Urban Update

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Urban Update

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AIILSG

FIGHTING AIR POLLUTION EFFECTIVELY & SUSTAINABLY

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'Delhi's air quality remains 'poor'; likely to deteriorate further' announced a recent news headline. The City's air quality index was then 245, while having reached a level of 400 plus some days ago. Air quality index of upto 50 is considered 'good' while 400 upwards is 'severe'. The severity of the air pollution in the national capital is evident from these numbers. Sadly, other cities are not much better. Twenty-one of the world's 30 cities with the worst air pollution were in India, according to data compiled in IQAir Air Visual's 2019 World Air Quality Report; six were in the top ten.

Around this time of the year, cities especially those in north India come under the grip of very poor air quality putting to grave risk millions of their citizens. Reasons for the poor air include vehicular emissions, industrial pollution, wood burning for cooking, construction activity, and stubble burning in some areas at this time of the year. The growing mountains of solid waste dumping sites around our cities add quite a bit too.

It is quite clear that anthropogenic activities have a substantial impact on the quality of air we breathe. Look at the situation during the recent COVID-18 induced lockdowns. According to the "Impact of Lockdown on the Ambient Air Quality" report by CPCB, PM 2.5 reduced by 24 per cent during the pre-lockdown phase (March 1-21) and further reduced by almost 50 per cent during the lockdown phases (phase-I March 25 - April 19 and phase-II April 20 to May 3) as compared to levels during 2019. Needless to say, air quality went steadily downhill once lockdown was relaxed in phases. The improved air quality during the lockdown came with high economic costs and therefore is not the way to go. However this experience could enable scientists to quantify the extent of impact various human activities have on air quality. We must find ways to decouple economic activity/growth from poor air quality. In other words economic growth need not be at the cost of environmental degradation. Technological innovations and restoring natural ecosystems can enable us to achieve irreversible, sustained, and sustainable long term improvement in air quality.

Rapid movement towards electric vehicles and increased blending of auto fuels to address vehicular pollution, accelerated shift to renewable energy and use of gas in place of coal fired thermal power plants, and innovations such as vertical forest towers, smog-eating building facades, cloud seeding, anti-smog guns and water sprinkling all have their roles in cleaning up the air. Yet we must not neglect the crucial role of our natural ecosystems in our quest for a clean-air future. Growing more trees, conserving forest cover, rejuvenating our rivers and water bodies, preserving flora and fauna, restoring wetlands, reducing waste (reusing and recycling) will all serve a wide range of objectives including preventing floods, water security, good sanitation, and of course providing us clean air to breathe. This could be the more sustainable path.

This issue of Urban Update deals with the subject of air quality covering various aspects. We trust you will find the issue engaging. ∎

PIN POINT

> Our health system can still cope with this challenge today, but at this speed of infections it will reach the limits of its capacity within weeks

Angela Merkel
Chancellor of Germany

> The COVID-19 pandemic has jarred the world's health systems, societies and economies. In many ways, this is a wake-up call for potentially even greater threats, especially those posed by climate change

Dr Tedros Adhanom Ghebreyesus
Director General, WHO

> We can beat COVID-19 only with facts, science and community solidarity

Winnie Byanyima
Executive Director, Joint UN Programme on HIV/AIDS

> International cooperation is the only way to defeat the COVID-19 pandemic, the climate emergency, rising inequality and the spreading of hatred

Antonio Guterres
Secretary General, United Nations

BUZZ

UN Development
@UNDP

Global poverty is rising for the first time since 1998. COVID-19 is demolishing decades of efforts to advance #GenerationEquality, education, health, & human development

United Nations
@UN

#COVID19 has been devastating for children & their education. Students in the world's poorest countries have already lost nearly four months of learning since the start of the pandemic, according to @UNICEF's latest report

Bill Gates
@BillGates

It's inspiring to see so much passion these days for dealing with climate change, and to know that the world has set some ambitious goals for solving it. What we need now are practical plans to reach those goals

Urban Institute
@urbaninstitute

The pandemic has revealed is how critical housing is. "People are now working from home, schooling from home, healing from home." (via @amyreports)

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CRIC PROJECT KICKS OFF THROUGH ONLINE MEDIUM

Partners of UCLG ASPAC for the CRIC project include All India Institute of Local Self- Government (AIILSG), Association Des Cites Et Des Regions Pour La Gestion Durable Des Ressources, European network for community-led initiatives on climate change and sustainability (ECOLISE), PILOT4DEV and Universite Paris Est Marne La Valle. The third quarterly progress report of CRIC project (July-October 2020) details the status of the ongoing activities or output produced

The project funded by the European Commission under the European Aid Programme sets the framework to develop the tools to help cities in addressing resilience in their agenda and shape the project's training activities. The goal of the project is also to contribute to sustainable integrated urban development, good governance, and climate adaptation/mitigation through long lasting partnerships, and tools such as sustainable local action plans, early warning tools and experts' panels. The target groups of the Project include local governments, cities, urban stakeholders working on climate resilience, climate mitigation and adaptation, and good governance of inclusive cities.

The project works around three pillars including knowledge and exchange, local action plans for climate resilient and inclusive cities, and communication and capacity building. Association of Cities and Regions for sustainable resource management (ACR+) will be responsible for sharing its expertise and knowledge by contributing to expert reports and panels, providing indicators and recommendations for the urban analysis, and developing training, materials and tools. It will also support sectorial action plans and local sustainable action plans.

It is predicted that 68 per cent of the population will live in cities in the next ten years. Urban population densities exceed 15,000 habitants/km² in cities like Jakarta and more than 30,000 habs/km² in some inner-city areas. Cities are hard

hit by climate change, although they could be seeds for solutions. Cities like Jakarta are sinking below sea level and could be expected to sink by 2050. Countries like Vietnam (36 per cent of urban population) and the Philippines (45 per cent) have concentration of large urban areas, with fast growing centres. Urban areas host most of the vulnerable populations, as well as vital and social infrastructure, and local governments have increased pressure to develop services, infrastructure, and employment (UN-Habitat).

Hundreds of millions of people in poorer urban areas are hit by pockets of deprivation, while lacking basic infrastructure (such as water and sanitation). Problems will worsen when the most fragile territories could be affected by rising sea levels, flooding, landslides, toxic peaks of air pollution, typhoons, storms, or periods of more extreme heats and droughts related to climate change. Cities and local governments are increasingly recognised as key actors in addressing climate challenges and SDGs. UCLG ASPAC is an association of the local governments and is the key actor as knowledge management hub on LGs' issues in the Asia Pacific region. UCLG ASPAC has strong sources of leadership that require enabling frameworks and a combination of measures to achieve the changes that are needed.

During the opening ceremony in January 2020, Dr Bernadia Irawati Tjandradewi, Secretary-General, UCLG ASPAC said that the impacts of climate change are becoming more intense and frequent, and that we need to accelerate our work to help cities and local governments withstand the effects and protect citizens from future shocks and stresses. She added, "The local political leadership, networks and expertise that we pool together under this project will play a critical role in achieving the project's aim to promote climate resilience and inclusive cities." She also stressed that the most affected ones in climate calamities were women and children. Therefore, cities must re-double their efforts by making good collaboration as climate change is real.

KNOWLEDGE PRODUCTION AND EXCHANGE

For strengthening the first pillar of knowledge production and exchange, capitalization of knowledge and tools on inclusive climate resilient cities has been done. Inventory of tools, knowledge reports, contacts and list of cities where they have been implemented is now complete. Knowledge reports have been prepared on climate, resilience, inclusiveness and Sustainable Development Goals (SDGs) implementation in cities and provinces. Reports of comparative analysis of works in different cities under the project have been curated as well. As a representative of South Asia, AIILSG has recommended the names of experts to join the expert panel of the CRIC project. AIILSG has also recommended tools and provided reports on them.

As part of first pillar only, urban analysis has been done in eight cities or sub districts Pilot4dev, ACR+ and partners. Consultant and expert driven ten Urban Analysis Reports (UARs) have been prepared along with the policy briefs for Pilot4dev, to integrate the question of air pollution based on the UARs. AIILSG is currently working on developing input for ten cities with particular focus on policy recommendations and tool specific proposals.

UCLG ASPAC coordinated six public hearings for ten UARs with a panel of experts during the period September 14-18 and 22. The hearings were attended by partners including, Pilot4Dev, ACR+, UEG, ECOLISE, and AIILSG. Five panels have been organized, which comprise experts from local governments and researchers, with the goal to strengthen policy dialogue on urban policies and urban challenges.

Four thematic tools are being developed by Pilot4Dev, ACR+, UGE, and ECOLISE on air pollution, waste management, early warning system, and water and sanitation. AIILSG would contribute in the consultation, input, and review of tasks, and may also assist UCLAG ASPAC in testing and validating the tools of air pollution.

LOCAL ACTION PLANS FOR CLIMATE AND SUSTAINABLE DEVELOPMENT

Work towards the second pillar of the project involves mapping of emissions of greenhouse gases (GHG) and development of sectorial action plans for five cities. The project has received commitment from nine cities for implementation of tools and creation of nodes for sustainable funding and working groups for the same have been established in five cities including, Bandar Lampung, Cirebon, Ternate, Gorontalo, and Pekanbaru by UCLG-ASPAC as coordinator and lead of the project.

COMMUNICATION AND CAPACITY BUILDING

Development of platform for online training course is in progress as a project based facility having UCLG-ASPAC as lead coordinator. Online training on Sustainable Urban Design and Development was completed through collaborative engagement of all partners with representations of more than ten delegations from India. As part of the project, an interactive website was launched, and is now being managed by UCLG-ASPAC and Pilot4Dev through continual inputs from partners feed.

CRIC project fact sheet, project release, and e-news were published as part of the project activity. ■

Rains unveil the cadaver of age-old drainage system in Hyderabad

HYDERABAD: Starting from October 13, heavy rains lashed the capital city of Telangana for 24 hours straight. The rainfall recorded on the day was 191.8mm, which was the heaviest rain spell ever recorded in October in Hyderabad. The incessant rain led to flooding of over 20,000 houses, water-logging in the whole city, death of over 50 people, and affected more than 35,000 families. K Chandrashekhar Rao, Chief Minister of Telangana, has pegged the loss suffered by the state at ₹5,000 crore, including the loss of ₹2,000 crores suffered by farmers due to crop damages. In a letter to Prime Minister Narendra Modi, Rao requested an immediate relief assistance of ₹1,350 crores-₹600 crores for farmers and ₹750 crores for rehabilitation works in Greater Hyderabad, which bore a major brunt of the downpour.

Frightening visuals of cars being swept away after streets got submerged in water, poles and trees getting uprooted, shook the whole nation. Telangana State Southern Power Distribution Company Limited reported damage in 15 substations, 686 feeders and 312 poles due to the Hyderabad rains. Several areas in the city, including Somajiguda, Abids and Serilingampally, suffered power outages for three consecutive days.

Amid the crisis, Vishwajit Kampati, Director, Vigilance and Disaster Management Department, Greater Hyderabad Municipal Corporation (GHMC), tweeted and informed that Disaster Response Force (DRF) personnel of the GHMC were continuously working on the field clearing water stagnations and inundations and all possible measures were being initiated in view of the rainfall. Personnel from the army and the National Disaster Response Force were also deployed to carry out relief operations and evacuate stranded residents.

According to the Indian Meteorological Department (IMD), the unabating rains were caused by weather that formed in the Bay of Bengal which initially weakened on the way but re-emerged in the Arabian Sea. According to Mrutyunjay Mohapatra, Director General, IMD, the reason for its severity was the significant moisture content of soil and a phenomenon called vertical wind shear-the result of a significant difference in wind speed between higher and lower atmospheric levels- which helped the system maintain its intensity as deep depression or a well-marked low-pressure area even on land.

A study on Hyderabad flooding published last year by researchers at the Hyderabad campus of the Department of Civil Engineering, Birla Institute of Technology and Science, Pilani, cited that the frequency and intensity of floods have increased due to a rapid rise in concretisation of the city, as buildings took over open spaces, nalas, tanks, ponds and lakes. A study on cities by researchers at Chennai's Hindustan University in 2013 showed that the built-up area in Hyderabad had increased by 136 per cent between 1973 and 1996, from 245 to 587 square kilometre.

According to publications and press releases of the Government of Telangana, in the five years, Hyderabad has added 392.14 million square feet (sqft) of the built-up residential area. The municipality expects an addition of another 60 million sqft in the coming years.

The increase in built-up space was on account of lakes, tanks and other natural and artificial storage areas which allowed rainwater to percolate into the ground. This increased the burden on the drainage system, which was incapable of handling such heavy rains, and as a result, the city streets turned into streams.

Telangana government seems to have realized that fast-tracking of building approvals over the years has done the state more harm than good. K Chandrashekhar Rao has directed officials to ensure apartment cellars are protected from gushing rainwaters in all new constructions. He added that building permissions should be given in such a manner that builders ensure that floodwater does not rush in and create havoc. The government has also decided to provide a compensation of ₹5 lakh each to family members of those who died in the deluge.

Hunger Index finds India's future stunted and undernourished

NEW DELHI: Concern Worldwide and Welthungerhlife released the Global Hunger Index (GHI) for the year 2020 on October 16. India ranked 94 in the peer-reviewed annual report which involved 107 countries in total. India's rank seems to have improved in comparison to rank 102 in 2019. GHI is a tool that measures and tracks hunger globally, regionally and by country. This tool marked India in serious hunger category with a score of 27.2 on a 100-point scale. In the index, India was ranked below almost all its neighbouring countries. Nepal was ranked 73; Pakistan, 88; and Bangladesh, 75.

The GHI scores are calculated to evaluate progress and setbacks in the countries combating hunger. It is calculated based on four indicators - child undernourishment, child wasting (low weight for children's age and height which reflects acute food shortage), child stunting (reflecting chronic undernutrition), and child mortality. High scores reflect the height of these four situations in the given country. In the GHI 2020 report, 17 countries, including Turkey, China and Brazil, shared the top rank with a score of less than 5.

The report established that 14 per cent of India's population is undernourished and the country is witnessing child stunting rate of 37.4 per cent. Stunted children are those who have a low height for their age, which reflects chronic undernutrition. Data shows that stunting is concentrated among children from households facing multiple forms of deprivation, including low levels of maternal education, poor dietary diversity, and household poverty. Child wasting, or short-termed malnutrition in children, was found to be most prevalent in Yemen, Djibouti, and India in the report. Child stunting in India has been reported to have improved from 54 per cent to 35 per cent and mortality rates have fallen to 3.5 per cent, but there has been no improvement in child wasting in the last two decades. In fact, the situation of child wasting seems to have worsened from 15.1 per cent in 2010-14 to 17.3 per cent in 2015-19.

According to the report, the situation is either improving too slowly in a few countries or is worsening. It revealed that multiple countries have higher hunger levels now than in 2012. The latest projections in the report also show that 37 countries will fail to achieve the goal of 'low hunger' by 2030 which was made part of the Sustainable Development Goals (SDG). The report mentioned that in India, only 9.6 per cent of all children between 6 and 23 months of age are fed a minimum acceptable diet. It added, "As of 2015–2016, 90 per cent of Indian households used an improved drinking water source while 39 per cent of households had no sanitation facilities (IIPS and ICF 2017)."

According to a World Bank report published on May 27, 2016, one in every five people is poor in India and cannot access basic necessities like food and water. India's poor performance in the latest GHI brings to the forefront the reality of the country's stubbornly high proportions of malnourished children. The report cited the fact that the country's top 1 per cent own more than 50 per cent of its wealth. Even though India is the world's second-largest food producer, yet it is also home to the second-highest population of under-nourished in the world.

The report established that nearly 690 million people are undernourished globally. It also said that the COVID-19 pandemic could have affected the progress made on reducing hunger and poverty and the totality of its effect will become visible soon. The report focused on the threat to the human, animal, and environmental health posed by the food system currently in practice. Osman Dar, Chatham House, said, "The 2020 GHI findings highlight the food insecurity challenges facing low-income countries as they battle multiple crises."

Household spread of COVID-19 is quick and common: Study

A study by the United States of America Centres for Disease Control and Prevention (CDC) states that in-family spread of COVID-19 among members if one person is infected, is "common". It stated that the spread is quick after the onset of symptoms. The researchers followed almost 101 people initially infected with COVID-19 along with 191 others who lived in their households. The spread of infection was quick as 53 per cent of those who stayed with an infected person became infected within a week. Around 75 per cent of the secondary infections occurred within five days of the appearance of first symptoms in the initial patient.

UN report says India third most disaster-prone country

After China (577) and the United States of America (467), India (321) ranked third on the list of countries recording the highest number of natural disasters in the last 20 years. According to a report by the United Nations Office for Disaster Risk Reduction (UNDRR), the economic losses due to the disasters are estimated at $3 trillion in the last two decades. Findings of the study state that such disasters have caused the loss of lives of around 1.2 million people and have affected around 4 billion. Natural disasters have also caused economic losses of almost $2.9 trillion.

Masks block coronavirus transmission, but not completely: Researchers

TOKYO: Scientists at the University of Tokyo have shown that though masks can provide protection against airborne coronavirus particles, even professional-grade coverings cannot eliminate contagion risk entirely. The researchers set up a secure chamber with mannequin heads facing each other. One of the heads was fitted with a nebulizer, simulated coughing and expelled actual coronavirus particles. The other mannequin head mimicked natural breathing with a collection chamber for viruses coming through the airway.

According to the results of the research, cotton masks reduced virus intake by the receiver head by about 40 per cent as compared to when the head did not wear a face mask. An N95 mask, used by medical professionals, blocked upto 90 per cent of the virus particles. However, even when the scientists taped the N95 mask to the receiver head, some particles managed to get through. On the other hand, when a cotton or surgical mask was attached to the coughing head, virus transmission was reduced by over 50 per cent. The researchers

wrote in a study that a drastic decrease in virus transmission was noted when both the coughing mannequin head and the receiver head wore masks. This comes when there is a growing concern among the scientific community that the coronavirus particles can spread through the air. The United States Centre for Disease Control and Prevention revised its guidelines this month and said that the coronavirus particles can remain suspended in the air for hours. A separate team of Japanese researchers used supercomputer simulations to show that humidity can have a significant effect on airborne dispersion of virus particles.

16.7 lakh died due to air pollution in India

NEW DELHI: The State of Global Air report published by the Health Effects Institute (HEI) has revealed that 16.7 lakh people died as a direct result of poor air quality in India in 2019. It further states that over a lakh of those who died due to severe air pollution in the country were less than a month old. The report, released on Wednesday, October 21, terms air pollution as the biggest health risk in India.

"Outdoor and household particulate matter pollution contributed to the death of more than 1,16,000 Indian infants in their first month of life in 2019. More than half of these deaths were associated with outdoor particulate matter 2.5 (PM 2.5) and others were linked to the use of solid fuels such as charcoal, wood, and animal dung for cooking," the report said. It further said that long term exposure to outdoor and household air pollution contributed to over 1.67 million annual deaths from strokes, heart attack, diabetes, lung cancer, chronic lung diseases and neonatal diseases in India in 2019.

A growing body of scientific evidence, including studies supported by the Indian Council of Medical Research, indicates that exposure to particulate air pollution during pregnancy is linked to low birth weight and pre-term birth, the report said. The results further revealed that of the deaths of infants due to all reasons, 21 per cent were due to ambient and household air pollution. Moreover, South Asian countries, including India, Bangladesh, Pakistan and Nepal, featured among the top 10 nations with the highest PM 2.5 exposures in 2019. However, all these countries have also had 50 million fewer people being exposed to household air pollution since 2010.

Scientists complete yearlong expedition to the Arctic, bring back tons of data

BERLIN: After completing a year-long international scientific voyage to study the high Arctic, an icebreaker carrying a team of scientists from countries all across the world has returned to Germany. The scientists have been able to procure extremely important scientific data which will help us in predicting the course of climate change in the decades to come.

The RV Polarstern arrived on October 12, at the North Sea port of Bremerhaven after having to deal with the lockdowns imposed in countries across the world. According to Markus Rex, the team was successful in achieving everything they had planned to while taking only a short break throughout the year. The COVID-19 pandemic did disrupt the carefully planned travel route of the

expedition. However, the team was able to manage and the mission had to face no significant problems, he said.

A total of 300 scientists from over 20 countries, including the United States of America, Britain, France, Russia and China, took part in the 150 million euro ($177 million) expedition to measure conditions in one of the most remote and hostile parts of the planet. A majority of the information will be used to improve scientists' models of global warming, particularly in the Arctic, where climate change has been the most pronounced anywhere around the world.

"We went above and beyond the data collection we set out to do," said Melinda Webster, a sea ice expert at the University of Alaska, Fairbanks, whose work is funded by NASA.

Post floods, GHMC engages in sanitation drive

HYDERABAD: The south Indian states of Andhra Pradesh and Telangana, among others, experienced heavy, unseasonal rainfall during the last week. These rains led to widespread destruction of property and life as flash floods swept across various cities. Post the disaster, civic bodies in Hyderabad are now tasked with the removal of over 20,000 tonnes of garbage. As part of a special monsoon sanitation drive, workers have picked up and shifted 10,386 tonnes of garbage in the last four days. The Greater Hyderabad Municipal Corporation (GHMC) expects that the special monsoon drive will continue for a few more days. GHMC says that the monsoon drive was taken up in the worst-hit localities in LB Nagar,

Charminar, Khairatabad, Serilingampally, Kukatpallu and Secunderabad zones and is progressing even as de-watering activities are continuing in several colonies. Low-lying areas across the city are the worst affected as residential and commercial localities witness massive heaps of waste piling up in and around their boundaries. Of the total waste collected, around 5885 tonne have been lifted from the Charminar zone in the last four days, followed by the Khairatabad zone and LB Nagar zone.

After a breach of the bund, the Gurram Cheruvu and Palle Cheruvu were the two lakes which overflowed, flooded and submerged the neighbouring colonies. So far, the GHMC has identified 9,163 heaps of garbage accumulated across these zones. The debris collection from these sites is being shifted to Jeedimetla and Fathullaguda C&D debris processing plants, while the other wastes are being shifted to the municipal dump yard at Jawaharnagar. The GHMC has additionally employed 72 earthmovers, 55 mini-tippers, 36 trucks (6-tonners), 110 trucks (10-tonner), and four tractors for the special sanitation drive.

NGT requests UP government to keep a watch on illegal brick kilns

The National Green Tribunal (NGT) has requested the Uttar Pradesh authorities to keep a watch on illegal functioning of brick kilns to safeguard air quality in the National Capital Region. The NGT bench was hearing a complaint against the illegal exercise of 600 brick kilns in Bagpat district of Uttar Pradesh. Study by Energy and Resources Institute and the Automotive Research Association of India shows 8 per cent of the PM 2.5 emissions in Delhi during winters and 5 per cent during summers is contributed by the brick kiln industry.

Air pollution a pan-NCR problem, not limited to Delhi: Javadekar

Prakash Javadekar, Minister of Environment, Forest and Climate Change, Government of India, through a Facebook live session, said that air pollution is not only a problem for Delhi but pan-NCR (National Capital Region). He also said that the Centre and the states of Delhi, Haryana, Uttar Pradesh and Rajasthan have to work together to tackle the problem. Talking about pollution-control initiatives taken by the centre, he mentioned initiatives like opening the peripheral expressway around the capital in order to divert non-Delhi destined traffic away and bringing in regulations related to the management of construction and demolition waste, which is a major source of dust.

Mumbai metro resumes with modified SOPs after 7 months

Mumbai metro services resumed operations after being closed down temporarily in March this year owing to the nationwide coronavirus lockdown. The trains are scheduled to run from 8:30 AM to 8:30 PM with standard operating procedures in place. Only 200 services of trains will run as compared to 400 before the lockdown in March. Wearing masks, maintaining social distance, and thermal screening has been made mandatory for travel in the metro. No plastic tokens are being issued and passengers are using digital tickets, smart cards, and QR-based tickets.

May remove plasma therapy from COVID management plan: ICMR

Dr Balram Bhargava, Director General, Indian Council for Medical Research, said that plasma therapy may be deleted from the national clinical protocols for the management of COVID-19. A few months earlier, it was endorsed as a life-saving intervention for patients suffering from severe COVID-19. Plasma Convalescent India (PLACID) trial by ICMR in September had inferred that plasma therapy failed to save people dying from SARS-CoV-2 infection. This was the world's first and largest randomized control trial, which was carried out on 464 patients across 39 hospitals. Several other studies conducted on the efficacy of plasma therapy have suggested that it did not reduce mortality or progression to a severe disease condition.

Above 80% of Europe's natural habitat in miserable condition

NEW DELHI: A report released by the European Environmental Agency (EEA) shows that more than 80 per cent of the European Union's natural habitat is in a miserable condition. The report examines the period between 2013-2014 and shows that the condition of Europe's natural habitats has deteriorated as compared to the period between 2007-2012. In the period between 2007-2012, 77 per cent of European natural habitats were in an 'unfavourable condition'. Carlos Romao, an EEA expert and one of the authors of the report, said that large scale reconditioning in Europe is urgently needed, not only for the conservation of biodiversity but also for the climate change agenda.

Among others, intensive agriculture, tourism, urban extension, unsustainable forestry activities and pollution put damaging pressure on habitats and species. Commonly found species like skylark and habitats like wet heaths are diminishing across the continent. A six-year investigation by EEA recorded

over 67,000 types of human activities which deteriorate the environment in the 28 states of the continent, inclusive of Britain. The reports also showed that the habitats important to pollinators are more affected than the other areas.

According to EEA, natural habitats protected by EU's Natura 2000 network are in a better condition than other habitats. Noah, an environmental group and a member of "Friends of the Earth" umbrella organisation, said that protection just by Natura 2000 won't be enough. European Union should take more steps to protect 30 per cent of the land and 30 per cent of the marine areas by law.

Highest air pollution exposure recorded in 2019: Report

NEW DELHI: The State of Global Air 2020 (SOGA2020) has examined that India has recorded an increase in the levels of Particulate Matter 2.5 (PM 2.5) since 2010. The report was released on Wednesday, October 21. Nepal, Niger, Qatar and Nigeria are following India in terms of concentration of PM 2.5. The claims of the report are contradictory to the data released by the Government of India which shows that air pollution levels in the country are decreasing.

SOGA is released by Health Institute and Global Burden of Disease (GBD), United States of America (USA). The report uses data from ground monitors and satellites to make their assessments. To calculate the annual average of PM 2.5 exposure or concentrations, the scientists divided the globe in blocks or grids. They linked the concentrations in these blocks with the number of people living in each block to produce a population weighted annual average concentration.

India is also in the list of top 10 countries with highest levels of Ozone (O_3) exposure in the world in 2019. India is at the third spot in this list with the highest increase (17 per cent) in O_3 concentrations in the last ten years. On an average, the global exposure to ozone has increased from 47.3 parts per billion (ppb) in 2010 to 49.5 ppb in 2019.

However, one point of relief for India is that the country has reduced the number of people exposed to household pollution from 73 per cent to 61 per cent. Since 2010, India has managed to decrease the number of people exposed to household pollution by 50 million. This has been achieved by various government schemes such as the Pradhan Mantri Ujjwala Yojana (PMUY).

BENGALURU MOVING AHEAD TO MAKE CYCLING CONVENIENT

THE DIRECTORATE OF URBAN Land Transport and World Resources Institute have taken an initiative to make the city of Bengaluru cleaner and environmentally friendly. As the number of cyclists increased during and after the COVID-19 lockdown, the prospect to reimagine the city's congested streets was presented through pop-up cycle lanes. Pop-up cycle lanes are exclusive cycle lanes that have bright orange bollards and are structured to be quick, need-based and cost-efficient. The pop-up cycle lane project stretches on Bengaluru's Outer Ring Road. It will not only help cyclists stay healthy but also reduce vehicular pollution.

Lockdown in Ireland after apprehensions over second wave of coronavirus

Micheal Martin, Prime Minister of Ireland, announced a six-week lockdown in the nation. The lockdown has been imposed after witnessing a resurgence in confirmed cases of SARS-CoV-2 infections in the past few weeks. From midnight on Wednesday, October 21, Ireland moved to its highest level of restrictions categorized as tier 5. Non-essential shops will be closed and travel will be restricted within five kilometres of an individual's home. The government also warned of the penalty for violating the five-kilometre restriction. Martin addressed the nation on national television and said, "The evidence of a potentially grave situation arriving in the weeks ahead is too strong."

DPCC fines 10 for practising stubble burning

The Delhi Pollution Control Board (DPCC) fined 10 people Rs 10,000 for burning stubble in Mundka village in Delhi's West district. A first information report (FIR) was also lodged against them on the basis of the complaints by the DPCC. The residents of Mundka also complained that plastic and other waste materials are being burned by local businessmen. The DPCC said that strict action will be taken against the offenders by the Sub Divisional Magistrate (SDM), Punjabi Bagh. DPCC team also visited the local farmers in Mundka and cautioned them about the legal outcomes of stubble burning in the future.

UNICEF to stock half billion syringes prior to arrival of COVID-19 vaccine

NEW DELHI: United Nations International Children's Emergency Fund (UNICEF) has said that it will stockpile around 520 million syringes in their warehouses. This action is based on its larger aim of one billion hypodermic needles by 2021 to ensure the availability of syringes in countries before the arrival of a COVID-19 vaccine.

United Nations Organisation (UNO) said that as the world awaits the vaccine for COVID-19, UNICEF has begun preparing for rapid, safe and efficient delivery of the COVID-19 vaccine. The agency has thus started preparing stocks of syringes and pre-positioning other equipment. It added that as and when vaccine trials are completed and the vaccine is licensed to use, the world will need a large number of syringes.

UNICEF has planned to deliver around one billion syringes in 2021 to support the supply of COVID-19 vaccination. Moreover, the agency will also purchase almost 620 million syringes for vaccination against non-COVID diseases such as measles, typhoid, etc.

Henrietta Fore, Executive Director, UNICEF, said that vaccinating the whole world against COVID-19 will be one of the largest mass undertakings in history. "To achieve the targets in time, we have to move fast now," she said. Fore added that at the end of this year, the agency will already have over half a billion syringes stocked to make them available in time.

UNICEF is also purchasing around 5 million safety boxes in order to safely dispose the used syringes and needles at health facilities. Every safety box carries 100 syringes and the agency is bundling the syringes with safety boxes so that there are enough boxes to go along with the syringes. UNICEF said that the shelf life of the equipment is around five years.

'India's manufacturing & research is critical to fighting COVID'

NEW DELHI: Bill Gates, Co-Founder, Bill and Melinda Gates Foundation, while talking about COVID-19 vaccine development, said that India's research and manufacturing will be critical to fighting COVID-19, especially for making vaccines on a large scale. He said this while addressing the Grand Challenges Annual Meeting 2020 on Monday, October 19. He went on to say that the work done by India is 'very inspiring' and that the country has made huge strides in improving the health of its people in the last two decades. Gates said that scientists all over the world are now working to end the pandemic as soon as possible. Scientists are now breaking down silos and instead of waiting for publications, they are sharing their results on a daily basis. "Since the pandemic began, scientists have shared 1,37,000 viral COVID-19 genomic sequences," the Microsoft Corp co-founder said. Even the pharmaceutical companies are cooperating on production ways that really have never been seen before, he added.

"The first approved COVID vaccine will probably be mRNA," he said but added that the world cannot rely on a single vaccine as it would be a logistical nightmare. Scaling up a single vaccine to suffice for the needs of everyone is impossible and therefore, simultaneous development of more vaccines is necessary.

He also stressed on the need for innovation in diagnostics platforms. "Even when people are tested, results come back negative because some of the tests are not sensitive to the small nano virus," he said, adding, this also leads to infection. "We need more sensitive and precise tests to efficiently diagnose the disease and the test must also be cost-effective and easily accessible to everyone," Gates said.

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Vaccine by China's Sinovac Biotech appears safe in preliminary results

A coronavirus vaccine developed by Sinovac Biotech, a China-based pharmaceutical company, has appeared to be safe in its last-stage clinical trial. Brazil's Sao Paulo's Butantan Institute has been carrying out the Phase III tests on the CoronaVac, which proved to be safe in preliminary results based on trials involving 9,000 volunteers. Reuters, a news agency, reported that there were no severe or adverse reactions to the vaccine. 20 per cent of the volunteers reported mild pain from the injection while 15 per cent reported headaches after the first dose, which dropped to 10 per cent for the second. Less than 5 per cent of volunteers reported nausea, tiredness or muscle-ache.

121 polluting factories demolished in Ghaziabad since October 15

To control air pollution in and around the city, a total of 121 polluting factories have been razed in Ghaziabad's Loni town since October 15. According to Ajay Shankar Pandey, District Magistrate, a dozen units have been demolished on Tuesday, October 27, itself. The demolition is part of the Graded Response Action Plan (GRAP) which has been implemented in the Delhi-National Capital Region (NCR). Pandey said that the administration is taking all necessary steps to curb air pollution in Ghaziabad, with polluting industries being demolished and hefty fines being levied on violators of pollution norms.

Asymptomatic COVID-19 patients lose antibodies sooner: Study

LONDON: A study by Imperial College, London, found that asymptomatic COVID-19 patients tend to lose detectable antibodies sooner than those who have suffered the symptoms. The study also suggested that the loss of antibodies was slower in 18-24-year-olds compared to those aged above 75.

Hundreds of thousands of samples were tested from across England between mid-June and late September and the results showed that presence of antibodies fell by more than a quarter. The research was commissioned by the British Government and was published on Tuesday, October 23, by Imperial College. It showed that immune response of the people against COVID-19 reduces over time. 3,65,000 adults were picked randomly for the study done at home by administering three rounds of finger prick tests for novel coronavirus antibodies.

James Bethell, Junior Health Minister, Government of Britain, said that this is an important piece of research which will help us to understand the nature of COVID-19 antibodies over time. At national level, it meant that population with antibodies fell from 6.0 to 4.4 per cent according to the study.

The study also found that the number of workers who tested positive for COVID-19 did not change over time. This means that there is prevalence of repeated or high exposure to the virus.

Almost 20% Keralites are not wearing face masks: Study

THIRUVANANTHAPURAM: According to a study by the Global Institute of Public Health (GIPH), Thiruvananthapuram, around 20 per cent of the people in the state were not protected by face masks. Of the 4,500 people who were surveyed across Kerala, 20 per cent either didn't wear a mask at all or wore it improperly.

Of the 96 per cent people who wore face masks, 16 per cent were found to be wearing it improperly. Malappuram district had the highest percentage of people wearing masks properly (85.8 per cent), followed by Thiruvananthapuram (85.5 per cent). Idukki had the lowest mask use percentage of 62.4 per cent.

The study was done on the basis of over 1,400 photographs taken in public places, hospitals and indoor gatherings. Around 4,500 people who were clearly visible in the photographs were taken up for the study. Average number of people in a photo frame was used as a measure to determine the crowding in places. It was found that co-incidentally, places with highest mask use had higher levels of crowding. This can be a reason for high COVID-19 positive cases in the districts of Malappuram and Thiruvananthapuram.

S S Lal, Head of Public Health, GIPH, said that 80 per cent of proper mask use is not a bad number but it is not enough. Anand Marthanda Pillai, Principal Investigator of the study, said that overall mask use of 96 per cent is a very good number. However, he added that 20 per cent of the people using face mask improperly is a number big enough to trigger the spread of COVID-19 again.

Green firecrackers key to control air pollution in Delhi: Gopal Rai

NEW DELHI: Gopal Rai, Minister of Environment, Government of Delhi, referring to the poor air quality index (AQI) in the national capital, announced that only 'green' firecrackers can be manufactured, sold and used in the city. Delhi government launched an anti-firecracker campaign on November 3, which is scheduled to continue even after Deepavali. In his address, Rai appealed to Delhiites to start a 'no-cracker' campaign mentioning how SARS-CoV-2 can become even more infectious in polluted air. Rai said that the main reason behind the spike in air pollution in Delhi are firecrackers on Deepavali and stubble burning in neighbouring agricultural lands. The Supreme Court had given the licensing department of Delhi Police the responsibility to enforce the ban on traditional firecrackers. To avoid disturbing the spirit of the festivals, the Delhi government is mandating the use of only green firecrackers which do not emit sulphur dioxide and nitrogen when burnt,

thus curbing the spike in pollution level. He requested people and traders to comply with norms and not use any remaining stock of traditional firecrackers. Rai said that there are around 93 companies across India which make green crackers using pyrotechnic. The Delhi Pollution Control Committee (DPCC) is all set to form 11 different teams consisting of engineers and environment marshals, who will keep a vigil on the manufacturers across the capital. Any violator caught by DPCC is to be charged under the Environment Protection Act and Air Act. Rai said that the Delhi government has taken various initiatives to combat air pollution. He referred to the sprinkling of bio-decomposer to stop stubble burning, 'Red Light On, Gaadi Off' campaign, anti-dust pollution campaign, and Electric Vehicle Policy. Delhi government is set to launch an app named 'Green Delhi", through which people can share complaints about any violation of environmental norms.

Exponential growth of COVID cases in Europe forces countries to revive curfews

PARIS: Due to the resurgence of COVID-19 cases across Europe, France and various other countries are going back to closing down schools, restricting movement of people and enlisting people for voluntary medical service. With over 100,000 cases reported daily from Europe, it has overtaken the United States of America by a huge margin, where the number of daily cases are still close to 51,000.

In the case of France, President Emmanuel Macron announced night curfews for four weeks in Paris and other major cities, affecting almost one-third of the country's 67 million people. He said that the curfews are being put into effect to temporarily restrict "parties, the moments of conviviality where there are 50 or 60 people, festive evenings because, unfortunately, these are vectors for the acceleration of the disease." This comes after most European countries eased lockdowns over the summer in order to revive dying economies which were already battered by the effects of the first wave of the coronavirus pandemic. However, this is most likely the cause for the sudden spike in cases witnessed just before the start of the winter season. A change in the rules in London is likely in very short order, according to an official in London Mayor Sadiq Khan's office. Khan and health leaders met on Wednesday, October 14, to discuss the potential move into stricter restrictions, which would ban two separate households from meeting indoors, the official said. London will soon hit an average of 100 cases per 100,000 people, the official added. Angela Merkel, Chancellor of Germany, said that she and 16 state leaders from across Germany agreed on Wednesday, October 14, to adopt tougher and more stringent measures to fight the pandemic. "We are already in a phase of exponential growth, the daily numbers show that," she said.

Some countries to face tougher times fighting COVID-19: WHO

Dr Tedros Adhanom Ghebreyesus, Director General of World Health Organisation, said that the world is at a serious position regarding the COVID-19 pandemic and certain countries, particularly those in the Northern hemisphere, are on a vulnerable track as health services are exhausting under the strain. He added that the coming months are going to be very difficult for everyone. Dr Tedros also urged leaders to take strict and immediate action to defend against increased unwanted deaths, essential health services breaking down and schools shutting down again. He added that as he said in February, this is not a routine.

Pfizer aims to deliver COVID-19 vaccine in 2020

Administrators of Pfizer, one of the world's premier biopharmaceutical companies, on Tuesday, October 27, expressed calculated optimism over the likelihood of supplying a COVID-19 vaccine in 2020 as the company reported lower profits due to disturbance in healthcare that affected the drug demand greatly. Dr Albert Bourlo, Chief Executive of Pfizer, said that the drug jumbo will possibly supply around 40 million doses in the United States in 2020 if the medical testing of the vaccine progresses as expected and is officially approved.

USA records 15% rise in COVID-19 deaths and 24% in new cases

In the previous week, new cases soar in the United States of America (USA) by 24 per cent to more than 485,000, while the number of tests undertaken rose by 5.5 per cent, says a Reuters analysis of the state and country records. Across the US, over 5,600 people have lost their lives because of the virus in the week which ended on October 25, up by 15 per cent as compared to the preceding week. A rise in the number of deaths was seen for at least two consecutive weeks in 16 states, in comparison to nine states earlier.

Over 50,000 new cases reported in a day in France

France recorded 52,010 new COVID-19 cases in a day, which set a new record for COVID-19 cases in the country. According to official data, the number of cases in a day has crossed the 50,000 mark for the first time since the pandemic hit the country. The Public Health France (SPF) authority reported that 116 people had succumbed to the disease, adding to the total number of deaths since the start of the pandemic and taking the number to 34,761. France has also passed the significant milestone of one million COVID-19 positive cases since the onset of the outbreak.

World Bank estimates $400 BN loss as schools remain closed in India

NEW DELHI: The extended shutting down of schools due to the ongoing COVID-19 pandemic may result in a loss of $400 billion in India's succeeding revenue, in addition to significant learning losses, as stated by a World Bank report.

The shutting down of all educational institutions from March 16 due to the nationwide lockdown may not only result in great losses to India but may also decrease the gross domestic product (GDP) of many other countries. In a worst case scenario, South Asia region may lose up to $880 billon due to school closures. According to the report titled "Beaten or Broken? Informality and COVID-19 in South Asia", South Asia is set to face the worst recession in 2020 due to damaging impacts of the pandemic on economy. It also said that the momentary shut down of schools has kept 391 million students away from formal education, affecting the learning for them greatly. It added that even though the Government of India has made great efforts to reduce the repercussions of school closures, engrossing children through remote learning initiatives has been troublesome. As per the report, 5.5 million students may drop out of schools due to the pandemic resulting in considerable learning losses which will adversely affect the productivity of the coming generation. Not attending school for approximately 5 months may result not only in halt of learning new things but also remembering what they have already learned.

The Learning Adjusted Year of Schooling (LAYS), a strategy introduced by the World Bank, has predicted that the continued closure of schools will lead to a learning loss of 0.5 LAYS for India. The system of LAYS helps in projecting the learning gain or loss for students from a particular region.

'1 vaccine not enough for pan India availability'

NEW DELHI: Dr Harsh Vardhan, Minister of Health and Family Welfare, Government of India, said that the country needs to have more than one COVID-19 vaccine to make it universally available. He also added that the authorities have to ensure that the most vulnerable group of people is provided with the vaccine on priority.

Dr Vardhan said that considering the size of the population, one vaccine manufacturer would not be able to meet the requirements. Therefore, assessment to introduce more than one vaccine, according to the availability, is under process. He added that most of the COVID-19 vaccines in India are in phase 1,2 or 3 of trials, hence adequate data is required for emergency use of vaccine to ensure safety of patients.

He also ensured priority administration of vaccine in light of the anticipation of limited stock of vaccine in the beginning. In his statement, Dr Vardhan said that prioritisation of the vaccine will be on the basis of occupational hazard, risk of exposure to infection and risk of exposure to severe diseases and increased mortality rate. Vaccines of Serum Institute and Bharat Biotech are two-dose vaccines whereas Cadila's vaccine is three-dose.

According to the information on the World Health Organisation (WHO)'s website, there almost 100 vaccines in process of development. Various scientists, healthcare providers and businesses are in the race to manufacture a safe and effective vaccine for COVID-19 infection. The Central Drugs Standard Control Organisation (CDSCO) has granted the permission to seven manufacturers in India for development of the coronavirus vaccine. These are Serum Institute of India, Pune; Cadila Healthcare, Ahmedabad; Bharat Biotech, Hyderabad; Biological E Ltd in Hyderabad; Reliance Life Sciences Private Limited, Mumbai; Aurobindo Pharma Limited, Hyderabad; and Gennova Biopharmaceuticals Limited, Pune.

COVID-19 vaccination strategies prioritise those at more risk

NEW DELHI: Currently, eight vaccines including that of Oxford, Moderna and Pfizer, are under the fourth and final phase of the vaccine trial. When a safe and effective vaccine is found, COVAX, led by World Health Organisation (WHO), Global Alliance for Vaccines and Immunizations (GAVI), and Coalition for Epidemic Preparedness Innovations (CEPI), will facilitate the equitable access and distribution of these vaccines. The global leaders, WHO, and vaccine producers are already facing the question of how to appropriately allocate them across countries.

The WHO plan begins with 3 per cent of each country's population receiving vaccines and continues with population-proportional allocation until every country has vaccinated 20 per cent of its citizens. Countries have started planning the vaccination strategy for its population as per estimated availability.

The government of the United Kingdom (UK) cleared up its citizens' misguided perception of the vaccine programme with a statement that less than half the population of the UK can expect to be vaccinated against coronavirus. Citizens believed that the whole population will be vaccinated at one stretch. But in a statement to Financial Times, David Nabarro, a special envoy from the UK to the WHO, said that the coronavirus crisis was "not going to be a case of everyone getting vaccinated." He established that there will be a definite analysis of who is the priority for the vaccine, based on where they live, their occupation and their age bracket.

Kate Bingham, Chair of the UK Vaccine Taskforce, commented that they will be vaccinating only the ones at risk. She said, "It's an adult only vaccine for people above 50, focusing on healthcare workers or those vulnerable to the disease spread." Following the interim advice by the UK's Joint Committee of Vaccination and Immunisations, vaccination would be recommended for adults older than 50 years, health-care and social-care workers on the front line, and adults with underlying comorbidities. This strategy aims at changing the likelihood of people getting harmed or hurt rather than using the vaccine to create population immunity against the virus.

Dr Harsh Vardhan, Minister, Ministry of Health and Family Welfare, Government of India, said that the government is deliberating over plans to roll out country's COVID-19 vaccine by prioritizing target groups in the population. Mentioning the plan of WHO for distribution of vaccines which will limit the supply each nation will receive in the beginning, he said, "It will be critical to prioritize vaccine delivery based on various factors such as the risk of exposure, comorbidity among various population groups, the mortality rate among COVID cases, and several others."

Dr Vardhan was interacting and responding to queries on social media in his fifth episode of Sunday Samvad when he denied rumours of the government prioritizing young and working-class for the COVID-19 vaccine for economic reasons. He said, "The prioritisation of groups for COVID-19 vaccine shall be based on two key considerations: occupational hazard and risk of exposure to infection, and the risk of developing severe disease and increased mortality."

He asserted that the most important component of the planning is the cold chain and other logistics which need to be planned appropriately to ensure no glitches occur in vaccine delivery to the masses. As per DrVardhan's address, India is looking at the availability of several different types of vaccines, of which some may be suitable for a particular age group while others may not be. He also said that one vaccine or vaccine manufacturer might not be able to fulfil the requirement of vaccinating the whole nation with a large population size such as India. Therefore, the government is assessing the feasibility of introducing several COVID-19 vaccines in the country as per their availability for the Indian population.

COVID-19 prompts pivot to green alternative to rubber gloves

KUALA LUMPUR: Malaysian firm Meditech Gloves will begin production of natural gloves that can biodegrade 100 times faster than synthetic, petroleum-based options.

COVID-19 has created unprecedented demand for certain services and products that will likely outlast the pandemic.

The manufacture of medical gloves for health workers is one industry that has exploded, with over 300 billion rubber gloves now being used each year - enough to fill New York City's landmark Empire State Building 25 times.

Most of the 80 million gloves used by coronavirus health workers each month are made from synthetic rubber and end up in landfill where they remain for about 100 years.

That is something a Malaysian company is determined to address.

Meditech Gloves is working with scientists at Britain's Cranfield University to create a surgical glove that uses natural rubber and can biodegrade 100 times faster than the widely used synthetic, petroleum-based rubber options.

They hope their sustainable alternative will leave a lasting legacy in a market set to be worth $70 billion by 2027.

"It is commonly believed that the nitrile (rubber) glove is the answer to everything - but if you imagine their usage all over the world, it's huge," said Effendi Tenang, chief executive officer at Meditech Gloves in Nilai, near Kuala Lumpur.

"There is always an alternative way to what is commonly believed," he told the Thomson Reuters Foundation.

When the pandemic broke out Meditech Gloves, a recent entrant into the industry, ramped up their production to meet the massive surge in demand for their gloves which use natural rubber.

But the firm will pivot towards their biodegradable gloves with plans to start producing for their buyers in Malaysia - the world's biggest gloves supplier - Europe, Australia and the United States by early 2021.

Tenang has patented his natural rubber gloves but said he is "prepared to share it with those who want to share".

Krzysztof Koziol, a professor of composites engineering at Cranfield University and inventor of the sustainable rubber gloves said the gloves can completely biodegrade within a year and more tests could cut this down to about a month.

"No one was thinking about biogradability during COVID ... the first thought was 'how do I get gloves in the first place'," he said.

"There was this kind of rush and we have to learn from this for future pandemics - how to handle the situation so we are not making the wrong decisions."

The inventors have also shown how energy savings can be made in the production of natural rubber gloves thanks to a faster manufacturing process.

In addition, 30% less waste is created during the production of the new gloves. Meditech Gloves currently only supply the healthcare sector, with a focus on the surgical and examination gloves market, although this could extend to other industries, such as care homes, engineering and factories, if needed, Koziol said.

"COVID was an awakening. We have the technology to do this right, rather than pay the price in the future with piles of gloves in the ocean," he said.

In 2018, the volume of biomedical waste treated and disposed across India was 530 metric tons per day. This was a mere 20 metric tons less than the total waste generated that year. Segregation of waste is the most crucial step in biomedical waste management. Common generators of this waste include hospitals, private clinics, nursing homes, medical research facilities and funeral homes or morgues. These natural gloves have provided a viable solution to this growing problem of biomedical waste.

(Source: Thomson Reuters Foundation)

Escape from the city? Londoners lead Europe in COVID-inspired dreams of flight

LONDON: Residents of London, Paris, Milan, Madrid and Berlin say COVID-19 has boosted concerns about overcrowding and air pollution. More than 40% of people in large European cities have considered moving away due to the new coronavirus pandemic, a survey showed on Thursday, with Londoners most prone to dreaming of living in a smaller town with better access to parks and other amenities.

Half of urban dwellers in London, Paris, Milan, Madrid and Berlin said lockdowns had made them more concerned about overcrowding and air pollution, according to the poll by British engineering firm Arup.

"The pandemic has brought home the way in which our living environments can be disrupted," said Arup's urban design leader Malcolm Smith, adding people have re-evaluated the importance of living near essential services like shops and green spaces.

Two-fifths of respondents in the British capital said they had temporarily left for a less populated area during the pandemic, compared to only about one in ten in Madrid and Milan.

This is because Londoners have to travel longer distances than their continental counterparts to reach services such as green areas, grocery shops, gyms and cafes, found the poll, based on interviews with some 5,000 people in five cities.

"During lockdown, we felt quite isolated in our residential area, with amenities really far away," said Bryndis Sadler, 27, who left west London's Acton suburb to buy a home about 40 miles (64 km) north in Hitchin, Hertfordshire, in October.

Londoners were the most prone to

dream about an escaping the city, with 59% saying they had considered leaving, against 41% of Parisians and 30% of Berliners. COVID-19 highlighted the importance of living within walking or cycling distance of a green area, 85% of respondents said.

It took Londoners an average of 20 minutes to get to a park or play area, almost twice that of residents of the other four cities, the poll found.

"One of the overwhelming advantages of city living is proximity," said Harriet Tregoning, director of the New Urban Mobility alliance, a network of cities, companies and advocacy groups promoting "liveable cities".

"The idea of the 15-minute city is resonant particularly during COVID-19, when more people are at home and looking to shop, travel, and recreate as locally as possible."

Yet, given London's many attractions, from history to culture and business, it was too early to talk of a flight from the city, said Philipp Rode, who runs LSE Cities, a research centre at the London School of Economics.

"This data speaks for, maybe less a decline, a potential decline of population,

but just a higher churn rate, a changing rate of the existing population," he said.

Still, the pandemic has underscored the importance of developing cities in smaller, more liveable modules that could withstand future disruptions, whether brought by viruses or climate change, said Smith. "In the 19th century the response to cholera in London brought big infrastructure, the sewer network," he said.

"I hope COVID-19 will lead to lots of smaller scale but widespread interventions - bringing green spaces to grey places, the prioritisation of cycling and walking and the revaluing of local amenities."

Cities have been at the centre of this COVID-19 pandemic with respect to first line medical defence or imposition of lockdown. The hygiene and crowding problem were central to the urban regions which made them the hotspots of novel coronavirus spread. Most of the metropolitan cities in India as well were the most important centres of the infection. London has suffered the same brunt as one of the most fragile hotspots in Britain.

ADDRESSING AIR POLLUTION IN INDIAN CITIES THROUGH ROBUST POLICY INTERVENTIONS

Air pollution in cities can be attributed to multiple sources and varies with location and developmental activities. In India, cities are growing at a rapid pace. Rising energy needs, growing number of vehicles, rampant construction and industrial activity is leading to increased air pollution. In addition, unsustainable consumption of resources and inappropriate waste disposal adds to emissions
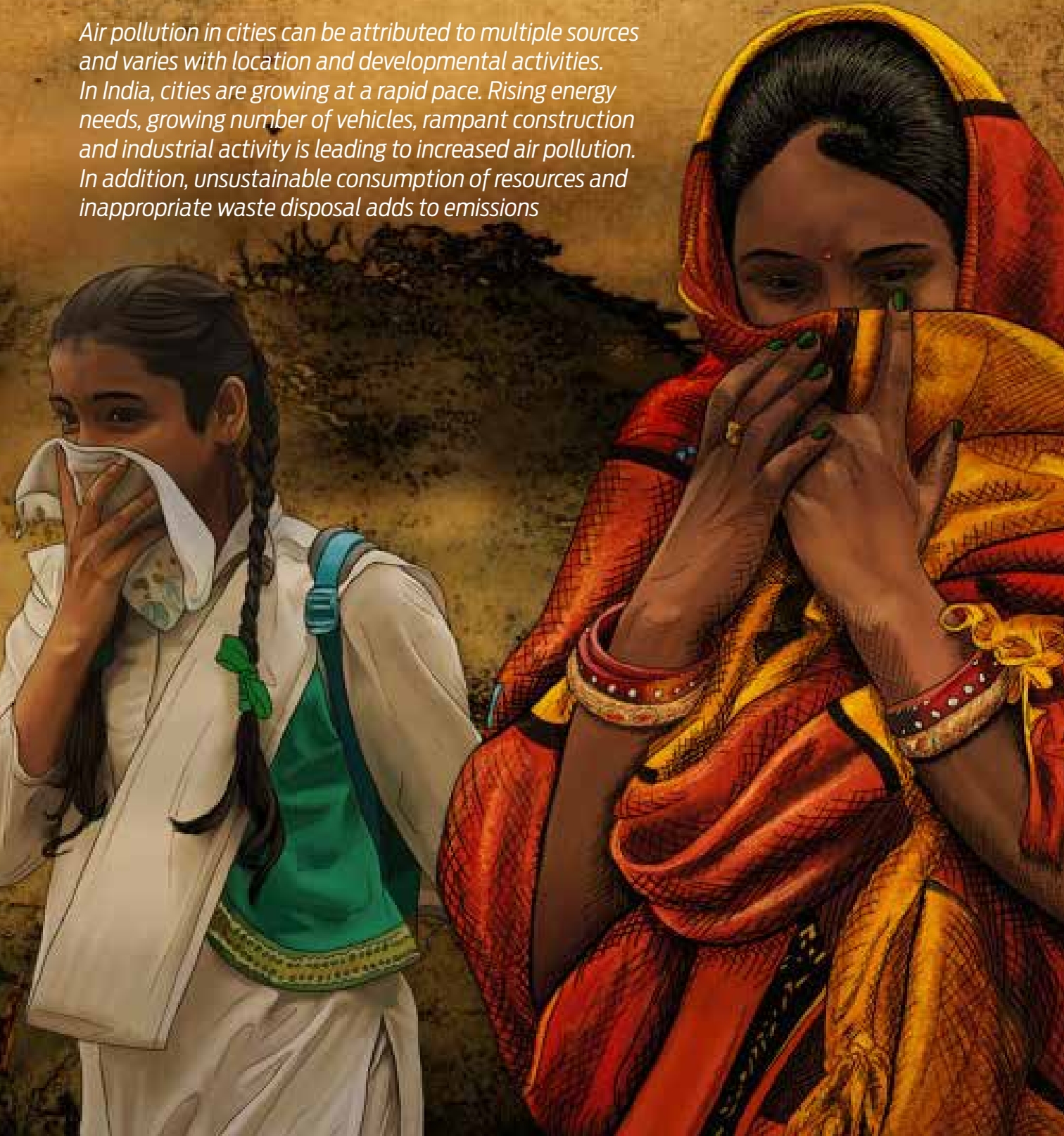
PRARTHANA BORAH
India Director, Clean Air Asia

Addressing air pollution is complex and requires strong legislative control. India's air pollution legislation has a long history. In addition, legislative controls have also been driven by landmark judicial interventions. This article is a brief review of India's air pollution policy in the context of history, present scenario and challenges of enforcement mechanisms.

GOVERNMENT INITIATIVES FOR ADVANCING CLEAN AIR

While the history of air pollution policy dates back to pre-independence era, the first mention of environmental protection being in Kautilya's Arthshastra, pre-independence acts like The Oriental Gas Company Act, 1857, Indian Penal Code, 1860, Indian Explosive Act, 1884, The Bengal Smoke Nuisance Act, 1905, were some legislative control measures that were directed to improve the environment with the objective of keeping the air clean. The Factories Act, 1948 was the first act of independent India that indirectly focused on air pollution. Following this, there were several acts like the Industrial (development and regulation) Act, the Mines Act, the Inflammable Substances Act, and so on that indirectly focused on reducing emissions. The Air Act of 1981 was the first act that focused directly on reducing air pollution followed by more sector specific legislations like the motor vehicles act and the municipal solid waste acts.

SECTOR AND REGION -SPECIFIC LEGISLATION

In addition to the above regulations, there have been sector specific legislations that

HISTORY OF AIR POLLUTION LEGISLATION IN INDIA

Year	Legislation	What it meant
1948	The Factories Act	Focuses on proper ventilation, dust, fumes and humidity related to the health of labor
1957	The Industrial (Development and Regulation) Act	Power to carry out investigation on scheduled industries to regulate production
1952	The Mines Act	Limited to ventilation, actions to be taken for dust fire and inflammable and noxious gases, precautions against spontaneous combustion, underground fire and coal dust.
1952	The Inflammable	Substances Act Declare certain substances to be dangerously inflammable and regularising such substances with Petroleum Act 1934
1962	The Atomic Energy Act	Addressing only health impact and safety from the radioactive substances with the sole purpose of control over atomic energy and radioactive substances.
1981	The Air Prevention and Control of Pollution Act	Provides for the prevention, control and abatement of air pollution. Established to carry out the purposes, of boards, assigning to such boards' powers and functions. The decisions were taken at the United Nations Conference on the Human Environment held in Stockholm in June 1972, in which India participated, to work towards preservation of natural resources including the quality of air and control of air pollution
1986	The Environment (Protection) act	Provides for the protection and improvement of environment and serves as an overarching arc act for many other rules and laws. - Notification on lead free petrol and catalytic convertors for vehicles in metropolitan cities, 1995 etc.
1988	Motor Vehicle Act	Control of automobile emissions and specifies vehicular emission standards
2000	The Ozone Depleting Substances (Regulation and Control) Rules	Deals with prohibition on new investments with ozone depleting substances, regulation of import, export and sale of products made with or containing ozone depleting substances along with monitoring and reporting requirements for the same.
2000	The Municipal Solid Waste (Management and Handling) Rules,	Ambient air quality monitoring was made mandatory at the landfill sites including installation of landfill gas control system
2000 time	The Noise Pollution (Regulation and Control) Rules	Ambient air quality standards with respect to noise on the basis of area (land use), (day or night)

have been introduced in areas like climate regulation, vehicular emissions control and others, with special focus on the Delhi National Capital Region (NCR) region. Under the Air (Prevention and Control of Pollution) Act 1986, the Central Pollution Control Board (CPCB) of India, directed forty-two measures to mitigate air pollution in major cities, including Delhi and NCR, through the implementation of an air action plan. In 1998, the Ministry of Environment, Forest and Climate Change, established the Environmental Pollution (Prevention and Control) Authority (EPCA) for the NCR of Delhi. The EPCA was given the authority to control and address environmental pollution. A landmark legislation was based on one such recommendation of EPCA when the Supreme Court, in July 1998, directed that all public transport vehicles comprising

taxis, three wheelers, and buses in Delhi to run only on Compressed Natural Gas (CNG) after April 2001. To keep vehicular pollution levels in check, the government introduced the Bharat Stage Emission Standards (BSES). Through the BSES emission standards, Government of India regulates the output of air pollutants from internal combustion engines and spark-ignition engines. The standards which are based on European regulations were first introduced in 2000. Stringent norms have been rolled out progressively since then.

In 2015, the Ministry of Environment Forest and Climate Change, Government of India (MoEFCC, GoI) submitted its Intended Nationally Determined Contributions (INDCs) on climate change with the objectives of a cleaner and climate friendly economic development, reduction in emissions, promotion of

non-fossil fuel based energy resources, development of additional carbon sink of 2.5 to 3 billion tons of CO_2 equivalent through additional forest and tree cover by 2030, among others.

The Construction and Demolition Waste Management Rules (C&D Rules) were published in 2016, to tackle the issues of pollution and waste management. In 2018, a Dust Mitigation notification making mandatory dust mitigation measures in infrastructure projects and demolition activities in the country was published. The National Green Tribunal (NGT) in 2019, directed state pollution control boards to install air quality monitoring stations and to report to the CPCB on the installation of the stations by April 1, 2020. One of the significant aspects of air pollution legislation in

India has been the judicial responses for environmental issues as Public Interest Litigations (PIL). Many key judgements have been provided to drive enforcement; a major one being the Taj Trapezium Case, Agra where the writ petition was filed by MC Mehta regarding pollution caused to the Taj Mahal in Agra. Other issues where the judiciary has driven action include reducing vehicular emissions in Delhi and removal of hazardous industries from Chembur, to name a few.

NATIONAL CLEAN AIR ACTION PROGRAMME

On the January 10, 2019, MoEFCC launched a five-year National Clean Air Action Programme (NCAP) to tackle the problem of air pollution. The overall objective of the NCAP is to take comprehensive mitigation actions to prevent, control and abate air pollution while supporting the national air quality monitoring programme, strengthening awareness and building capacity.

NCAP has identified 122 non-attainment cities that do not meet the annual average ambient air quality standards for PM 10. These cities have been identified based on ambient air quality data obtained (2011-2015) under National Air Quality Monitoring Programme (NAMP). The NCAP has set a tentative national level target of 20-30 per cent reduction of PM (PM2.5 and PM10) concentrations by 2024 using 2017 as the base year.

NCAP's approach includes collaborative, multi-scale and cross-sectoral coordination between the relevant central ministries, state governments and local bodies. This includes coordination with existing policies and programmes, such as the National Action Plan on Climate Change (NAPCC) and the Climate Smart Cities Assessment Framework.

MAKING LEGISLATION EFFECTIVE

India, a vast country with an emerging economy, faces major challenges in its growing population and widespread poverty. The enormous challenges in meeting commitments associated with poverty reduction and eradication of hunger under the United Nation

Sustainable Development Goals (SDGs) and the deaths and disabilities caused by air pollution, its close links to climate change, all require a balanced approach to policy legislations to ensure equity in development strategy.

Policies that make cities smart and resilient—through green urban planning, clean technology and adequate citizen participation, can provide better air quality. Actions to improve air quality, such as switching to cleaner energy, cooking and transport solutions will also address the climate crisis. Policies and investments supporting cleaner transport, energy-efficient housing, power generation, industry and better municipal waste management can effectively reduce key sources of urban air pollution.

In 2019, the Ministry of Housing and Urban Affairs launched the Climate Smart Cities Assessment Framework for 100 identified Smart Cities under Smart City Mission. Out of 100 Smart Cities, 54 smart cities are also identified as non-attainment cities. This assessment framework is aimed at helping smart cities to take actions to tackle climate change and be more responsive and less vulnerable to climate change. The Framework has 30 indicators across five sectors: (i) energy and green buildings; (ii) urban planning and biodiversity and green cover; (iii) mobility and air; (vi) water resource management; and (v) waste management. It addresses both mitigation and adaptation.

While India has, over the years, built up a number of legislations to address air pollution, some gaps are evident. Economic loss due to air pollution is not considered in policy formation. This is a must if air pollution is to be an indicator for economic planning. Similarly, loss of agriculture and food production is not considered in air pollution legislation. Damage to crops gives rise to the biological loss in terms of food. Economic loss needs to be a measure for legislation to be effective. Unless air pollution legislation takes into consideration economics, difficulties of enforcement will remain.

Public awareness and participation in legislation is essential for enforcement. History shows that the acts, laws, and rules exist but fail in implementation.

Lack of awareness in community, cultural-economic variations from state to state and lack of public participation make policy ineffective. Finally, environmental legislation in India is not composite and this makes it deal with only one aspect of environmental protection at a time. To address the complex issue of air pollution what is required is a composite, not piecemeal approach to air quality management policy that takes into consideration a scientific process of assessment and tracking mechanism that will help cities set and achieve their clean air targets. India's long list of legislations needs a coherent approach in enforcement in order to achieve what it has been designed for. ■

[Data in this article has been taken from the following sources

Bhave, Prashant P, Nikhil Shirish Kulkarni, 2015 Air Pollution and Control Legislations in India; Clean Air Asia, 2020 Air Quality Management for Decision Makers; Borah, PB, 2019, Mainstreaming Air Quality in Development Policy; National Clean Air Programme, Ministry of Environment, Forest and Climate Change]

AIR POLLUTION AS A PANDEMIC

World Health Organisation's (WHO) data states that 91 per cent of the world's population lives in places where level of air quality exceeds WHO limits. There have been a total of 1.49 million deaths reported due to COVID-19 worldwide. On the other hand, WHO estimates that deaths of over seven million people every year across the world can be attributed to air pollution. The numbers are clearly comparable and air pollution seems to be killing more people than the infection of SARS-CoV-2. Is it time that we declare air pollution as a pandemic and treat it so?
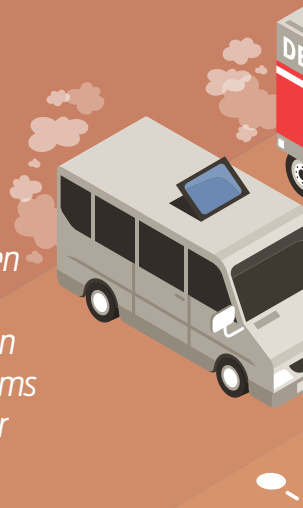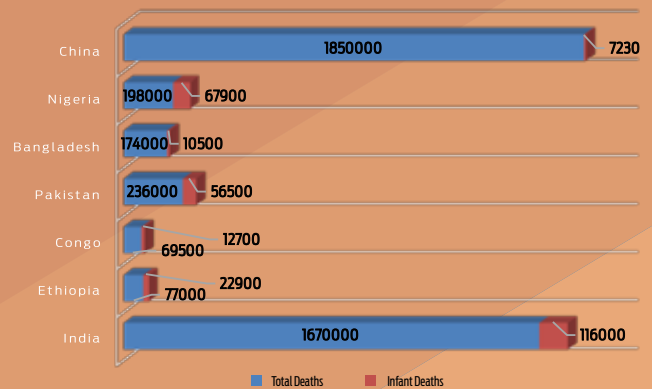
COMPILED BY Pooja Upadhyay | Editorial Assistant
DESIGNED BY Meenakshi Rajput | Senior Graphics Desginer

POLLUTION CHANGES THROUGH YEAR

DEATHS ATTRIBUTED TO AIR POLLUTION EVERY YEAR

CONCENTRATION OF POLLUTANTS & ITS SOURCES IN INDIAN CITIES

INDIAN CITIES	AQI	PM 2.5	PM10	O_3	NO_2	SO_2	CO	MAJOR CAUSE OF POLLUTION
New Delhi	386	385	386	47	124	15	104	Vehicular emmissions, open waste burning, dust
Kanpur	270	270	110	71	110	9	NA	Industrial emmissions, biomass burning
Ghaziabad	375	331	375	83	73	16	155	Dust, Vehicular emmissions
Greater Noida	399	386	399	106	118	25	17	Recycling of e-waste, dust
Faridabad	364	364	NA	71	114	19	68	Burning of solid waste, industrial emmissions, dust
Varanasi	240	206	240	58	24	NA	NA	Traffic congstion, dust
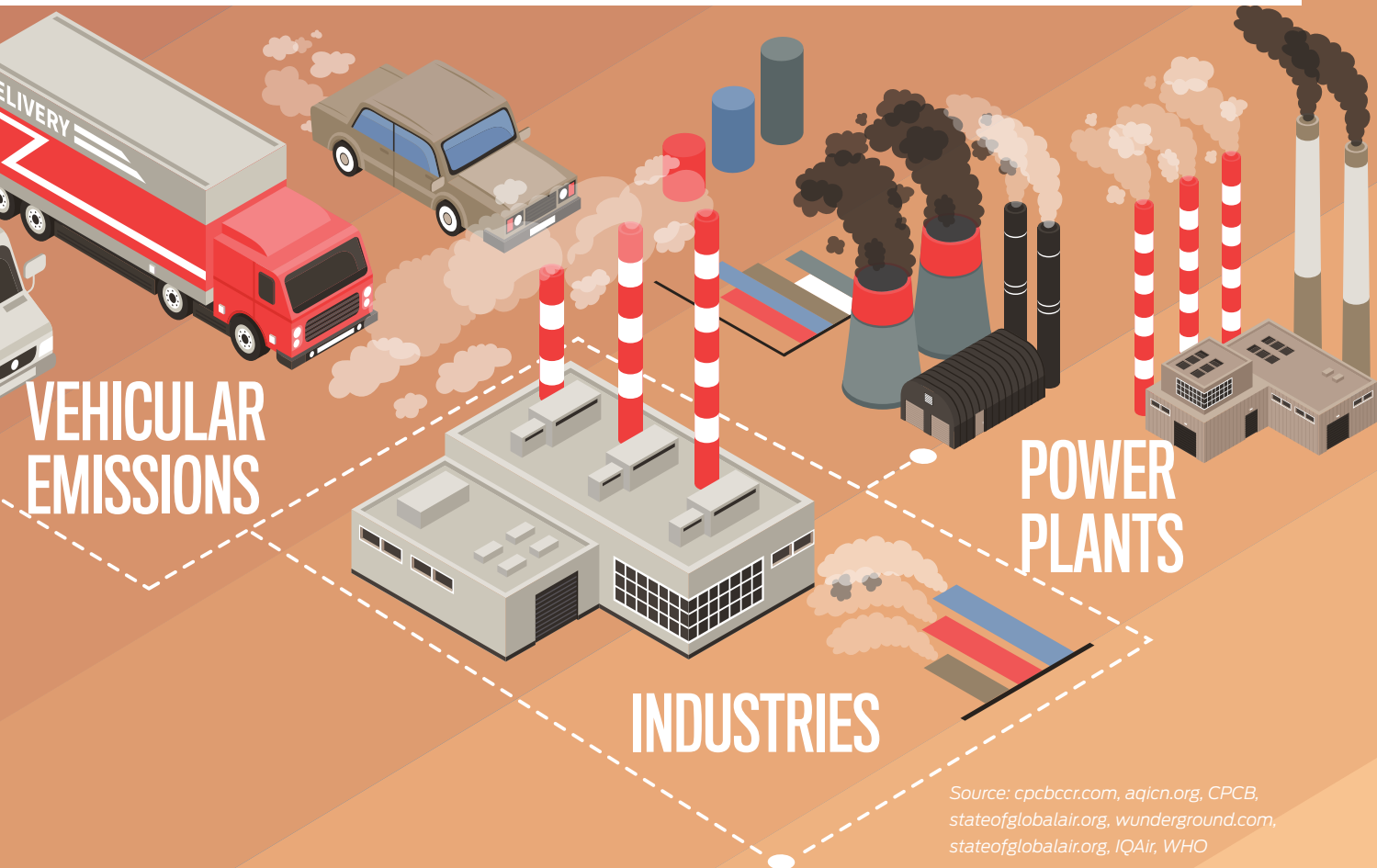
VEHICULAR EMISSIONS

INDUSTRIES

POWER PLANTS

POLLUTION MONITORING STATIONS PER 15 SQ KM

CITIES	CENTRES	AREA (Km²)
Dalian, China	9	13,237
Dhaka, Bangladesh	6	306.4
Kanpur, India	9	1000
Faridabad, India	2	742.9
New Delhi, India	35	1,484
Greater Noida, India	1	203
Ghaziabad, India	4	210
Fresno, USA	3	300
Beijing, China	33	16,808

Chart values: Dalian, China 0.01; Dhaka, Bangladesh 0.29; Kanpur, India 0.13; Faridabad, India 0.04; New Delhi, India 0.35; Greater Noida, India 0.07; Ghaziabad, India 0.28; Fresno, USA 0.15; Beijing, China 0.029
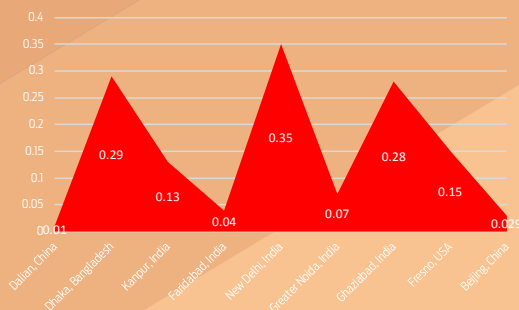
Note: Each pollution monitoring station can cover the radius of 15 square kilometers. Therefore, if the city cize is 1000 sq km, then it needs 67 centres spread across the city

GLOBAL BURDEN OF DISEASE DUE TO POOR AIR QUALITY

Global Burden of Disease (GBD) study done in 2015 states that exposure to outdoor fine particulate matter (PM) 2.5 is the fifth leading risk factor for deaths worldwide, accounting for 4.2 million deaths and 103.1 million disability-adjusted life-years in 2015. People with chronic diseases (particularly cardiorespiratory illnesses), little social support, and poor access to medical services are most at risk from air pollution. In 2017, the GBD study added diabetes mellitus type 2 to the already existing list including diseases such as, ischemic heart disease, stroke, chronic obstructive pulmonary disease, lung cancer, and acute lower respiratory infections, as an outcome of both ambient PM2.5 and household air. In high-income countries, WHO states that urban outdoor air pollution ranks in the top ten risk factors to health

A HEALTH HAZARD HIDING IN PLAIN SIGHT

The COVID-19 pandemic has forced many of us to stay at home for long. There are many side effects of staying at home for long on our mental, physical, and emotional well being. Indoor air pollution could be an additional health hazard which has not been extensively researched as ambient air quality. Citizens need to be extra careful to keep air quality at their homes clean and their health fine

The deteriorating air quality in our cities has forced governments to deploy technological tools to monitor air quality in different parts of the cities round the clock but there are still only few research studies on quality of air inside our homes. The pandemic and following lockdowns have forced many of us to remain indoors.

Air quality dips in many cities of the country with coming of the winter season and that is because of several reasons combined. Stubble burning, bursting of crackers during the festival season and low ambient temperature increased the pollutants in the ambience.

GOVERNMENT'S INITIATIVE

India has taken long strides in the use of clean fuel in poor rural and urban homes with the introduction of Ujjwala Yojana. The free LPG connection scheme has seen a huge increase in the number of poor households with gas stove thus reducing dependency on the use of solid fuels such as coal, dung cakes, and firewood for cooking. Many studies suggest that sustained exposure to indoor air pollution increases the risk of stroke, heart disease, chronic obstructive pulmonary disease, lung cancer, and acute respiratory infections in women and children.

Government of India, in 2016, launched the Pradhan Mantri Ujjwala Yojana (PMUY)—the largest clean cooking energy programme of its kind—to protect the health of women and children. By subsidising connections and providing a loan for the cost of LPG adoption, the scheme has been pivotal in transforming access to LPG with over 80 million connections provided to poor households in 715 districts. There is no doubt that the scheme has helped in reducing pollution in millions of Indian homes but affordability to refill the gas cylinders remain a concern for many poor families, especially in the times of the pandemic in which many livelihoods have been affected. It is a major challenge to stop people from switching back to biomass fuel. It is expected that the successful implementation of the PMUY (to provide LPG to poor households) and

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THERE IS NO DOUBT THAT THE PRADHAN MANTRI UJJWALA YOJANA HAS HELPED IN REDUCING POLLUTION IN MILLIONS OF INDIAN HOMES BUT AFFORDABILITY TO REFILL GAS CYLINDERS REMAIN A CONCERN FOR MANY POOR FAMILIES, ESPECIALLY IN THE TIMES OF THE PANDEMIC WHEN MANY LIVELIHOODS HAVE BEEN AFFECTED. IT IS A MAJOR CHALLENGE TO STOP PEOPLE FROM SWITCHING BACK TO BIOMASS FUEL

the Deen Dayal Upadhyay Grameen Jyoti Yojana (to provide electricity to all rural households) would help India meet the annual national pollution safe standard for PM 2.5 concentrations.

According to a study published in Environment Health Journal, the average daily concentration of PM 2.5 inside a home using solid cooking fuel can be anywhere in the range of 163-600 micrograms per cubic metre (µg/m3). This is between six and 23 times the safe level of daily air pollution exposure of 25 µg/m3 recommended by the World Health Organisation (WHO). Exposure to indoor emission increased during the lockdown period. Kerala, with an increase of 20 tons a day in PM 2.5 emissions, Maharashtra (15 tons/day), West Bengal (14 tons/day) and Jharkhand (12 tons/day) are emerging as the biggest indoor emitters among states. A study suggests that the national daily average household emission for PM 2.5 increased from nearly 8,600 tons to about 8,750 tons per day during the lockdown, according to the World Resource Institute (WRI) India analysis. The lockdown situation adversely affected the health of children and elderly who used to spend their time outside in schools or at the workplace or anywhere outside during cooking hours.

WORST AFFECTED

As per the data published in the recently released report State of Global Air 2020, the vast majority of deaths attributed to household air pollution occur in Africa and Asia. Long-term exposure to household air pollution from the burning of solid fuels for cooking contributed to 2.31 million deaths in 2019, about 4 per cent of all global deaths. Most of the 2.31 million deaths are accounted for by just three Regions: South Asia (36 per cent), sub-Saharan Africa (30 per cent), and Southeast Asia, East Asia, and Oceania (28 per cent). China and India, despite declining exposure and death rates attributable to household air pollution, together account for about 42 per cent of global household air pollution deaths owing to their large exposed populations.

There is a silver lining in this report for India. India and China have registered a reduction of over 440,000 deaths attributable to household air pollution. This could become possible because of sustained efforts by these countries to move towards cleaner fuel options for cooking and stringent anti-pollution norms. The report says that in China, large-scale efforts have focused on replacing coal-burning cookstoves with cleaner devices.

In India, access to clean fuels (i.e., liquefied petroleum gas, or LPG) has been expanded across the country. India is also fast urbanizing and it is believed that more people would be living in cities in the coming years. It becomes more important to address the issue of ambient air quality and indoor air quality because increasing pollution would probably lead to more consumption of energy in cities. And, if not controlled strategically, it could lead to worse air quality inside our homes and on the streets. The issue of ambient and indoor air quality needs to be addressed holistically because both the issues are closely linked. The governments all across are working to reduce ambient air pollution but the individuals also have a role to play. Experts suggest some practical solutions for households such as having proper ventilation at home, cleaning of floor to avoid the collection of dust and no-smoking rule inside the home. It is also suggested that bad odour shouldn't be covered using air freshener instead one should find the source of it and get rid of it. Use of natural cleaners instead of chemicals is also suggested. This is not an exhaustive to-do list for keeping the air clean at home but these basic rules can make the air inside our homes healthier. ■

SUCCESSFUL MEASURES TO CONTROL THE SILENT KILLER

Air pollution in cities is one of the major environmental issues that the world has been encountering for years now. With growing industrialisation and population explosion, the challenge of controlling air pollution has become more difficult. According to the World Health Organisation (WHO), seven million people die every year due to health issues caused by polluted air

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Poor air quality affects all age groups, all regions, settings, and socioeconomic groups. However there are geographic differences in vulnerability to air pollution. Some regions enjoy clean air because of less or no industrialisation and less population density, whereas citizens of regions like Asia, Africa, or Middle East, have pollutant levels that are much higher than those considered safe by WHO's air quality guidelines.

Air pollution is an unavoidable aspect of rapid urbanisation. In recent years, many studies have been conducted which suggest that the air quality will further deteriorate with damaging impact especially on health, agriculture, and economy. Since urban air pollution depends on a wide variety of reasons, the government plays a vital role in addressing the issue of air pollution and finding ways to reduce it. Team Urban Update tries to document some of the most efficient initiatives taken by governments across the world to control air pollution in their cities.

NORTH AMERICA

In spite of the improving air quality in New York City (NYC) for decades now, air pollution remains a major concern. NYC has a long history of implementing programs to reduce the pollution level, but pollutants like PM2.5 from cars, power plants, forest fires and wood burning, damages the quality of air. In 2007, the levels of PM2.5 and Ozone crossed the standards set by the United States Environmental Protection Agency. In response to this, NYC started PlaNYC 2030, which was its first long-term sustainability plan. The plan aimed to make NYC's air quality the cleanest among large cities in the US, when measured in terms of PM2.5. The initiative brought 25 civic agencies together to work towards the goal of cleaner and greener New York.

The government also launched other policies to reduce air pollution such as requiring all oil boilers to switch to cleaner fuels by year 2030, passing a law in 2010 requiring heating oil to contain 2 per cent biodiesel by October 2012. A voluntary "Clean Heat Program" was also launched which encouraged the adoption of cleaner fuels by providing financial and technical assistance to building owners.

As a result of these policies and initiatives by the government, an air quality report published in 2013 showed that sulphur oxide (SO_2) concentration in the air was down by 69 per cent while the concentration of PM2.5 was down by 35 per cent.

Air pollution in Toronto is mainly due to traffic, and industrial, residential and commercial sources. It was recorded that 1,700 premature deaths and 6,000 hospitalisations per year in Toronto were a result of bad quality of air. To improve the quality of air, Government of Ontario released a unique policy. It was to exclude coal from the state's electricity generation in a cost-effective way. Slowly but efficiently all coal plants stopped using coal by 2014. Over the years, use of coal to generate electricity was switched over to increased generation from natural gas, deployment of renewables and expansion of nuclear generation. By 2014, the levels of PM10, SO_2 and nitrogen dioxide (NO_2) emissions due to electricity generated by coal declined by 90 per cent, 91 per cent and 65 per cent, respectively.

SOUTH AMERICA

Bogota, the capital of Colombia, witnessed a serious pollution episode in February 2019, due to adverse atmospheric conditions that raised serious concerns about air quality in the capital. The city government had to declare an emergency situation, limiting traffic temporarily, mainly in majorly affected zones. Heavy duty diesel-powered trucks were permanently restricted during rush hours. It took four days to lower the levels of PM10 pollutants. Diesel-powered public buses and heavy transport vehicles are the main

causes of pollution, which contribute 44 per cent of the polluting emissions according to the Clean Air report series, International Gas Union 2019. The other causes of pollution include industrial activity powered by coal, waste burning and poorly maintained road pavements. These contribute approximately 56 per cent to the pollution.

To improve the living conditions in the city, the government took the initiative of improving the city's bus rapid transport system (BRT)-Transmilineo. 70 per cent of BRT fleet were switched to cleaner vehicles which use compressed natural gas (CNG).

The efforts are showing drastic change in the quality of air in Bogota as CNG absorbs 75 per cent of the emissions, does not contain Sulphur and gives out lower amounts of nitrogen oxide and NO2 emissions.

EUROPE

Half a century ago, London was trapped in a yellow dense fog of pollution. It was London's first unfortunate lesson on the importance of clean air. The episode came to be known as "London Killer Smog" or the "Great Smog" due to which more than 12,000 deaths were caused. Soon afterwards, the 1956 Clean Air Act was launched, which was one of the world's first major clean air policies. It brought in social, economic and technological changes to help reduce smoke and SO_2 emissions. Significant changes were observed in the quality of air due to the measures taken by the government. Coal was largely replaced with natural gas and electricity. As a result, the SO_2 concentration was significantly reduced in the atmosphere.

A few years ago, the Government of United Kingdom introduced carbon-pricing policies. They incorporated the environmental externality cost of carbon dioxide (CO_2) emissions. The Carbon Price Support program came into practice in April 2013 and rose annually. According to an analysis by the London School of Economics, coal generation dropped by 73 per cent between 2013 and 2017. This was caused due to the Coal Price Support program.

A drastic decline in concentration of greenhouse gasesby about 18 per cent was also observed.

ASIA

The Beijing-Tianjin-Hebei (BTH)region is one of the most polluted regions in China. In 2013, the annual average of PM2.5 concentration in the region was three times more than China's National Air Quality standard. Hence, as part of the Air Pollution Prevention and Control Action Plan, the State Council decided to work towards reducing air pollution in the BTH region by 2017 by 25 per cent as compared to pollution levels in 2012. It is also known to be the most rigid air pollution plan till date in China. Six ministries jointly launched programmes for the prevention and control of air pollution in the area. Many measures were enforced including reduction of coal consumption, the re-adjustment of industrial structure and reduction of fuel use in vehicles. As a result, concentration of PM2.5 was reduced by 39.6 per cent in 2017 compared to 2013; whilethe average annual carbon concentration in provinces of Beijing, Tianjin and Hebei dropped by 27, 21 and 18 per cent respectively. According to the Global Burden of Disease Study 2017, 12.5 per cent of all deaths in 2017 were due to poor air quality in India. Morbi is a small city of Gujarat, famous for its giant ceramic sector with 900 ceramic manufacturing units, which contribute considerably to the region's economy. Nevertheless, usage of coal gas in production of the ceramic tiles was making the air quality of the area very hazardous causing health issues for the residents. The National Green Tribunal (NGT) banned the coal gasification technology used in the ceramic units of Morbi in March 2019, and ordered the Gujarat Pollution Control Board to shut down allcoal gasifiers in the area. NGT also asked all the ceramic manufacturing units to switch over to cleaner fuels. Consequently, all the ceramic units of the area immediately switched over to Piped Natural Gas, the supply and network of whichthey already had access to. The switch to natural gas brought swift results and the air quality of the region improved significantly. There was a 75 per cent drop in PM2.5 pollutant levels, a 72 per cent drop in PM10 pollutant levels and an 85 per cent drop in SO_2 levels. ■

Delhi's battle against air pollution

The main contributors of Delhi's poor air quality index (AQI) are emissions from vehicles and industries, and stubble burning. The winters are extremely crucial in the national capital as they are dominated by cold, dry air, and ground based inversion with low wind conditions, which are the reasons behind increasing concentration of pollutants. In addition to that, approximately 35 million tons of rice-paddy stubble is burnt during this time of the year in the three adjoining states of Punjab, Haryana, and West Uttar Pradesh, which leads to heavy smog formation in Delhi.

The central and state governments took many initiatives including shifting of commercial vehicle fleet from petrol to Compressed Natural Gas (CNG), ban on use of coal, closure of thermal power station in Delhi, introduction of EURO 6 fuel and promoting use of Petroleum and Natural Gas in industries.

In 2016 a Graded Response Action Plan was launched as an emergency measure which is executed when Delhi's AQI deteriorates to 'severely poor' or 'very poor' category. As part of the plan, entry of trucks, operation of diesel generators and construction activities are temporarily banned in Delhi and the odd-even rule is implemented. In addition to this, Governments of Haryana and Delhi made several attempts to discourage burning of paddy residue. However, as alternatives to stubble burning were costly, the governments were largely unsuccessful. Ironically, despite these measures, the city is breaking all previous records of poor air quality levels in the pre-Diwali period this year.

INNOVATIONS AMONG SOLDIERS AT WAR WITH AIR POLLUTION

Pollution in the air creates difficulty in breathing, itchy eyes, skin allergies, and more. Research shows that long term exposure to polluted air can not only result in people developing long-term diseases, but also reduce their life expectancy. While governments have been trying at different levels to combat air pollution, scientists, administrators, and innovators have been coming up with all types of innovations for the same

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The first clear sign of air pollution was the detection of a hole in the ozone layer above the Arctic by three scientists from the British Antarctic Survey in 1985. It should have been the ultimate wake-up call. But decades later, when humans started suffocating in the air that they themselves created, people across the globe started coming up with innovative technologies to enable easier access to clean air. Things like air purifiers, N95 masks, have taken significant space in an individual's life, to survive

POPULAR INNOVATIONS AND USAGE

Vertical Forest

Stefano Boeri, an Italian researcher, built the first vertical forest towers, the 'Bosco Verticale' in Milan in 2014. The two towers are covered with a total of 900 trees, 5,000 shrubs and over 11,000 other plants. The vegetation absorbs carbon dioxide from the air, preventing the gas from causing further greenhouse warming in the atmosphere. Additionally, plants and trees filter airborne particulates either by intercepting them or absorbing them through pores in the leaf surface.

Asia's first vertical forest, built in China, named as the Nanjing Green towers, has 600 tall trees and 500 medium-sized trees covering a 6000 sqm area. Mana Foresta is a vertical forest tower built in Sarjapur, Bangalore. It is a 14 storey tower and instead of concrete, glass and steel, what one sees is countless trees, shrubs, perennials, climbers and creepers.

Taking inspiration from such vertical forest towers, governments in cities like Noida, New Delhi, and Ahmedabad have been growing vertical gardens on pillars under the metro rail corridors, elevated roads, and flyovers. This innovation aims at increasing greenery, offsetting carbon footprints of people and fuel emissions, purify the air, and reduce urban heat in the much-congested cities.

Smog-guzzling/Air Cleaning buildings

A building named Pallazo Italia, which also acts as a smog-eating machine, was constructed in Milan in 2019. Its TX Active technology captures air pollution when the envelope material comes in contact with light, which it then transforms into inert salts. The building itself is net-zero energy, which means that the structure is capable of covering its energy needs autonomously.

Manuel Gea González Hospital in Mexico added a new "smog-eating" façade over its building covering over 2,500 square meters. The system's thermoformed shells coated in photocatalytic titanium dioxide reacts

with light to neutralise elements of air pollution, negating the effects of up to 1,000 cars a day according to its developers. Due to the distinctly high construction cost, there has been no such project in developing countries like India.

Cloud Seeding

Cloud seeding is a way to artificially tweak rain and alter the natural development of the cloud to enhance precipitation, suppress hail, dissipate fog, or reduce lightning. According to the World Meteorological Organization, at least 56 countries have used some sort of cloud seeding. This technique is used for a variety of purposes like reducing fog in airports in Russia, creating heavy rainfall in UAE, and clearing smog and combating air pollution in China.

Indian Institute of Tropical Meteorology has been carrying out cloud seeding experiments in areas around Nagpur, Solapur, Hyderabad, Ahmedabad, Jodhpur, and Varanasi. The success rate of these experiments in inducing rains is about 60 to 70 per cent, which very much depends on local atmospheric conditions, the amount of moisture in the air and cloud characteristics. In 2018, to combat the frightful Air Quality Index in New Delhi, the Ministry of Environment had initiated a cloud seeding program along with IIT Kanpur and Central Pollution Control Board. However, due to Delhi's dry weather conditions, the plan was never put into action.

Water Sprinklers

Yu Shaocai, a scientist, came up with the idea of spraying water into the atmosphere from sprinklers atop skyscrapers and towers to curb air pollution. Water shortage and the feasibility of the concept hindered its implementation. Although deriving from the same idea, cities have come up with sprinkling water on the ground level across the cities to settle the dust and reduce pollution in the air. Cities like New Delhi and Ghaziabad have deployed water sprinklers for the same. The East Delhi Municipal Corporation alone purchased 40 water sprinkler

machines to combat air pollution. But the issue of water availability for this system remains and experts suggest using recycled water for sprinkling.

Anti-smog Guns

An anti-smog gun is similar to water sprinklers but different in its approach. It sprays atomised water, while remaining connected to a water tank, into the atmosphere to settle the dust and other suspended particles like PM 2.5. The trial of the very first anti-smog gun was conducted in New Delhi in AnandVihar by Delhi's Department of Environment and Delhi Pollution Control Committee. This technique focuses on three key sources of pollution–transport, industry, and road dust and fugitive emissions.

In October this year, ten anti-smog guns have been installed in South Delhi. Ghaziabad Municipal Corporation has attached anti-smoke guns to water-sprinkling tanks to reduce additional cost of getting separate tanks and drivers for both.

PUSA Decomposer

Delhi and many other North Indian states get covered with smoke due to stubble burning by the farmers. Scientists at Indian Agriculture Research Institute (IARI) came up with an innovation named 'PUSA'. According to A K Singh, Director, IARI, PUSA Decomposer is a set of four tablets made by extracting fungi strains that help the paddy straw to decompose in or under 25 days. A packet of four tablets costs ₹20 whose distribution has already started.

HOW RELEVANT AND FEASIBLE ARE THESE TECHNOLOGIES?

Dr Harini Nagendra, Ecologist, Author, and Professor at Azim Premji University, looks at many of these technologies with skepticism. Cities like Delhi and Bangalore talk about smog free towers but much of the interest comes from the municipalities as the towers are major sources of profit for them. She said, "What is the point of cutting down big trees and installing smog scrubbing towers?" She added that simple things

like maintaining the ecosystem of trees, lakes, wetlands, planting more trees, and implementing existing policies like covering construction sites, spraying recycled water regularly in areas, will go a much longer way into cleaning the air that we breathe.

Recent studies show that solid waste dumps, in and outside of the city are mammoth contributors to the emissions. If trash collection, recycling, and composting are done better by the system, one would not need to invest so much into high-tech alien innovations. She finds some technology and tools to be feasible and much needed like composters, compressed incinerators, and water sprinklers to curb air pollution. Dr Nagendra believes that vertical forests or gardens built on highway or metro pillars in Indian cities do not seem to work so much. The question we never think during its installation is, who is going to maintain it? Where is the maintenance budget? Dr Nagendra believes that it is not the best environment for those plants to grow either. "They are right next to concrete, it is very hot, you need to keep replacing the soil, keep adding water, add a lot of artificial nutrients, so most of these which are grown, die. And, a lot of money goes into them," she said.

Bicycle lanes, e-bikes are good ideas but they need better implementation as well. There is need for policing and monitoring in such a way that cars, motorcycles, orcostermongers don't come into the lane. Dr Nagendra noted with regret that we start good things but fail to recognize how to maintain them. Authorities also have to make sure that these lanes are comfortable for people to cycle along.

Air purifiers, smog towers, vertical forests, all of these are so expensive that they can be only installed in a few wealthy areas. But those wealthy areas already have lush green trees around, it's the crowded urban spaces where most of us are exposed to the pollution. Harini said, "You cannot expect technology to take the role of what nature used to do. You have to have technology working along with restoration of the natural ecosystem." ∎

DELHI ON TRACK TO BECOME INDIA'S EV HUB

A study by the International Council on Clean Transportation, Milken Institute School of Public Health from George Washington University, and the University of Colorado Boulder, revealed that vehicular emission is one of the biggest sources of air pollution in the world and caused 3.85 lakh deaths globally in 2015, out of which, 74,000 deaths were reported in India alone. Thus, in order to tackle air pollution, India first needs to address the fuel that vehicles use

ASHLEY PAUL
Reporter

Apart from initiatives like the Government of India's Faster Adoption and Manufacturing of Hybrid and Electric Vehicles – Phase II (FAME India II) scheme, various state governments have also tried to take small steps to promote citizens to switch from fossil fuels to environmentally friendly fuels. However, the most notable and ambitious plan in this direction has been that of the Government of National Capital Territory of Delhi (GNCTD) in that it aims to make Delhi India's electric vehicle (EV) capital by the year 2024. Team Urban Update tries to analyse GNCTD's ambition and assess if the pioneering yet far-fetched goals that the government has set are achievable in the narrow time frame or not.

WHAT IS DELHI'S EV POLICY?

Through the Delhi Electric Vehicle Policy 2020 or the DEVP 2020, the GNCTD wishes to revamp government's approach to kick-start the push for adoption of electric vehicles in Delhi. In order to achieve this aim, the government has laid out the following aproaches:

♦ Financial Incentives - Purchase incentives, Scrapping incentives, Interest subvention on loans.

♦ Waiver of road tax and registration fees.

♦ Establishment of a wide network of charging stations and swappable battery stations.

♦ Administration of the policy including constitution of State Electric Vehicle Board, establishment of a dedicated EV cell, and developing an intensive public outreach programme focused on creating awareness about the benefits of electric vehicles.

♦ Setting up of Skill Centers with provision for training related to jobs in the EV eco-system and creation of jobs.

♦ Setting up of Recycling Ecosystem for Batteries.

♦ Creation of an umbrella, non-lapsable 'State EV Fund', to be fundedthrough the air ambience fund, levy of additional taxes, cess, fee etc., on inefficient or polluting vehicles.

According to Dr RS Minhas, Deputy Chief General Manager, Delhi Transport Corporation (DTC), the policy not only focusses on ways to push for wider adoption of EV but also keeps in mind the infrastructure that needs to be put in place to handle outcomes once EVs are adopted. Knowing that an appropriately placed charging infra is a pre-requisite for the success of the policy and that batteries from EVs need safe handling and disposal, the government will simultaneously work on all cylinders to fire up a sustainable and self-sufficient EV ecosystem in Delhi.

WHAT HAS BEEN DONE SO FAR?

Since the DEVP 2020 was implemented in August this year, it is obvious that not a lot has been done on-the-ground so far. However, in a little over a month, the GNCTD constituted the Charging Infrastructure Working Group (CIWG) which held its first meeting in mid-September this year. At the meeting, it was decided that keeping in mind the multiplicity of civic agencies in Delhi, the task of setting up nearly 200 charging stations in less than a year would be taken up by not only the Delhi government but also the three Municipal Corporations of Delhi, the New Delhi Municipal Council, the Delhi Development Authority, the Public Works Department, the Transport department, DTC and the Delhi Transco Ltd., etc. Jasmine Shah, Chairman, CIWG, was quoted saying in a press release that coordination and communication is key to the successful implementation of the policy. Not only this, all agencies working together will also ensure that each and every inch of the city is covered with diligence. The CIWG aims to make a charging station available at every three kilometres across the city.

In addition to this, the GNCTD is also looking to induct 2,000 electric buses in its massive fleet of public transport buses by the end of next year. The government has already floated a tender for the first batch of 300 low-floor electric buses on a build, own, operate and transfer (BOOT) basis. Addition of electric buses to DTC's fleet will help in reducing a large amount of the city's vehicular pollution while also encouraging private players to invest in the scheme by setting up private charging stations, buying electric

vehicles for professional purposes, etc.

The GNCTD has also ensured that by early 2021, they will begin rolling out category based incentives for both two and three-wheelers in the city in order to realize the dream of having 5 lakh (25 per cent of all new vehicle registrations) electric vehicles in Delhi by 2024. These incentives may amount to a maximum of Rs 1.5 lakh. In order to set an example, the GNCTD will also be switching its entire fleet to electric vehicles by August next year.

WHAT MORE CAN BE DONE?

According to experts like Dr Minhas, the DEVP 2020 is a flagship policy of the Delhi government. If implemented precisely, it will turn out to be a milestone in Delhi's dream of becoming the EV capital of India. However, he noted that despite the various initiatives of the Delhi government, help from neighbouring states is of equal importance too.

Since Delhi witnesses a regular and massive inflow of vehicles from the states of Punjab, Haryana and Uttar Pradesh every day, it is extremely important for the governments of the respective states to also undertake similar initiatives. Dr Minhas said,

"TILL THE TIME THE GOVERNMENTS OF OUR NEIGHBOURING STATES DO NOT UNDERTAKE PLANNED POLICIES FOR PUSHING FOR ADOPTION OF EV IN THEIR STATES, IT WILL BE VERY DIFFICULT TO WITNESS A PRONOUNCED CHANGE IN DELHI'S POLLUTION LEVELS. THIS IS MOSTLY BECAUSE VEHICLES FROM THESE STATES SOMETIMES DO NOT EVEN FOLLOW MINIMAL VEHICULAR EMISSION STANDARDS."

**DR RS MINHAS
DEPUTY CHIEF GENERAL MANAGER, DTC**

"Till the time the governments of our neighbouring states do not undertake planned policies for pushing for adoption of EVs in their states, it will be very difficult to witness a pronounced change in Delhi's pollution levels. This is mostly because vehicles from these states sometimes do not even follow minimal vehicular emission standards."

The GNCTD must also push for attracting private players in the implementation stage of the scheme. If and when stakeholders like online taxi services, and food and e-commerce delivery executives begin using EVs, a substantial change is predicted to be visible in the mindsets of the people of Delhi. "They must become trend setters and lead with example," said Dr Minhas. It is clear that the DEVP is an ambitious and seemingly far-fetched dream of the Delhi government. However, it is also clear that the government, Delhi's civic agencies and the central government are working tirelessly to make this dream a reality.

It will be safe to say that although Delhi seems to be on track to become the EV capital of the country, a lot still needs to be done in a very short amount of time. ◼

Increasing pollution is a bigger problem for the country this year due to already challenging health situation dealing with COVID-19 pandemic. With the onset of winters and Unlock 5.0, the demon of air pollution has once again raised its head. Various studies across the globe present several arguments about effect of pollution on novel coronavirus

HITESH NIGAM
Editorial Assistant

P ollution has been a serious challenge to the health sector of the country for some time now. However, this year with COVID-19 already weakening the immunity and respiratory systems of people, pollution has jeopardised their health further. Moreover, continued studies in this regard have found that pollution acts as catalyst in the spread of COVID-19.

RESEARCHES SHOWING CONNECTION BETWEEN COVID-19 AND POLLUTION

The countries with the underlying problem of pollution are one of the hottest spots of COVID-19 infection, as suggested by data from World Health Organisation (WHO) website. According to a study published in Cardiovascular Research, about 15 per cent of the deaths due to COVID-19 can be attributed to long-term exposure to air pollution. Recent surge in COVID-19 cases of Delhi is the appropriate example of effect of pollution on COVID-19 transmission. According to Indian Medical Association, about 13 per cent of this increase in COVID-19 cases is estimated to be due to pollution.

A study conducted in nine Asian cities to find relationship between novel coronavirus and pollution, was published by Springer. It clearly stated

COVID-19 & POLLUTION
PANDEMIC 2.0

that air pollution is acting as a hidden element in intensifying the spread of COVID-19. Another study done in Italy and published in ScienceDirect, found the genetic material of novel coronavirus among the air pollutants. Previous studies have also suggested that pollution has carried the viruses causing bird flu, measles, etc. Experts aren't sure of the spread of COVID-19 via tiny airborne droplets;however, SARS-CoV (2003) was also spread in the air via pollution particles. These findings point towards a strong linkage between pollution and COVID-19.

A study published in 'Environmental Research' journal, claims that one of the potential modes of transmission of COVID-19 is through exposure to polluted air by droplets which carry the virus. The dust particles exposed to humid environment get contaminated with a water film on them increasing the chances of contamination. This can seriously jeopardise the health situation of India as it is the fifth country in the world in terms of exposure to Particulate Matter 2.5 (PM2.5), according to a data by IQAir, Swiss Air Technology Company. For an expert view, Urban Update spoke to Dr SubrotoKundu, Former Chief Medical Officer (CMO), Indian Health Services.

He told us that novel coronavirus remains for a longer time in air with high PM2.5. He said, "the basic nature of novel coronavirus is very similar to a normal flu virus, it attacks the lungs and respiratory system. Pollution also does serious damage to lungs which makes a perfect environment for the spread of virus."

GOVERNMENT POLICIES TO CURB POLLUTION

According to State of Global Air, 2020, around 1.6 million deaths in India have been because of long exposure to air pollution in which it is second in the world. Due to the large population size, in India public policies regarding curbing air pollution are needed to produce effective results. Government

of India and Government of NCT (National Capital Region) Delhi have come up with aggressive public policies to curb pollution such as "Red Light On, Gaadi Off" campaign and ordinance on pollution, respectively. Dr Kundu said, "policy making by the central and state governments is an important factor in handling this health situation."

However, in cases like stubble burning strict policy making and guidelines have also have produced minimal outcomes as it still remains a prime source of air pollution in the capital. Delhi's Air Quality Index (AQI) has consistently been in the 'severe' category in the first week of November, which raises serious alarm especially considering the rapid rise in COVID-19 cases in the capital. As always, loop holes in the preparedness of government and administration against pollution are exposed. Dr Kundu stated smog as the root cause of every health problem related to lungs including COVID-19. Winter has always carried increased levels of smog but no precautions and self-preparatory methods were adapted, this being the year of health disasters.

EFFECT OF WEATHER ON COVID-19

How weather affects the spread of COVID-19 is still a question for the health agencies around the world as the results of various studies show varying results.A study published in International Journal of Environment Research and Public Health states that temperature and humidity have negligible effect on novel coronavirus. The spread of infection almost completely depends on human behaviour. A lot of rumours around effect of climate on COVID-19 infection have been cleared by WHO. The agency has said that spread of novel coronavirus is not dependent on any weather and can spread in all climates. On this, Dr Kundu said, "the basic structure of novel coronavirus is similar to flu as it also affects body

temperature, symptoms of cold and problems in breathing. Winters, being the welcome season for the spread of flu, can affect the spread of COVID-19."

SOLUTION

Curbing air pollution is the first and foremost solution to this health situation. The increased COVID-19 cases in Delhi is attributed to varying reasons such as festival times, reopening of offices, and avoidance of safety precautions. Following the basic safety guidelines of WHO regarding social distancing and wearing of masks is the first line of defence against the virus which should be followed seriously. Dr Kundu also addressed the problem of avoiding masks and said, "solution for containing the pandemic and pollution is first of all to just follow the basic WHO guidelines. Secondly, people with breathing problem should avoid going out and avoid the crowd. Government policy making is equally important to oversee the status of pollution." He specially mentioned that complete ban on crackers should be implemented across the nation to further contain the spread of COVID-19 in Diwali season. Many states like Odisha, Delhi and Karnataka have already banned the use of crackers and this should be followed by all the other states as well, he added. Ban on crackers by National Green Tribunal was a step towards fulfilling the aim to curb the spread of COVID-19.

Wearing of masks is the most important tool against both pollution and COVID-19 as both are associated with breathing. WHO has again and again reiterated that quarantine, wearing of masks and social distancing are our best chances against the pandemic. As vaccine for COVID-19 is around the corner, this seems the last battle against the novel coronavirus. If the country copes up with the combined challenge of COVID-19 and pollution, a better part of the work will be done. ■

Need for better & safe Public Transport in times of COVID-19

All India Institute of Local Self-Government, in collaboration with United Cities and Local Governments – Asia Pacific (UCLG ASPAC) and Urban Update, organised a webinar in the month of November as part of its E-Dialogues series. The theme of the discussion was shift of people's transit preferences from public transport to private vehicles. The pandemic has significantly affected transit choices of people due to serious health challenges. Data shows that public transport has seen a major slump in the usage even after the 'Unlockdown' began. A range of daunting questions about contemporary urban issues were asked and efforts were made to find answers

The COVID-19 pandemic has seriously affected people's transportation preferences. They have started shifting from public transport towards private vehicles in order to avoid any health associated risk. To discuss this shift in transportation, Urban Update invited Prof Geetam Tiwari, Chair Professor, Transportation Research and Injury Prevention Program (TRIPP), Indian Institute of Technology, Delhi; Dr RS Minhas, Deputy Chief General Manager, Delhi Transport Corporation (DTC); Dr Sewa Ram, Professor, Department of Transport Planning, School ofPlanning and Architecture, Delhi; and Faraz Ahmed, Senior Research Associate (Transport Planning), Institute for Transportation and Development Policy (ITDP). Abhishek Pandey, Editor, Urban

Update, moderated the event.

Pandey began by saying that despite various innovations in public transit, data shows that usage of public transportation has decreased across the world. It is high time that the authorities and administration revive public transport in a way that makes people confident of using it.

Prof Tiwari began her part by talking about situations that were prevalent during previous pandemics which were much fatal than what the world is facing currently. She said, "Past pandemics also had severe effects on demand for public transportation and there is no reason to believe that the COVID-19 pandemic has put a permanent scar on its face." In many countries, unlike India, public travel was not halted completely during lockdowns. Infact, public transit was made available in reduced capacity while following proper precautions. Public transportation is a derived demand which means that people travel because they need to go to offices or their places of work. However, during lockdown in India, travel was completely restricted which affected the demand severely, Prof Tiwari added. The people employed in the services sector have been one of the most prominent users of metros in cities but due to the new work-from-home routine followed by most organisations, this demand was extinguished completely. Prof Tiwari added that travelling by buses has become difficult in the post-pandemic period because of the regulations put in place by the government allowing only 20 people to board a bus at a time. Thus, people have to stand in long lines at bus stops, waiting for a bus to arrive that might have an empty seat for them to occupy. In addition to this, no new innovative policies have been implemented for buses despite the

E-Dialogue 19.0| Changing Transit Preferences-From Public to Private

emergency. Dr Minhas talked about the need to add more buses in the country's public transit system to meet demand of public transit which is bound to increase as the present situation gets better. He said, "As per my study, there is a need of adding 16,000 buses to Delhi's fleet of buses against which, only 7,000 to 8,000 buses are currently operating in Delhi by the DTC and Department of Transport, Government of Delhi." Financial assistance needed for Public transport to the tune of ₹2,33,691 in various fields has been ignored since long. He added that due to the pandemic situation, a smaller number of people can travel in same number of buses due to safety guidelines which has severely increased the demand for buses. He said, "By strictly following the safety guidelines, we have to build trust among people so that we can come back to a similar amount of demand for public transit." He also suggested various solutions for the smooth operation of buses, with proper safety precautions, such as changing the school timings to avoid crowding, installing sanitizer dispensers in buses, thermal testingof passengers, compulsory use of masks, and contactless bus ticket booking. According to a data from the DTC, Dr Minhas stated that the corporation has witnessed a drop in users of almost 3,073 lakh people which has added to the losses of the department. He concluded by saying that continuance of public transport is essential as it supports the livelihoods of various people. Dr Ram answered a question regarding how the pandemic has affected travel characteristics and said that efforts must be made to ensure that the new normal should not become permanent. He added that there are no safety guidelines for other modes of public transport such as e or auto-rickshaws, which are one of the foremost modes of transport fulfilling the first and last-mile connectivity requirements of people in Indian cities. Dr Ram went on to address problems faced by those travelling from remote areas, particularly those areas with little or no connectivity to government-

ACCORDING TO ITDP DATA, 10 TO 16 PER CENT OF THE PEOPLE ACCEPTED THAT THEY WILL PREFER TO TRAVEL BY PERSONAL VEHICLES INSTEAD OF USING PUBLIC TRANSIT. FARAZ AHMED ADDED THAT AROUND HALF OF THE POPULATION EITHER WALKS OR USES BICYCLES TO TRAVEL AS THEIR TRIPS ARE SHORT. IN VARIOUS COUNTRIES, COVID-19 HOTSPOTS WERE STUDIED AND IT WAS FOUND THAT PUBLIC TRANSPORT WAS NOT A SIGNIFICANT CONTRIBUTOR TO THE SPREAD OF THE PANDEMIC.

operated buses.He suggested that operation of mini-buses can solve their problems in the long run.

Faraz Ahmed started by talking about public participation in mitigating the shift in transit preferences of people. According to ITDP data, 10 to 16 per cent of the people accepted that they will prefer to travel by personal vehicles instead of using public transit. He added that around half of the population either walks or uses bicycles to travel as their trips are short. In various countries, COVID-19 hotspots were studied and it was found that public transport was not a significant contributor to the spread of the pandemic. He said, "The reputation of public transport is downgraded to such level that people assume it to be unsafe whereas the data shows otherwise. Moreover, the exposure time of people in different modes of public transport is very less which further reduces the chances of infection." Stimulus investment in public transport and sustainable modes of private transport such as bicycles is the need of the hour and it will also help the economy in the long run. He concluded by saying that proper communication and outreach

is needed to communicate with the users and make them aware of safety measures put in place by governments in order to earn back lost trust on public transport.

Prof Tiwari answered the question regarding the change of passenger behavior after the pandemic by saying that it is completely related to the growth of the country. She added that people travel if there is a need and the need is generated by a fully-functioning economy which is not the case with India right now. Dr Minhas answered the question regarding the need of Bus Rapid Transit (BRT) system and said that inclusion of BRT is the need of the hour and it should be accepted by all the stakeholders. He added that prioritisation of bus passengers is important to develop the system of public transit but it was not accepted universally. Ahmed added to the discussion and said that we should implement multi-pronged strategies to mitigate the shift in transit preference and government should focus on travel demand management. He added that owning a private vehicle can be linked to various other factors but usage of the private vehicle should be examined. ∎

PDPB to unlock digitalisation's potential in India

Urban Update and All India Institute of Local Self Government (AIILSG), in collaboration with United Cities and Local Governments Asia Pacific (UCLG ASPAC), organized the fourth edition of the 'One-on-One" series on the topic "Improved Data Privacy in the New Normal" on Thursday, October 29, 2020. Abhishek Pandey, Editor, Urban Update, interviewed Vijayshankar Nagaraja Rao, Executive Chairman, Foundation of Data Protection Professionals in India (FDDPI), and talked about the various threats to data security in the new normal. Introducing the topic, Abhishek said that due to the COVID-19 pandemic, official activities and day-to-day meetings have gone online resulting in a lot of data sharing digitally. The question of data safety has taken center stageand governments around the globe are handling the issue in their own ways

WHAT ARE THE CHANGES IN OUR DAY-TO-DAY ACTIVITIES SINCE THE PANDEMIC HIT THE GLOBE IN MARCH THIS YEAR? AND, WHY SHOULD WE BE WORRIED ABOUT DATA SAFETY AT ALL?
Advantages of virtual media like saving expenditure and time have always been recognized but not utilised. This pandemic only forced us to seek shelter in virtual media for everything and this is now called the new normal. I believe that this platform is nothing new, instead, it was always available but only now we have realised its full potential, which is a welcome change.

At the same time, this has brought issues of information and data security to the forefront because opportunities for criminals to exploit the situation have increased. Cyber-crimes in the pandemic have increased due to two reasons- increase in people using the platform and people not well versed with digital usage have suddenly entered the digital world which makes them vulnerable. It becomes very essential to prepare people to counter these challenges.

WHEN WE TALK ABOUT DATA NOWADAYS, WE REFER TO IT AS NEW OIL AND EVERYONE WANTS TO CONTROL IT. THE ISSUE OF DATA SECURITY HAS BECOME IMPORTANT GLOBALLY IN TERMS OF THE RELATION BETWEEN DIFFERENT COUNTRIES. HOW GOVERNMENTS ARE ENSURING THAT DATA OF THEIR CITIZENS ISSAFE IN CASES OF INTERNATIONAL INTERACTIONS ONLINE?
One of the two aspects is data security, which implies confidentiality and that the data should not be modified. Data is like money, that is, it has value as long as it is used. So, the second aspect becomes finding appropriate channels for the usage of data rather than preventing data usage. Data can be of two types as well- personal and non-personal. More than 100 countries today have Acts for the protection of personal data. Although, India already has the Information Technology Act, it is currently working on a legislation specific to personal data protection, which includes bank details, addresses, identification numbers, etc.

Personal data needs to be accorded certain additional security in comparison to non-personal data. Non-personal data has commercial value and therefore India is planning to draft alegislation on how to unlock the value of non-personal data.

Using data for data profiling, market segmentation, psychographic profiling of the target audience to regulate the information flow is inherent in any business and is less harmful to the users. What is worrying and can be termed unethical is the manipulation of users through the use of data that they are asked to submit at social media platforms. Controlling fake news and IDs by the platforms and government can reduce potential harm.

A FAMOUS SAYING GOES, 'WHEN YOU ARE NOT PAYING FOR A PRODUCT, YOU ARE THE PRODUCT.' USERS ON FREE SOCIAL MEDIA PLATFORMS THUS BECOME A PRODUCT AS THEIR DATA IS CAPTURED AND THEIR PROFILING IS CARRIED OUT. HOW EXACTLY IS IT DONE? HOW SECURE, RELIABLE OR ACCOUNTABLE IS THIS KIND OF PROFILING?
All these data profiling and analysis is done by Artificial Intelligence (AI). But actions like blocking profiles, deleting or flagging any inappropriate content is done by AI only under human supervision.

INDIA IS PLANNING TO DEVELOP 100 SMART CITIES. THAT NOT ONLY REFERS TO IMPROVING BASIC CIVIC SERVICES BUT ALSO EMBEDDING DIGITAL TECHNOLOGY LIKE SMART CAMERAS OR FACIAL RECOGNITION. ENTERING INTO THAT KIND OF ECOSYSTEM WOULD MEAN STORAGE OF LOTS OF DATA IN CITIES' ADMINISTRATION WHICH IS NOT FULLY EQUIPPED TO DEAL WITH THE SAME. SHOULD USERS AND CITIZENS BE CONCERNED?

Humans are responsible for the interpretation of data captured by cameras. Smart cities, unless it is a crime related situation, need not use facial recognition as part of the collection. Smart cities' software need not necessarily be intrusive to citizens' privacy. Implementation of technology solutions is possible without adversely affecting the privacy or security. Harmless functionality of the system will require innovations in terms of segregating work only according to authorization. Techno-legal people can play a crucial role in this.

HOW DO YOU PROPOSE TO BUILD CAPACITY AND KNOWLEDGE OF THE MUNICIPAL STAFF ON THE INTRODUCTION OF TECHNOLOGY?

There is a need for proper information flow among citizens about the involvement of any technology, and law. Government sector lies far behind the private sector in terms of digital data handling and protection. If anonymous data is shared, a municipality can make use of it. A municipality in America traced and anatomised transit movements of people to decide where they should set up housing projects.

WHAT IS THE PERSONAL DATA PROTECTION BILL (PDPB) ALL ABOUT AND HOW IT IS GOING TO CHANGE THE WHOLE DIGITAL ECOSYSTEM?

Presently, we are working under the regime of the Information Technology Act which says that there will be a punishment if data is misused, which makes it a cyber-crime law. This Act made intermediaries or companies who are in possession of these digital information, take certain precautions to ensure that hacking doesn't take place. But the Act does not have adequate deterrence or monitoring authority. Worldwide, after the General Data Protection Regulation (GDPR) in 2016, the focus was drawn towards the protection of personal data in a particular manner. Our PDPB follows the same trend and intends on introducing pro-active measures to be taken up by the company to reduce the risk of privacy loss.

In Puttaswamy' judgement, in 2017, the Supreme Court said that privacy is a fundamental right of an Indian citizen. It is infringed upon when an organisation fails to regulate the personal data of people. This act aims at giving an individual the choice and authority over how much of their personal information they want to provide and how much of it can be used. The key to PDPA is consent-based collection of personal information. Certain rights have been given to the data subject, including access to the information on where exactly their information will be used and settings to change the reach of access by the platform into personal data. The organisations have been told to follow certain compliance measures, appoint Data Protection Officers, and develop an action plan on processing data to protect data. Some precautions are necessary to ensure data processing in a manner which is in the interest of the data subject. There are also data breach notification aspects in the Act. PDPB has a system called Data Trust Score (DTS). Every organisation is audited by a data auditor (mandatory once a year) and the auditor has to provide DTS for particular companies based on their capability of protecting personal data.

HOW SHOULD USERS BEHAVE ONLINE AND WHICH PRECAUTIONS SHOULD THEY TAKE?

A user usually is asked to accept a privacy policy of an organisation before submitting their data. However, most users remain unaware that the content in privacy policy contains details of where and how their data will be used.. There are times when an organisation collects more information than is necessary for a particular service. At present, there is no monitoring authority, but after the PDPB bill is passed, Data Protection Authority (DPA) can take action.

DPA can penalize such organisations if found using users' data in excess if brought to their attention through their own audit system or through complaints. People not well versed in the technology and the laws surrounding it is the biggest issue. A service called consent manager has been introduced in the bill to guide people who are new to technology, through apps and filling information. The law also provides the consent managers to create pseudonymous identity so that their privacy remains protected, their purpose is carried out, and there is no legal infringement. Consent managers will act as an intermediary between data fiduciary and data principle, thus bridging any gap of knowledge, expertise, or language. ∎

GOOD BYE, KD

Kumar Dhananjay, Consulting Editor of Urban Update, died at age 46, having lived a life that would have sent a lesser man to ashes years earlier. He struggled with his health condition now and then but it never stopped him from living life to the fullest. Known for his flamboyance and distinctive laugh, he will be greatly and dearly missed in media circle, office, among friends and in family

Abhishek Pandey
Editor, Urban Update

" Mridula Chunduri

You were one of the first people to make me feel welcome in AajTak. The one who was always there for anything. In the last few years after i quit, I would still light up when I saw your number calling cause that was the kind of person you are. I cannot bring myself to use past tense yet. Goodbye my dear friend. Absolutely gutted to be saying this.

" Deepak Sharma

उनका साथ मुझे बेहद पसंद था क्योंकि 40—45 मिनट के इस सफर में वे, मुझे दिन भर की कई खबरों का अपडेट, कई घटनाओं का एनालिसिस देते थे। मेरे शो, या मेरी किसी खोज खबर के बारे में भी बारीक मश्वरा देते, जो बड़े काम का होता था। वे दफ्तर के लोगों के बारे में कम, आईडिया और आइडियोलाजी पर ज्यादा चर्चा करते थे।

" Qamar Waheed Naqvi

बहुत दुःखद। यकीनन धन्नजय खबरों और मुद्दों की जानकारी के मामले में विलक्षण थे। विनम्र श्रद्धांजलि।

OBITUARIES ARE DIFFICULT TO WRITE. It becomes more difficult when you have to write about your close one.

Dhananjay was not just a phenomenal journalist but a great friend and colleague. Some called him KD, family and fellow students in Jawaharlal Nehru University have known him as Pinku. Kumar Dhananjay, born in Madhubani, joined Bachelor of Arts (French) in Jawaharlal Nehru University in 1993. He was elected Convenor of School of Language with a record-high number of votes in JNUSU in 1994-95. He remained active in student politics throughout his time in the university and beyond. He stayed in the University till he completed his M. Phil.

He began his career in media with India TV and later joined TV Today group where he spent most of his journalistic career. In 2016, he joined Urban Update as Consulting Editor and contributed significantly editorially in taking the magazine to greater heights. In his two-decade-long career as a journalist, he worked for many media organizations, including India TV, TV Today Group (AajTak), All India Radio, Turkish Radio and Television (TRT) World (Turkish State-owned News Channel), and in his final years with Urban Update magazine.

He always fell in love with whatever he did and always used to get irritated if the things were not done correctly. He took the Urban Dialogues, the flagship conference of the magazine, to a new level with his proactive initiatives. His journey with Urban Dialogues started in Varanasi where he made sure that then Union Minister for Urban Development Narendra Tomar attended the program. It was the first Urban Dialogues beyond the limits of Delhi and Mumbai. He believed in making a mark. The last event he managed and administered with Urban Update team was the 5th South Asian Cities Summit in Goa this year. When the lockdown was announced, he enthusiastically hosted a series of webinars and remained engaged in every aspect of it, from speaker invitation to report finalization.

KD was always a source of inspiration for the editorial team. His passion and dedication at work was exemplary and served to lift the spirit of all he worked with. As a senior editorial person, he did not pull ranks but was very particular to the kind of work he wanted to be done. He was disappointed with the current state of media and often told me that he had stopped watching TV news since the TV media turned primetime into a circus. He was an intellectual par excellence and had excellent news sense. He could discuss anything under the Sun for hours and be furiously in disagreement with you. But the next moment, he would break bread together and crack jokes. That was him.

He struggled with his diabetes, he had a sweet tooth and could barely hold his temptation to have a piece or two of Jalebi or for that matter, any Indian sweet dish. When you tried to restrain him by telling him, it is not good for you, He would promptly say, "Ek Se Kuch Nahi Hota, yaar". He loved travelling and trying new cuisines. I travelled along with him to several Indian and international destinations and he would always find "good places to eat". At times, we walked kilometres to have a good cup of tea. He loved non-vegetarian food but always made sure that there is something special in vegetarian too; considering me being vegetarian. He also loved good music, especially ghazals of Faiz. Hum Dekhenge... was one of his favourites. He was regular at the cultural festival Jashn-e-Rekhta

Many friends and colleagues, who paid homage to him on social media and at his cremation, agreed on two points. One, he had a hot temper. And, second, he was among the kindest and most generous persons.

Just before dinner, he collapsed in his house in Vasant Kunj. He was rushed to Fortis Hospital but could not make it. No one knows exactly what happened so suddenly. He was not infected with COVID but the pandemic has had an impact on his physical health and mental well-being. He could not go for

> ## Samyak & Jayvardhan
>
> Pinku chacha, or mama for my brother Chandan, was one of a kind; from making the cheapest dance steps look lit to knowing everything that's happening in the world at the tips of his fingers, he was everything we could hope to be

> ## Shefali S Jha
>
> A man with a golden heart, a committed journalist, an individual with strong ideologies, an honourable man and family's favourite, it was not the time for mama to leave us like this. He has left a deep hole in our hearts

his regular checkups; he stopped going for morning walks which he loved and also could not go to Haridwar for attending regular Yoga Sessions. I think all of this coupled together caused this tragedy.

His passing away is a great loss to Team AIILSG and Urban Update. And, this is recognized by one and all. Everyone in the team from Rajiv Agarwal, Director General, AIILSG to Ashok Wankhade, Managing Editor, Urban Update, Ravi Ranjan Guru, Deputy Director-General, Debarishi Pandya, CFO, AIILSG, AK Jain, Sunil Velankar, Jayant Pathak, Mukul Sharma, KR Sharma, Manoj Joshi, and hundreds of senior and junior colleagues sent their condolences to the bereaved family. Not only from the present organization, his former colleagues from Aaj Tak have also paid rich tributes to him. That is how he lived his life and earned love and respect from all ranks.

KD will always be remembered for his frank opinions, fearless approach, and his zeal for living every moment to the fullest.

Air knows no boundary so does air pollution

Air pollution is not a country-specific problem. Cities in India and elsewhere have realized that their efforts alone cannot bring down air pollution in their jurisdiction. Delhi is a fine example where stubble burning in neighbouring states affects the city's air quality. Like climate change, there is a need to focus on a transnational and regional plan for curbing air pollution along with local initiatives

ASHOK WANKHADE
Managing Editor

Air pollution is generally a result of energy use. The burning of fossil fuels and biomass is the principal source of air pollution in urban and rural areas. There is no guarantee that air pollution activity in one place would not affect the other. Thus, rural and urban areas, cities and states, and countries will have to come together to address the problem.

The recent collective initiative of Punjab, Haryana, Delhi, and Uttar Pradesh governments to curb air pollution in urban areas of National Capital Region is a laudable move for many reasons. The first being, everyone has to play their part to reduce air pollution. This is the first time that the Court had ordered a ban on bursting of firecrackers in all the cities where air quality was poor. However, the ground impact of the order was not great because the implementation was poor. But this was the first time such order was passed at this scale. Though, in future, policymakers must keep in mind that such initiatives should propose blanket ban otherwise fractured initiatives will not give desired results.

Another good initiative is that the state governments of all these states have launched an awareness campaign supported by the technological solution for farmers to avoid stubble burning in their farms. This has significantly reduced the cases of stubble burning. I am sure that the collective efforts of these government will bring forward positive outcomes. I expect that other states where air quality has worsened will also follow this example of collective and collaborative actions.

STRATEGIC PARTNERSHIPS

These efforts need to go beyond these states. I think, India, being one of the largest and most populated countries in the region, should take a leadership role in controlling air pollution in the region and the Government could forge a strategic alliance to reduce air pollution. This is also important because Asia-Pacific is among the worst-affected regions from air pollution-related issues and it is also reflected in terms of numbers in the burden of disease. According to a report by the UN Environment, 6.5 million people die annually from exposure to poor air quality. 70% of air pollution-related deaths occur in the Asia Pacific.

One such partnership already exists. Established in 2015, the Asia Pacific Clean Air Partnership is a platform for policymakers and stakeholders to share knowledge, tools and innovative solutions to tackle air pollution in the region. The effectiveness of this partnership is not yet visible on the ground. It can become effective only when all partners are actively engaged and come forward with innovative and creative solutions to address the problem. Such initiatives need to be supported by national governments and it should be reflected in their policy-making; then the objectives of such associations can be fulfilled. It would therefore be imperative that nations, their local governments and civil society as well as other interest groups come together to address this common challenge to provide clean air for their citizens and save precious lives. The time to do it is now. ■

UrbanUpdate
Setting The Agenda For Tomorrow's Cities

WEEKLY
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Urban Update is a leading magazine on sustainable development of cities brought out by All India Institute of Local Self-Government (AIILSG). Bringing together the experience of the multilateral sector with that of the private sector and the local governments themselves, the magazine focuses on the challenges and solutions for city leaders and local governments.

Urban Update plays a special role – that of a primary, indispensable link among stakeholders that nurtures community. A wellspring of writing and imagery reinforces our vision of evangelizing Urban Infrastructure, Governance, Culture and Sustainability.

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HE CLEANS OUR WORLD. LET'S SALUTE HIM WITH ALL OUR HEARTS.

Sanitation workers deserve more than what we give in return. They deserve our respect. Because they do our job with sheer dedication. We spread dirt. They spread cleanliness.

All India Institute of Local Self-Government (AIILSG) whole heartedly supports Swachh Bharat Mission and is committed to play a proactive role to realise its objectives. The Institute is organising regular orientation workshops on SBM to augment the capacity of ULBs and also generating public awareness on cleanliness

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