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IT'S NOT ECONOMY VS CLEAN AIR

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The damage to the global economy from [COVID-19](#) threatens to far exceed that of the recession of 2007-2009 and could, according to the International Monetary Fund, trigger the worst recession since the Great Depression of the 1930s. Governments desperate to reopen moribund economies are now tiptoeing around the lockdown to avoid the dreaded “second wave” of the virus.

However, as lockdown exit strategies turn their attention to saving livelihoods, there is pressure on governments to lower environmental standards, suspend environmental monitoring requirements and reduce environmental enforcement, in the belief that this is necessary to salvage economic growth. Yet, it would be a mistake to assume that there is a trade-off between saving livelihoods and protecting the environment. The crisis of COVID-19 has highlighted that improving the quality of air in our country is not a matter of choice but an emergency.

At the end of March, the US announced a significant reduction in fuel efficiency standards for new cars, which could result in increased gasoline consumption by 80 billion tonnes, pumping increased carbon emissions into the atmosphere. The US Environmental Protection Agency has announced that it will not be enforcing compliance with routine monitoring and reporting obligations of environmental protection, for an indefinite period.

On April 15, the UN special rapporteur on human rights and the environment, David Boyd, condemned such steps as “irrational, irresponsible, and jeopardiz[ing] the rights of vulnerable people”, emphasizing that COVID-19 must not be used as an excuse to weaken environmental protection. Thirteen European climate and environment ministers, including those of [Italy](#) and [Spain](#), the countries worst affected by the virus in Europe, wrote as recently as on April 9 that “we should resist the temptations of short-term solutions in response to the present crisis” and stressed the need to maintain and strengthen EU’s effective regulatory tools to stick to its 2030 climate goals.

India has even greater reason to resist the temptation to put clean air on the backburner. First and foremost, people living in areas with higher levels of air pollution face increased risk of premature death from COVID-19. New Delhi was the world’s most polluted capital city for the second straight year in 2019, and India was also home to 21 of the world’s 30 most polluted cities, Swiss-based group IQ AirVisual said in a recent study.

The State of Global Air 2019 Report finds air pollution responsible for over 1.2 million deaths in [China](#) and India each, based on 2017 data. Whereas China succeeded in reducing air pollution in its cities by 32 per cent on average in four years from 2014-2018, India has had little success. Again, continued air pollution directly translates to mortality under COVID-19.

Second, there is enormous inequality in the impact of the COVID-19 fallout. Those who suffer the most from air pollution are the millions who live and toil in the open, who cannot afford air-purifiers or other mitigating measures, as also the elderly and children.

Third, there is good evidence that three-quarters of the emerging infectious diseases migrate from wild or domesticated animals into humans. This includes Ebola, SARS, MERS and now COVID-19. Deforestation, industrial agriculture, illegal wildlife trade, climate change and other types of environmental degradation increase the risk of future pandemics.

Fourth, from Delhi to Sao Paulo, Bangkok to Bogota, the dramatic improvement in the quality of air and water in the most polluted cities around the world has been transmitted by social media. This may well result in a groundswell of public support for measures to protect the environment.

Fifth, it is possible that the cataclysm of corona will jolt the markets into giving a clean, healthy and sustainable environment the economic value it deserves. As Mark Carney, former governor of the Bank of [England](#), wrote in The Economist: “.the traditional drivers of value have been shaken, new ones will gain prominence, and there’s a possibility that the gulf between what markets value, and what people value, will close.”

For all these reasons and more, the [pandemic](#) is an urgent call to action on the environment — air pollution in particular — on a war footing. In the past, we have never treated air pollution as a national emergency, failing to coordinate between the Centre and state governments. The COVID pandemic has been declared a national disaster in India, under the National Disaster Management Act, 2005. This legislation mandates the disaster authorities at the national, state and district levels under the Act, as well as the Central and state governments, coordinate among themselves and take measures for the prevention and mitigation of the pandemic. Air pollution creates medical conditions that gravely increase the risk of fatalities from COVID-19.

Preventing and mitigating the risks of COVID-19, therefore, means the mandate for the disaster authorities is also to tackle air and other forms of pollution head-on.

The NDMA is a platform which should be used to combat air pollution as an emergency, with a framework for coordination between different levels of the government. Similar coordination will be required at an international level to continue to work towards reduced emissions under the Paris Agreement. It is a great pity that it takes a pandemic to bring the realisation that economic growth versus clean air is a false dichotomy.

The writer is a senior advocate, Supreme Court of India

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INDIA NEEDS TO ENACT A COVID-19 LAW

Relevant for: Environment | Topic: Disaster and disaster management

The [nationwide lockdown](#) has been central to the government's strategy to combat the [COVID-19 pandemic](#). With businesses closed, supply chains disrupted, timelines extended and contracts terminated, this exercise has caused the organised sector unprecedented economic losses. In the unorganised sector, there has been a complete breakdown with little or no legal recourse for those who are affected. While the lockdown has helped contain community spread of the disease, a legal and legislative audit of this exercise has evaded scrutiny so far. As we are now in the seventh week of the lockdown, it is imperative and timely that we assess its underlying legislative soundness.

The lockdown has been carried out by State governments and district authorities on the directions of the Union Ministry of Home Affairs under the Disaster Management Act of 2005, which was intended "to provide for the effective management of disasters and for matters connected therewith or incidental thereto". Under the Act, the National Disaster Management Authority (NDMA) was set up under the leadership of the Prime Minister, and the National Executive Committee (NEA) was chaired by the Home Secretary. On March 24, 2020, the NDMA and NEA issued orders directing the Union Ministries, State governments and authorities to take effective measures to prevent the spread of COVID-19, and laid out guidelines illustrating which establishments would be closed and which services suspended during the lockdown period.

Taking a cue from the guidelines, the State governments and authorities exercised powers under the Epidemic Diseases Act of 1897 to issue further directions. For instance, the Health and Family Welfare Department of Tamil Nadu issued a government order on March 23, 2020, to impose social distancing and isolation measures which directed "suspected cases and foreign returnees" to remain "under strict home quarantine" and people "to stay at home and come out only for accessing basic and essential services and strictly follow social distancing norms". Subsequently, on March 25, the earlier order was extended for a period of 21 days, in accordance with the directions of the NEA. District authorities such as the Commissioner of Police, Greater Chennai, have consequently issued orders to impose Section 144 of the Criminal Procedure Code in public places.

Cumulatively, these orders constitute the legislative umbrella governing the lockdown that has been in place since March 24. The invoking of the Disaster Management Act has allowed the Union government to communicate seamlessly with the States. However, serious questions remain whether the Act was originally intended to or is sufficiently capable of addressing the threat of a pandemic. Also, the use of the archaic Epidemic Diseases Act reveals the lack of requisite diligence and responsiveness of government authorities in providing novel and innovative policy solutions to address a 21st century problem. Another serious failing is that any violation of the orders passed would be prosecutable under Section 188 of Indian Penal Code, a very ineffective and broad provision dealing with disobedience of an order issued by a public servant.

In contrast, the U.K. enacted the Coronavirus Act, 2020, which is a comprehensive legislation dealing with all issues connected with COVID-19 including emergency registration of healthcare professionals, temporary closure of educational institutions, audio-visual facilities for criminal proceedings, powers to restrict gatherings, and financial assistance to industry. Similarly, Singapore has passed the Infectious Diseases Regulations, 2020, which provides for issuance of stay orders which can send 'at-risk individuals' to a government-specified accommodation

facility.

Also read | [Battling COVID-19 with a colonial-era law](#)

Both the U.K.'s and Singapore's laws set out unambiguous conditions and legally binding obligations. As such, under Singaporean law, the violators may be penalised up to \$10,000 or face six months imprisonment or both. In contrast, Section 188 of the Indian Penal Code has a fine amount of 200 to 1,000 or imprisonment of one to six months. Even then, proceedings under Section 188 can only be initiated by private complaint and not through a First Information Report. As such, offences arising out of these guidelines and orders have a weak basis in terms of criminal jurisdiction thereby weakening the objectives of the lockdown.

In India, both Houses of Parliament functioned till March 23, 2020, when they were adjourned sine die. There were a number of interventions regarding COVID-19 by Opposition members through the session. However, the Union government showed no inclination towards drafting or enacting a COVID-19-specific legislation that could address all the issues pre-emptively. In fact, there has been little clarity on a road map to economic recovery after the announcement by the Union Finance Minister last month.

Also read | [Quarantine and the law](#)

Worryingly, a consolidated, pro-active policy approach is absent. In fact, there has been ad hoc and reactive rule-making, as seen in the way migrant workers have been treated. The flip-flop of orders regarding inter-State movement has left the fate of hundreds of thousands of migrant workers to be handled by district administrations with inadequate resources. This has also exposed the lack of co-ordination between the Union and State governments.

In past instances, the Union government has not shied away from promulgating ordinances. These circumstances call out for legislative leadership, to assist and empower States to overcome COVID-19 and to revive their economic, education and public health sectors.

Manuraj Shunmugasundaram is an advocate at the Madras High Court, and spokesperson, DMK

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TOXIC DISASTER: THE HINDU EDITORIAL ON VISAKHAPATNAM GAS LEAK

Relevant for: Environment | Topic: Disaster and disaster management

The [disastrous leak of a toxic chemical](#) that has killed several people and left hundreds sick near Visakhapatnam in Andhra Pradesh comes as a shock to a nation struggling to cope with a prolonged lockdown. Residents of habitations around Gopalapatnam, close to the site where the LG Polymers plant is located, passed out as the hazardous [styrene vapour swept through the area](#) at night. Several deaths took place as people tried to flee, and the chemical rendered them unconscious. There are horrific stories of people falling from buildings, or into wells and ditches as they lost consciousness. They have become the first victims of the exit from the lockdown, when industrial units were allowed to resume their operations. [Styrene](#), the chemical involved in the disaster-struck plant that produces polystyrene products, is included in the schedule of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989. The rules lay down strict norms on how it should be handled and stored. Although it will take an inquiry to establish what caused the incident, the company and the State government knew that the chemical was hazardous, characterised by poor stability under a variety of conditions that could even lead to explosive situations. It is also reasonable to assume that the safety mechanism built into the storage structures of something so hazardous was either faulty or allowed to be overridden. Was the reopening work at the factory left to unskilled people, as some city officials have said? These aspects must be probed in the inquiry to fix accountability.

The Andhra Pradesh government must focus immediately on the medical needs of those who have been grievously affected by the gas leak, which has inevitably led to comparisons with the 1984 Bhopal gas disaster. As a harmful chemical, styrene could have chronic effects beyond the immediate symptoms. International safety literature cites it as a substance that may cause cancer; there is thus no safe limit for exposure to it. Solatium payments and compensation for the victims and families are important, but so is access to the highest quality of health care for the victims. What happened in Gopalapatnam is also a warning for industries across India. Although some may see the incident as a consequence of the lockdown, the States have the authority under the Central government's orders to exempt process industries. It needs no special emphasis that safety of industrial chemicals requires continuous watch, with no scope for waivers. As India aims for a wider manufacturing base, it needs to strengthen its approach to public and occupational safety. Transparent oversight is not a hurdle to industrial growth. It advances sustainable development by eliminating terrible mistakes.

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WATER WISDOM DURING A PANDEMIC

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

Residents stand in queue to collect drinking water in Chennai on April 7, 2020. | Photo Credit: [PTI](#)

World Water Day was observed more online than in-person this year on March 22, given the guidelines notified by the WHO in the light of the ongoing [COVID-19 pandemic](#), yet its broader aim remained constant: to raise awareness on the importance of freshwater and advocate for its sustainable management.

More than any previous year, there was a recognition of the importance of water in handwashing and personal hygiene practices, an action that is as important as social distancing and nationwide lockdowns in breaking the circuit of coronavirus transmission.

The choice of theme for the event this year, “Water and Climate Change” reflected the desire of policymakers to address the impact of climate change on the water sector. Water is the primary medium through which climate change impacts trickle down to the community and individual levels, primarily through reduced predictability of water availability.

More broadly, climate change and water are inextricably linked. Growing populations and their demand for water increases the need for energy-intensive water pumping, transportation, and treatment. It contributes to the degradation of critical water-dependent carbon sinks such as peatlands. Due to climate change, water cycles experience significant change, which reflects in water availability and quality. A warmer climate causes more water to evaporate from both land and oceans; in turn, a warmer atmosphere can hold more water, roughly 4% more water for every 1°F rise in temperature.

These changes are expected to lead to negative consequences in the water sector, with increased precipitation and run-off (flooding) in certain areas and less precipitation and longer and more severe scarcity of water (droughts) in other areas. Hence, wet areas are expected to become wetter and dry areas drier. This influences almost all aspects of the economy including drinking water, sanitation, health, food production, energy generation, industrial manufacturing, and environmental sustainability and ultimately the achievement of the Sustainable Development Goals (SDGs). In coastal areas when more freshwater is removed from rivers and aquifers, saltwater will move farther upstream into the river mouth and the aquifer, which will put pressure on the limited freshwater available on the coast, forcing water managers to seek costly alternatives like desalination plants.

Water is a common pool natural resource that sustains ecosystems, biodiversity, food security, economies, and society; hence, its judicious use with balancing multiple water needs is significant. In developing countries like India, a large population depends on climate-sensitive sectors like agriculture, fisheries and forestry for its livelihoods. We cannot afford to let climate change-induced hydrological challenges overtake us.

India has come up with climate change adaptation and mitigation strategies and appropriate policy measures. The government is implementing the ‘National Action Plan on Climate Change’ through eight National Missions, including the Water Mission. However, effective policies need the support of the local governments, corporates and NGOs.

Water resources planning must be given due consideration while dealing with climate impacts.

As tanks and ponds can store and recharge the excess rainwater to the aquifer, their rejuvenation (desilting) facilitates flood and drought management. We need to revisit our rich tradition and culture of water wisdom in water resources management. More public awareness on the need for climate-resilient actions, including protecting carbon sinks like oceans, wetlands, peatlands, and mangroves, adopting climate-smart agricultural techniques, rainwater harvesting, waste-water reuse, and judicious use of water, should be generated and inculcated in each citizen.

Prakash Nellyat is a Chennai-based researcher

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To reassure Indian Muslims, the PM needs to state that the govt. will not conduct an exercise like NRC

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OCEANS MAY RISE OVER A METRE BY 2100, WARNS SCIENTISTS

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

In this file photo, ice chunks float in the Arctic Ocean as the sun sets near Barrow, Alaska. | Photo Credit: [AP](#)

Oceans are likely to rise as much as 1.3 metres by 2100 if Earth's surface warms another 3.5 degrees Celsius, scientists warned Friday.

By 2300, when ice sheets covering West Antarctica and Greenland will have shed trillions of tonnes in mass, sea levels could go up by more than five metres under that temperature scenario, redrawing the planet's coastlines, they reported in a peer-reviewed survey of more than 100 leading experts.

About ten percent of the world's population, or 770 million people, today live on land less than five metres above the high tide line.

Even if the Paris climate treaty goal of capping global warming below 2C is met — a very big “if” — the ocean watermark could go up two metres by 2300, according to a study in the journal *Climate Atmospheric Science*.

Earth's average surface temperature has risen just over one degree Celsius since the pre-industrial era, a widely used benchmark for measuring global warming.

“It is clear now that previous sea-level rise estimates have been too low,” co-author Stefan Rahmstorf, head of Earth system analysis at the Potsdam Institute for Climate Impact Research (PIK), told AFP.

The new projections for both the 2100 and 2300 horizons are significantly higher than those from the UN Intergovernmental Panel on Climate Change (IPCC), including a special report on oceans it released in September.

“The IPCC tends to be very cautious and conservative, which is why it had to correct itself upwards already several times,” Rahmstorf said.

Sea-level projections in the IPCC's landmark 2014 Assessment Report were 60% above those in the previous edition, he noted. A new Assessment will be finalised by the end of next year.

While less visible than climate-enhanced hurricanes or persistent drought, sea level rise may ultimately prove the most devastating of global warming impacts.

Indeed, it is the extra centimetres of ocean water that make storm surges from ever-stronger tropical cyclones so much more deadly and destructive, experts say.

Benjamin Horton, acting chair of the Nanyang Technical University's Asian School of the Environment in Singapore, led the survey to give “policymakers an overview of the state of the science”, a statement said.

Across the 20th century, sea level rise was caused mainly by melting glaciers and the expansion

of ocean water as it warms.

But over the last two decades the main driver has become the melting and disintegrating of Earth's two ice sheets.

Greenland and West Antarctica are shedding at least six times more ice today than during the 1990s. From 1992 through 2017 they lost some 6.4 trillion tonnes in mass.

Over the last decade, the sea level has gone up about four millimetres per year. Moving into the 22nd century, however, the waterline could rise ten times faster, even under an optimistic greenhouse gas emissions scenario, the IPCC has said.

The Greenland and West Antarctic ice sheets hold enough frozen water to lift oceans about 13 metres. East Antarctica, which is more stable, holds another 50 metres' worth.

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SAL FOREST TORTOISE HABITAT STRETCHES OVER UNPROTECTED AREAS

Relevant for: Environment | Topic: Biodiversity, Ecology, and Wildlife Related Issues

Critically endangered: The sal forest tortoise is heavily hunted for food and collected both for local use, such as decorative masks, and international wildlife trade. | Photo Credit: [Abhijit Das](#)

The sal forest tortoise is widely distributed over eastern and northern India and Southeast Asia. However, it is not common in any of this terrain. In fact, 23 of the 29 species of freshwater turtle and tortoise species found in India come under the threatened category in the IUCN red list and are under severe existential threat due to human activities. Also known as the elongated tortoise (*Indotestudo elongata*), the sal forest tortoise, recently assessed as critically endangered, is heavily hunted for food. It is collected both for local use, such as decorative masks, and international wildlife trade.

A recent study by ecologists in the Wildlife Institute of India, Dehradun, finds that the area designated as a protected area network has only a small overlap with the actual habitat it roams around in. According to the authors of the study published in the journal *Herpetological Conservation and Biology*, over 90% of the potential distribution of the species falls outside current protected area's network. Also, in northeast India, the representation of the species in protected areas is least, and there is little to no connectivity among most of the protected areas where the species is present.

The study also found that 29% of the predicted distribution of the species falls within high occurrence fire zones or areas where there is management burning. "This includes Uttarakhand State which is the "westernmost" distribution limit of the species and where field surveys were conducted with the help of Uttarakhand forest department," says Abhijit Das, an author of the study, from the Wildlife Institute of India, Dehradun, in an email to *The Hindu*. According to him, especially in northeast India, which is a suitable habitat for the species, they experience jhum fire. Such an intervention may not only directly kill the animals but also open up habitats, which, in turn, increases the chance of people finding the tortoise easily. Forest fires also perturb soil moisture which may impact forest floor thus changing the whole community on which the reptiles depend.

According to the IUCN the population of the species may have fallen by about 80% in the last three generations (90 years).

Dr. Das says: "We need to realise that tortoises are no less threatened than tigers. Thus, they should be part of regular monitoring effort. In summer days, these tortoises select moist patches such as dry stream beds. Such areas should be protected from the spread of forest fire."

The study covers not only parts of India but also Bangladesh, Bhutan and Nepal. Dr. Das observes: "It is not difficult to go to these countries for research or even in having collaborations. However, transboundary research has not picked up in our countries. For tigers, yes, there are some efforts in this line, but not for many other species which are equally threatened globally." There is for tigers, the "Tiger Conservation Unit" and transboundary conservation reserves such as Manas for the Indo-Bhutan region, the Sundarban for the India-Bangladesh region. "However, there are many species such as our study species which have very large distribution but it is rare and overexploited throughout its range. The critically endangered brackish water turtle (*Batagur baska*) distributed in India and Bangladesh also needs such support," he adds.

There is little information on the population sizes of the sal forest tortoise, or any such species, mainly because they are so rare, live in remote areas of the forest and funding opportunities to study them are few. Species having large distribution may suffer myriad problems. "Protected areas are designated in a largely mammal-centric way. Many reptiles and amphibians which are equally threatened live outside protected areas where exploitation risk is more," says Dr. Das.

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DECISION ON HYDROPOWER PROJECT IN ARUNACHAL PRADESH DEFERRED

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The Forest Advisory Committee, the apex body of the Environment Ministry tasked with deciding whether forest land can be diverted for industrial projects, has once again deferred its decision on a controversial hydropower project in Arunachal Pradesh.

The 3097 MW Etalin Hydropower project, in the State's Dibang Valley, has been delayed for over six years. This is because it required diverting 1165 hectares of forest in a region of rich biodiversity.

[The curious case of India's Environment Ministry](#) | [Arunachal Pradesh has potential to generate 50,000 MW of hydropower: Pema Khandu](#)

In 2015, the FAC had ruled that the Environment Impact Assessment commissioned by the power company had not properly accounted for the environmental impact of the project. It recommended that an "internationally credible" institute conduct studies over multiple seasons to record the region's ecological constitution. It had also recommended that the National Tiger Conservation Authority be consulted, because tigers had been sighted in the region. In 2019, the FAC reviewed the progress of the environment appraisal and said neither of its recommendations had been fully complied with, though a wildlife assessment was done by the Wildlife Institute of India, Dehradun. This is an autonomous institute funded by the Environment Ministry.

An FAC subcommittee conducted a site-visit in February this year. The objective of this visit was to determine if the land required for the project could be reduced and whether it was necessary to fell 30,2538 trees — as initially proposed — for the project.

[Also Read | Animal carcasses hung in Arunachal villages to fend off COVID-19](#)

The committee recommended that 15 hectares of forest land could be salvaged and a further 423 hectares would be handed over to the State forest department after commissioning the project. Also, 27,8038 trees would have to be felled. With these and a few other conditions, the FAC subcommittee approved the project.

In a meeting on April 23, the FAC — at least two of whose members were part of the subcommittee that did the site-visit — decided that it would be "prudent" to get an input from the Ministry of Power. The reasoning, according to the minutes of the meeting, was that since 2015 the government may have changed its policy on hydropower projects. Several hydropower projects have undergone a rethink in different parts of the country because of the costs, ecological damage and alternatives in the form of wind and solar energy.

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Government of India has allowed the movement of migrant workers by buses and 'Shramik' special trains to enable them to travel to their native places.

In order to capture the information regarding movement of migrants and facilitate the smooth movement of stranded persons across States, National Disaster Management Authority (NDMA) has developed an online Dashboard - National Migrant Information System (NMIS).

The online portal would maintain a central repository on migrant workers and help in speedy inter-State communication/co-ordination to facilitate their smooth movement to native places. It has additional advantages like contact tracing, which may be useful in overall COVID-19 response work.

The key data pertaining to the persons migrating has been standardized for uploading such as name, age, mobile no., originating and destination district, date of travel etc., which States are already collecting.

States will be able to visualize how many people are going out from where and how many are reaching destination States. The mobile numbers of people can be used for contact tracing and movement monitoring during COVID-19.

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VG/SNC/MM

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WORLD CARBON POLLUTION FALLS 17% DURING PANDEMIC PEAK: STUDY

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

In this April 21, 2020, file photo, 42nd Street in New York has very little traffic. The world cut its daily carbon dioxide emissions by 17% at the peak of the pandemic shutdown last month, a new study found. | Photo Credit: [AP](#)

The world cut its daily carbon dioxide emissions by 17% at the peak of the [COVID-19](#) pandemic shutdown last month, a new study found.

But with life and heat-trapping gas levels inching back toward normal, the brief pollution break will likely be a drop in the ocean” when it comes to climate change, scientists said.

Also read: [Cauvery, tributaries look cleaner as pandemic keeps pollution away](#)

In their study of carbon dioxide emissions during the coronavirus pandemic, an international team of scientists calculated that pollution levels are heading back up — and for the year will end up between 4% and 7% lower than 2019 levels. That’s still the biggest annual drop in carbon emissions since World War II.

Also read: [Lifting lockdowns too quickly could spark 'deadly resurgence': WHO](#)

It’ll be 7% if the strictest lockdown rules remain all year long across much of the globe, 4% if they are lifted soon.

For a week in April, the United States cut its carbon dioxide levels by about one-third.

Big emissions cut by India, Europe

[Data | United States bears the global brunt of new coronavirus cases](#)

China, the world’s biggest emitter of heat-trapping gases, sliced its carbon pollution by nearly a quarter in February, according to a study Tuesday in the journal *Nature Climate Change*. India and Europe cut emissions by 26% and 27% respectively.

The biggest global drop was from April 4 through 9 when the world was spewing 18.7 million tons (17 million metric tons) of carbon pollution a day less than it was doing on New Year’s Day.

Such low global emission levels haven’t been recorded since 2006. But if the world returns to its slowly increasing pollution levels next year, the temporary reduction amounts to “a drop in the ocean,” said study lead author Corinne LeQuere, a climate scientist at the University of East Anglia.

“It’s like you have a bath filled with water and you’re turning off the tap for 10 seconds,” she said.

By April 30, the world carbon pollution levels had grown by 3.3 million tons (3 million metric tons) a day from its low point earlier in the month. Carbon dioxide stays in the air for about a century.

Outside experts praised the study as the most comprehensive yet, saying it shows how much

effort is needed to prevent dangerous levels of further global warming.

“That underscores a simple truth: Individual behavior alone ... won’t get us there”, Pennsylvania State University climate scientist Michael Mann, who wasn’t part of the study, said in an email.

“We need fundamental structural change. If the world could keep up annual emission cuts like this without a pandemic for a couple decades, there’s a decent chance Earth can avoid warming another 1.8 degrees (1 degree Celsius) of warming from now,” study authors said. But getting the type of yearly cuts to reach that international goal is unlikely, they said.

If next year returns to 2019 pollution levels, it means the world has only bought about a year’s delay in hitting the extra 1.8 degrees (1 degree Celsius) of warming that leaders are trying to avoid, LeQuere said. That level could still occur anywhere from 2050 to 2070, the authors said.

The study was carried out by Global Carbon Project, a consortium of international scientists that produces the authoritative annual estimate of carbon dioxide emissions. They looked at 450 databases showing daily energy use and introduced a measurement scale for pandemic-related societal confinement in its estimates.

Nearly half the emission reductions came from less transportation pollution, mostly involving cars and trucks, the authors said. By contrast, the study found that drastic reductions in air travel only accounted for 10% of the overall pollution drop.

In the US, the biggest pollution declines were seen in California and Washington with plunges of more than 40%.

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70% POWER PLANTS WON'T MEET EMISSION STANDARDS BY 2022 DEADLINE: CSE

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

A report released by the Centre for Science and Environment (CSE) on Thursday said that with just two years to go, 70% of the country's power plants won't be able to meet the stringent emission standards that will come into effect in 2022.

The standards set by the Ministry of Environment, Forest and Climate Change in December 2015 were based on global standards, it said.

CSE director general Sunita Narain said in a statement, "Our assessment finds that even after seven years since the notification and even after the agreed five-year extension given to this sector in 2017, most of the total installed coal-fired capacity will not be compliant with the crucial sulphur dioxide (SO₂) standards by 2022."

The CSE said there was lack of information in the public domain about the compliance with particulate matter or nitrogen oxide standards.

"Coal-fired power plants are some of the most polluting industries in the country. They account for over 60% of the total PM emissions from all industry, as well as 45% of the SO₂, 30% of oxides of nitrogen and over 80% of the mercury emissions. Therefore, even as we continue using coal, India's thermal power sector must clean up its act. This is absolutely non-negotiable," Ms. Narain said.

The CSE report said the implementation of the stringent standards would, according to rough estimates, reduce emissions of PM by 35%, SO₂ by 80% and NO_x by 42%.

Power plants with 97GW capacity were compliant with the standards so far and 14GW was in the upgrade process, the report said. "Total compliance and non-compliance could not be ascertained as no information was available on the status of progress of an additional 69 GW capacity."

For SO₂, 16GW capacity was compliant and tenders had been awarded with respect to 32GW capacity and preliminary work was on for 125 GW capacity, while there were no plans for 9GW capacity.

"It is highly unlikely for units still at preliminary stages or with no plan to meet the 2022 deadline even if they awarded the tenders now. It takes at least two years for a station to complete FGD (flue-gas desulfurisation) construction. Hence, a coal-based power project with a 2022 deadline should have begun construction by 2019," the report said. It recommended that the Environment Ministry issue directions and impose fines on the plants that won't meet the 2022 deadline.

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TACKLING THE LOCUST ATTACK

Relevant for: Environment | Topic: Disaster and disaster management

May 25, 2020-Monday

-°C

Humidity

-

Wind

-

Metro cities - [Delhi](#), [Mumbai](#), [Chennai](#), [Kolkata](#)

Other cities - [Noida](#), [Gurgaon](#), [Bengaluru](#), [Hyderabad](#), [Bhopal](#), [Chandigarh](#), [Dehradun](#), [Indore](#), [Jaipur](#), [Lucknow](#), [Patna](#), [Ranchi](#)

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While India battles the coronavirus pandemic, four Indian states — Madhya Pradesh, Rajasthan, Punjab and Gujarat — are also confronting another challenge — a desert locust attack. Sixteen out of 33 districts of Rajasthan are battling the scourge; Madhya Pradesh has reported one of the worst attacks in 27 years in the Nimar-Malwa region; and, Punjab and Gujarat have warned farmers that they could be the next. Reports say that swarms are threatening to touch the Rajasthan-Haryana border, and then could move into Delhi. The current round is the second such attack; the first one was from December to February. India was then moderately successful in tackling the problem, with states deploying teams to spray organophosphate to kill locusts.

The desert locust is one of 12 species of short-horned grasshoppers; its swarms can travel up to 130 km in one day. Each day, a locust can eat its own weight — about two grams of fresh vegetation. This means that they not only devour valuable standing crops, but can also devastate livelihoods of those associated with the agricultural supply chain. The Food and Agriculture Organization has warned that the locust attack could lead to a major threat to food security. Locust attacks are not new to India, but earlier they used to leave India by November. But the swarms stayed on till early February this year. This, scientists said, was because of the climate crisis. In 2019, the monsoon started six weeks ahead of time (first week of July) in western India. It also lasted till November, instead of the usual September/October cycle. Extended rains created breeding conditions and also produced natural vegetation on which locusts feed. The May attack has been attributed to a series of cyclones in the Indian Ocean that hit a sandy area in the Arabian peninsula, providing hospitable breeding conditions for locusts.

Current global challenges — the coronavirus pandemic, increasing intensity of cyclones (as Amphan has shown), the locust attacks in Africa, Iran, Pakistan and India — demonstrate the perils of environmental degradation and the need for international cooperation to fight trans-border challenges. India has proposed a trilateral response in partnership with Pakistan and Iran to combat the desert locust wave. This is positive, and must be a template to deal with environment-related challenges.

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THE SWARM: THE HINDU EDITORIAL ON LOCUST ATTACK

Relevant for: Environment | Topic: Disaster and disaster management

Just last week, [eastern India was battered](#) by one of the most powerful cyclones in decades and now, even as hundreds of lives are lost every day to the [coronavirus](#), another danger lurks on the nation's west. A burgeoning [locust swarm](#) in Rajasthan, Gujarat and even parts of Madhya Pradesh threatens to amplify into an agrarian disaster. The desert locust, as a species, is the bane of agriculture. Monitoring and tackling periodic outbreaks of the marauding insects are among the objectives of the [Locust Warning Organization](#) (LWO) in Jodhpur. There were 13 locust upsurges from 1964 to 1997, and after 2010 there was "no large scale breeding" reported. Once a significant outbreak starts, it lasts for about two years, and then there is a quietus for about eight years. LWO officials say that the swarm building up is potentially the "worst in decades".

It is a testimony to its devastating potential that an arcane piece of legislation, The East Punjab Agricultural Pests, Diseases and Noxious Weeds Act, 1949, has a provision whereby a District Collector can "...call upon any male person not below the age of 14 years resident in the district to render all possible assistance ..." and there is potential imprisonment for failure to abide by the law. Antiquated as it may sound, it is a reminder that humanity's oldest blights — plague, pestilence — will never truly be eliminated. The breeding locusts which threaten farming are an indirect fallout of the warming Indian Ocean, as some meteorologists suggest. Last year, there were fears that the monsoon may fall short because of an El Niño, or warming of the Equatorial Pacific. However there was an extreme flip. By July it was evident that a positive Indian Ocean Dipole, or relatively higher temperature in the western Indian Ocean, was in the works. This led to record-breaking rainfall in India — then a cause for cheer — as well as in eastern Africa. But moist African deserts precipitated locust breeding and favourable rain-bearing winds aided their transport towards India. On the other hand, coronavirus quarantines meant that routine coordination activities involving India, Pakistan and Afghanistan regarding spraying pesticides were halted. While it is some comfort that there is now limited standing crop in India, forecasts are for good rains in Rajasthan, and, paradoxically, conducive conditions for locust breeding during the sowing season. A less highlighted aspect of global warming is that it may link disparate disasters — floods, pandemics and pestilence — amplifying the potency of each. Improved science and technology is only making it clearer that man's follies transcend borders. This makes it necessary to abandon any territorial blame game and focus on policies that will ensure an equitable, sustainable future.

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GLOBAL CARBON POLLUTION FALLS BY 17%

Relevant for: Environment | Topic: Environmental Conservation, Sustainable Development, and EIA

The daily levels of carbon dioxide emissions in the world have reduced by 17% during the [COVID-19 pandemic](#). A study based on this was carried out by the Global Carbon Project. An international team of scientists said the annual estimate of carbon dioxide emissions is estimated to end up between 4% and 7% lower than 2019 levels.

This is the [biggest annual drop in such emissions](#) since World War II. It is expected to be at 7% if strict lockdown measures continue. Whereas, it will be 4% if the lockdown is lifted.

In April, the US cut its carbon dioxide levels by about one-third. China, the world's biggest emitter of heat-trapping gases, sliced its pollution by nearly a quarter. Big emission cuts were recorded by India and Europe with 26% and 27% respectively.

[COVID-19 | Interactive map of confirmed coronavirus cases in India](#)

Nearly half of the emission reductions came from less transportation pollution. But, reductions in air travel accounted for only 10% of the overall pollution drop.

The world was spewing 18.7 million tonnes of carbon pollution a day in the beginning of April. Such low global emission levels have not been recorded since 2006.

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By the end of April, the carbon pollution levels had grown by 3.3 million tonnes a day, since its low point earlier in the month. The earth can avoid warming another 1.8 degrees from now, if the current annual emission cuts are maintained.

But, authors of the study say that is unlikely. If the next year returns to 2019 pollution levels, this temporary reduction will only be "a drop in the ocean."

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CYCLONE AMPHAN: A GRIM SNAPSHOT OF INDIA'S CLIMATE CHANGE FUTURE

Relevant for: Environment | Topic: Environmental Degradation - GHGs, Ozone Depletion and Climate Change

Fuelled by climate change, Cyclone Amphan tore through the Sunderbans and devastated Kolkata. What lessons should we learn from this extreme event?

When it developed in the southern Bay of Bengal on 13 May, the storm that was going to become cyclone Amphan was a low pressure system. It travelled north from a point a couple of hundred kilometres east of Colombo, Sri Lanka, seeking warmer waters, gathering power. The India Meteorological Department (IMD) issued its first warning the same day, predicting that it would intensify into a cyclone by the evening of 16 May.

That is exactly what happened. The storm deepened into a depression and by the evening of 16 May, into cyclone Amphan. Climate change added a twist to the tale. It was predicted that the storm would develop into an extremely severe cyclonic storm (ESCS) by 19 May, with wind speeds of 90 knots (166 kmph). That would have been the equivalent of a Category 2 hurricane on the Saffir-Simpson scale. Instead, by the morning of 18 May, Amphan had intensified into a super cyclone with wind speeds of up to 240 kmph. In under 24 hours, its wind speed had gone from 65 knots to 125 knots.

To climate scientist Roxy Mathew Koll at the Indian Institute of Tropical Meteorology (IITM) in Pune, the answer lay in a marine heatwave sweeping through parts of the Bay of Bengal. "Cyclones keep evolving based on where the warm waters are. We observed some of the highest surface temperatures recorded by weather buoys installed in the Bay of Bengal, with unprecedented values of 32-34 degrees Celsius, just before the cyclone," he says. Koll says normal surface temperatures at this time of the year are 29-30 degrees Celsius. But the marine heatwave led to a rapid intensification of the cyclone into a super cyclone. "So in about 18 hours it developed from a Category 1 to a Category 5 storm with winds of up to 250 kmph. That's something unprecedented."

The heatwave also led to massive bleaching of coral reefs in the Gulf of Mannar through April and May. As last year's Intergovernmental Panel on Climate Change's Special Report On The Ocean And Cryosphere In A Changing Climate demonstrated, marine heatwaves are a result of climate change. The global ocean has absorbed 90% of the excess heat generated by greenhouse gas emissions since 1970. The rapid, devastating intensification of tropical cyclones, as well as the destructive bleaching of coral reefs, is the result. Last year's cyclone Fani, which struck Odisha in early May, had shown somewhat similar intensification, but Amphan had no peer in how rapidly it intensified.

The vulnerable delta

Cyclone Fani had exacted a devastating cost. It affected over 16.5 million people in 14 Odisha districts and the state suffered an estimated loss of 24,176 crore; 64 people were killed. From 2007-20, the Bay of Bengal basin has seen at least 15 major cyclones. Some of these, like Sidr in 2007, Aila in 2009, Phailin in 2013, Hudhud in 2014 and Bulbul in 2019, caused widespread damage in Odisha, West Bengal and Bangladesh. The main focus of most of these cyclones was the Ganga-Brahmaputra delta and the Sunderbans.

Amphan too made landfall in the Sunderbans, between Digha in West Bengal and Hatiya Island

in Bangladesh, between 2.30-6pm on 20 May. The path had been predicted definitively by IMD as early as 16 May, and according to the National Disaster Response Force (NDRF), over 500,000 people were evacuated from coastal West Bengal. The cyclone had weakened to an ESCS and was packing winds of 160-170 kmph, with wind gusts of 190 kmph. As the cyclone headed straight for Kolkata, it left a trail of devastation in its wake over the South 24 Parganas and North 24 Parganas districts: A storm surge of over 13-14ft swept through large parts of these districts and sea water inundated the land. River embankments across the Sunderbans and low-lying districts were swept away, sweetwater ponds salinated, houses and crops destroyed.

According to Sugato Hazra, director of the School of Oceanographic Studies at Jadavpur University, Kolkata, it could have been worse. "The inundation may not have been as high as with cyclone Aila because the landfall coincided with a low tide in the Sunderbans," he says. However, due to the saline water, he says, waterlogging will affect the areas for a long time.

Giriraj Amarnath, senior researcher and research group leader, water risks and development resilience, at the Colombo-based International Water Management Institute (IWMI), says that while the Sunderbans mangroves are a resilient system, and did a great job of weakening the cyclone, their ability to protect communities depends on the storm surge. "If the storm surge is 25-30ft, even the trees can get submerged," he says, adding that "the people living here will suffer the most."

As more of the Sunderbans is turned into arable land, mangrove density declines. And people are subjected to greater risks. "So the question is how much you want to develop in a region and how much you want to take the burden of human deaths and infrastructure losses," says Amarnath. "We have to revive the channels in the delta, revive the rivers in the delta, bring more freshwater so the mangroves can regenerate fast. And the people can get some freshwater. Without this the delta cannot survive," says Hazra.

While the delta took the brunt of the violence of Amphan, Kolkata wasn't spared. Over 5,000 trees were uprooted, there was large-scale flooding, electricity and water lines were down for days. The city came face to face with its climate change future as winds of 130-140 kmph battered it on the evening of 20 May.

"Kolkata is a very vulnerable city because of its density of population as well as very underdeveloped infrastructure because it's an old city. And it is a very low-lying area, it is more or less like a basin. So water cannot escape easily," says Hazra. He emphasizes that high-intensity rainfall has increased over the past decades in the city. "The city will remain flooded unless you can pump out the water. And pumping out the water will depend upon your readiness and preparedness of flood management," he says.

Amarnath holds similar views on the risks that Kolkata faces. "We don't really plant the trees that are required in an urban system. We don't allow for groundwater recharge. Our drains are still of 1m width and less. They are from British times and need to be upgraded," he says.

Rebuilding for the future

Amarnath shares high-resolution images from international disaster monitoring satellites to show the extent of flooding. As West Bengal picks up the pieces and rebuilds, detailed flooding maps like these, he says, can help chart a path of resilience. "I was looking at media sources which reported that the government of West Bengal has given an initial loss estimate of 1 trillion. How can you be sure? It can even be 2 trillion. I would say use these footprints of satellite data which show inundation and breaches, then people could estimate really where the damage has

happened, how much compensation should be given," he says. "There is a term called post-disaster need assessment. So if you do it in a detailed way, you can come up with where are the locations and what the priorities should be for recovery planning," he adds.

When it comes to cities like Kolkata, Amarnath says, "We cannot plan for today and say we can manage every disaster in the future." He suggests we make a habit of climate screening for managing land, water and ecosystem services. "Look at more bio-retention, more green infrastructure. You need to improve your water system, regulate for climate and plan for flooding mitigation," he says.

Hazra insists the mangroves need to be taken seriously; without them, such storms will hit Kolkata directly. He also says it's time the government thinks of relocating people away from vulnerable coastal areas, giving them access to other livelihood options and compensating them equitably for the move. "You cannot keep them there and go on saving them. It is better to rehabilitate them a little away from the delta margin because nearer to the coast there is higher vulnerability and risk," he adds.

In Hazra's view, India's climate policy leaves a lot to be desired. He says the country has a gender-blind climate policy, even when it's clear that it is women who suffer the most. "There's no place for the most vulnerable people in the delta. There's no place for the delta in the Indian plan. This is the most vulnerable part and you don't have an Indian plan for that." He says the government doesn't even generate gender-segregated data for communities affected by extreme climate shocks.

What is clear is that the wounds inflicted by cyclone Amphan will fester for a long while. And given the worsening climate crisis, this entire tale of devastation may be repeated later this year, or next year. There are many questions about planning, adaptation and resilience that need to be addressed right now, but, as Hazra says, such questions should be asked all the time, not just after a disaster.

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