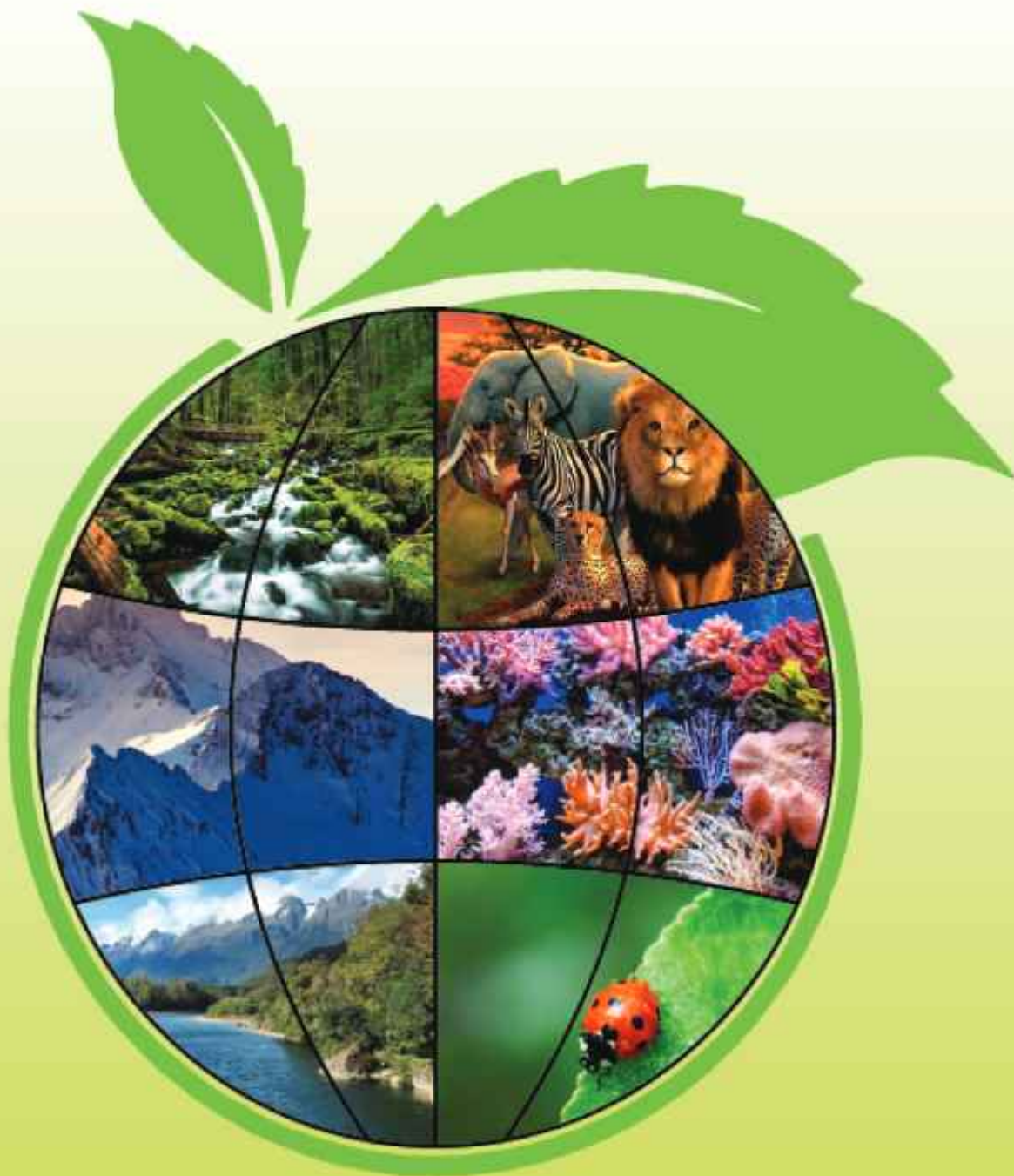




THE SCMC CHRONICLE

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A SPECIAL ISSUE ON ENVIRONMENT

EDITOR'S NOTE

Many environmentalists considered the UN's 26th Climate Change Conference 2021 held in Glasgow, Scotland, as the last chance to save our planet. Although not legally binding on nations, the agreements at the Glasgow Summit have at least set the global agenda on climate change for the next decade. On the background of this historical Conference of Parties (COP26), our Final-Year journalism students have written well-researched articles on some significant environmental issues in this special issue of the SCMC Chronicle magazine. The detailed article on COP26 Conference focuses on the expectations and outcomes of the international attempt to combat climate change globally. The articles cover various perspectives like 'Climate change and indigenous communities', 'Corporate response to climate change' and 'The unobtrusive nature of climate change'. There are articles in this issue that throw light on the slow death of coral reefs, the reduced life span of trees, unpredictable rains in India, the impact of global warming on the Sunderbans and the effects of unplanned plantation drives on the environment. Global and local issues and incidents like the impact of Hurricane Ida in the US, the La Palma volcanic eruption, the importance of the Mullaperiyar Dam for Kerala, the impact of stubble burning and the growth of plant-based meat markets in India have also been covered. There are articles on innovative solutions to save our planet like using cloth sheets to stop glaciers from melting, solar energy projects, electric cars, genetically modified seeds to increase agri-production. There is a growing world-wide concern about consumerism and the trend of young people becoming advocates of minimalism. Our students have also taken a look at this issue in two articles which talk about 'slow fashion' and 'gentrification' in the fashion economy and the concept of a zero-waste lifestyle.

DR SAGAR GOKHALE
(EDITOR)

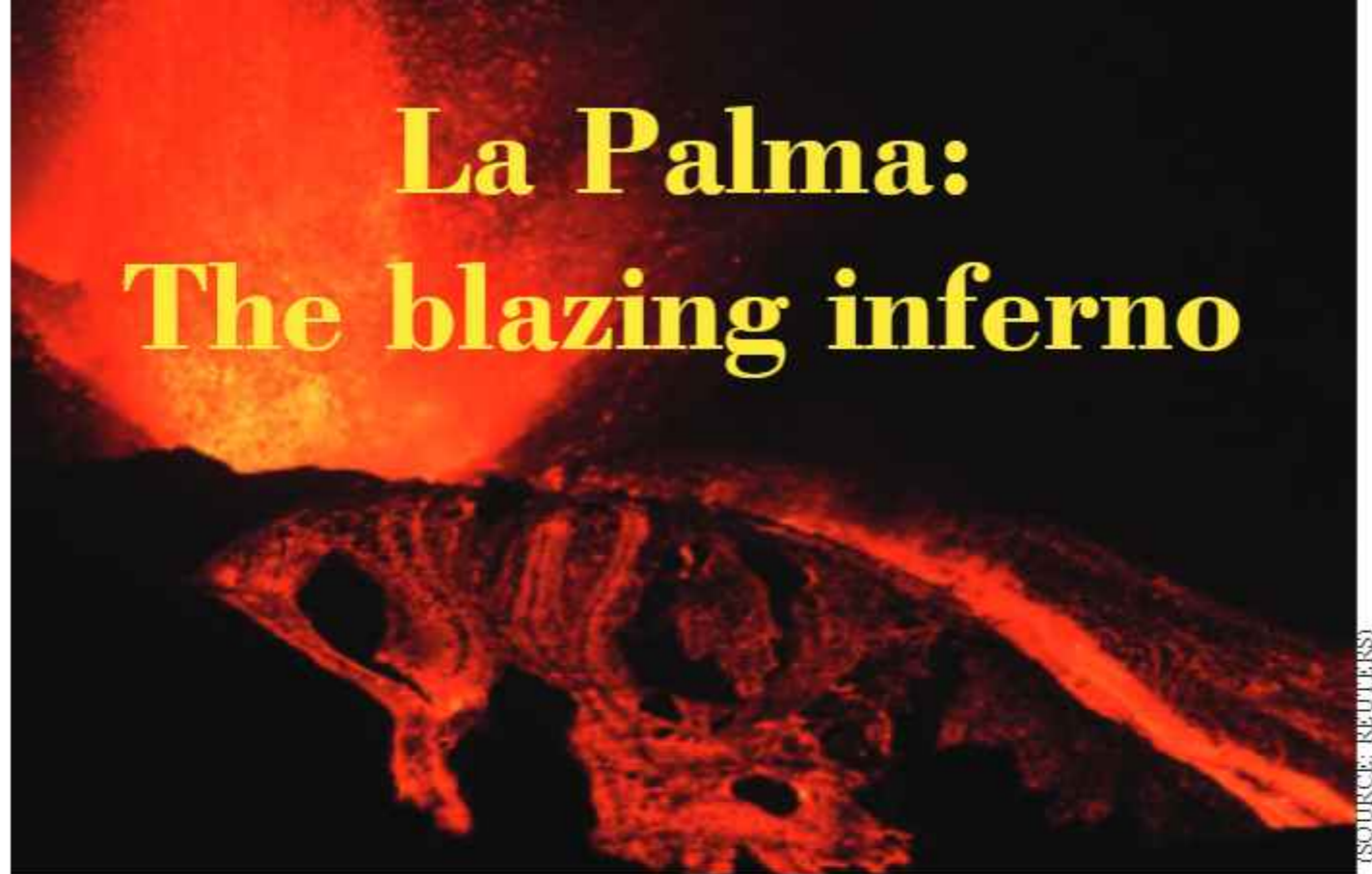
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La Palma: The blazing inferno



Building-size blocks of molten lava spew from the mouth of the volcano

By Somalika Chhabra

The Cumbre Vieja volcano on La Palma, a Spanish island, came to life after 50 years of dormancy on 19 September. Ash filled the sky, and molten rock cooking at 1,075°C oozed from several new crevices and cascaded down the volcano's haunches in the form of Hadean rivers, pushing through houses and farms. Thousands of island inhabitants evacuated ahead of time, with no casualties reported due to the impeccable operation carried out by local scientists and emergency services.

The tremor measuring 5.1 on the Richter scale happened during the early hours in La Palma and La Gomera. The Spanish Geographic Institute registered 42 quakes within 24 hours of the initial tremor, 12 of them measuring over three points on the Richter Scale. Out of the 83,000 inhabitants on the island, 7,000 people have evacuated their homes in La Palma. Then lava flows have covered 941 hectares of land agricultural land and have destroyed over 2,100 buildings.

Although, the recent new rivers have not forced the evacuation of any more residents, those staying within the exclusion zone that authorities have created said to be safe.

Government authorities predict that the greatest of the lava flows measures 1.5 km at its broadest point. The delta of new landforms where lava flows into the Atlantic has also reached a surface of 84 acres.

The scientific committee advising the government said that if the delta grows outwards into the sea, parts of it could break off. That would end up generating explosions, gas emissions, and large waves, but it would not represent a danger to those outside the no-go zone.

Though no damage to life has occurred, the primary hazard to La Palma is the relentless flow of lava. It has already damaged and destroyed hundreds of homes in the island's southwestern region and continues to do so as it inches closer to the coast.

The ash is also a problem: it's difficult to breathe in, especially if you have a respiratory issue, and it obstructs visibility, burns out electric circuits, kills automobile engines, pollutes streams, and suffocates crops. The density of volcanic ash



A satellite view of the bright streak of lava flowing through La Palma

poses a more subtle threat: the weight of accumulated ash on rooftops can lead them to collapse. Along with health and displacement concerns, the loss of livelihood and abandonment of prized possessions is irreparable damage. People had just enough time to carry essential documents and belongings as the life-threatening stream pounded down the volcano.

Tourism has certainly shot up in La Palma. As the island gains international attention, tourists pour in to witness the spewing flames. A favourable future for the inhabitants as the Spanish Government extends its help. One eagerly waits for the day the volcano shall revert back to its dormancy.



A photo of Dilli-Haat.

Sustainability and fashion: is thrifting benefitting us all?

By Nandita Singh Rattan

From Sarojini in Delhi to Chor Bazaar in Mumbai, there are a growing number of flea markets in India, and in between is a new blooming trend of up and coming online thrift stores almost creating a digital flea market of sorts.

Thrifting as a concept isn't new to Indian consumers and while some Indians see it as just a relatively costly form of hand me downs, there's a majority that believes it to be a pocket friendly shopper's stop. Flea markets in fact have been the main shopping market for many low to middle income groups in India and the term 'slow fashion' is rather a new introduction to many. The outlook on slow fashion is that it is eco-friendly, one of a kind, and incredibly affordable—all of which are true and also the USPs of thrift shopping. This perspective on thrifting is part testimonial to the fact that Indian fashion consumers: both lower-middle income groups and higher class are becoming aware of the consequences of fast fashion, and are increasingly being open to appreciating thrift and its practicality. But the catch here is that it's also a way for the affluent class to capitalize on. Haulers are on the rise!

Online thrift shops are a lucrative business model that's

an absolute banger amongst the youth across the country—for both the consumers and sellers alike. It's a surprise seeing many youngsters who earlier fretted over the thought of buying from a flea market to now take pride in donning secondhand fashion, while some have even gone to launch their own stores. Instagram in particular witnessed a rise in thrift shops with many of them delivering across the country even during the lockdown phase of the pandemic, which furthered its buzz and enhanced sales drastically.

However, people from affluent classes tend to buy from these thrift stores online and off for the purpose of reselling or personal consumption, rebranding and repositioning as preloved for much higher prices. A greater turnover for these online stores has led to the gentrification of thrifting. Putting clothing articles to auction, reselling last season's clothing articles from a fast fashion brand is what more affluent consumers have started to practice under the guise of thrifting, that takes away the opportunity for the low income consumers and sellers both online and offline to earn their share. It's perfectly alright to introduce some preloved clothes in one's closet and expand it, but making a profit out of it is counterintuitive to the model of slow fashion and sustainability as a whole. That's exactly where the challenge lies for the fashion industry, to reinvent a system that works in congruence with fashion and sustainability. Otherwise, thrift is just in fashion; just another trend to don.

Cloth sheets are keeping glaciers from melting

By Aadhya Venkatesh

Global warming has resulted in the rapid melting of the world's ice sheets. This in turn is causing an irreversible rise in sea levels, which will eventually have grave repercussions for our planet, if not controlled now. For years, scientists have been thinking of ideas to prevent the melting of ice caps, but who could have guessed that the solution would be in the form of a cloth sheet?

The melting of glaciers causes a rise in sea levels, reduction in natural water resources and even act as catalysts to natural disasters. Only recently, the breaking off of a part of the Nanda Devi glacier in Uttarakhand, India, due to the melting of ice sheets caused severe floods. Measures to curb global warming and carbon emissions have been in place for ages but to not much avail.

The time has now come to find innovative solutions that help us save our planet. A recent example of this was observed in Sweden. The Helags glacier in Scandinavia was covered with a cloth sheet made from corn starch and wool. This prevented the direct rays of the sun from melting the glacier.

In recent years, a rapid reduction in height of glaciers has been observed across the globe.

In the aftermath of the experiment, a statement by Swedish Politician, Erik Huss revealed that the strategy was a success and that, "This sheet actually protected 3.5-4 meters of the

glacier from melting". Covering the glaciers with cloth sheets during the summer months is a much more cost-effective option as compared to other solutions possible solutions that are available.

These solutions include pumping seawater back into the glaciers for refreezing. While effective, these methods cost billions of dollars to create and implement as opposed to simple solutions in the form of cloth sheets.

The experiment conducted on the Helags glacier though was not the first of its kind. The Presena glacier in Italy has been conducting a similar experiment since 2008. Scientists cover about 1,20,000 square meters of the glacier with cloth sheets every year. The tarp is laid down and sewn shut to prevent hot air from entering. This process has saved about 70 percent of snow cover during the summers.

Scientists and environmentalists are increasingly concerned about the exponential rise in global warming. Erik Huss believes that what matters is "doing something" to prevent climate change and raise awareness about global warming. The cloth sheet experiment depicts a very real way in which glacier melting can be controlled. It also clearly highlights the global crisis we face due to the rapid melting of these ice sheets.

Even so, these are only temporary solutions to the crisis at hand. No real change can be made unless conscious efforts are taken by the people to truly curb global warming.



Picture of the Helags Glacier in Sweden.

The Mullaperiyar Dam: dangerously obsolete ?



An image of the Mullaperiyar Dam on the Periyar River, Thekkady in the Idukki District of Kerala.

By Hannah Sarasu John

With the recent United Nations report from the Institute for Water, Environment and Health, the current conversation around the dangers posed by the 126-year-old, structurally unsound, Mullaperiyar dam has only heightened, post heavy rainfall in Kerala. Large public outcry for the decommissioning and reconstruction of the dam situated on the Periyar River followed some of the worst rains and floods in the district of Idukki, the location of the Mullaperiyar dam.

The dam has been deemed to be decommissioned because of the danger it poses to five main districts in Kerala – Idukki, Kottayam, Ernakulam, Alappuzha and Thrissur but has been wrapped up in an ongoing dispute between the governments of Tamil Nadu and Kerala in the Supreme Court. This push towards decommissioning has been recommended by the Indian Institute of Technology, Roorkee and Indian Institute of Technology, Delhi. The opposition to the decommissioning of the Mullaperiyar comes from the state of Tamil Nadu who operate the dam and are heavily dependent on the water from the dam for irrigation and electricity generation.

One of the reasons for the decommissioning of the dam is its location in an acknowledged seismic zone which has led to damage of the construction following mild earthquakes

which occurred in 1979 and 2011. According to reports, roughly around 35 lakh people will be immediately affected in Kerala, with devastating future consequences. Expert consensus has declared the dam has far outlived its intended lifespan of 50 years with the technology that the dam was constructed on, which is now dangerously obsolete. This is more concerning especially when taking into account Kerala's recent increase in rainfall over the past few years, leading to heavy floods, large-scale displacement, landslides and flash floods.

The mounting pressure on the dam is worrying because of the consequent dangers to other dams and reservoirs within the state, which would be damaged in the event of a break in the Mullaperiyar dam. The Chief Minister of Kerala, Pinarayi Vijayan in a statement directed towards the Chief Minister of Tamil Nadu, mentioned that the recent flooding in the State had forced the dams in three other districts to be opened to reduce the pressure on the Mullaperiyar dam, causing 38 deaths in flood related incidents.

However, most recently, the Supreme Court on the 25th of October, 2021 expressed concern about the structural improvisation of the dam and the threat of rising water levels. The court has allowed for the setting up of a supervisory committee to decide on the maximum water level permitted in light of the increasingly possible disastrous consequences that a break may have for the state of Kerala.

Climate change and indigenous communities

By Prishita Das

Climate change's most devastating effects will reach the people dwelling in nature first — indigenous people. Even a half degree increase in the planet's temperature would spell disaster for frontline communities.

It is, therefore, obvious that indigenous activists are the fiercest fighters for climate reform. Despite their activism and work, their voices are continually excluded from climate conservation negotiations.

The most highly anticipated climate change conference of 2021, the COP26, held by the UN, saw the absence of about 2/3rds of the civil society organizations that usually attend it. This is due to a combination of reasons — COVID protocols, visa issues and travel rules. The majority of those absent were from the poorer countries and the global south, which is disproportionately affected by climate change.

At the COP26, it was announced that 1.7 billion dollars

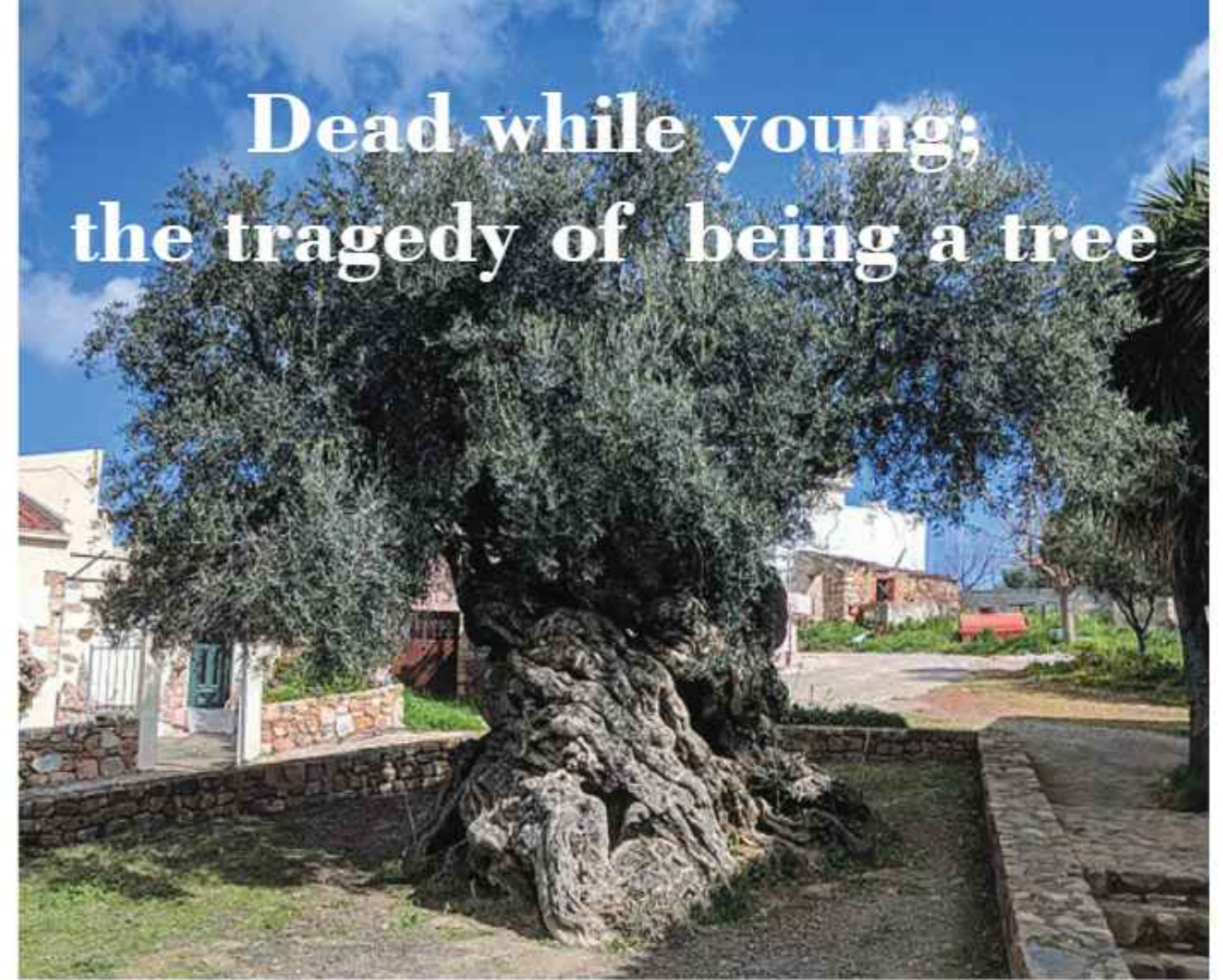
were to be allotted to local communities and indigenous peoples for their efforts and role in climate conservation and protection of nature. And yet, across the river Clyde, indigenous delegates assembled to remember all the activists who had been murdered for their conservation work. According to the international non-profit Global Witness, approximately 1,005 environmental activists have been killed since the Paris accords, which were held six years ago.

Despite the dangerous and monumental odds, indigenous activists have not given up, and continue to make their voice heard. According to Ruth Miller, a Dena'ina Athabaskan and Ashkenazi Russian Jewish woman, and a member of the Curyung tribe, "It's a testament of our resilience that even after hundreds of years of colonization and betrayal that we indigenous communities are still willing to sacrifice our lives, health and energy for this last-ditch attempt to save the planet. We're here offering sustainable solutions to the rest of the world that require an ideological shift, not a green industry built on colonialism and repression. It's up to them if they listen or not." She is also the climate justice director of the Alaska-based Native Movement.



This is the Amazon. The brown areas on the upper left indicate deforestation, affecting the livelihood of indigenous communities in the area, as rainforest turns to savannah.

Dead while young; the tragedy of being a tree



Olive tree Vouves, expected to be 2000 years old.

By Purnima Priyadarsini

While we live with trees, they are blessed to outlive us sometimes. Large and magnificent trees are the symbolic representation of great age among all living organisms. The longevity of trees varies for different plant species. Some survive for five years, while others like Juniperus and Pines can naturally live up to 2000 years. Trees, like any other living organisms, depend on numerous minerals from sunlight, water and soil to survive. Plants, in general, need 16 essential nutrients from their environment to grow, which if not provided in a balanced amount will affect their growth preventing them from completing their life cycle. It has been scientifically proven that trees are vulnerable to losing their life span to an unsteady environment. The ongoing and future global changes like temperature instability are threatening dramatic shifts in growing periods of plants causing them to lose considerable years of their natural lifetime. Today, climate change is making some plants go extinct 500 times faster than they're supposed to, while negatively altering the leaf, root, and reproductive development of plants.

According to a study by European Commission for Science for Environmental Policy suggests climate change has appeared to shift plant cycles over the past six decades. The factor that has affected plant longevity the most was caused by temperature, followed by rainfall irregularity. Climate changing phenomena like rising CO2 concentrations in the atmosphere, elevating the global temperature, and drought situations put stress on the developmental processes in leaves, roots, and reproductive structures. Due to the stress root

elongation process and movement of root growth angle are both reduced to large unhealthy extent. And in response to drought, seed yielding has also plummeted along with an increase in root biomass in shallow soil due to elevated CO2. These variable responses to extreme climatic conditions from plants arrest the development of their reproductive structures and reduce growth rate.

Due to high-temperature plants are growing taller than their normal height and moving away from other plants to cool themselves, which is making them unsupported and precarious, causing them to bend more and break in an untimely manner.

Environments responsible for slow plant growth are also home to several plant enemies that attack or kill more trees degrading the longevity of trees. The reproductive rate of aphids and related insect types, who are dangerous parasites to plants, have increased due to higher temperatures in the forest. And the drought stress on the host trees like oaks, lindens, maple, etc. shrinks the defense capacity in these plants, increasing their susceptibility to an aphid attack.

Many shreds of evidence have indicated that trees do not die because of genetically programmed senescence in their meristems, the indistinct tissue in plants from which new cells are formed, but many external biotic or abiotic agent are responsible for their early deaths. Trees in order to achieve their highest longevity needs suitable conditions that allow them to retain their capacity to push their growth. But the climate change is consistently disturbing the adequate environmental ecosystem around plants all across the globe, breaking their natural life expectancy.

Plant-based meat - the Indian potential

By Shirin Pajnoo

Non-vegetarians in India wouldn't have ever imagined that the experience of eating meat could be even nearly simulated with a healthier and environmental-friendly substitute. However, the recent trends paint a different picture and have something to say.

Plant-based meats involve technology and innovation that replicates the taste, smell and texture of animal meat but is made exclusively from plant ingredients like soya chunks, jackfruit, gluten, legume protein and mushroom. Products available include mock kebabs, burger patties, nuggets, hot dog, sausages etc.

Why is it necessary for the environment?

India's second-fastest growing processed meat market contributes to about 4.11% of the total GDP. The rate of consumption of meat is extremely high in India, which involves animal farming and directly leads to an increase in Greenhouse Gas (GHG) emissions.

Consumption of meat requires pressure on the farming & livestock industry. The vicious circle is endless; animal farming requires grazing, which subsequently leads to exploitation of natural resources, resulting in the loss of water table level. Considering the unhygienic environment in the slaughterhouses and unethical practices attached to animal farming, it adds on to the detrimental increase of environmental problems.

Plant-based meats do not exploit natural resources. They in fact, reduce the carbon footprint. There's only one dependency – absorption of solar energy, which is required for the plants to create food. Animals, on the other hand, need to consume food, which is done through grazing. This is a 'back to square one' situation. When you choose plants

as your direct source of protein, you are choosing a healthy life without destroying the ecosystem.

Growth of the market in India:

Although not exponentially, but this sector is seeing slow changes. During 2019-2020, eight plant-based meat Indian start-ups were launched and five international & Indian players entered the market during 2020-2021.

India has a wide customer base for the market. India's agricultural biodiversity offers these start-ups with a wide range of choices and opportunities. With the growing demand for investment in the agri-tech market, collaborations and partnerships could be very fruitful for exports. All innovations are taking place keeping in mind mass affordability and making it more crisis-resilient.

The cost of these substitutes is significantly higher than regular meat, which means they'll first target tier-1 cities. As their customer base expands, they will target other cities eventually.

Many start-ups like GoodDot, OhVeg, Vezlay, Imagine Meats, Clear Meat etc. have already captured a huge share in the market and are growing with steady pace! Moreover, Dominos has recently launched a product called 'the unthinkable pizza', made just from plant-based proteins with the same taste and smell like chicken.

"India can be a back-end for the global plant-based meat industry, considering the availability of skilled manpower and abundant agri-processing resources," says Abhishek Sinha, co-founder and CEO of GoodDot.

Imagine having meat on Tuesday, or as for vegetarians, imagine tasting chicken without having to actually taste it! Considering the heterogeneous population in India, plant-based meat markets have already found their place to grow.



In picture: vegetarian mock meat.



Humanity's waste-generation is at an all time high. Pictured is one of the country's many overrun landfills.

A zero waste lifestyle - possible in India?

By Shruti Menon

A trend has been slowly picking up pace in the past couple of years in India, and unlike most fads that usually encourage consumerism (like hauls from fast fashion outlets) this one, surprisingly, preaches the opposite – a zero waste lifestyle. From Youtubers like Nayana Premnath talking about their zero waste practices to zero waste organic stores popping up around the country (like Adrish) it seems as though time in lockdown has encouraged the public to contemplate their impact on the planet.

A zero waste lifestyle is pretty self explanatory. Those following it make changes to their lifestyle that result in minimal waste creation – some followers of this ethos are so effective that they end up accumulating only a jarful of garbage over the span of a couple years. This is achieved by following the Rs of the environment very closely: reduce, reuse, and recycle, which basically involves reducing consumption, especially of non-biodegradable synthetic materials, reusing items already in one's possession, and recycling materials like aluminium for example, so that they can be used again. Composting is also a common way of managing biodegradable waste, which promotes growth of one's own plants and vegetables. Coming up with ways to use eco-friendly options for situations that often use plastics or use-and-throw items is a big part of the zero waste lifestyle.

One doesn't have to look too hard to realise that India faces a grave waste management issue. The roadsides in India's major cities reveal heaps of fly-infested garbage, or piles of burning waste, even though waste-burning has been

banned due to an increase in air pollution. The statistics confirm this – according to the United Nations Development Programme, only one fourth of the 15 million tonnes of plastic waste generated in India every year gets recycled. Following a zero waste lifestyle in this scenario is a great way to reduce individual impact on the current generation of waste in the country.

To follow the zero waste lifestyle, many have chosen to return to more traditional ways of living, like using steel boxes to pack food instead of ordering takeout. There are also up and coming shops like Brand Zero that aim to support those following a zero waste lifestyle with their biodegradable alternatives to common plastic items used around the house, like dish scrubs and toothbrushes. These ways of living, combined with tips and tricks shared by influencers online, make this lifestyle more viable for an Indian population. However, there is still an issue of accessibility as only the affluent have the means to make the switch to all natural products – biodegradable alternatives to common plastic items have not yet penetrated the offline markets.

While it is always good to try and reduce one's carbon footprint at an individual level, real change cannot be achieved unless large entities that produce waste also take up the zero-waste ethos. 100 companies are responsible for 71% of global emissions, which means that for a sizeable impact to be made on the environment, it is necessary for these major polluters to change their ways. At the end of the day, contributing to the green movement by following a zero waste lifestyle is a noble act, but to achieve real change, quickly, the public must influence major corporations to do the same.

How GM seeds shackles farmers to seed companies



By Vijay Hardik Josyula

Agriculture gets ignored in the daily rigmarole of news coverage. Two important developments related to farming sent distress signals to the environmentalists and the farming community. One, the government legalised contract farming as a part of its fair price assurance act. Two, the government allowed field tests of Bt. Brinjal in eight states across the country.

This brought back concerns about the autonomy of farmers. There is a fear that farmers will be forced to grow hybrid or GM crops in their fields. The fear has doubled with the legalisation of contract farming. Accounts from America and the United Kingdom show the fear is not unfounded.

GM (genetically modified) seeds introduced over twenty years ago consolidated the control of the seed industry in the hand of corporations. It came at the cost of the farmers. Earlier, farmers saved a portion of seeds for the next harvest. It helped farmers procure seeds in the next farming season.

The industrialisation of agriculture ended this practice. Industrialisation introduced hybrid seeds and now GM seeds. The GM seeds have their genetic make-up modified to produce high yields. They are touted as an answer to farmer income and climate change.

Four companies – Monsanto, DuPont, Syngenta and Dow control 60 percent of the seed market. Their market share increases up to 70 and 80 percent in crops like corn

and soybean.

The cost of seeds for corn jumped up by 500 percent and more than 450 percent for soybean in America. It dented the pockets of the farmers and brought down profit margins. In India, the use of Bt. Cotton seeds introduced by Monsanto drove farmers into poverty. It forced them to commit suicide.

Government statistics show that 75 percent of the rural debt is attributed to the purchase of farmer inputs. The GM seeds now have a new name – 'the seeds of suicide'. Noted environment activist Vandana Shiva commented, "The price per kilogram of cotton seeds has gone from 7 to 17,000 rupees."

She accused Monsanto of making fraudulent claims on achieving the high yields promised by them.

Apart from driving farmers into economic distress, corporations selling GM seeds punish farmers through patents. Companies providing GM seeds sign contracts with farmers that gives them operational control. From inspecting the fields to dictating farmers on how to grow the crop, the companies control the entire production process.

These patents and contracts indirectly control nearby fields. A farmer can be sued by seed corporations if the GM seeds contaminate their farms due to pollination. The farmer faces economic penalties in the form of crop loss and fines.

Seed corporations lured farmers promising them better yields and income. Consequentially, farmers growing GM seeds are dependent on the companies for farmer inputs. Their livelihoods are shackled to the seed corporations.

How unplanned plantation harms the environment

By Akshat Bhatnagar

Climate change has become a huge issue. Not only is it a risk to humans, but it also threatens the lives of the various species of animals and plants that inhabit this planet. Some of these species have already lost the battle and have become extinct, while many are endangered.

When people think of solutions for climate change, one of the most common solutions is to plant more trees. Trees are an essential part of our ecosystem; they make up habitats for animals, absorb carbon dioxide and release oxygen, they even provide food to various animals in the form of fruits. Planting more trees is a great idea, but it is not as simple as that. We need to be very careful about what kinds of trees we plant and where we plant them. Failing to do this can worsen the problem instead of fixing it.

Many plantation drives often don't consider what kind of habitat an area is situated in. They generally see an open space with a few scattered trees around and decide to conduct a plantation drive over there. Furthermore, when determining what kinds of trees to plant, they generally go for a species that either looks good or grows quickly, without taking into account how that species might affect the habitat around it.

Savannahs are a kind of habitat that often fall victim to this. Savannahs consist of a grassy layer on the ground and an open canopy made of a few trees scattered around. Due to their open nature, they are generally mistaken for barren or waste land, but in reality, they are an essential part of our ecosystem and are home to several species of plants and animals that would not survive in other habitats. No matter how well-intentioned the planters' efforts are, the ecosystem ends up destroyed due to the new trees. To make matters even worse, since the planters want to plant trees that grow up quickly, they end up planting invasive species. These invasive trees make the problem even worse since they do not let other trees grow in the area and multiply at an astonishing rate, quickly coving the entire region.

An example of this is, during the British Raj, several of India's Savannahs were misclassified as wastelands or deciduous forests. The scrublands in and around Pune were also put into this category. They carried plantation drives to convert these areas to forests by planting an exotic species of trees called *Gliricidia sepium*, an invasive species that cannot support animal life. These trees have now spread to all parts of Pune, destroying the habitats of several species of plants and animals. We need to learn from this mistake and realise the importance of maintaining natural habitats; otherwise, we might continue to harm the planet while trying to help it.



Typical scrubland habitat.

SOURCE: GEOGRAPHY BRITAIN AND IRELAND

Hurricane Ida unleashed environmental devastation



The overflow of Croton Dam in New York, a day after the record rainfall in the state due to Hurricane Ida.

By Keerthana Unni

On the 26th of August 2021, the Gulf Coast of Louisiana, United States was hit by Hurricane Ida. It was classified as a Category 4 storm that had winds blowing at the speed of 240km/h. The storm lasted for over a week, dying down only on the 4th of September 2021. During its course, Hurricane Ida travelled from across the northeastern states of the US all the way to Pennsylvania on the first of September that caused tornadoes. It was also the reason for record rainfall in New York caused by the result of a post-tropical cyclone.

Louisiana has seen the death of at least 82 people due to the storm and millions of residents were cut off from their electricity supply for weeks. The NGOs and government facilities had to shoulder the supply of basic necessities during and after the storm. One of the worst accompaniments to the hurricane was the urban floods that occurred just before it died down. The floods during this time held the record as one of the worst flood disasters to ever happen in the history of the northeast part of the country.

Along with causing distress and loss to human lives, there have been several environmental issues that have been caused due to the coming of Hurricane Ida. The state Department of Environmental Quality announced the release of multiple chemicals along with the leakage of crude oil and fuel oils before and during the storm. There was also a

release of wastewater due to the power cuts, which posed a major problem for parish pump stations as they moved the majority of their waste via underground pipes. This would later affect the states and country in the long run due to such toxic chemicals and waste that has not infiltrated their resources.

Hydrogen, at an unknown amount, was released from the Shell Norco facility. There was also a release of an unknown amount of ammonia from a safety valve in Cornerstone Chemical in Waggaman. Although the valve was repaired to stop the leak, the toxins that were already released into the environment still pose a threat to the health and well being of its citizens and its future generations.

Due to the recent occurrences of natural disasters, scientists along with NOAA have said that global warming caused by man could be the reason for a stronger and higher number of hurricanes to be drawn to the coast of the United States. The country has seen five major hurricanes in just the last three to four years all in categories ranging from 4-5 in the Gulf Coast. This gave the country as well as its citizens very little time to recover from the human as well as environmental losses physically, mentally and financially. Researchers have also said that increasing industrialization and urbanization has worsened flood rates. An increase in the ground covered by concrete can lead to a decrease in the amount of ground for the rainwater to be absorbed. A UN agency mentioned that there has been a fivefold increase in weather disasters caused by climate change in the last 40 years.



Dangerous viruses, sickness, lockdowns - the new normal.

By Krishna Barot

The Covid-19 pandemic shook the world in ways one never imagined. From a global health crisis to crippled economies - the pandemic resulted in a paradigm shift in society's functioning and thinking. Out of the many lessons learnt, one of the most significant ones was that humans are not superior to nature, no matter what.

Although Covid-19, scientifically named SARS-CoV-2, is not the first zoonotic that affected humans - it has definitely caused widespread health crises of a level previously witnessed during the 1918 Spanish Flu. Zika, Ebola and Influenza are other examples of zoonotic diseases - which have been transmitted to humans from animals. Also known as spillovers, such diseases are gaining prevalence at an alarming rate - and experts state that there is more to come.

According to the Pulitzer Center, animal-borne diseases currently make for approximately 2.4 billion cases of human illness annually, with 2.2 million deaths. While these figures are unsettling, these might only be the tip of the iceberg. Humans are in danger of experiencing pandemics at a much larger scale, but are the ones responsible for it.

The most pivotal drivers of pandemics have become human encroachment - unsustainable wildlife trade, wildlife exploitation, deforestation and climate change, the list continues. While humans are interconnected with the

environment, nature has its own mechanisms to prevent spillovers from occurring. Due to human encroachment on nature, there is increased proximity between humans and wildlife, opening up a Pandora's box of new diseases.

Experts say that there are currently 1.7 million viruses on the planet that are yet undiscovered, out of which 850,000 can infect humans. 3 in 4 of the newly discovered diseases are zoonotic, which is a cause for alarm. And each time a forest is cleared for agriculture, waste is generated in enormous amounts, a wet market vendor captures an 'exotic' animal to sell, we are inching closer to a more dangerous pandemic.

The solution to this danger is easier said than done - for it would require the implementation of strict, large-scale measures to prevent human encroachment on nature. Conserving nature to prevent human-wildlife interaction entails a dramatic change in the world's food and consumerism habits. A drastic change like this will be far from easy or cheap, but it is the need of the hour. A report from Brookings explains that governments have the authority to shape policies and measures to ensure the sustainability of nature, while society has to change its habits.

Change is not easy, neither is a pandemic. As the world grapples with Covid-19 and the daunting effects of climate change, everybody is aware of what needs to be done. It is all a matter of when the change takes place, will it be implemented in the nick of time? Or will we be too late?



A common sight - the clearing of forests for development.



Low visibility due to smog in Delhi.

Improving air quality will require stricter laws

By Abhishek Anand

It is that time of the year when the capital city is choked by polluted air. The festive season, stubble burning, and less rainfall have impacted the entire country, pushing the air quality index levels (AQI). The air quality in India has been degrading at an alarming rate, yet it does not seem to affect the general population and the government.

According to a worldwide survey conducted by IQAir, India had 21 out of 30 most polluted cities in the year 2019. The average AQI number was 152, and recorded PM 2.5 figure was $58.08\mu\text{g}/\text{m}^3$, which is five times more concentrated than the recommended levels by World Health Organization. It was discovered that over 2 million people lose their lives due to health issues related to air pollution. These facts are enough to show the requirement for immediate action.

Out of the top 10 most polluted cities in the world, three of them are from India. Delhi ranks first with its AQI at 556, more than 1.5 times the second most polluted city. In the same list, Kolkata ranked four, and Mumbai was at the sixth position. These are all metropolitan cities with a heavy industry presence, a higher migrant population, and a higher common population.

Stubble burning is a major factor worsening the air quality level. In 2020, 42 per cent of polluted air came from stubble burning in neighbouring states. Emission of greenhouse

gases, unfavourable wind speed, and bursting firecrackers during Diwali add to the increasing problem.

During this year's Diwali, the situation became severe in the country's capital city and other parts. The capital city woke up to a blanket of thick smog along with an AQI higher than 500. Even after government's efforts, courts, and celebrities who helped raise awareness about an eco-friendly Diwali, it did not seem to affect most of the city's population.

Social media created a divide between people who supported the crackers' ban and others who didn't. In the fight of ideologies combined with politics between both sides, the environment experienced a tremendous loss. The festival of lights has always taught people to be compassionate, considerate, and guiding light in others' lives. However, moral values have not played a significant role in changing the mindsets of individuals.

The government is yet to take any action to prevent the situation from worsening. Furthermore, India awaits a strict policy that can control the level of pollution. Though, there are existing laws and standards, they do not seem to impact industries, farming processes, and vehicle emissions significantly. The world is moving towards the sustainability model, and India is trying to follow the same path. Implementing strict policies, followed by government actions, will enable the general population to be more aware and careful. It will also lead India to a better and greener path.



Floods in Mumbai due to climate change.

By Mayura Ghate

India is a physically and geographically blessed nation. The country is surrounded by water from all three sides to the south, snow-clad mountains to its north desert to its east, and green mountains to its west. Blessed with an excellent geographical location, India has had an abundance of natural wealth right from the time of its advent. One of the main reasons behind the British's rule was the wealth this nation had.

In the past, the natural climatic patterns in India were in control and sync with the surrounding. As time passed and development started taking place, along with the whole world, even India became prey for the climatic changes. Along with development, the pollution in the nature increased such as air, water, noise, etc. Air pollution in nature has led to issues like ozone layer depletion, during which climatic changes started taking place.

Due to climate change, India has been facing unpredictable rainfall. Climate models predict that if greenhouse gas (GHG) emissions remain high, global warming will increase monsoon rainfall by 14% by the end of the century (see graphic). Monsoon rainfall could increase by 10% in the medium emissions scenario.

Though the regular time frame of monsoons in India is from June till September, this year, the rainfall in India continued till October '21. It all started in mid-July when a low-pressure region formed over the Bay of Bengal. This

low-pressure system worked as an anchor for rain-bearing westerly winds from the Arabian Sea, which began pouring towards the trough during the monsoon months of June to September. These winds carried a lot of moisture from the overheated Arabian Sea, where sea surface temperatures were 1-2 degrees Celsius above usual at the time. As these winds sped towards the low-pressure area, they collided with the Western Ghats' high range. They also dumped all of their water.

Because of these unpredictable rains in the Western Ghats region, people in the State of Maharashtra face many floods, landslides, etc. The current high-intensity rainfall in Kerala happened due to a low-pressure system formed in the Arabian Sea's east-central region. As the system approached the Kerala coast, heavy weather developed.

In the north-eastern part of India, other climatic factors such as the increased snowfall in the Eurasian region also impact monsoon rainfall in North East India. Excessive snowfall in Eurasia causes cooling of the region's atmosphere, which triggers events eventually leading to a weak summer monsoon season there.

The changing nature of climate has brought a lot of challenges for India to suffer. Amid Covid-19, India suffers a lot due to the unpredicted rainfall, which has now become lethal. If now, as a nation, we do not start taking progressive steps towards controlling the climate change issue, it will lead to a more deadly scenario. Hence, the government of India should work towards achieving Sustainable Development Goals (SDG's) for the better future of our nation.

How global warming is affecting the Sundarbans

By Sayanta Sengupta

The Sundarbans are undoubtedly one of the most beautiful and charming forests in India and Bangladesh and they are an eye-catching tourist destination as well. The largest mangrove forest in the world, the significance of the Sundarbans extends beyond the unique and attractive forests. It is also an important habitat of a myriad of animals and is home to the iconic Royal Bengal Tiger. However of late, the Sundarbans have been at the receiving end of the apathetic attitude and mindset of human beings in general. Global Warming which is orchestrated by human beings have had a deep-rooted impact on

paramount importance as they not only save lives in the region but also prevent erosion of the islands and prevents the impact of storms in the region.

Global warming causes an increase in the sea level and according to the NASA Landsat satellite imagery, the sea level has risen by an average of 3 centimetres every year over the past two decades in the Sundarbans. This has caused widescale and massive floods and the houses and farmlands of the locals have been washed away by the powerful waves and water. The islands are gradually disappearing and the saline present in the sea water has affected and diminished the quality of crops and soils in that region. The mangrove



The mangrove forests of the Sundarbans are at a risk because of global warming.

the Sundarbans. Be it the increase in carbon dioxide (CO₂) emission or the increase in the average global temperature of the earth, things are getting worse for the Sundarbans.

Firstly, the increase in temperature results in the destruction of the mangrove trees and forests present in the region. This inevitably places a multitude of lives at stake as the mangroves essentially protect the people from violent storms. This destruction of the mangroves also results in the coast getting exposed. A lot of people lose their lives because of floods and tropical cyclones and global warming which results in destruction of the mangrove trees and forests is the primary reason. According to certain scientists, the mangrove trees of the Sundarbans played a pivotal role in saving a lot of lives from the wrath of the 1999 cyclone from the Bay of Bengal. The mangrove trees thus are of

trees are salt-tolerant and the increasing saline water has affected them largely.

Another major impact of the fast-approaching sea because of global warming has been that the tigers in the region have been pushed to the farmlands and the village area. This is essentially because the hunting grounds have been washed away. The tigers have caused the death of a lot of villagers and have destroyed several crops in the farmlands.

Unless and until the government intervenes and takes things seriously, the mangrove forests will disappear and most of the area will go underwater because of the adverse effects of global warming. The steps and choices we undertake today will definitely play a pivotal role in the survival of the mangrove forests.

Environment damage - the price we pay for cheap 'fast fashion'

By Rupashree Ravi

Brands like Zara, Forever 21, UNIQLO and H&M are widely popular and are known for their cheap and fashionable clothing. But the cost of making these clothes comes at a heavy price. These brands are the biggest players in the fashion industry and are also among the most damaging industries for the environment. They are fast fashion retailers who bring out large quantities of a variety of products and allow consumers to get more fashion and product differentiation at a very low price.

'Fast fashion' refers to cheaply manufactured and low priced garments that copy the latest catwalk styles and get quick entry into retail stores in order to maximise on the current fashion trends. It is called the fast fashion model because it involves rapid design, mass production and distribution as well as heavy marketing. Today, it takes less than fifteen days for a garment to move from the design stage to being sold physically in stores. The term has gained more prominence in recent times and is often used in conversations revolving around environmental consciousness as well as sustainability.

According to the UN Environment Programme, the fashion industry, especially since the rise of fast fashion, has become the second largest consumer of water and is responsible for 10 per cent of carbon emissions and 20 per cent of wastewater globally. It also dries up water sources and pollutes waterways. This is because these fast fashion retailers

use about 700 gallons of water to make one cotton shirt and about 2,000 gallons to make one pair of jeans. Moreover, the textile dyes that they use contribute to polluting these waterways as the chemicals leak into the water, which also pose health risks to the general population.

These brands also use synthetic fibres like polyester, nylon and acrylic which take several years to biodegrade. A report published by the International Union for Conservation of Nature (IUCN) in 2017 said that almost 35 per cent of all microplastics, which are tiny pieces of non-biodegradable plastic found in the ocean, come from these synthetic textiles, especially polyester. This is an extremely worrisome phenomenon.

The fast fashion model is also an energy intensive process. The production of plastic fibres and textiles needs huge amounts of petroleum. In addition, it releases volatile particulate matter and acids such as hydrogen chloride. Even cotton is not an environmentally friendly fabric to manufacture for fast fashion companies as they are exposed to a number of pesticides which are very harmful.

It is imperative that we as consumers stop buying from these fast fashion companies and instead choose locally produced garments. Sustainable fashion is the best alternative for fast fashion. To counter the environmental damage caused by fast fashion, sustainable fabrics like wild silk, organic cotton, hemp, linen and lyocell can be used in a responsible way.



Stores like Zara and H&M are the pioneers of fast fashion in the 21st century.

Climate change is causing albatrosses to 'divorce'



An albatross flying over the South Atlantic Ocean.

By Yashvi Shah

A study by New Zealand's Royal Society has found evidence of the effect of climate change on the longevity of relationships among albatrosses. Albatrosses are among some of the most monogamous creatures on the planet and they usually mate for life. This new study suggests that the current tumultuous environmental conditions cause splits between the black-browed albatrosses in the South Atlantic. The official word used by the study to describe the splits is "divorce."

Albatrosses are sea birds that are found across the Southern Hemisphere. Along with their expansive travels and their long lives, they are also known for having a wingspan of up to 11 feet. When it comes to partnerships, black-browed albatrosses usually spend most of the year apart and reunite each mating season to raise their chicks together. The male albatross typically arrives first on the land and waits for his partner while tending to their nest.

According to experts, albatross divorce is extremely rare. Usually, permanent separation is triggered only when a pair of albatrosses fail to successfully fledge a chick. However, the research, led by Francesco Ventura of the University of Lisbon, found a connection between permanent separation and rising ocean temperatures. The objective of the research

was to see if 'divorce' between albatrosses was affected by environmental variability over the years.

The researchers collected data on the seabirds' breeding behaviour starting from 2003- spanning 15 years. They researched albatrosses from New Island, Falklands- a group of remote islands in the South Atlantic Ocean. The islands are home to about 15,500 pairs of albatrosses. The research found that the divorce rate among birds increased in years when the ocean was the warmest. According to the report, the divorce rate rose to 7.7 percent in 2017 from an average of 3.7 percent in the previous years.

In the years when oceans and seas are warmer than usual, albatrosses were found to be struggling with both fertility and divorce. This indicates a worrisome trend for almost all seabird populations as the global temperatures rise significantly with each passing day. On the other hand, the research also suggests that the divorce between the birds yields certain reproductive benefits especially for female albatrosses who are more likely to find new partners and gain a higher breeding success.

The research concludes that divorce between partners in monogamous sea populations like the black-browed albatross is an adaptive strategy to climate change. The consequences of climate change have already started to leave an upsetting impact on populations across the world and the environment.

How coral reefs are dying a slow death

By Adarsh Tripathi

Our planet is beautiful. Mountains capped with pristine white snow, flanked by deep blue oceans of vast unknown treasures, teeming with life in every shape and size. A complex ecosystem that is locked in a self-preserving cycle that has been going on for eons. Our planet has evolved in the face of collapse and adversity and stood silent as a witness to mass extinctions and yet it has soldiered on. It is beautiful, but more importantly, it is the only one we have. It cannot possibly endure beyond the human civilization, and has finally begun to crack under the sheer pressure of 7.5 billion people and their rapid advancements at its expense.

For coral polyps, their ancestry is the key to their survival. For centuries they have extracted calcium carbonate from the seawater to form hard exoskeletons and lived their lives out in these self-made homes, eventually leaving them behind upon their death for future generations to build upon. Now as the world moves forward, using up fossil fuels at unprecedented rates and polluting the atmosphere like never before, these ancient neighborhoods are in serious trouble.

According to the non-government organization Coral Guardians, there are three primary causes of coral bleaching, namely global warming and acidification of oceans. Global warming is a phenomenon that is causing the average temperature of the Earth to rise, and this is now happening

faster than ever. Since 1860, the average ocean surface water temperature has increased by 0.5°C. Projections by the Intergovernmental Panel on Climate Change report that average air temperature is set to increase dramatically by 1.5°C in the next couple of decades, which means that the ocean surface temperatures are not cooling down anytime soon. With rising temperatures, the stress on the coral reefs will rise proportionately, leading to faster and more severe bleaching of the reefs.

The acidification of oceans due to pollution is another major reason for the rapid bleaching of coral reefs. For so long, the oceans have maintained a pH balance that was perfect for the growth of these coral colonies. With human intervention, however, this balance now hangs by a thread. Oil spills, excessive pollution, and severe fishing malpractices are just some of the reasons behind the change in the acidity of our water bodies. This change is devastating for coral polyps, as it can severely impact their functioning and their ability to form the exoskeletons that they have been producing for ages. With weaker homes, these species are at the risk of being wiped out entirely.

Immediate action is required to save our coral reefs. This is a crisis we cannot choose to postpone, for today if the coral reefs disappear tomorrow, it will be the very earth we stand on. In an age where we are not afraid to run towards the final frontiers of space in search of new horizons and possibly new planets to conquer, I believe we should be focusing on saving the home that we have.



Diverse coral community at Norman Reef in the northern Great Barrier Reef, Australia.

India aims for 175GW of solar energy by 2022



Huge solar panels are set up by industries in the nearby lands to produce energy with the help of solar panels.

By Atharva Agashe

The geographical location of India is suitable for converting solar energy into different forms. Every part of the country receives plenty of sunlight which is a boon for the country's energy crisis.

To tackle the energy crisis, the Indian Government has a fair number of solar energy projects functioning in the entire country. The states which have the most Solar Power Plants are Rajasthan, Karnataka, Andhra Pradesh, Madhya Pradesh, and Tamil Nadu. Along with these plants, the government and the Ministry of New and Renewable Energy (MNRE) aim to install Solar Water Pumps across the country under the Varun Mitra Project and the Kusum Yojana.

Bhadla Solar Park in Rajasthan, Pavagada Solar Park in Karnataka, Kurnool Ultra Mega Solar Park, NP Kunta Ultra Mega Solar Park in Andhra Pradesh are some of the major power plants through which India plans to generate around 175-gigawatt energy by 2022. Statistics say that 2.25 lakh solar pumps were installed between the year 2014-2019 which is 19 times higher than what was installed before 2014.

The usage of solar energy benefits the environment on a large scale as it reduces the usage of water in energy production. It also mitigates air pollution and reduces the carbon emissions already present in the air. It does not produce any greenhouse gases and thus slows down climate change.

For the environment to benefit, it would be essential for the people of India to switch to renewable sources of energy like solar cookers, electric cars, solar panels for corporate offices, railway stations, airports, etc. The government of India also provides a subsidy to the families who install Solar Power Plants on their terraces or in their buildings.

To move towards a better future, the government has started the Surya Mitra program where students would be taught to install solar water pumps and this program will be free of cost. Surya Mitra program is also going to employ 13 lakh people across the country.

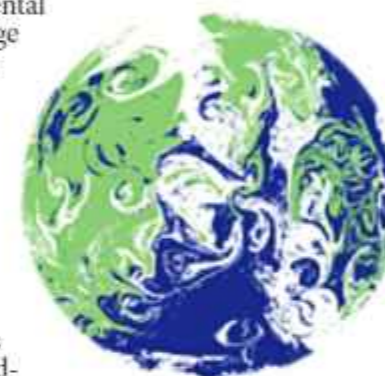
According to the Ministry of New and Renewable Energy, the solar park scheme has doubled from 20 GW to 40 GW and is expected to grow immensely till 2022. For more details regarding Renewable Energy and the upcoming projects, visit <https://mnre.gov.in/>

Could our 'Last Best Chance' end up being the next failure ?

By Yukta Patwardhan

With the COP26 climate conference at Glasgow coming up in less than a week, the world is gearing up for some major discourse around climate change and strong commitments in the action plans by all countries. Having forgone the conference last year due to the pandemic, this year's summit has even more expectations built up even as experts claim it might already be too late for the Earth. The conference, starting October 31, will go on till November 12 and will consist of two weeks of solid negotiations and holding countries accountable for their environmental responsibilities.

The Intergovernmental Panel on Climate Change (IPCC) report that was released earlier this year in August came with a warning to begin extensive work on reducing the human impact on the environment stating that any more delays would make it too late. The COP26 must focus on each country's individual responsibility as well as the developed countries' responsibility to aid the developing ones to meet



The Paris Agreement, signed in 2015 at the COP21 stated stopping global warming at 1.5C as one of its main goals. According to experts, the current NDCs, that is, Nationally Determined Contributions through which each country decides its climate goal individually, are insufficient to meet the 1.5C goal. One of the major expectations from the summit is negotiating stricter action plans from countries whose current NDCs don't meet the mark.

There are high hopes riding on the developing countries, especially those of the G20 to come forth with highly ambitious NDCs that show drastic action plans to reduce emissions. All eyes are on China and India - two of the world's major emitters - who still haven't come forth with updated NDCs with concrete plans to reduce emissions.

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On the other hand, since developing countries often have to bear the brunt of climate change, they are sure to take this as an opportunity to ensure that the developed countries honour their promises of providing them with climate finance.

The richer countries have failed to provide the promised \$100 billion per year to developing countries for tackling climate change since the pledge was initially made in 2009.



Manuel Pulgar-Vidal, President of COP 20, speaking at COP 21 in Paris, 2015.

The looming threat of a climate induced migration crisis in India



Migration induced due to climate change.

By Aarya Trivedi

As extreme weather events are on a rise in India, ranging from droughts and floods to heatwaves and hailstorms, climate migration is being fuelled and the nation's poorest are being compelled to abandon their homes, land, and livelihoods.

A survey conducted across three Indian states in over 1,000 households revealed that almost 70 percent of respondents migrated immediately after such weather disasters, reported the International Institute for Environment and Development (IIED).

Seasonal migration was predominantly observed by people hit by droughts and floods that caused harm to crops, or by cyclones that damaged fishing activities. India's poorest demographic that comprises of small farmers and people practising other primary occupations, finds it hard to cope with the extent of damage caused by severe weather as the country reaches towards impending rising sea levels, more heatwaves and cyclones.

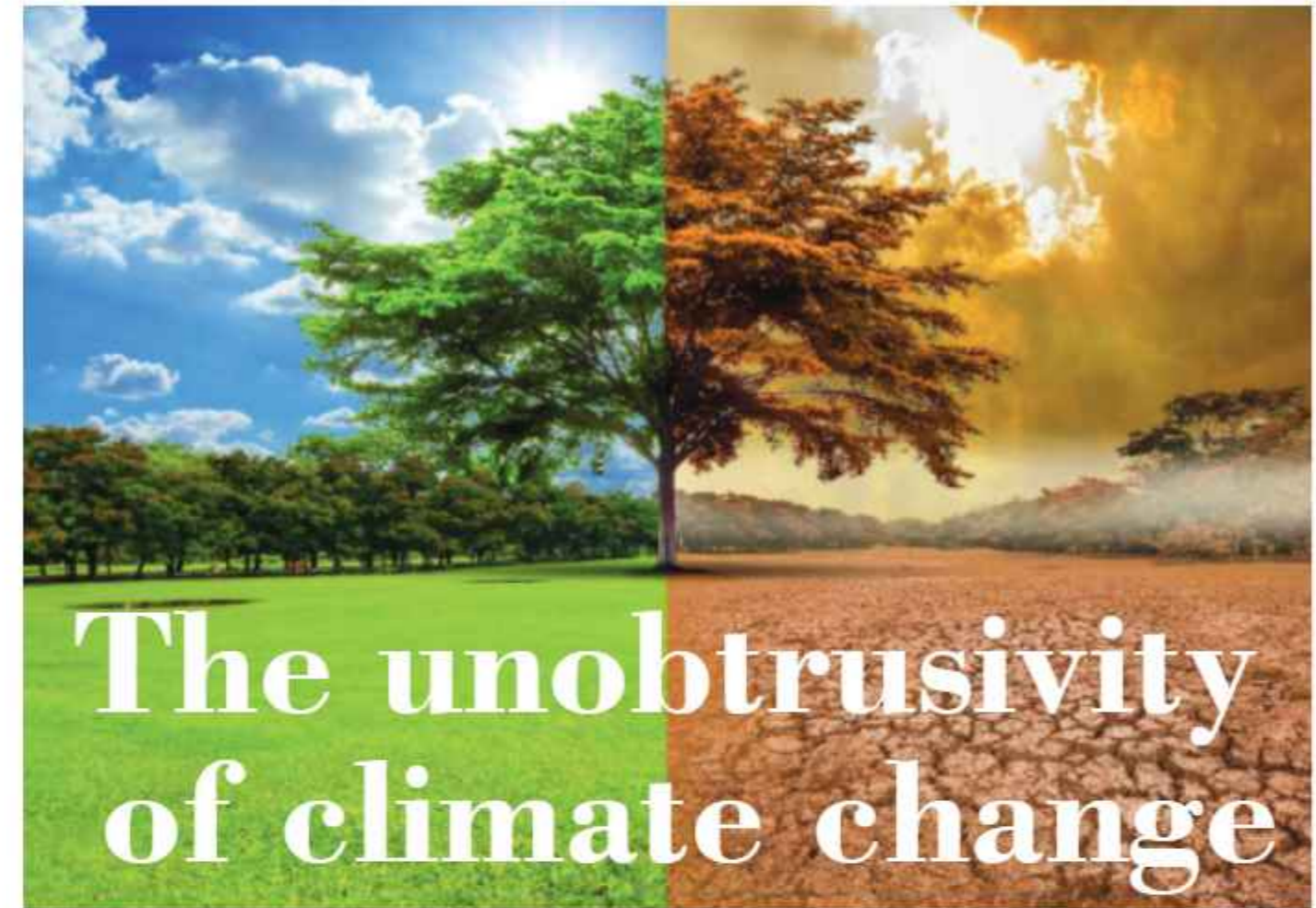
These events add extra pressure onto people who already struggle for the bare minimum, forcing them out of their homes, into the margins of society. When their migration patterns were studied, the report found that the poor often sell their belongings and take loans at exploitative and predatory interest rates to finance their migration. The trends reveal that the migration is often to nearby urban centres and then to metro cities, where they are forced to take-up

unskilled jobs.

The Global Climate Risk Index 2021 ranks India among the top 10 countries most affected by climate change. In 2020 alone, India suffered the most devastating locust attack in decades, three cyclones, a pan-nation heatwave and flooding that claimed several lives and forced even more to migrate. Data shows that in India, about 14 million people may have migrated this year due to the slow-burn climate change. Slow-burn climate impacts could cause countries in the region to lose about 2% of their GDP by 2050, rising to a loss of nearly 9% by 2100.



It has become the need of the hour to factor climate scenarios into account while formulating policies, which is not being practised yet. While the developed countries have a historical responsibility towards climate change, the developing nations must brace themselves for the future.



People's knowledge of climate stems from the media, and from people who make conscious efforts to educate.

By Pranjal Nangare

Lately, whenever we talk of climate change, a picture of Greta Thunberg talking to us about the imminent nature of the threat we face. Nevertheless, is the imminent threat facing scenario the only time we look at climate change? Climate change has sadly so become very "obtrusive" in the way people look at it.

Spatially, 'climates' are usually described for entire countries, continents, hemispheres, or the whole world. Such dimensions lie far beyond most people's life-worlds and biographical horizons. The climate and its changes are observed and (re)constructed primarily by scientists, whose results are rather complex and difficult to understand for many people.

Secondly, climate change is also an unobtrusive issue because its social effects and the measures to mitigate them are debated, complex, and, at times, difficult to understand. Many of the consequences of climate change, most likely the more severe ones, are not occurring here and now. For instance, the leading anthropogenic causes of climate change – greenhouse gas emissions – remain invisible. As a result, the causes and consequences of climate change and its implications are not directly and easily perceivable.

Further, what most people know about them stems from a media communication. The existence of climate change itself, its extent, and urgency are "deeply contested considerable competition among scientists, industry, policymakers, and NGOs, each of whom is likely to be actively seeking to establish their particular perspectives on the issues" (Anderson, 2009: 166). Using different kinds of strategic communication, these stakeholders often aim for media

representation because media are the main forum for public debates and essential sources for information.

Stakeholders also try to project themselves in the media to be seen as viable actors in this field and inject their viewpoints into media coverage to influence the societal perceptions of climate change.

It is also a cross-sectional topic that includes scientific as well as political, economic, cultural, and other facets. As a result, most journalists writing about climate change are not monothematic experts on this issue.

On the one side, because the complex issue of climate change does not cater well to news values, journalists have to find and emphasize its newsworthy aspects to cover it. Therefore, they occasionally tend to play down or omit uncertainties connected to scientific information to comply with the news value of 'unambiguity'. Or to exaggerate the expected adverse outcomes of climate change to comply with the 'negativity' news value.

In addition, studies have shown that media attention for climate change, as for many other issues as well, strongly fluctuates over time and that it peaks around specific events, basically it is event driven.

With its doomsday approach to Climate Change, the question that needs to be addressed is whether journalists can churn out a new climate-coverage playbook that would surmount the widespread unobtrusiveness of climate change that could make a difference to the masses. The onus lies on collaborative efforts of a responsible media and consumers of such a media to change climate change's "obtrusive" status to "unobtrusivity".



How stubble burning is choking Delhi to death

Farmers burn crop residue in Punjab, to quickly prepare for the next crop.

By Sophia Navagaonkar

Stubble burning has emerged as a recurring conundrum in North India, as the severe air pollution caused by burning of crop residue in Punjab and Haryana chokes the lungs of the national capital and its surrounding areas.

In North India, stubble burning has actually been a major cause for air pollution for years now, and yet despite the massive public health crisis it has caused, the practice hasn't stopped. The crop residue is burnt in October to clear the land in preparation for the next crop. Despite banning the practice, fining the farmers and pitching alternatives, the toxic fumes still pollute northern India every year, putting the health of millions at risk. It is estimated that farmers burn around 23 million tonnes of paddy stubble annually, mainly because it is the quickest and easiest way to get rid of the residue.

However, the process has a lot of harmful effects on the environment, the most obvious being air pollution. The uncontrollable amounts of smoke produced contain toxic pollutants as well as harmful gases including methane, carbon dioxide, nitrogen dioxide, sulphur dioxide and carbon monoxide, all of which are extremely harmful to humans. These gases either turn into a cloud of ash or become smog, which have the ability to travel thousands of kilometres, putting millions of Indians at risk.

Several studies have linked air pollution to a range of

health issues from eye and skin irritation to severe cardiovascular, neurological and respiratory diseases. It may even have chronic effects on people with pre-existing conditions. Breathing in this polluted air can give rise to issues like bronchitis, asthma, Chronic Obstructive Pulmonary Disease, cancer, lung capacity loss, asthma, stroke, tuberculosis and coronary diseases. Besides, fine particulate matter (which happens to be present in the smog) alone is responsible for 21% of total deaths in South Asia.

Other than its effects on air quality, stubble burning harms soil productivity as well. It raises the temperature of the soil to 42 degrees Celsius, kills the important microorganisms in the soil, and strips it of essential nutrients like nitrogen, potassium and phosphorus, along with other micro-nutrients. Thus the suffering soil fertility and poor air quality together extend their impact on agricultural productivity, with evidence proving how these factors severely affect production.

The process of stubble burning is particularly dangerous with regards to climate change. The release of greenhouse gases like carbon dioxide and methane contribute to global warming, an environmental issue that has become particularly prominent in recent years.

Stubble burning has become a menacing problem for the environment and a major health hazard for Indians. It is high time that modern and sustainable agricultural practices are adopted with the increasing climate emergency, which is very much possible through effective policies and more importantly, the effective follow up of those policies.



Spawning coral babies at the Great Barrier Reef



By Rishab Sengupta

After decades of destruction and decay, a new conservation method may be a sign of hope for Australia's Great Barrier Reef. A year after their transfer to dead reefs, the first "IVF Coral Babies" have matured and begun spawning new corals.

For nearly 30 years now, the world's largest living structure, the Great Barrier Reef, has suffered damage due to climate change and pollution. Over half of the reef has died since the 90s, a crippling loss to the marine biodiversity of the region. The UNESCO World Heritage Site is finally set to recover from the damage it has suffered over the years, all thanks to the efforts and ingenuity of the Coral IVF programme.

The Great Barrier Reef, composed of over 2900 individual reefs and 900 islands, and stretching over 2300 kilometres, now has several hundred dead zones and dying reefs as a result of coral bleaching. The Coral IVF programme seeks to revitalise these damaged reefs by introducing new "baby" corals into the affected areas. They do this by collecting coral spawn from the waters and rearing the spawn into the larval stage in man-made floating nurseries. The larvae are then delivered to the damaged reefs, where they take root and grow into corals.

The head of the project, Professor Peter Harrison of Southern Cross University, first began experimenting with this technique in 2016 on Heron Island. Now, the corals

introduced to the reefs since then have not only survived into adulthood but are also beginning to reproduce.

The process of Coral IVF is not easy by any means. Adult corals only reproduce once a year, in an event known as an "underwater snowstorm". This is a period where the corals release sperm and eggs into the water en masse. The main issue plaguing the natural life cycle of the coral reefs is the fact that corals are dying faster than they can reproduce. Often, the coral larvae and polyps cannot survive into adulthood due to the increased water temperatures and contaminants.

The IVF project involves collecting large amounts of these sperm and egg cells from the surface of the water and transferring them into floating nursery pools. This allows the fertilisation and growth of the coral embryos to occur in a controlled environment. The coral spawn mature into larvae over the course of a week, after which they are delivered to damaged reef systems either manually by divers or by specially designed robots.

The most recent milestone in this journey towards the restoration of the Great Barrier Reef is the survival and maturity of the corals delivered to the reefs via the IVF process. The corals introduced by Peter Harrison and his team have recently begun to spawn sperm and eggs of their own. This is major good news, as it means that the efforts of conservationists have paid off. With any luck, it will be only a matter of time before the once vibrant reefs will be restored to their former beauty.

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