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EARTH ROOT

ELECTRIC VEHICLES: LESSONS FROM PLASTIC AND PROS AND CONS TO COMBAT CLIMATE CHANGE

IS AIR POLLUTION THE CAUSE OF COGNITIVE DYSFUNCTION?

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AIR QUALITY HAZARDOUS IN DELHI

ATMOSPHERIC BROWN CLOUD

About E-magazine

"Earth Root" is an open access e-magazine in the discipline of Environmental sciences published by Earth Root Foundation. The aim of the e-magazine is to provide information and upgradation of knowledge about environmental issues on wider scale and to share ideas and resources to the readers. Using essential knowledge people can lead a healthy life, which is more sustainable and can connect with ongoing efforts for stopping catastrophically the climate change. E-magazine caters to all related environmental aspects ranging from big issues like climate change, renewable energy and pollutants in the atmosphere to the health of human and living beings on Earth. We also take topics of water resources and efforts and measurement to provide optimum use of it; including large scale atmospheric circulation linked with oceans and ecology.

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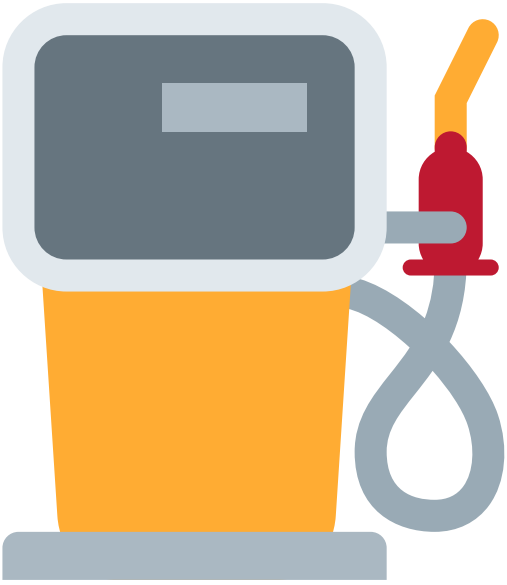
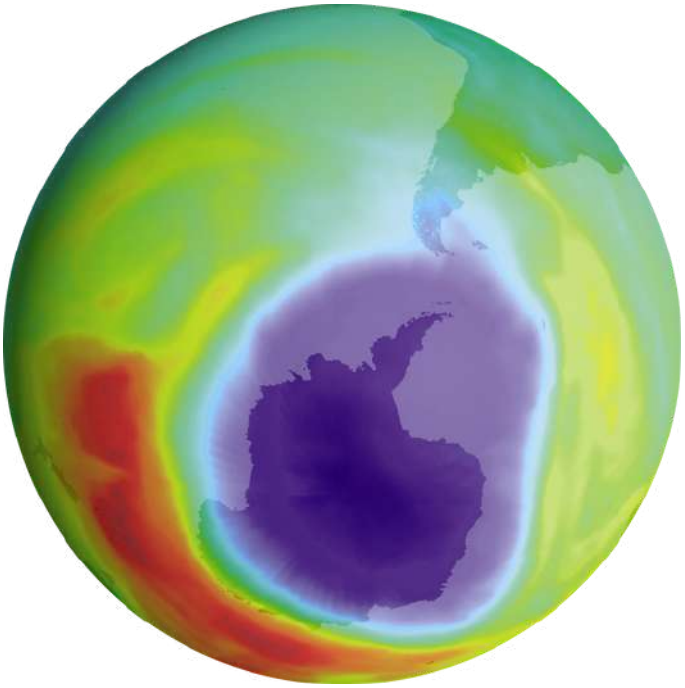




Electric vehicles: lessons from plastic and pros and cons to combat climate change

Praveen Gawali
Indian Institute of Geomagnetism, Navi Mumbai

The COP26 summit has set majestic goals to achieve in light of the global climate change that is felt all over the world. Some targets are realistic some are ambitious while others are ideal that need to be achieved, but is probably not humanly possible. Be that as it may, the pronouncement of unrealistic and unachievable targets indicates the intention of some countries to rein in components that bring about harmful changes to the climate. This realization is an acknowledgement of the lifestyle changes that are urgently needed to undertake to stop or minimize environmental degradation.

I had an occasion to be a part of the electric vehicle expo, last month, where I was able to experience first-hand the initiatives taken and progress made in the automobile sector to tackle fossil fuel pollution. The transportation of almost all the countries of the world is heavily, nay, exclusively dependent on fossil fuels. Apart from the fact that these fuels are finite in content, and they are absolutely going to deplete completely in the near future, the changes that they are bringing to the atmosphere are completely unacceptable. The kind of targets set by world leaders is definitely an indication that things are going to radically change in the years to come. The automobile industry has read the writing on the wall, and they seem to have embraced the change. They have decided to transition from fossil fuels to renewable energy sources.

There were big automobile companies that had participated in the expo and showcased their electric vehicles. All were fabulous. They had the wow factor and the test drive was just smooth. No noise, no pollution. The taste of the future was quite fascinating. However, there are reports, for safety reasons, electric cars will be fitted with sound-generating contraptions so that they just do not surprise the walkers and fellow road travellers by appearing from nowhere.

The major constraint that many users will face is the price component. The prices of these electric cars are high enough to discourage even those potential buyers who are sensitive to environmental upkeep. The other constraining factor is the charging of batteries. I was told it takes almost 5 hours of charging for the vehicle to ply about 100 km. The batteries cannot be replaced. Hence, there will be a waiting period of full charging, rendering the user immobile. The task of maintaining the battery will also be an important task that will have to be performed constantly and consistently. The disposal of lithium-ion batteries will also be quite a huge task. The litter that will be generated will be humungous, and piling it would do more harm than good.

A few decades back, plastic became popular, which replaced cotton bags within no time. The argument was that more land had to be brought under cotton cultivation, and it needed power and water disproportionate to its utility.

The plastics did not need water and land for their manufacture. Also, the multiple uses of plastics became apparent with every new technological advancements and innovation. However, during those initial years, nobody thought about how it was to be disposed of. It was just thrown away, and the plastic mountains began to pile up and up in and around major cities and towns. The best way to get rid of plastics was considered to be the oceans. All the litter started and continues to be thrown into the oceans, where it is harming the oceanic life forms. Country size plastic dumps are floating around in the oceans, and it is not a pretty sight. In fact, these are the death traps for the sea-dwelling flora and fauna.

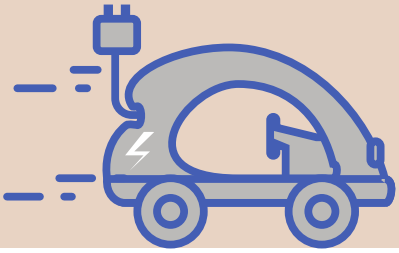
We have now woken up to this very lethal danger and are trying ways and means to curb this menace. The same future can be foretold for lithium-ion batteries. Lithium is dangerous and is also in short supply. The lithium-ion battery is a device that moves the ions of lithium from one electrode to the other. The electric current is generated by a battery when the lithium ions get out of the electrode where these ions are stored, swimming through an electrolyte, and get chemically attached to the opposite cathode. The process is reversed during the recharging phase. The lithium ions are ripped out from the cathode and sent back to the storage electrode. This is such an easy process. The crux of the matter lies in this give and take of electrons and ions from electrode to cathode and vice versa. If the movement of the electrons and ions is slow and sluggish, it will take more time for total recharging. If the movement is quick and fast, through the electrolyte, then the recharging can happen in a jiffy. Efforts are now directed at how the flow rate can be increased. They are experimenting with a variety of electrolytes to quicken this pace. Once that magic potion is concocted, then the utility of electric vehicles can grow manifold. The best candidate available for this task right now is lithium iron phosphate, which has given encouraging results.

A range of studies is carried to bring down the dependence on fossil fuel and increase the use of renewable energy generating mechanisms. Lithium-ion battery costs have dropped by 97% in the 2020s since 1991. The research and innovations made by the government as well as private organizations helped the cause to a great extent. The intent and resolve to afford “affordability” to this device induced setting up better-manufacturing units, increase the efficiency of the distribution system that set in commercialization, helping reduce the user-end cost of the battery.

The shift to renewable forms of energy is the need of the hour. The grandiose plans envisaged in the coming years by the rich and poor countries alike need to be looked at critically. The developmental plans of the poor countries can go into disarray if they are barred from using fossil fuels. Their entire economy is based on its usage. The compensation offered by the rich countries in terms of financial help and technology transfer needs to come to fruition. At the same time, the energy generated by renewable sources has to be consumed in real-time. Else, the storage issue will come into the picture and will lead to more envisaged environmental issues. It will be the story of plastic all over again!

Using electric cars to replace diesel and gasoline-powered automobiles.

Shenzhen, China, for example, has shifted from diesel-powered public transportation to an electric bus fleet, which is predicted to reduce CO2 emissions by 48 percent and reduce particulate matter by a substantial amount.



WHAT CAN BE DONE TO CURB AIR POLLUTION

Vanshika Tushir
Delhi School of Economics, University of Delhi

As a prime contributor to climate change, air pollution is damaging our planet. According to the World Health Organization (WHO), each year air pollution is accountable for nearly seven million deaths around the globe. Nine out of ten human beings currently breathe air that exceeds the WHO's guideline limits for pollutants, with those living in low- and middle-income countries suffering the most. Air quality in India has deteriorated considerably during the last two decades; today, air pollution is the second leading risk factor contributing to the country's disorder burden.

That being said, preventing the environment and enhancing the quality of the air we breathe is doable. There are various policies and programs that have been implemented in India to tackle the issue of air pollution. Apart from these government initiatives, there is also a need for efforts to be made at an individual level in order to breathe fresh air and protect our health.

Here are the following tips if tailored in day to day can assist in attaining cleaner and healthier air.

1. Utilization of public transport: Vehicle exhaust is a major factor. Using public transport requires less gas and energy, even carpooling adds to it. Walking or cycling to nearby places is a healthier option.
2. 3R's: Reduce, Reuse and Recycle are some of the best ways to help the environment. This concept not only helps in achieving a sustainable lifestyle, but also reduces air pollution as pollutant emission is reduced.

3. Use less energy: Opt for an effective appliance and heating system. Use a fan instead of air conditions. Switch off electrical stuff when not using it. Transition to renewable energy sources and sustainable living.
4. Afforestation: Go green, plant more and more trees. Trees filter the pollutants and release oxygen. It helps improve the long-term air quality of your area.
5. Avoid crackers: Usage of crackers during festivals or any other event increases the particles of pollutants in the air, leading to layers of smog which directly affect one's health.
6. Avoid burning garbage and smoking: burning garbage or conducting open fires and wood-burning stoves have a significant impact on air pollution. In addition to it, smoking worsens the quality of air along with its harmful effect.

In a nutshell, the consequences of air pollution are real and in the future, it's only going to get worse until and unless necessary precautions and steps are not taken. Air pollutants can be subdued by making some changes in everyday life such as adopting renewable energy resources, planting more trees, leading sustainable lifestyles and many more.

Does imposing lockdown help curb air pollution?

Sarthak Mishra
Freelance Conent Writer

The lockdown restrictions during the pandemic last year sent financial markets into free fall. But because of the lockdown, people of some of the world's most polluted cities got something they have not experienced in years, 'clean air'. According to observational data, the first national COVID-19 lockdown from March 24 to April 24 last year drastically reduced emissions as vehicular movement and construction activities were halted. Data from NASA's Global Modelling and Data Assimilation team clearly shows how concentrations of some pollutants fell after the lockdowns started.

Clear blue skies and an absence of visible smog seen during the first Covid-19 lockdown in India gave people much relief. But a new study claims that air pollutants did not decrease as thought. Instead, ozone levels increased, which could lead to potential health issues. The study by some researchers at York University in Canada claimed that as the air looked much cleaner, it allowed more sunshine to get through, creating conditions for ozone to increase up to 30 per cent.

Many scientists have different opinions on this issue. That's why a proper ultimate conclusion cannot be provided. Imposing lockdown is a way to curb carbon emission, but it can also lead to some problems like an increase in ozone in the lower atmosphere. But improvements in outdoor air quality is also a fact as everybody is mostly inside their houses.

Our strategy for examining the causal effect of lockdowns on air quality relies on a comparison of levels of air pollutant species, including particulate matter (PM10 and PM2.5), sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), and ozone (O3) within a city around the lockdown dates. Ground stations in northern India also show a downward trend in overall PM2.5. Even in a city that did not have a formal lockdown policy, air quality levels may be affected by disease preventive measures such as the extension of the Spring Festival holiday, the stay-at-home order, and the social distancing policy.

The studies show that the environmental impacts of lockdown differed as per the development level, industrial structure, and population of a country. It allowed us to make a cross-country comparison and informed governments that taking measures suitable to local conditions should be the basic principle when charting paths to counter air pollution during the post-pandemic period.

DID YOU KNOW

Inhaling air pollution takes away at least 1-2 years of a typical human life

Forest Man of India

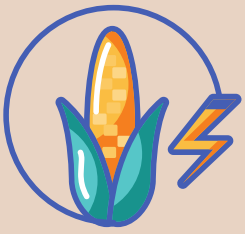
Vanikaa Dhoundiyal
Shyama Prasad Mukherji College for Women, Delhi University

Ever wondered if someone could single-handedly plant some 40 million trees and create a man-made forest, bigger than the NYC Central Park. Difficult to even imagine, isn't it? But this is exactly what a man from a Tribal community of Assam did for over forty years of his life. This is the story of Jadav "Molai" Payeng, The Forest Man of India. He is credited for the creation of a man-made forest, at the Majuli Reserve in the Brahmaputra river. Today this beautiful forest in Assam's Jorhat district, locally called the 'Molai Forest', is known for its rich flora and fauna. Jadav Payeng is now recognized globally, is a recipient of numerous Honours and awards and has been part of various environmental programs at both national and international levels.

Source: twitter.com

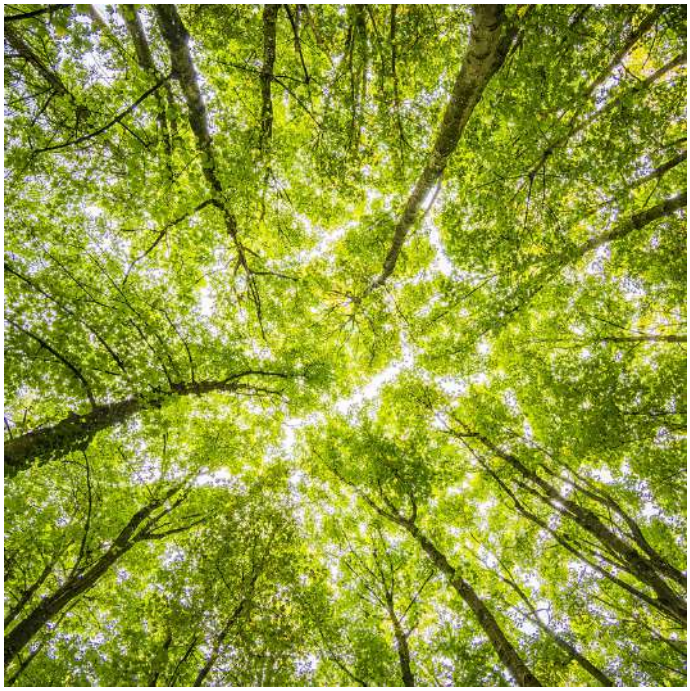
Switch to Renewables

Changing your energy supplier to one that's 100% renewable is a great eco-friendly tip for any home.



Jadav Payeng's journey began at the early age of sixteen in 1979 when he witnessed the death of hundreds of snakes due to drought. The only method he could think of to help the situation was to plant some trees, so he planted some 20 bamboo saplings. The way to create a 1360 acres forest was paved when a scheme of tree plantation on 200 hectares was launched in the district of Jorhat. This project got over in five years, but Jadav stayed back to look after the plants and continued planting more trees. He worked hard, nurtured the plants and the result is well known to us. For over 35 years he devoted himself to this action; every day he would cross the river on a boat and walk two hours to reach the sandbar where he would plant a tree. Payeng has elaborated on his method of taking care of the plants which involve the use of cow dung and organic matter as manure, use of drip irrigation methods to water saplings and use of earthworms in the preparation of soil. The forest turned out to be dense which today is home to diverse flora including several species of trees, bamboos and medicinal plants along with animals like deer, elephants, tigers and rhinos.

Jadav's story was highlighted when, in 2007, a photojournalist stumbled upon him and wrote an article about him. This brought him to the attention of the whole nation as well as the government. He was recognized for his incredible efforts and was honoured multiple times. He has given TED talks, has been subjected to numerous documentaries and even a children's book is based on him. He received the title of "Forest Man of India" by Jawaharlal Nehru University in 2012. Payeng was also awarded the Padma Shri in 2015. Recently, he has signed an agreement with Fundacion Aztecz (NGO) to plant 7 million trees in Mexico.



Jadav Payeng's story is truly inspirational for each one of us. He has set up an excellent example of how one only requires an aim and determined efforts to make a change. His journey showcases the importance of an individual's input towards helping our environment and motivates us to follow the same. If a man alone could bring to life a massive forest, why can't we do something similar, either individually or through combined efforts?

5th January

National Bird Day

NURTURE

When it comes to eco-friendly living, ecological sustainability is critical. Things start to break apart without a healthy ecology. More people and companies need to make sure that we're planting more native trees to replace those that have been cut to make way for projects in order to safeguard the environment and enhance air quality.

2040

Gauri
Sanjay Ghodawat International School, Maharashtra

Can today's world be the best you can give to your future generation, or it could be any better? Climate change, talking about sustainability might seem old topics, but they are old topics which need action on daily bases to make some process.

The movie showcases a possibility of world being a better planet in 2040. The movie starts with a father imagining the best possible future for her daughter in terms of surrounding and climate. He travels around the globe to come up with practical ways on individual bases that can lead to drastic change over the years. Carbon is the building block of everything around us. Some of it is stored and some is released. However, due to industrialization nowadays most of it is trapped and absorbed by oceans which affects marine life and ecosystem.

Few solutions discussed in the film were solar panels, auto electric vehicles, and many more with the least resistance to practice every day. It makes a viewer realize, "from little things, big things can grow". The movie requests everyone to produce energy at the point you consume it without wasting it. Moreover, the extra energy can be sold in a way that is economically beneficial to the country without relying on the government.

Source: imdb.com

Damon Gameau travels from Bangladesh, Australia, the United States, and many other countries to spread awareness and discover about making small changes like using local transport, solar panels, etc. the interesting thing is about the use of seaweeds in absorbing carbon from the atmosphere as much as possible.

The movie showcases many fascinating ways to lead to a better future, making the coming year full of possible ways to make the best year so far.

If you have allowed your food to go past its 'best by' date, make sure you compost it rather than throwing it away. Not only will this help generate a natural fertiliser and keep your garden green, but it will also limit the quantity of garbage that goes to landfill – and there will be no build-up of methane gas because it won't break down anaerobically.

Is Air pollution the reason behind cognitive dysfunction?

Sarthak Mishra
Freelance Content Writer

Air pollution is the presence of substances in the atmosphere that are harmful to the health of humans and other living beings. Air pollution may cause diseases, allergies, and even death to humans. One of the environmental factors which are less studied but found to have a significant influence on cognitive function is exposure to air pollutants. Studies around the world have reported that exposure to high amounts of air pollution can negatively impact the cognitive functioning of adults. Many victims of air pollution ironically experience significant “brain fog” and have sensory processing deficits in smell, hearing, and balance. Air pollutants affect the central nervous system (CNS) either directly by the transport of nano-sized particles into the CNS or through systemic inflammations. The release of nanoparticles to the environment as aerosols from traffic, waste, and industry processes strongly suggests that inhalation is an important access route for humans.

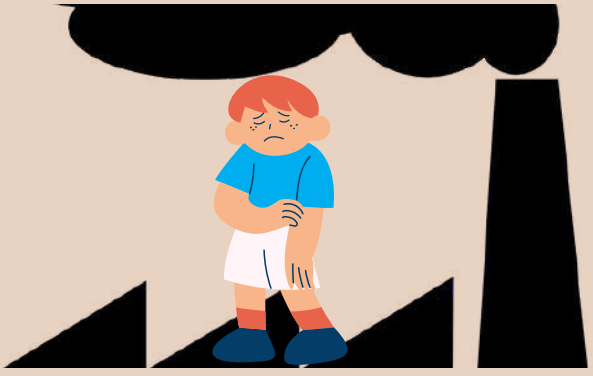
Many epidemiologic studies have reported that exposure to airborne pollutants can contribute to neurodegenerative disease processes already from early childhood, especially if the individuals are chronically exposed to the contaminants.

Air pollution is a multifaceted toxic chemical mixture capable of assaulting the central nervous system. Despite being a relatively new area of investigation, overall, there is mounting evidence implicating adverse effects of air pollution on cognitive function in both adults and children. Some studies show that indoor air pollution exposure is also responsible for cognitive dysfunction

Exposure to indoor air pollution through fuels used for cooking and heating was significantly associated with cognitive dysfunction among elderly women. Some researchers found that inflammation had damaged the brain cells and prevented that region of the brain from developing, and the ventricles simply expanded to fill the space.

A child born today may not be able to breathe pure air until they are eight years old.

Long-term exposure to air pollution throughout childhood can result in permanently decreased lung function. The development of foetuses has also been demonstrated to be affected by dirty air.



On the basis of these findings, there is also speculation that may be air pollution playing a role in autism and other neurodevelopmental disorder.

The effects of air pollutants are at a high level of interest for scientific, governmental, and public communities. The problem is a major health concern for both developing and developed countries. More studies and more intensive collaborations are needed to generate larger and more diverse cohorts and standardized data that would allow us to draw stronger conclusions related to cognitive dysfunction

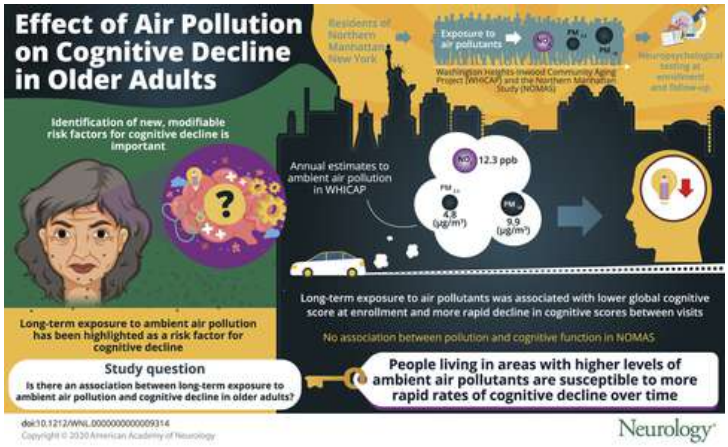
DID YOU KNOW?

For the first time in 2020, air quality management received specific central financing.

For the first time in 2020, 42 million or more Indian cities will get specialised air quality management money, thanks to suggestions made by the 15th Finance Commission. Budgetary allocations to Urban Local Bodies (ULBs) were INR 2,200 crore in 2020 and INR 2,217 crore in 2021. These grants are essential for integrating air quality into local administration, but they exclude up to 90 non-attainment communities. They also can't be utilised for acts that are particular to the transportation and industrial sectors, which aren't covered by ULBs.

24th January

International Day of Education



Source: n.neurology.org

GO LOCAL

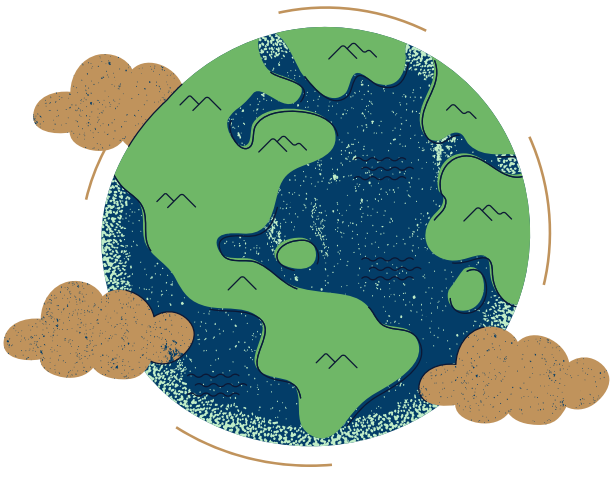
You have a tremendous influence on air pollution when you pick sustainable products and locally sourced commodities and food. Food and clothing do not have to travel thousands of miles to reach you. You're helping to reduce the amount of fossil fuels used by ships, aircraft, and trucks to move products vast distances.

Atmospheric Brown Cloud

Aamiya Rana
Kamala Nehru College, University of Delhi

Atmospheric brown cloud is a layer consisting of aerosols such as dust and smoke which absorb as well as scatter The Incoming solar radiations, leading to climatic effects and risky for human health and food security. The extension of this layer is roughly 3 kilometres from the earth surface. The atmospheric brown clouds in urban areas (Urban brown clouds) are a result of air pollution caused by thermal inversions.

This phenomenon was first observed in 1990 as part of the Indian Ocean experiment index (INDOEX) in which air pollution was measured with the help of aircraft, satellites, surface stations and balloons. The observations made during the study surprised the researchers by disclosing a huge number of aerosols formed over most of South Asia and the Northern Indian Ocean. These brown clouds are termed 'Asian brown clouds'. This Asian brown cloud is an annual phenomenon that occurs mainly from the month of November through May. As per the analysis made so far, it has been observed that atmospheric brown clouds are a global phenomenon and are human-generated in association with air pollution from Africa, North America, South America and Europe, also Asia. These are frequent in tropical regions due to its prolonged dry season, which prevents aerosols from being removed from the atmosphere through precipitation.



Pollution is Causing a Revolution

Chakr Innovation, located in Delhi, has developed the world's first retrofit emission control device for diesel generators. It collects 90% of particulate matter emissions from exhaust air while maintaining high energy efficiency. Inks and paints are made from diesel soot recovered from the exhaust.

Aerosols are majorly made up of black carbon and organic carbon. The black ones absorb solar radiation, resulting in solar heating of the atmosphere. Organic carbon aerosols such as sulphates and nitrates scatter the solar radiations back to space. The total impact of these aerosols results in ‘dimming’ (produced due to reduction in solar radiations reaching the surface of the earth). Due to this dimming effect, India and China are dimmer at the surface today by at least 6 percent in comparison with their pre-industrial time states.

Air Quality Hazardous In Delhi

Sarthak Mishra
Freelance Content Writer

Air pollution needs no introduction in 2021. Air pollution in India is estimated to kill around 1.5 million people every year. India is one of the world's highest death rates from chronic respiratory and asthma diseases, according to the World Health Organization (WHO). In Delhi, poor quality air irreversibly damages the lungs of 2 million, around 45 percent of all children. There are a few factors that have spiked pollution in Delhi, such as factories, construction, vehicles, cracker burning, stubble burning, dust pollution, vehicular emissions, burning of waste and landfills.

There are several Air Qualities checking apps that you can use to know the status in your city. Air quality is measured by taking into account a number of factors that come together on a uniform scale that helps citizens make sense of data. AQI is the number used by government agencies to assess and communicate air pollution to the public. A higher AQI indicates unfavorable health effects for a huge proportion of the population.

After Diwali, the city's Air Quality Index (AQI) turned “hazardous” in the national capital as it touched 500. Following this, the Delhi government also banned 92 construction sites in the national capital for violating dust norms. Air quality in Delhi continues to be in the ‘very poor category with a higher AQI, according to the System of Air Quality Weather Forecasting Research (SAFAR). The National Capital’s air quality had slipped to the “severe” category in the first week of November, with stubble burning accounting for 27 percent of its PM2.5 pollution.

Air pollution is prevalent throughout the year. In fact, Delhi didn’t have a single day of good air quality during summer in the last year. However, the pollution level, especially in North Indian states, increases post-Diwali as a result of atmospheric conditions and human factors.

Winter inversion, valley effect in addition to industrial emissions, vehicular emissions are some of the reasons for the increasing amount of air pollution in winter. During summer, the lowest layer of the atmosphere is warmer and lighter than compared to winter, which makes it easy for air to rise upwards. As a result, the pollutants are carried away from the ground. However, during winter, the air near the atmosphere of the earth is dense and cooler.
The increase in pollution levels was large post-Diwali as a result of the bursting of crackers on the occasion of Diwali and stubble burning in the neighboring states. To combat the situation in the region, Central Pollution Control Board (CPCB) proposed measures like the implementation of the Graded Response Action Plan (GRAP). Water-sprinkling will be accelerated as 400 tankers are set to make rounds across Delhi to reduce pollution. But these all are temporary solutions. Not just the government, but the important measures, must be adopted by every individual to contribute towards the prevention of air pollution. For a long-term solution, government and people together need to focus on fixing problems related to air pollution.

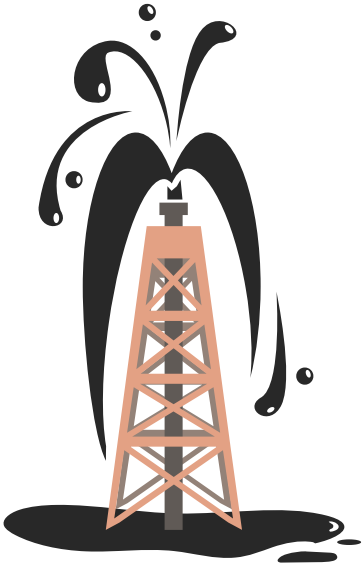
A Reality Check

Deepika

Earth Root Foundation, New Delhi

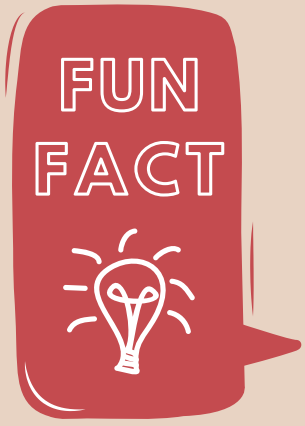
With oxygen cylinders instead of bagpacks,
Eyes covered with shades to avoid smoke,
Tiny totes went to school,
Like i had never seen before;

There is a new currency that we carry around,
Money cannot buy it,
We can only grow it,
In the pots, or up from the ground;



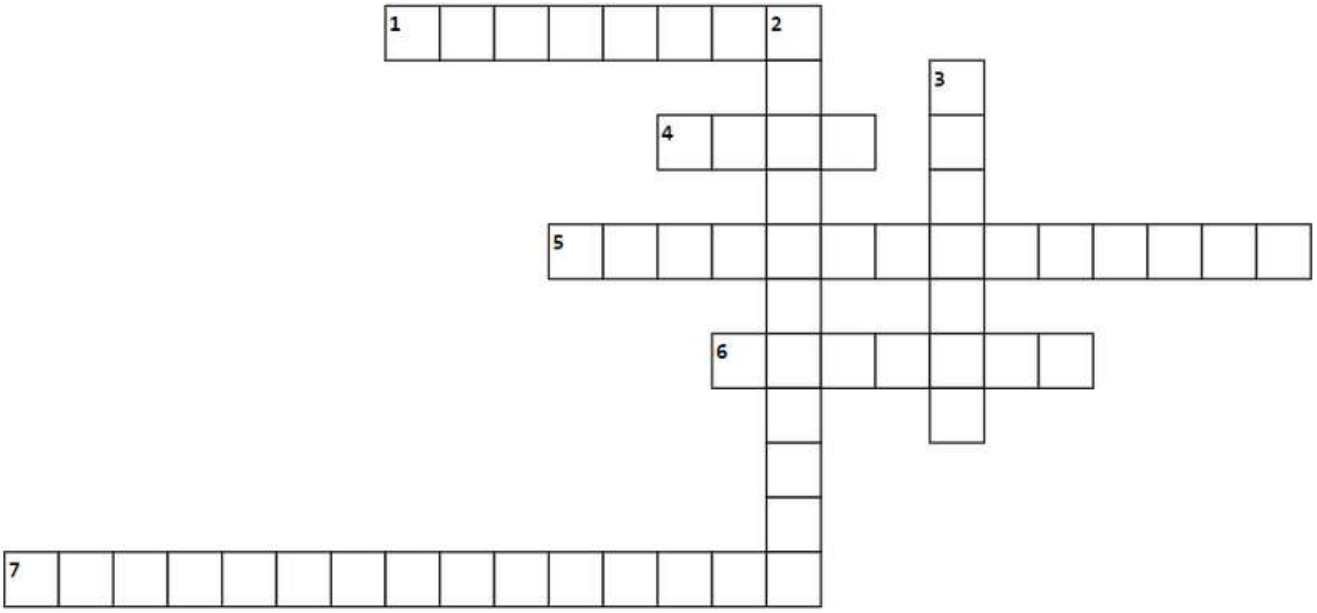
People had to queue up,
To breathe in the fresh air,
Their hearts heavy with regrets,
In past, why didn't they care?!

I woke up gasping,
Fresh air had run out before i took my turn,
I could still feel my chest burning,
Even though i realized it wasn't real;



Despite the fact that no international agreement expressly acknowledges the right to a healthy environment, numerous governments have opted to do so. As of 2015, approximately 100 nations had established a right to a healthy environment for their inhabitants, with the majority of them including it in their national constitutions.

CROSS WORD



Across

1.Manganese dioxide acts as a __ ?
4. Fog or haze combined with smoke and other air pollution ?
5. Which gas is not present in clean air?
6. It is a measurement of how dense the dust particles are in the air and takes into account how much light is obscured by the rising dust when looking at a solid, coloured background.
7. It is the most common air pollutants.

Down

2. Which layer of the atmosphere absorbs the most heat?
3. It is air which has had hydrocarbons removed via a process of oxidative catalysis to ensure it only contains less than 0.1 parts per million (PPM) of total hydrocarbons.

1.Catalyst; 2.Troposphere; 3.Zero Air, 4.Smog;
5.Carbon Monoxide; 6.Opacity; 7.Nitrogen Dioxide

THE EARTH ROOT FOUNDATION IN NEWS


Indoor Air Pollution Levels Nearly Half the Outdoor Levels in Delhi-NCR During November-December: Study

By IANS - 21 December, 2021 - TWC India

Representational Image

Preliminary data from a month-long experiment has shown that indoor air pollution levels were nearly half of the outdoor levels in Delhi-NCR during November-December so far.

A primary cause, the study has shown, is how meteorological factors play a crucial role in air pollution levels, especially in the Delhi-NCR region.

Two sensor-based air quality monitors and data loggers installed in Delhi's Dwarka revealed that diurnal variation, where air pollution levels usually peak in the evening and early morning hours, missing from indoor air pollution levels, highlighting the effects of meteorology in outdoor air pollution.

The experiment is part of an ongoing project by Professor S.K. Dhaka from Rajdhani College, University of Delhi; Dr Vivek Panwar from Rajdhani College and Earth Root Foundation; and Professor S. Hayashida and Y. Matsumi from the Research Institute for Humanity and Nature (R Kyoto, Japan.

Source: weather.com


बाहर खतरनाक प्रदूषण, घर है सुरक्षित : स्टडी

15 नवंबर से 15 दिसंबर तक की स्थिति का आंकलन

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नई दिल्ली : नवंबर, दिसंबर के महीने में इस साल बाहरी प्रदूषण की तुलना में इंडोर प्रदूषण आधा रहा है। एक महीने लंबी स्टडी के प्राइमरी डेटा के आधार पर यह दावा किया गया है। इसके लिए दिल्ली के द्वारका में दो सेंसर लगाए गए हैं जो निरंतर प्रदूषण की मॉनिटरिंग कर रहे हैं। इस स्टडी में भी सुबह और शाम के समय प्रदूषण सबसे अधिक दर्ज किया गया। लेकिन इंडोर प्रदूषण में इसकी मात्रा काफी कम रही। स्टडी में बताया गया है कि बाहर और अंदर मौसम का असर अलग-अलग होता है। इसी वजह से यह असर रहता है।

ये स्टडी राजधानी कॉलेज के प्रफेसर एस. के. धाका, डॉ. विवेक पंवार, अर्थ रूट फाउंडेशन, रिसर्च इंस्टीट्यूट फॉर ह्यूमेनिटी एंड नेचर जापान के प्रफेसर एस हयाशिदा और याई मतसुमी ने की है। इसमें 15 नवंबर से 15 दिसंबर तक की स्थिति का आंकलन किया गया। स्टडी में सामने आया कि ज्यादातर दिनों में घर के बाहर की बजाय अंदर काफी कम प्रदूषण है। इंडोर प्रदूषण के आंकलन में पाया गया कि पीएम 2.5 का स्तर यह दिन और रात में काफी कम रहा। बाहरी प्रदूषण की तुलना में यह लगभग आधा रहा। स्टडी में बताया गया है कि 25 नवंबर और 2 दिसंबर को प्रदूषण का स्तर पीक पर रहा और यह 500 से 600 एमजीसीएम के बीच दर्ज किया गया। यह गंभीर श्रेणी में है लेकिन यह बाहरी प्रदूषण की तुलना में काफी कम रहा। अंदरूनी प्रदूषण बाहरी प्रदूषण की तुलना में विभिन्न दिनों में 10 से 60 प्रतिशत तक कम रहा। पंवार के अनुसार घर में रहना प्रदूषित दिनों में अधिक सुरक्षित है। स्टडी में यह भी सामने आया है कि दोपहर के समय पीएम 2.5 का स्तर कम हो जाता है। लेकिन अंदरूनी प्रदूषण के मामले में ऐसा नहीं होता।

इंडोर प्रदूषण के आंकलन में पाया गया कि पीएम 2.5 का स्तर यह दिन और रात में काफी कम रहा

Source: Nav Bharat Times

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