

VOLUME 5 • OCTOBER 2021

# EARTH ROOT



**"LIMESTONE - A BOON  
FOR WATER TABLE IN  
RAJASTHAN"**

**PROTESTS: GREEN GROUPS CALL FOR  
COP26 POSTPONEMENT, CLIMATE CHANGE  
PROTEST IN VANCOUVER, KHARASROTA  
PROTEST**

**'THE DECLINE OF  
AFRICA'S LION  
POPULATION'**

**'Oil spill in the  
Mediterranean'**

**'Delhi's  
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# "LIMESTONE - A BOON FOR WATER TABLE IN RAJASTHAN"

-Tabish Khan and Praveen Gawali  
Indian Institute of Geomagnetism, Navi Mumbai

The exquisite and beautiful white marble for the Taj Mahal was excavated from Makrana a small town in Rajasthan. It was also used in the construction of the Victoria Memorial in Kolkata. Rajasthan is one of India's richest mineral and ore resource state. The assortment of geological formations of great economic value has formed due to many geotectonic events in the past. The dry and 'deserted' look of Rajasthan is quite deceptive. It has many geological tales that have not yet been unraveled.

Marble is the end product of limestone. The heat and pressure generated by tectonic events generate copious amounts of energy to transform the molecular structure of limestone. The energy prevalent during such episodes cooks the limestone and churns it out as marble. It is similar to the action wherein the dough is transformed into bread by heat.



*Red line shows limestone slurry below the gravels laid down for foundation of a building.*

The districts of Kota and Jhalawar from east Rajasthan are famous for rich deposits of limestone. We all know it as Kota limestone. They are the siliceous variety of calcium carbonate. In more common terms it is also called chalk and is a mineral of sedimentary origin. The two districts are estimated to lie on about 100 million tonnes of limestone. The livelihood and economy of the districts are dependent on the mining and excavation of this resource. It is also exported nationally and globally earning huge foreign exchange.

As is the norm everywhere the export variety of limestone is different from the excavated form. It is grinded, molded, and polished to enhance its beauty. This process leaves behind a lot of sludge and scrap. This waste material is dumped across the road, field, and open ground, lake, and river banks. This in itself is not a bad thing, in certain cases. If the agricultural field and its soil are acidic, then limestone, the ground/powdered one, helps to make it alkaline. Soil alkalinity or acidity is called the pH and is quite important since it directly impacts the growth and life of plants. The right pH makes available all the nutrients needed for the plant. The nutrient has to stay insoluble state for a longer period and it needs to be mobile so that it reaches the plant in an available stage of consumption. The solubility of nitrogen is optimal at a pH between 4 and 8. Most of the nutrients are optimally functional at pH 6.0 and 6.5, hence maintaining this level is of paramount importance. In some parts of the Kota district, the pH was seen to be as high as 8. So the dumping of waste material may be of some help in maintaining the nutrient availability in this region.



However, there is another downside to this dumping of waste limestone material. The increasing urbanization and construction activity are likely to give rise to environmental issues and problems in these two districts. The contractors, and gullible, are both using this scrap material to build their foundations on, be it small houses or high-rise buildings. Limestone may look physically very strong and robust, but chemically it is very weak. The availability of water and its interaction with the calcium carbonate can easily wear down the rock. The process becomes doubly swift with the scrap.

## NEVER RUN THE TAP WHEN BRUSHING TEETH

**Please be mindful of closing the tap while brushing your teeth or washing your hands. Majority of us don't close the tap when we are taking soap for washing the hands. Please be careful about it because every drop is precious.**



The limestone terrain all across the world has given rise to exotic and interesting landscapes. The elephant skin-like soil surface and the formation of sinkholes and outlandish caves are the results of karstification. The corrosion, erosion, and chemical weathering brought about by water seepage, percolation or flow leads to karsts. Jhalawar district is called the Cherrapunji of Rajasthan. Recent studies have shown rising water table. There are places where up to 25 cm water rise is seen every year. The post-monsoon water table is anywhere between 2 and 8 meters higher than the rest of the seasons. Karsts develop unique hydrogeology in the area giving rise to more aquifers that are productive, but also prone to pollution. Karst topography in India can also be seen in places like the Vindhya (SW Bihar), parts of Himalayas (Jammu, Kashmir, Dehradun, Mussorie, etc), Madhya Pradesh (Pachmarhi), Chattisgarh (Bastar), Andhra Pradesh (Visakhapatnam), and many other places.

The interaction between fluids in the interstitial soil spaces with the carbon dioxide from the atmosphere creates carbonic acid.



***Image showing Dumped Slurry near pond.  
The readily available water will start  
corroding the basement***



***Slurry dumped along a construction  
site near a river***

If this even slightly acidic solution has a free flow through limestone terrain then it dissolves the limestone into calcium ions and carbonate ions. This process is seen to have created conduits and passages in caves. It has also created new caves. Such formations in the wilderness can mean nothing to humanity. However, if such a process takes place in cities and towns then the impact and loss of life and property can be quite tragic.



## *Slurry dumped on the bank of a river*

The increased construction activity in Kota and Jhalawar has induced people to use the limestone dumps to fortify their building foundations. This mineral is physically quite strong, but chemically very weak. It might give a sense of strong foundation for now, but in near future, the corrosion could lead to the weakening of this foundation due to chemical activity.

**We need to educate the common people about the perils of using limestone and the dangers lurking round the corner!!!**



## 31ST OCTOBER WORLD CITIES DAY

World Cities Day is celebrated to: promote the international community's interest in global urbanization; and, push forward cooperation among countries in meeting opportunities and addressing challenges of urbanization, and in contributing to sustainable urban development around the world.



## SHOP FOR ORGANIC PRODUCTS.



Organic products help in reducing pollution and they use less energy. Animals are not harmed in this process. Such products are more fresh and it doesn't involve chemicals and toxic substances so it's good for your skin and health.



# THE DECLINE OF AFRICA'S LION POPULATION

-Suhab Aktar Barbhuiya

Lions symbolize power and strength and are synonymous with the wild. Yet few recognize that these elegant cats have undergone a disastrous range reduction and have reduced to only about twenty thousand. That is because of substantial habitat loss. We will never know just how many lions there once were, but measured trends in recent decades are alarming. Lions are extinct in 26 African countries and have disappeared from over 95 percent of their historic distribution where they once ruled. Wildlife experts estimate that there are only about 20,000 lions left in the wild. Though lions still exist in 28 African countries and in India. There are only six protected area complexes known to support more than 1,000 lions. Thankfully they are safe there for the time being but in about 60 other protected areas the situation is far less secure.

Lions are currently listed as "vulnerable" in the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. In West Africa, the species is now classified as "critically endangered." Any additional rapid decline will make the species appear "endangered" throughout its range.



## WHAT IS IUCN?



The IUCN Red List is a critical indicator of the health of the world's biodiversity.

IUCN's mission is to "influence, encourage and assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable and ecologically sustainable".

Lions are the most affected by the illegal trade in bushmeat and body parts, conflicts with locals due to poaching of livestock, habitat loss and fragmentation, and unreasonable trophy hunting. The increase in poaching of body parts is particularly worrisome and may spell the end of many smaller and more unprotected lion populations.

The decline of the lion is devastating proof of our destruction and over-exploitation of mother nature. In addition to the need to save our own conscience, there are many important reasons to save the majestic lions. As apex predators, lions play a key role by helping control the herbivore population. Lions prey mainly on herd animals, often taking the weakest. This in turn keeps the herds resilient and healthy.

The Lion is not just a fascinating species or just another wild animal living in some far away savanna. The Lion is a unique animal that plays a pivotal role in the health and diversity of an ecosystem. If the lions go extinct, the entire system would collapse. So we need to conserve this gorgeous beast.



# TIME TO GO VEGAN

-Rajasvee

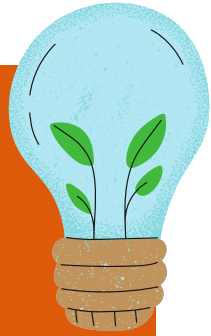
Often times we tend to neglect certain things by focussing on the obvious and far greater problems. So is the case with animal agriculture. Our attention to find solutions in order to move away from fossil fuels to combat climate change has led us to ignore the largest and probably the next biggest environmental issue- animal husbandry. It is not only the second-largest source of human-made greenhouse gas emissions but also contributes to deforestation, water and air pollution, and biodiversity loss.



Livestock production has a large carbon footprint and a significant potential for global warming. It accounts for 14.5 percent of worldwide greenhouse gas emissions which are extremely harmful to the environment. How can livestock production or animal agriculture for that matter affect the climate, you ask? Well, it's quite simple, water and land are used to grow crops to feed animals which are then used to bulk up these animals for slaughter. The animals emit noxious levels of CO<sub>2</sub>, methane gas, and excrement that pollute the waterways and also the air. These animals are then transported in trucks and processed in large factory-style slaughterhouses. Creating one calorie from animal protein necessitates 11 times the amount of fossil fuel input and emits 11 times the CO<sub>2</sub> as producing one calorie from plant protein.

## EAT LESS MEAT

We are not advocating that everyone should stop eating meat. Meat is important part of heritage and identity. But we all must develop meat consciousness and reduce the level of meat in our diets. Shifting to more plant based food is essential to combatting climate change. If we decide to eat fewer meals with meat and dairy each week. We can have a huge impact on health of the planet.



A report released in 2018, concluded that global greenhouse gas emissions which reached an all-time high of more than 3.7 billion tonnes must fall sharply to keep global warming to 1.5C. The question that now arises is if there is a way out of this. Indeed, there is always a solution to the problem. This, however, involves going vegan or reducing the intake of dairy, meat, and eggs. It is a smart way to minimise the carbon footprint and the negative consequences that our diet has on the environment. In reality, consuming little or no fat can reduce the risk of a variety of illnesses, including heart attacks, strokes, diabetes, and many kinds of cancer.

# OIL SPILL IN THE MEDITERRANEAN

-Sahithya Balakrishnan

The oil spill in Syria has added to the threat that marine life faces. Syria's largest reserve, Baniyas, was the source of the oil spill that spread across the Mediterranean Sea. A tank filled with 1500 liters had been leaking since August 23 at a thermal power plant on the Syrian coastal city of Baniyas.

The oil spill covered approximately 800 sq. km, around the same size as New York City, and about 7 km from the Cypriot coast. A 400-meter barrier off the Karpas peninsula was constructed to prevent the slick from reaching the shores.

The locals around the Baniyas and Jableh-locals have warned about the potential threat to marine life that the spill has and would cause.

Turkey, which shares a border and coastline with Syria, was drawn in to contain the spill. Fuat Oktay, the Vice President of Turkey, told the state-run Anadolu news agency, "We are taking the necessary measures by mobilizing our resources to stop any chances of the spill turning into an environmental disaster."



**OIL SPILL - ROZINA AKHTAR**

*The cartoon depicts the degradation of life on earth due to various human activities in a comical manner with the exchange of dialogues between different planets.*



Image source : 7news.com.au



This is the second major spill this year that has dealt another devastating blow to the environment. The Israel country beaches were devastated by an oil spill off the coast of Israel- tar deposits across the Lebanese coast in February. As a result, many sea animals and sea birds were found washed up on the shore, covered in sticky, black film. According to the Israeli government, the clean-up would take months.



It is time to prevent further accidents that can destroy marine life and destroy the ecological balance already on the verge of falling. Every disaster like the recent oil spill is another step back in the journey towards restoring health to our environment. So let us take responsibility and work towards a greener and healthier future!



## 23 OCTOBER INTERNATIONAL SNOW LEOPARD DAY

The main purpose of this day is to show the importance of snow leopard conservation and raise awareness about this incredible animal.



## TRY TO DO CARPOOLING

An eco friendly, economical and socializing initiative, carpooling is considered as the most sensible option for people of the same local locality commuting to common destination. It reduces pollution and traffic.



## START COMPOSTING

COMPOSTING IS A PRACTICAL AND ENVIRONMENTALLY FRIENDLY WAY OF CARING FOR YOUR GARDEN OR KITCHEN GARDEN. IT INVOLVES PLACING ORGANIC WASTE INTO A COMPOST PILE WHERE BACTERIA AND OTHER MICROORGANISMS BREAK IT DOWN AND TURN IT INTO A FERTILIZER. COMPOSTING TURNS YARD WASTE INTO MULCH, ADDS TO NUTRITION OF YOUR SOIL AND THE WASTE DOESN'T CONTRIBUTE TO LANDFILLS.



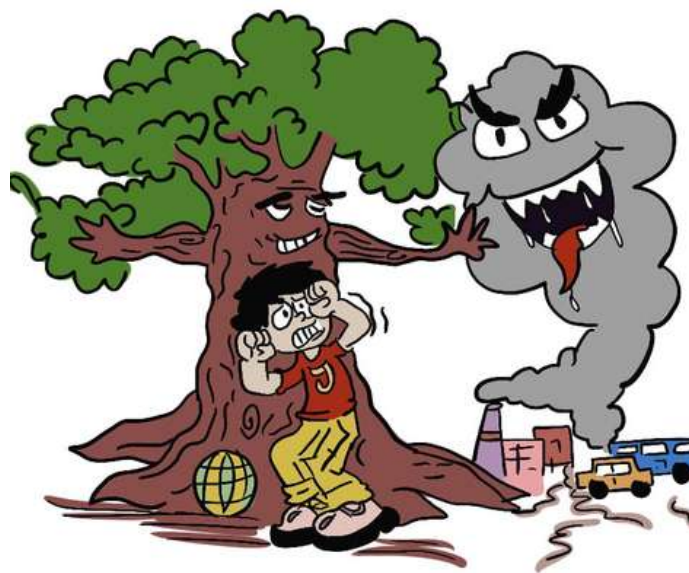
# DELHI SMOG TOWER: A QUICK FIX TO AIR POLLUTION

-Deepika

When it comes to Delhi, what instantly comes to one's mind is the mouth-watering street food and shopping sprees. But sadly, this has become old news. Now what steals the show in Delhi is 'SMOG'. In the past few years, this problem could not be clearer to Delhi residents, pun intended. In the year 2017, in November, Delhi, the level of PM 2.5 and PM 10 hit 999 micrograms per cubic meter, indicating that the situation was spiraling out of control and if no measures were taken then the damage would be great.

Driven by the orders of the Supreme Court (2019 & 2020) the government was quick enough to take action. Under a pilot project, it installed two smog towers in Delhi both at the prime location of Connaught place and Anand Vihar. Although it is not the first, as the Gautum Gambhir foundation already installed one last year in Lajpat Nagar and two more, later on, there is another smog tower located in Bengaluru at Hudson Circle.

The Delhi smog towers are as high as 24 m and work on the 'Downdraft air cleaning system'. It is supposed to discharge 1,000 cubic meters per second of air back to the environment. The tower has 5,000 filters arranged in two layers to filter the particles. The 'MICRO' layer entraps particles of 0.3 microns, while the 'MACRO' layer filters particles around 10 microns and larger. The clean air will spread in the range of 1 km.



## ***Air pollution ~ Khushi Kaushik***

*"Can you see that giant monster coming.....??"*  
*This cartoon portrays the detrimental effects of air pollution on children's health and emotional well-being. Hence, it is everyone's obligation to ensure that the future of the next generation is not jeopardised.*

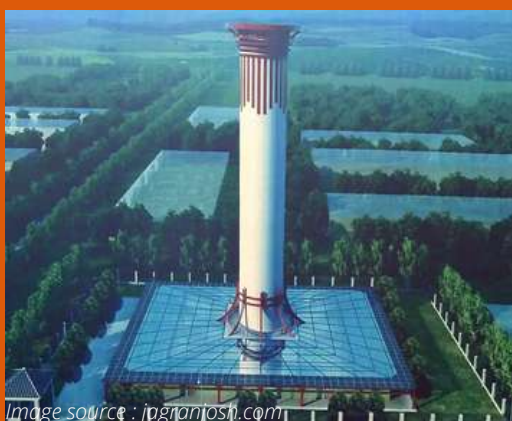


Image source : jaganjoshi.com

Delhi got its first smog tower installed at Baba Kharak Singh Marg, Connaught Place, inaugurated on August 24 as part of the Delhi government's drive to fight air pollution.

The 24-metre high tower was being operated on a trial basis, with the Delhi Pollution Control Committee (DPCC) monitoring its effectiveness.

IIT-Bombay and IIT-Delhi will join hands to monitor the impact of the smog tower under a pilot project of two years. It is the first time that such a huge step has been taken by the government to control air pollution. But the major question is will it be effective?

Anumita Roy Chowdhury, ED of Research and Advocacy at Centre for Science & Environment pointed out the obvious flaw in the tower, “How do you filter the air in a dynamic scenario when it is not a confined area?”.

There are smog towers, large and small, installed across the world in countries like China, Netherlands, South Korea, but so far there is no concrete evidence that they are indeed successful in lowering down the air pollutant level.



Hence, we have to wait and see whether this 20 crore project will bear fruits or will it turn out to be a vain effort that will go down the drain.



**13TH  
OCTOBER**

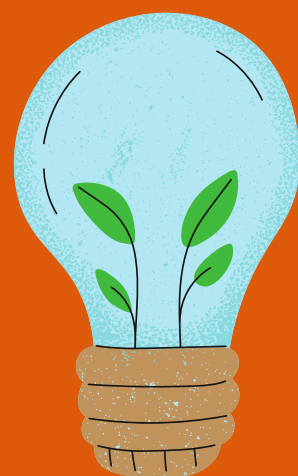
**INTERNATIONAL  
DAY OF  
DISASTER  
REDUCTION**

The International Day for Disaster Reduction is an international day that encourages every citizen and government to take part in building more disaster-resilient communities and nations



## CHOOSE ECO FRIENDLY PERSONAL CARE PRODUCT

When you use synthetic and chemical products, they end up contaminating the air and water. According to a research some ingredients in sunscreen damage coral reefs, causing their bleaching. By using bio-cosmetics you will avoid this damage and protect the ecosystem.





# NEXT MONTH'S ARRIVAL: AIR POLLUTION

-Sahithya Balakrishnan



Despite the attempts to tackle the problem, air pollution continues to be an issue that refuses to leave. Thus, lives and livelihoods are being cost, with the Indian business facing a loss of \$95 billion. In addition, the International Panel on Climate Change noted recently that despite very low greenhouse emissions, it is made moot by not cooling reduced methane and other ozone precursor emissions. Thus, while long-term climate actions are good, short-term plans for clean air gain are also important.

Next month, North India will face another high pollution season and even with the slow down of the economy due to the pandemic, National Ambient Air Quality Standards found that the air quality was not up to standards. In fact, according to an analysis by Council on Energy, Environment, and Water (CEEW), Delhi had worse air in winter 2020 than 80 winter days in winter 2019.



It is time for action. Delhi must introduce measures like Beijing, which introduced emergency measures in advance. We can use air quality forecasts to issue health warnings to halt pollution sources. Initiatives like this also require mutual trust between citizens and authorities to implement emission control.



Farm fires are another challenge that needs intervention. Though crop residue burning must stop, the domination of rice in Punjab's Kharif crop poses a problem. Problems in situ and ex-situ would continue to occur due to the inadequacy and underuse of hybrid seeds and super seeds used. The increase in diesel price is an added issue. Another problem that needs addressing is indoor pollution. Despite the government pushing households to use cleaner cooking fuel, 38% of Indian households use polluting solid fuels alongside LPG due to lack of affordability. These are a huge factor that contributes to the poor air quality in Delhi.

These problems need immediate addressing. With the past year proving the connection between health, economy, and environment, it has solidified the fact that these are issues that require close attention. After all, everyone has the right to breathe fresh and clean air.



**24 OCTOBER**

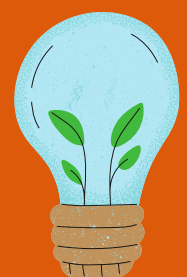
## **INTERNATIONAL DAY OF CLIMATE ACTION**



**Climate action means stepped-up efforts to reduce greenhouse gas emissions and strengthen resilience and adaptive capacity to climate-induced impacts**

## **INVEST IN ECO FRIENDLY TECHNOLOGIES**

**Eco friendly technologies help preserve the environment through energy efficiency and reduction of harmful waste. They use latest environmental science and green chemistry to reduce the harmful effect of human activity on earth.**





# WHO AIR QUALITY GUIDELINES 2021

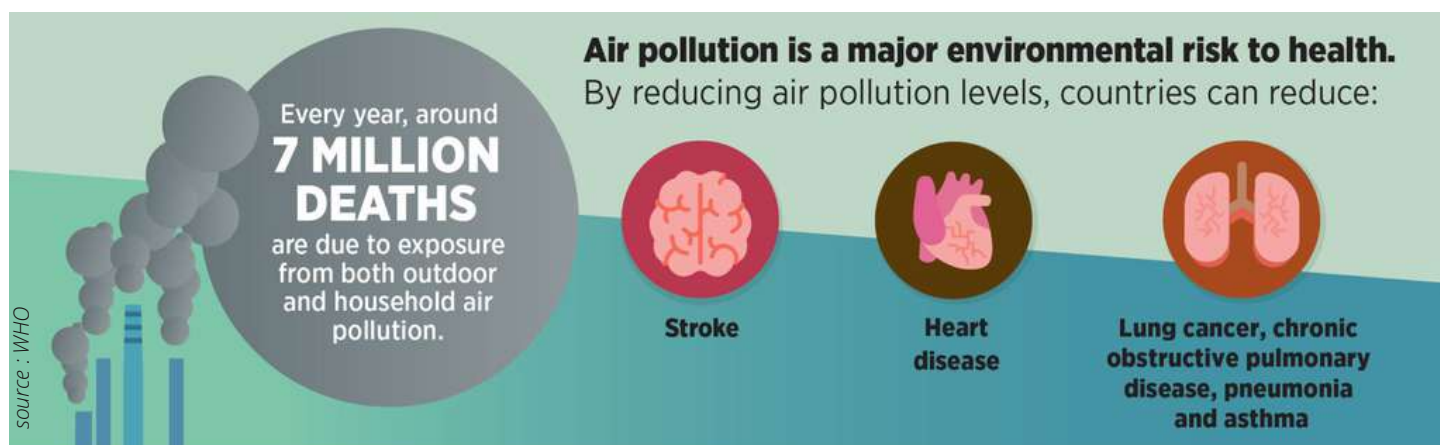
-Rahul Patel



source : WHO

The need for updated guidelines had become imperative as the last update was more than 15 years ago as the public health threat is more than ever. There has been tremendous progress in the scientific area regarding air pollution, mortality, and morbidity. Health effects have been studied in WHO regions instead of just Europe and North America. Air pollution has been implicated in developing new conditions (asthma, diabetes, reproductive outcomes, and several Neuro-cognitive endpoints) which were not included in the last update. Advances in statistical analysis and machine learning have facilitated studies of nationwide populations, including rural areas.

Practices such as quantifying UFP in terms of PNC for a range with a lower limit of  $\leq 10$  nm and unrestricted from above, early warning systems and action plans to alert the population to stay indoor



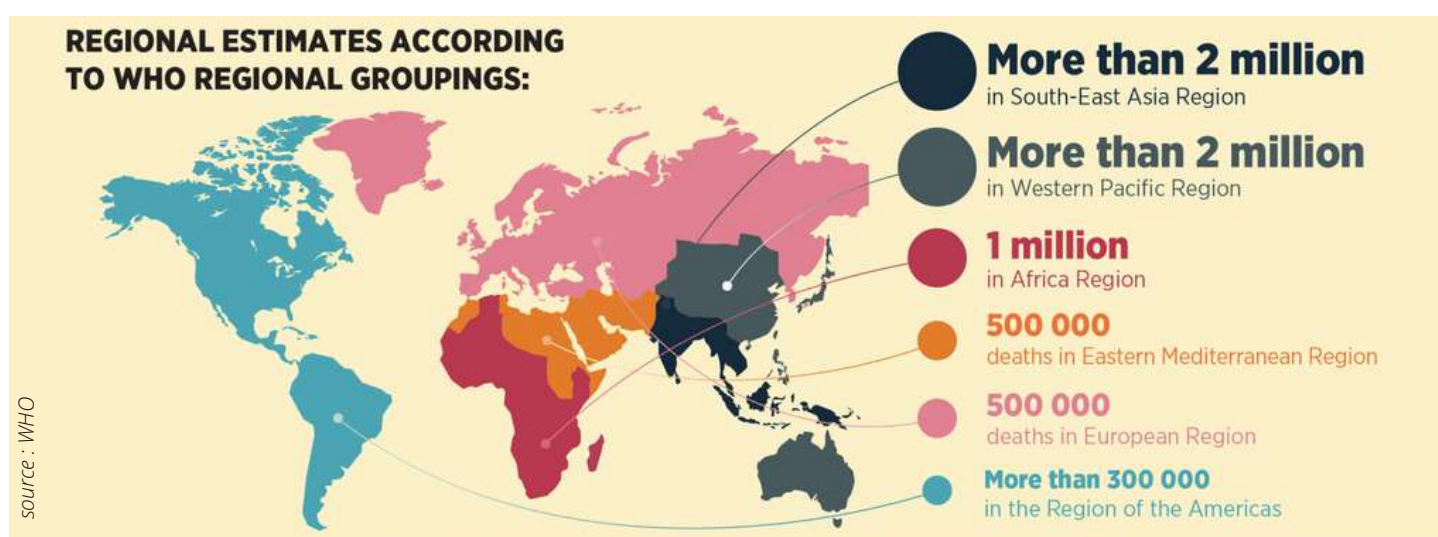




from dust and harmful air, wind erosion control through expansion of green spaces improve air quality monitoring of other PM types. It's vital to disseminate information regarding air pollution. Although the guidelines are universally applicable, innovative communication tools are needed in mid-income and BPL areas.

WHO website being a channel for disseminating information aims to send strong and clear messages. WHO aims at hosting events to introduce the guidelines globally, including high profile events, smaller workshops of end-users, meeting medical and scientific communities, consultation in affected regions. The authorities aim at reducing concentrations of pollutants in the air through urban planning. Organizations responsible for general awareness can use the guidelines for promoting citizens and authorities. Standards are enforced by authorities to define the acceptable level of air pollution for a region by averaging time, measuring techniques, data handling, and choosing a percentile. For tracking implementation, governmental actions are needed to incorporate the AQG into regulations by establishing a periodically updated database.

Air pollutant concentrations in rural areas and tier-II cities should be taken into account too. The estimates of disease burden by the UN can be used to inform global estimates of disease and economic burden. The updated AQG levels provide a set of health and exposure indicators for the measurement of the health impacts of air pollution.



# NO TO COP26 CLIMATE SUMMIT : GREEN GROUP

-Ritika Sen

COP26 Climate conference which is to be held in the two upcoming months (October 31-November 12) in Glasgow, Scotland is being opposed by people for postponement. A collaboration, Climate Action Network, of around 1500 environmental groups is asking the government to cancel the conference and shift it forward due to COVID-19. According to them, it is not safe to have such an international conference. The major issues according to them are- travel, quarantine costs, and a surge of Covid 19 cases. Around 200 heads of the state and the government are invited to attend the conference along with thousands of delegates, campaigners, countrymen, and the media. Since from global South, so many people will be gathering among which many are in UK's Red List read list. Since the turnout will be huge, there are chances that people from third world countries (where vaccination might not be done well and is actually neglected by rich countries for climate crisis happening) might be left out, which is not ideal.

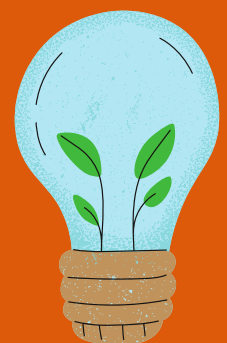
According to WHO a number of around 57% of people in Europe are fully vaccinated whereas in Africa only 3% are fully vaccinated. It can lead to a big blunder for the safety of all.

The government is ensuring that funding will be given to the hotels which will be converted to quarantine centers, vaccines will be provided to the delegates who need them. COP26 president Alok Sharma said that proper planning of the summit has been going on since last year with all their partners, including the Scottish Government of the UN, for the safety accessibility of people.



## GET RID OF SINGLE USE ITEM

Single use items or disposable items are products and packaging that we throw out after using them once. These items are used for only few minutes but their impact on environment can last thousands of years. There are many sustainable alternatives to single use items like using wooden cutlery instead of plastic ones, avoid using plastic straws.





# HUMAN-ANIMAL CONFLICT IN INDIA

~Sarthak Mishra

India among many big countries has a serious problem of humans intruding deeper and deeper into nature due to which a number of animals face the threat of extinction. Depleting forest cover, encroachment and construction in forested areas affect the habitat of animals. This leads to an increase in human-animal conflicts that often causes agricultural crops and property damage, killing of livestock and sometimes even humans.

Many Elephants were killed in the last 10 years mostly in Assam and West Bengal region because they ran into moving trains. We have heard many times that a rogue elephant attacks a farmer. According to some reports, 35% of India's tiger reserves are outside protected areas and human-animal conflict affects over 75% of the world's biggest cat species. We have also seen significant growth in the negative interaction of humans with marine species.

Tigers are now known as man-eaters in the Sundarbans, death due to Snakebites have increased in India, leopard and elephant attack numbers

## WHAT IS HUMAN ANIMAL CONFLICT ?

It occurs when animals pose a direct and recurring threat to the livelihood or safety of people, leading to the persecution of that species. Retaliation against the species blamed often ensues, leading to conflict about what should be done to remedy the situation.



**1ST MONDAY  
OF OCTOBER**

## WORLD HABITAT DAY

Recognized by the United Nations to reflect on the state of towns and cities, and on the basic right of all to adequate shelter.





have skyrocketed in the last 5 years these example shows the seriousness of the issue. Even United Nations Environment Programme (UNEP) stated that human-wildlife conflict is the greatest threat to animals and needs to be addressed with utmost priority.



The sensible course of action would be to ensure that human beings don't venture into animal territory. The division of wildlife habitat should be avoided and proper care should be taken so that the connectivity through wildlife corridors is not disturbed. Completely exterminating human-animal conflict is not possible but a well-planned and integrated approach to manage it, can reduce conflicts. And that's why spreading awareness is crucial. Urgent action from the governments is much needed otherwise this devastating trend will only worsen the ecosystems and the biodiversity that exists.



**UNEP** was established by Maurice Strong its first director, after the United Nations Conference on the Human Environment in Stockholm in June 1972.

UNEP addresses environmental issues at the global and regional level for the United Nations. It develops international agreements and national environmental instruments; and, strengthens institutions for wise environmental management.



**2ND SATURDAY  
OF OCTOBER**

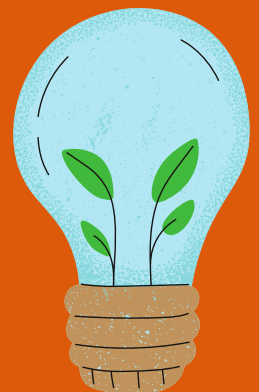


**WORLD MIGRATORY BIRD DAY**

(WMBD) is an awareness-raising campaign highlighting the need for the conservation of migratory birds and their habitats.

**OPEN BLINDS TO LET  
IN NATURAL LIGHT.**

By opening blinds you allow natural light to let in. It gives you positivity and makes you feel fresh. It's eco friendly as consuming natural light prevents you from switching on light.



# KHARASROTA PROTEST

-Ritika Sen

The Kharasrota river protest is an ongoing protest where people of the Kendrapara district in Orissa are raising their voices against the mega drinking water project. This project is being carried out on the Kharasrota river, with the aim to supply water to four blocks and three NAC's (Notified Area Council) of the district. The project is being outsourced by the Hyderabad based company Megha Engineering India Private Limited. The project has currently started at Nuahat which is under the Chandbali block in the Bhadrak district.

The Bhitarkanika is demanding to postpone the project work until they analyze the whole situation and has given the warning to escalate the protest if the agreement is not being made properly. According to them the project is not very good for the environment and needs certain changes so that the livelihood of the area as well as the environment does not get exploited.



## 24TH OCTOBER UNITED NATIONS DAY

United Nations Day is an annual commemorative day, reflecting the official creation of the United Nations on 24 October 1945.



According to the people, the water from the river is being lifted from near Barunadiha for water treatment. Barunadiha and Bhadrak come under the eco-sensitive zone under Bhitarkanika (Eco-sensitive Zone Committee). The people of the committee and the residents are protesting together, as they say, that the report made on the project describing the functioning as well as resolution is based on false information.



There is an aggregate of 410 villages in the area. The water from the Kharasrota river is actually being used to meet the people's requirements. Also, the water is beneficial for the nutriment of the wide variety of trees in the Luna Forest. During the monsoon, the water is abundant for people but during the remaining year, there is a shortage of sweet water. Along with that, the river is a home for many crocodiles. If the water level lowers, they have to leave which can lead to conflicts.

# CLIMATE CHANGE PROTESTS ACROSS CANADA

-Sarthak Mishra

Protests related to climate change are always in the news and continue to happen in different parts of the world. The current ongoing protest in Canada has drawn a great deal of attention. A large number of protestors in Downtown Vancouver gathered for the call of action against climate change. The demonstrators say that the provincial and federal governments have failed to address climate change as an emergency and have failed to take any action against it. Now the protestors want the climate emergency to be a top election issue.

Several severe wildfires have destroyed many forests across Canada. This year the country faced one of the worst wildfire seasons on record. There has been flooding, unprecedented heat and droughts which have brought hardships for the local communities. The recent air quality issues have made everyone even more worried about climate change and that's why people have started talking and protesting about climate change. The protestors want action against climate change to be at the top of the manifesto of every political party in the upcoming election.

## CLIMATE CHANGE

Climate change includes both global warming driven by human-induced emissions of greenhouse gases and the resulting large-scale shifts in weather patterns.

The report of the Intergovernmental Panel on Climate Change (IPCC) warned us about climate change, dangerously approaching, an irreversible out of control situation. The report suggested that human-generated greenhouse gases have already reached enough high levels in the atmosphere which may bring enormous suffering for the future generation in the form of climatic disasters. The average global temperature is likely to increase by 1.5-degree Celsius (maybe even more) within 20 years.

It has become very important to take immediate and large-scale action to reduce carbon emissions. The climate crisis has started to take a toll on the existing ecosystem. Political parties should also focus on this issue. It's only going to get worse if we don't act now.





# Motivational Story

## THE HUMANLY ELEPHANT

-Sanyukt Kulshrestha

As my heritage from my grandmother, I have numerous tales that belong to the village that she had to leave behind. Most of them had one or more animals in them. These tales generally ended with a simple sentence “Ek din aaegaa jab jaanvar hee insaan ko insaanityat sikhaaegaa” (there will be a day when animals will teach humans humanity). Even though my grandmother is no more, I am reminded of these tales even today, thanks to Brahmadathan and Damodaran Nair.

This pair of mahout and elephant's friendship lasted for 25 years. And finally ended with the death of Damodaran Nair due to cancer, who was both a trainer and a friend. They were the dynamic duo of major festivals across Kerala, especially The Thiruvappu Anayottam, an elephant race that was their last public event as leaders.

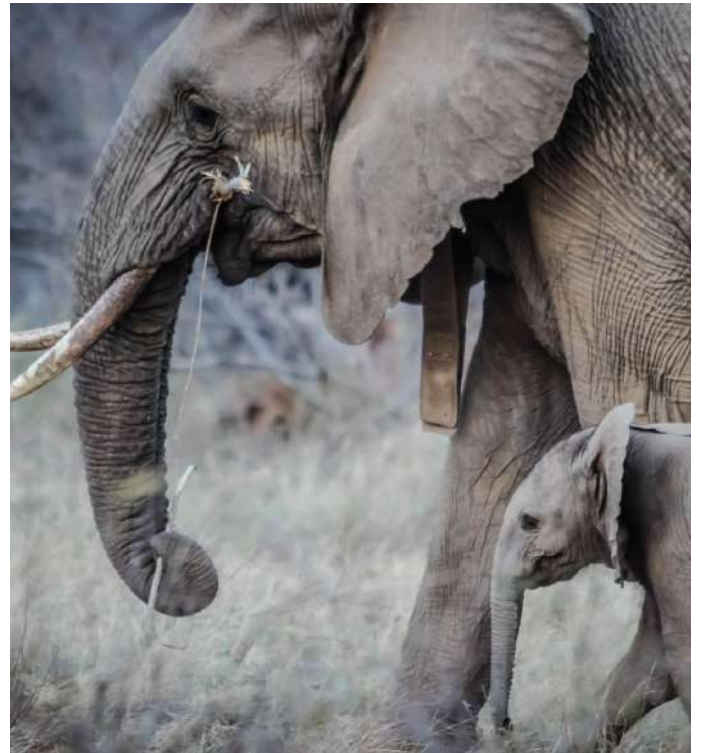
Damodaran of Kerala's Kottayam district was a trainer and a mahout for the last 60 years. Nair's son Rajesh said that Damodaran treated Brahmadathan as a son. On his death bed, Nair expressed his last wish to see Brahmadathan to Rajesh.

Alas, the wish of this dying man could not be fulfilled. As just after few minutes of this incident Damodaran passed away. But Rajesh and the other relatives decided to respect the last wish of the deceased.

Brahmadathan, along with Rajesh walked for 25 kilometers and finally reached the place where the mortal remains of Nair were kept. The elephant with his tusk touched and tried to feel his friend. No one including the gentle giant could hold back their tears after seeing this.

Rajesh also said that this is not the first time that something unprecedented has happened amongst them. Because once in the elephant race, Brahmadathan saved Damodaran's life when an elephant angrily attacked him.

We, the people who call ourselves the toppers of the food chain, keep destroying what marvels of mother nature we have as a gift under the name of development. I think we need to learn that the development which we seek so badly will destroy nature and stories like these, which people hold on to as a heritage from our parents and grandparents.



Now, just imagine if we keep destroying what we have, then what will our children hold on to as a heritage. And will those stories have the human-ly elephant in them? Finally, I hope that my grandmother is wrong and we rather learn than lose.

# Movie Recommendation

# L U C E N T

-Gauri Patil

A meaningful documentary on the hidden yet cruel production of innocent animals like pigs in Australia has provided us with a different and thoughtful perspective to take action on unethical animal farming. The documentary starts with featuring wounded pigs in a small crate where they can barely move. Roughly five million pigs are slaughtered every year for food in Austria. Lucent brings out concealed inhuman practices around the globe to satisfy human tempting desires.



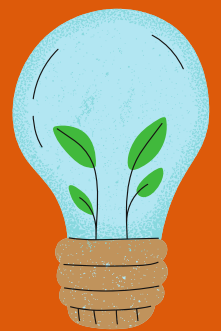
The documentary pleads to see pigs without putting any sort of stereotype. As stated in Lucent, pigs undergo forceful pregnancies four times within a span of two years and are then sent to slaughter. The documentary brings out the unknown lifestyle of pigs before they are consumed by thousands every day all over the world. The work of Lindsay McDougall (the doctor from Triple J) and his team have provided video clips taken by hidden cameras as accurate evidence to create compassion in people while increasing awareness.

Imagine being a mother and killing your own child just because you don't have enough space to move? The pigs in the pig farm are forced to give birth to many piglets while they are put into a small crate. Due to meagre space, the piglets are crushed when the mother tries to sit or move. The piglets are killed and decomposed in front of their mother itself. The documentary provides us with behind the scene of pigs with their ruthless lifestyle created by human beings.

In the end, I would say, humans, can forcefully produce any animal for their own pleasure. Who knows we might start producing dogs in future to have food pleasure? Like "dog farming". At last, the documentary raises questions among viewers to choose their values and to create more awareness as well as to take necessary action with one's own will.

## Try to have a plant based meal.

Switching to the plants based meal diet can help fight climate change. A major report on land use and climate change says that the high consumption of meat and dairy produce is fuelling global warming. The major benefits of plant based meal on environment is that it cuts down carbon footprint, conserve water, save animal and plant habitats and provides cleaner air.



# ANIMAL PLAY/LIFE

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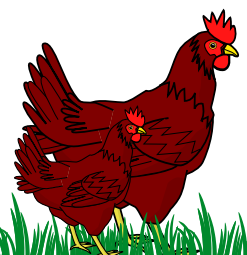
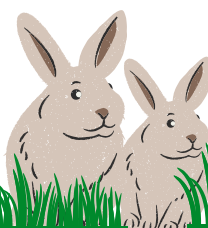
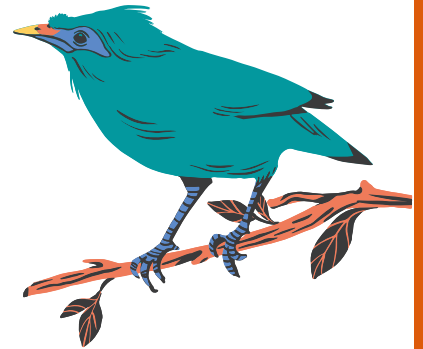
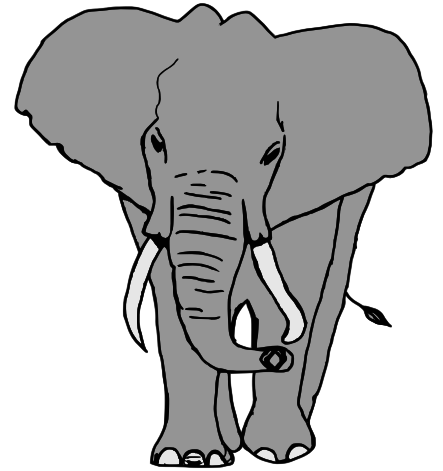
Chop, chop, sizzle,  
It's ready, table number 4,  
Bang, Bullseye!  
Bravo! What a neat shot!  
Alas! One more dead,  
No worries, we have a whole lot;

They get eaten,  
Braised, raw or stir-fried,  
Their heads hung as decorations,  
To feel human's empty pride,  
Their teeth are pulled out,  
Skinned dead/alive, rugs are made out of their hides;

Hunted for mere pleasure,  
Nobody notice their demise,  
Tested for the sake of development,  
Nobody hears their pleas and cries,  
Tamed, put in cages for shows,  
Nobody asks for what they truly desire;

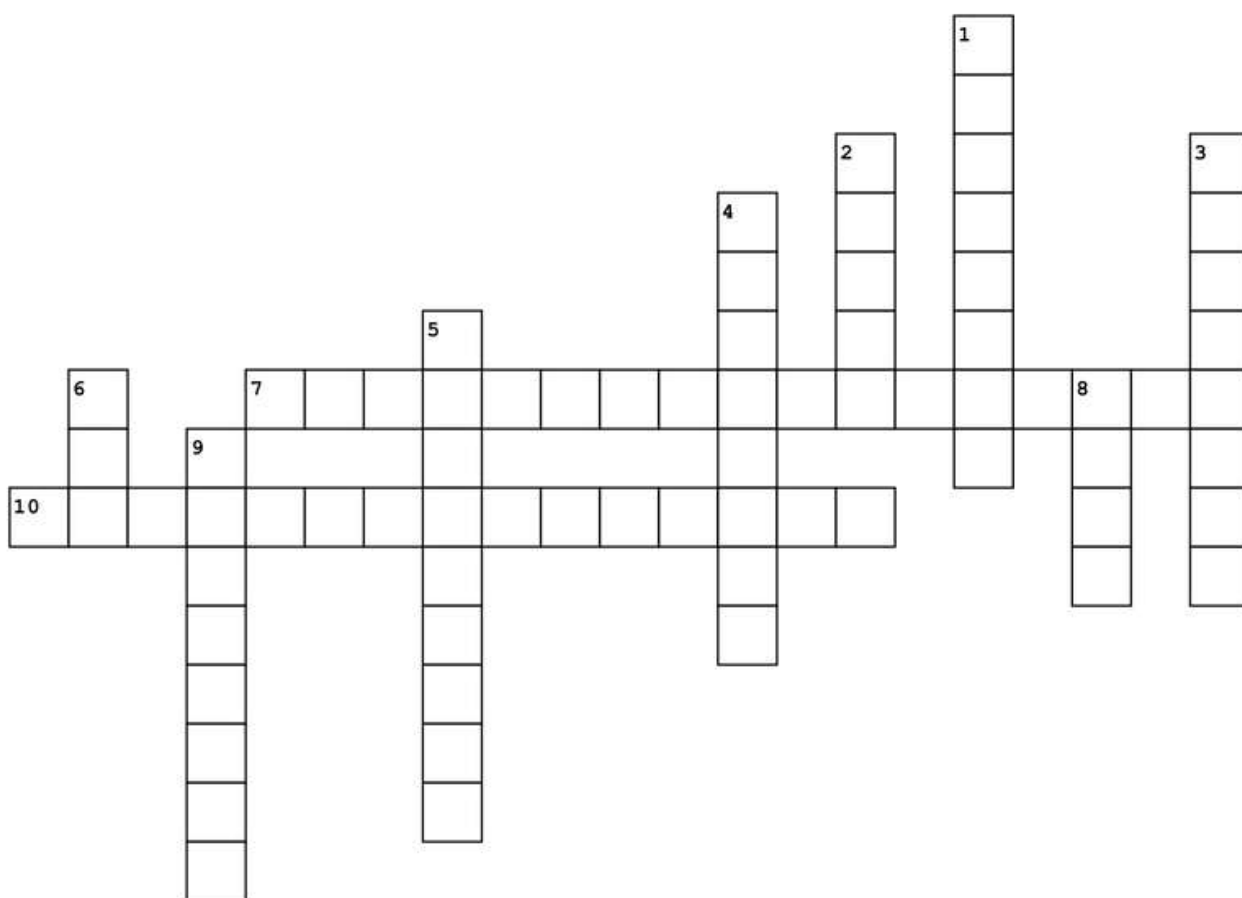
Animals are seen as low lives,  
They are denied to defend or fight,  
Their significance is so low on radar,  
It can't be seen, even if magnified,  
Treated as playthings and abandoned on whims,  
Will a time come in future, when everything will be justified?

-Deepika





# CROSS WORD



## Across

7. sea connected to the Atlantic Ocean, surrounded by the Mediterranean Basin and almost completely enclosed by land.
10. \_\_\_\_\_ is the form of animal husbandry which raises domesticated birds such as chickens, ducks, turkeys and geese to produce meat or eggs for food.

## Down

1. The illegal hunting or capturing of wild animals,
2. The hole in the \_\_\_\_ layer is caused by air pollutants.
3. A country with the highest numbers of lions in the wild
4. The practice of abstaining from the use of animal products.
5. \_\_\_\_\_ is the release of a liquid petroleum hydrocarbon into the environment, especially the marine ecosystem, due to human activity, and is a form of pollution.
6. \_\_\_\_\_ is a specialized agency of the United Nations responsible for international public health.
8. A kind of air pollution, originally named for the mixture of smoke and fog in the air.
9. the largest existing land animal.



BE THE PART OF PLASTIC FREE DWARKA CAMPAIGN



STARTING POINT: OUTSIDE METRO VIEW APARTMENT,  
GATE NO.1, SEC-13B, DWARKA, NEW DELHI, NEAR TO  
DWARKA, SEC-13, METRO STATION, GATE NO.2

2ND OCTOBER  
8:00AM  
DISTANCE:  
2KM

CONTACT: +91-8766317774  
EMAIL: info@earthrootfoundation.org  
www.earthrootfoundation.org

## JOIN US!

Plogging is a combination of jogging with picking up litter. As a workout, it provides variation in body movements by adding bending, squatting, and stretching to the main action of running, hiking, or walking. An estimated 2,000,000 people Plog daily in 100 countries and some plogging events have attracted over 3,000,000 participants. So, let's come together!

Join us on the **2nd of October 2021** for a better and clearer future. For more information check out our website or follow us on social media platforms.

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