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## LADAKH ADOPTS STATE ANIMAL AND BIRD

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

Snow leopard numbers are dwindling worldwide.

Ladakh on Wednesday adopted two endangered species, snow leopard and black-necked crane, as the State animal and the State bird, two years after it was carved out as a separate Union Territory (UT) from the erstwhile State of J&K.

“The snow leopard ( *Panther unica* ) and black-necked crane ( *Grus nicricollis* ) shall be the State animal and State bird respectively of the UT of Ladakh from the date of issue of the notification,” reads an order issued by the Lieutenant Administration (LG) of Ladakh.

Black-necked crane, only found in the Ladakh region, was the State bird of J&K before August 5, 2019.

“Black-necked crane and snow leopard are two endangered species and the pride of Ladakh,” said Konchok Stanzin, councillor from Chushul constituency.

Black-necked cranes are only found in Ladakh’s Changthang region. They are described as majestic birds — around 139 cm long with a 235 cm wingspan and weighing 5-6 kg. The bird’s sighting is considered auspicious in Ladakh.

Snow leopard, whose numbers are dwindling worldwide, has been categorised as “vulnerable” in the International Union for Conservation of Nature Red List.

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# INDIA MUST COMMIT TO NET ZERO EMISSIONS

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

India is at the risk of being cast globally as an outlier on climate action, with a negative fallout. With over 50% of the global economy already committed to net zero emissions by 2050 — and China committing to be so before 2060 — this is not where you want to be.

The pace and scale of climate action is only set to increase, with the recent Intergovernmental Panel on Climate Change (IPCC) report unequivocal on the need for urgent and stronger responses. Events around the world underline the point — towns washed away in Germany, subways turned into storm water drains in China, forests fried in the United States and so many more lives lost to flooding in India.

### Mid-century target for net zero emission inadequate, says India

It is not only governments that are increasing climate action. The business world is too, not just to protect themselves against the risks of climate change but also to take advantage of the massive opportunities arising as the global economy shifts to net zero emissions. Last year, investors injected over \$500 billion into climate transition. In my country, Australia, the number of major companies that have put in place a target of reaching net zero emissions by 2050 has more than trebled in the past year.

The United Nations Climate Change Conference (COP26) in November in Glasgow is shaping up to be the most important climate meeting since the Paris Agreement in 2015. It is squarely focused on supercharging global ambition and action on climate change, as all countries, including India, agreed to do in the historic Paris Agreement.

Over 100 countries have already committed to net zero emissions by 2050, with more expected at COP26. Two key holdouts are India and Australia. In the case of my country, under mounting pressure at home and internationally, the government is moving toward such an announcement and I am confident they will do so by or at COP26.

### India will reduce more than targeted 33% carbon emission by 2030: Power Minister

I am not so confident about India. From what I hear through networks from my time as the Australian High Commissioner to India and as Australia's Ambassador for the Environment, India is resolutely not committing to net zero by 2050, including on the basis that as a developing country, it needs to see significant support from developed countries for climate action as part of making any such commitment.

Perhaps this is negotiating tactics. Either way, I fear India may shoot itself in the foot by resisting net zero by 2050.

First, India itself has a national interest in ambitious global and national climate action. Like Australia, it is among the most vulnerable countries to climate change and, therefore, should be among the more active against the threats. India faces harmful impacts related to sea level rise, heat stress, drought, water stress and flooding, biodiversity and natural disasters. Climate change is not coming — it is here.

### India can do more, hints climate official

Second, as a rising power, India naturally seeks stronger influence globally. Being an outlier on the global challenge facing our generation does not support this aim. India is already the third largest emitter in the world, and is set to be the largest as the United States, China, and the European Union are all now signed up to net zero.

This will become a significant drag on India's international diplomacy. This applies not just to key relationships like with the U.S., where President Joe Biden's administration is mainstreaming climate action into its economic, foreign and security policy, but also with much of the Group of 77 (G77) states, who are increasingly concerned to see climate action, and in multilateral groupings such as the United Nations and ASEAN-APEC.

Finally, as the famous phrase goes, "it's the economy, stupid". There is no longer a trade-off between reducing emissions and economic growth. For example, the U.K. has reduced emissions over 40% and grown its economy over 70% since 1990. Solar energy costs have fallen 90% in recent years, providing the cheapest electricity in India ever seen. Also, given the negative impacts, addressing climate change in India's economic development is now central to success, not an added luxury to consider. For example, agricultural policy that does not consider adaptive approaches to maximise productivity in the face of increased flooding and drought due to climate change is derelict.

Acting on climate change, a \$11 trillion opportunity for India: Report

The transition of the global economy to net zero emissions is the biggest commercial opportunity in history. In just the energy sector alone, an estimated \$1.6 to \$3.8 trillion of investment is required every year until 2050. China gets this, which is why it is investing heavily in gaining an advantage in the technologies of the new economy, be it renewable energy and storage, electric and hydrogen transport, low emissions industry, green cities or sustainable agriculture. India needs to be riding this wave.

It is not as if India is at a standing start. It is set to significantly exceed its Paris Agreement commitment of reducing the emissions intensity of its GDP by 33-35% below 2005 levels by 2030, providing ready room for higher ambition. India is impressing the world with its leading roll-out of renewable energy and target for 450GW by 2030, linked to its leadership on the International Solar Alliance and recent national hydrogen strategy. Indian corporates are also stepping up, with the Tata Group winning awards on sustainability, Mahindra committing to net zero by 2040 and Reliance by 2035. There is plenty on which to build.

A low-carbon future through sector-led change

And India should not be expected to build alone. India's national interests on climate action are now engaged in ways that go significantly beyond waiting for donor support to drive ambition, notwithstanding reasonable arguments about historical responsibility, per capita emissions and equity. With growing wealth and stature, India is increasingly disinclined toward handouts. But that does not mean well-targeted donor investments and international partnerships should not be a factor in raising India's climate ambition. In fact, they should be, as it is more and more obvious that the world needs to work together for success.

This could come in many guises, from stronger political engagement and dialogue to policy support in areas of mutual challenge such as energy policy, carbon markets and post-COVID green economic recovery. Practical support and cooperation in areas like rolling out renewable energy and integrating it with the national grid, zero emissions transport, decarbonising hard to abate sectors like steel, cement and chemicals and decarbonising agriculture offer significant scope to raise ambition. As does working with India on innovative green financing for

decarbonising investments, including using donor support to mobilise private sector finance, green bonds and climate transition funds. Whichever it is, they need to be lasting partnerships that deliver results.

Comment | [In climate change noise, India's role as conductor](#)

Yet, in the end, India's tryst with destiny rests in its own remarkable hands, as it always has been. In a land where the earth is called mother, and Mahatma Gandhi, major religions and the Constitution enshrine environmental care, commitment to net zero emissions by 2050 should almost be foretold. The world hopes we will see it soon.

*Patrick Suckling was Australia's High Commissioner to India and Ambassador for the Environment. He is a senior fellow at the Asia Society Policy Institute (ASPI) and senior partner in Pollination, a specialist climate advisory and investment firm. This oped draws from his recent paper for ASPI on Catalysing India's Climate Ambition*

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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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## 'RAJIV GANDHI' GOES FROM ASSAM NATIONAL PARK'S NAME

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

Less than a month after the Central government renamed the Khel Ratna after hockey legend Dhyhan Chand, the Assam Cabinet has decided to drop former Prime Minister Rajiv Gandhi's name from the Orang National Park. "The decision to restore the original name of Orang National Park was taken following requests from the Adivasi groups in the State," government spokesperson Pijush Hazarika said after a Cabinet meeting. The Assam Pradesh Congress Committee condemned "such petty attitudes" of the BJP-led government.

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## PARTICULATE POLLUTION: 40% INDIANS RISK REDUCED LIFE EXPECTANCY

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

NEW DELHI: Nearly 40% of India's population is exposed to pollution levels not seen in any other country, with 510 million North Indians forecast to losing 8.5 years of life expectancy on an average if current levels persist, as per a study done by Energy Policy Institute of University of Chicago.

The study highlighted that all of India's 1.3 billion people live in areas where the annual average particulate pollution level exceeds the World Health Organization's (WHO) guideline. Since 1998, average annual particulate pollution has increased 15%, cutting nine years off the life of an average resident over those years.

The scientists took into account new data from the Air Quality Life Index (AQLI), according to which South Asia is home to the most polluted countries on earth, with Bangladesh, India, Nepal, and Pakistan accounting for nearly a quarter of the global population and consistently ranking among the top five most polluted countries in the world.

According to AQLI, the estimated impact is even greater across northern India, the region that experiences the most extreme of air pollution in the world. The residents of this region, which includes the megacities of Delhi and Kolkata, are on track to lose more than nine years of life expectancy if 2019 concentrations persist.

It added that annual average PM2.5 concentration in the cities of Allahabad and Lucknow in Uttar Pradesh is 12 times the WHO guideline. Residents of Lucknow stand to lose 11.1 years of life expectancy if these pollution levels persist. Residents of the national capital could see up to 10 years added to their lives if pollution were reduced to meet the WHO guideline; up to 7 years if pollution met India's national standard, the study said.

Working unseen inside the human body, particulate pollution has a more devastating impact on life expectancy than communicable diseases like tuberculosis and HIV/AIDS, behavioural killers like cigarette smoking, and even war, scientists said.

"During a truly unprecedented year where some people accustomed to breathing dirty air experienced clean air, and others accustomed to clean air saw their air dirty, it became acutely apparent the important role policy has played and could play in reducing fossil fuels that contribute both to local air pollution and climate change," says Michael Greenstone, the Milton Friedman Distinguished Service Professor in Economics and creator of the AQLI along with colleagues at the Energy Policy Institute at the University of Chicago (EPIC). "The AQLI demonstrates the benefits these policies could bring to improve our health and lengthen our lives."

Alarming, India's high level of air pollution has expanded geographically over time, the study said.

In 2019, the central government declared a "war on pollution" and announced the National Clean Air Programme (NCAP). The goal is to reduce particulate pollution by 20-30% relative to 2017 levels by 2024. Though the NCAP's goals are non-binding, if India does achieve and sustain this reduction, it would lead to remarkable health improvements: a nationwide reduction

of 25%, the midpoint of the NCAP's target, would increase India's national life expectancy by 1.8 years, and by 3.5 years for residents of Delhi, the study pointed out.

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## '28% OF 138,000 ASSESSED SPECIES FACE EXTINCTION'

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

Indonesia's Komodo dragons listed as "endangered". | Photo Credit: [ROMEO GACAD](#)

Some 28% of the 1,38,374 species assessed by the International Union for the Conservation of Nature (IUCN) for its survival watchlist are now at high risk of vanishing forever, the global conservation body said on Saturday.

Habitat loss, overexploitation and illegal trade have hammered global wildlife populations for decades, and climate change is now kicking in as a direct threat as well, the IUCN reported.

Trapped on island habitats made smaller by rising seas, Indonesia's fearsome Komodo dragons were listed as "endangered". The species "is increasingly threatened by the impacts of climate change" said the IUCN, with rising sea levels expected to shrink its tiny habitat by at least 30% over the next 45 years.

Some 37% of the 1,200 shark and ray species assessed by experts are directly threatened by extinction, a third more than only seven years ago, it warned on Saturday.

"The conservation status of the group as a whole continues to deteriorate," Nicholas Dulvy, a professor at Simon Fraser University, said.

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This research team at Central University of Jharkhand has used the dye extract of the kamala fruit to create a low-cost and non-toxic sensitiser for dye-sensitised solar cells. But there is still a lot to be done to finalise the efficacy

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# PM URGES PRIVATE SECTOR TO HELP IMPROVE QUALITY IN GOVT. SCHOOLS

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

Teacher connect:Narendra Modi announcing various initiatives at the Shikshak Parv on Tuesday.PTI

The private sector must come forward and contribute to increasing the quality of education in government schools, Prime Minister Narendra Modi said on Tuesday, while launching a portal to coordinate private contributions for school development.

Addressing the inauguration of a 10-day Shikshak Parv, Mr. Modi praised teachers for using online teaching and assessment methods to promote learning during the COVID crisis, despite recent surveys showing that many students in rural India had no access to digital education during the pandemic.

## Talking books project

He rolled out five initiatives on Tuesday as part of the implementation of the National Education Policy, including a 10,000-word dictionary for Indian Sign Language and a talking books project for visually challenged students.

A teacher training programme for early childhood education, a standards setting authority for the Central Board of Secondary Education and the Vidyanjali 2.0 portal to facilitate private donors, corporate social responsibility contributions and volunteering activities are part of the initiatives.

The Prime Minister emphasised that the transformation of the education sector is “not just policy-based but also participation based”, and noted that the NEP had involved consultations with academics, teachers and other stakeholders at every level.

“Now we have to take this participation to a new level, we also have to involve society in it,” he said. “In this society, our private sector has to come forward and contribute to increasing the quality of education in government schools.”

Mr. Modi praised teachers for their efforts during the pandemic. “In this corona period, all of you have shown the power of our education system. The challenges were many but you all resolved them swiftly. Online classes, group video calls, online projects, online exams, many such words were not even heard before. But our teachers, parents and our youth have easily made them a part of daily life.”

However, a recent report on the impact of school closures in 15 States by a team headed by economist Jean Dreze noted that only 8% of rural students and 24% of urban students had regular access to digital education during the pandemic. Among rural students, 37% had stopped studying altogether.

Another survey from the Annual Status of Education Report in rural Karnataka found that primary and elementary students have suffered a year of learning losses in foundational literacy and numeracy.

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# ICELAND CREATES PLANT THAT SUCKS CARBON DIOXIDE FROM AIR AND TURNS IT INTO ROCK

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

A company in Iceland has built the world's largest plant that sucks carbon dioxide directly from the air and deposits it underground.

The giant Orca plant, constructed by Switzerland's start-up Climeworks and Iceland's Carbfix, comprises four units, each made up of two metal boxes, similar in appearance to the containers used for maritime transport.

Orca is named after the Icelandic word "Orka" meaning "energy".

The company has claimed that the [Orca plant](#) can draw 4,000 tonnes of carbon dioxide (CO<sub>2</sub>) out of the air every year.

According to the US Environmental Protection Agency (EPA), that is the equivalent of the annual emissions from about 870 cars.

Last year, global CO<sub>2</sub> emissions totalled 31.5 billion tonnes, according to the International Energy Agency.

Direct air capture is one of the few technologies extracting carbon dioxide from the atmosphere and is viewed by scientists as vital to limit [global warming](#), blamed for causing more heatwaves, wildfires, floods and rising sea levels.

There are currently 15 direct air capture plants operating worldwide, capturing more than 9,000 tonnes of CO<sub>2</sub> per year, according to the IEA.

## How does Iceland's Orca plant suck CO<sub>2</sub> from the air?

To collect the carbon dioxide, the plant uses fans to draw air into a collector, which has a filter material inside.

Once the filter material is filled with CO<sub>2</sub>, the collector is closed and the temperature is raised to release the CO<sub>2</sub> from the material after which the highly concentrated gas can be collected.

The CO<sub>2</sub> is then mixed with the water before being injected at a depth of 1,000 metres into the nearby basalt rock where it is petrified.

Orca is the only one that permanently disposes of the CO<sub>2</sub> rather than recycling it.

US oil firm Occidental is currently developing the largest direct-air-capture facility, to pull 1 million tonnes per year of carbon dioxide from the open-air near some of its Texas oilfields.

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## NATIONAL MISSION FOR CLEAN GANGA & NAULA FOUNDATION CELEBRATE HIMALAYAN DAY 2021 WITH THE THEME 'CONTRIBUTION OF HIMALAYAS AND OUR RESPONSIBILITIES'.

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

The National Mission for Clean Ganga organised Himalayan Diwas in association with Naula Foundation. This year's theme is 'Contribution of Himalayas and our responsibilities'. The event was part of the ongoing celebration of 'Azadi ka Amrit Mahotsav'. Himalaya Diwas is celebrated every year on 9<sup>th</sup> September in the state of Uttarakhand. It is celebrated with the aim to conserve Himalayan ecosystem and region. It was officially declared as Himalaya Day in 2015 by the then Chief Minister.

Explaining the significance of Himalayas, Shri Rajiv Ranjan Mishra, Director General, NMCG raised concerns over unplanned urbanization in the Himalayas, and said, "Himalayan hill towns face several challenges because of poor building planning & designs, poor infrastructure (roads, sewage, water supply etc) and unprecedented cutting of trees. This causes serious ecological issues." He added that there is an urgent need to develop eco-sensitive hill town plans and designs. "We cannot have similar master plans for cities in plains and hills," he said. He emphasized that the Himalayas are a source of strength and a valuable heritage not only for India but the entire world and we need to preserve them. Mr Mishra said, "This can be made possible with scientific knowledge along with community involvement and we welcome Naula Foundation's efforts".



Padma Shri Kalyan Singh Rawat in his key note address said, "Himalayas are a source of medicinal plants which makes Ganga water special and gives life to not only Ganga but many smaller streams."

Congratulating on the occasion of Himalayan Diwas, Prof Vinod Tare, Founding Head, cGanaga, IIT Kanpur shared a draft of Uttarakhand river's atlas. He informed that this project of developing river's atlas intends to map all rivers in Uttarakhand and give them a unique identification number. Speaking about the efforts of Naula Foundation in conserving the

Himalayan ecosystem, Shri Bishan Singh, President Naula Foundation underscored the need of focusing on traditional methods of water conservation and working with local communities.

*Proceedings of 'Stakeholders Webinar on Pahad-Paani-Parampra' were released at the event. The webinar was organised on 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> June, 2021. It was an excellent opportunity for policymakers and decision-makers to sensitize them on the drying-up of springs and the crucial role of spring-shed management in implementing similar programs and to share experiences. A technical session on emphasising the need of Ganga Rejuvenation for Sustainable Himalayas was conducted at the event. Prof Rajiv Sinha, IIT Kanpur, Prof A. S. Maurya, IIT Roorkee and Prof Venkatesh Dutta shared ideas on various scientific aspects of conservation of Himalayas & its ecosystem.*

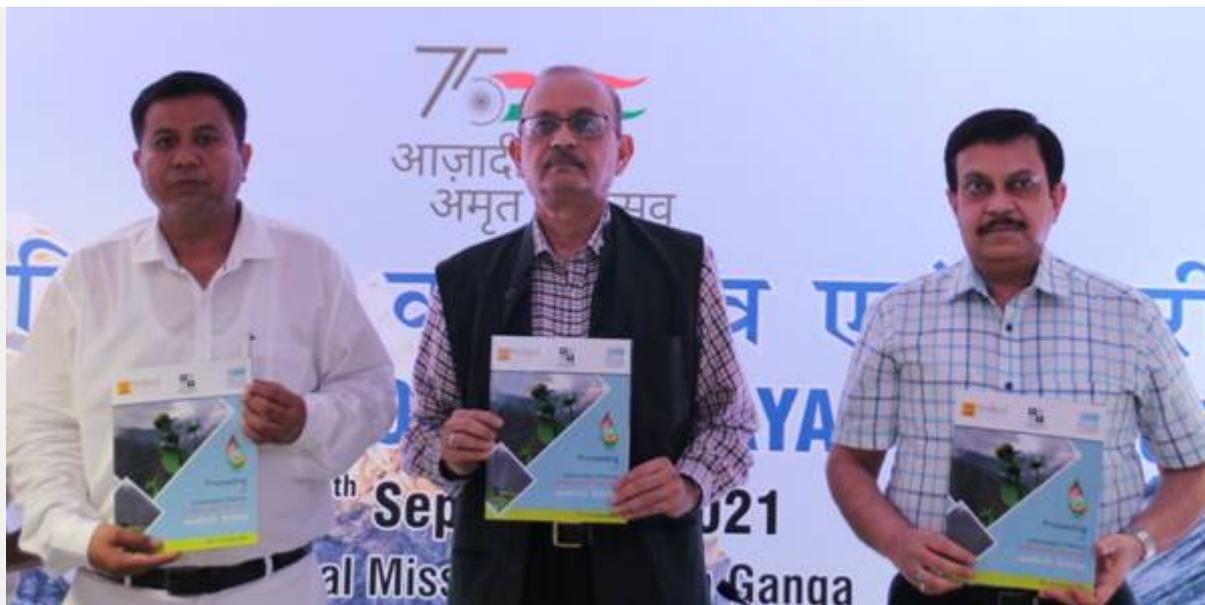
NMCG understands the importance of the Himalayas which triggers the Monsoons every year. This greatly contributes towards the flow of the river Ganga and its tributaries. Understanding the contribution of the Himalayas, NMCG has sanctioned various projects, understanding the responsibility towards Himalayas. One such project is 'Rejuvenation of dying springs in Tokoli Gad Catchment of Tehri Garhwal District using Geo-chemical & Geo-physical techniques' by IIT Roorkee. NMCG has also sanctioned a project titled Cultural mapping of river Ganga from Gaumukh to Ganga Sagar by INTACH. Under the project, the tangible and intangible heritage of river Ganga and the cities, is being documented. Uttarkashi, Tehri Garhwal, Haridwar & Rudraprayag are the important Himalayan cities covered under the project.

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## MOS JAL SHAKTI SHRI PRAHLAD SINGH PATEL LAUNCHES SWACHH SURVEKSHAN GRAMEEN 2021

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

The Minister of State, Jal Shakti Ministry, Shri Prahlad Singh Patel presided over the e-launch of Swachh Survekshan Grameen 2021 under Swachh Bharat Mission (Grameen) Phase -II at an event organized by Department of Drinking Water and Sanitation (DDWS) today. The event was attended by Shri Pankaj Kumar, Secretary, JalShakti Ministry, Shri Arun Baroka, Additional Secretary, DDWS, other DDWS officials, media persons and virtually by senior SBMG officials from States/UTs.



The Department of Drinking Water and Sanitation (DDWS) will undertake Swachh Survekshan Grameen 2021 countrywide to support acceleration of ODF Plus interventions and increase momentum for improving ODF Sustainability as well as Solid and Liquid Waste Management (SLWM) activities across the villages in the country. DDWS had commissioned Swachh Survekshan Grameen (SSG) on two occasions earlier in 2018 and 2019.

Addressing the gathering, the Minister of State, Shri Prahlad Singh Patel said that under the inspiring leadership of Prime Minister Shri Narendra Modi and his strong will power, India achieved the massive challenge of ODF declaration of all villages in mission mode in five years (2014-19). Shri Patel said that the 75<sup>th</sup> anniversary celebration of India's Independence or *Azadi ka Amrit Mahotsav* has started this year with the symbolic Dandi Yatra. The greatest Swachhata Ambassador ever, Mahatma Gandhi said that Cleanliness is more important than freedom highlighting its significance in our lives.

The Minister of State highlighted that the initiative of undertaking SSG during *Azadi ka Amrit Mahotsav* is a very significant step and states are the biggest stakeholders in this. Shri Patel said that Prime Minister Shri Narendra Modi has always stressed on the strength and importance of Swachh Bharat Mission in changing millions lives. The vision of Prime Minister made the unbelievable task of triggering Behavior Change for ending open defecation leading to construction of over 10 crore toilets and achievement of Open Defecation Free (ODF) India. The vision further led to Jal Jeevan Mission (JJM) for addressing water security. As Swachhata is an eternal journey, the Phase II of SBM (G) aims at achieving the goal of comprehensive

cleanliness or Sampurna Swachhata by addressing ODF Sustainability and SLWM issues.



The Minister of State added that the findings of the Survey by a third party agency will help us in bridging the gaps by identifying challenges on ground and working with all states. The citizen feedback will strengthen the program further. The SSG 2021 mobile App will also be made available in major local Indian languages. The survey will be well monitored and complimented with frequent field visits.

The Minister of State, JalShakti also released the SSG 2021 Protocol document; SSG 2021 Dashboard and the mobile App for Citizens feedback at the launch event. A detailed presentation on SSG protocol and survey implementation was also made at the launch.

Shri Pankaj Kumar, Secretary, Ministry of Jal Shakti in his keynote address said that Prime Minister, Shri Narendra Modi gave a clarion call for Swachh Bharat in 2014 and a National behavior change movement was launched whose two primary yardsticks were Transparency and people's participation (*Jan Bhagidari*). Following these yardsticks, the programme succeeded in achieving its goal of ensuring access to safe sanitation to all in rural India. SSG was conducted in 2018 and 2019 to measure the success of the programme in context of the goals set; now the importance of SSG has assumed significant importance in Phase 2 of SBMG for promoting commitment to cleanliness, transparency and people's participation. The survey will also help us in coming over the challenges due to Covid pandemic in recent time and achieve ODF Plus status by our villages in near future.

Shri Arun Baroka, Additional Secretary, DDWS, Ministry of Jal Shakti in his welcome address said that the past experiences of SSG has shown that it fosters a very healthy competition between districts and States to improve their rankings. The Surveskshan provides us a great opportunity to give the necessary momentum to ODF Plus activities especially due to unexpected slow down due to covid pandemic over last few months. One of the country's largest

such survey with around 17,475 villages, it not only gives huge publicity to the programme and ODF Plus goals, but at the same time engages districts and states in enhancing their reputation in sanitation, overall cleanliness and waste management.

[Click here for more details of Swachh Survekshan Grameen 2021](#)

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## BY/AS

The Minister of State, Jal Shakti Ministry, Shri Prahlad Singh Patel presided over the e-launch of Swachh Survekshan Grameen 2021 under Swachh Bharat Mission (Grameen) Phase -II at an event organized by Department of Drinking Water and Sanitation (DDWS) today. The event was attended by Shri Pankaj Kumar, Secretary, JalShakti Ministry, Shri Arun Baroka, Additional Secretary, DDWS, other DDWS officials, media persons and virtually bysenior SBMG officials from States/UTs.



The Department of Drinking Water and Sanitation (DDWS) will undertake Swachh Survekshan Grameen 2021 countrywide to support acceleration of ODF Plus interventions and increase momentum for improving ODF Sustainability as well as Solid and Liquid Waste Management (SLWM)activities across the villages in the country. DDWS had commissioned Swachh Survekshan Grameen (SSG)on two occasions earlier in 2018 and 2019.

Addressing the gathering, the Minister of State, Shri Prahlad Singh Patel said that under the inspiring leadership of Prime Minister Shri Narendra Modi and his strong will power, India achieved the massive challenge of ODF declaration of all villages in mission mode in five years (2014-19). Shri Patel said that the 75<sup>th</sup> anniversary celebration of India's Independence or *Azadi ka Amrit Mahotsav* has started this year with the symbolic Dandi Yatra. The greatest Swachhata Ambassador ever, Mahatma Gandhi said that Cleanliness is more important than freedom highlighting its significance in our lives.

The Minister of State highlighted that the initiative of undertaking SSG during Azadi ka Amrit Mahotsav is a very significant step and states are the biggest stakeholders in this. Shri Patel

said that Prime Minister Shri Narendra Modi has always stressed on the strength and importance of Swachh Bharat Mission in changing millions lives. The vision of Prime Minister made the unbelievable task of triggering Behavior Change for ending open defecation leading to construction of over 10 crore toilets and achievement of Open Defecation Free (ODF) India. The vision further led to Jal Jeevan Mission (JJM) for addressing water security. As Swachhata is an eternal journey, the Phase II of SBM (G) aims at achieving the goal of comprehensive cleanliness or Sampurna Swachhata by addressing ODF Sustainability and SLWM issues.



The Minister of State added that the findings of the Survey by a third party agency will help us in bridging the gaps by identifying challenges on ground and working with all states. The citizen feedback will strengthen the program further. The SSG 2021 mobile App will also be made available in major local Indian languages. The survey will be well monitored and complimented with frequent field visits.

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[Click here for more details of Swachh Survekshan Grameen 2021](#)

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# SHELTERED FOR A YEAR, VULTURES NOW AT HOME WITH NATURE

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

A White backed vulture at the Jatayu Conservation Breeding Centre in Haryana's Pinjore. Special Arrangement

In October 2020, eight critically endangered Oriental white-backed vultures were released into the wild for the first time in India from the Jatayu Conservation and Breeding Centre (JCBC) situated at the Bir Shikargah Wildlife Sanctuary in Shivalik ranges of the Himalayan foothills in Haryana's Pinjore. A year later, they have blended well into the untamed habitat outside the aviary, offering hope to conservationists. But the grave threats to the survival of vultures are far from over.

"The Oriental white-backed vultures that were released in the wild are resident birds and not migratory, so they largely stay within a radius of 50-100 km of the breeding centre. All eight vultures were deployed with satellite tracking devices on their back, and orange-coloured wing tags on both wings, so we are able to monitor them. They have been bred in captivity so they will gradually adjust in the wild. They are flying well and have managed to locate water," Dr. Vibhu Prakash, Deputy Director and Principal Scientist at the Bombay Natural History Society (BNHS), who heads the JCBC, told *The Hindu*.

## Encouraging signs

"Also, they have managed to join the wild flock with other vultures such as the Himalayan griffon, which is surely an encouraging sign. They are not taking sustained flights as other wild birds do, but they are gradually increasing their time of flying, which is again good. We need to wait for another one year. If they survive, then it will be an indication that the environment is safe, after which we will release other raptors as well," he added.

As many as 378 vultures of three species are housed at the centre, of which 131 are Oriental white-backed vultures, 195 are Long-billed vultures, and 52 are Slender-billed vultures.

The "founder stock" of birds at the centre was collected from various States, including Assam, Haryana, Rajasthan, Gujarat, Madhya Pradesh and Maharashtra, to maintain genetic diversity.

In 2016, the centre released two Himalayan Griffon vultures, bred in captivity for 10 years, into the wild.

"One of the birds could be monitored for 45 days, and within this period, it started flying strongly and could soar very high with other species of vultures. There was no tracking device on these birds, so they could not be followed beyond 45 days. This gave us confidence to carry out future releases," said Dr. Prakash.

Once very common, vultures are on the verge of extinction in India. Uncontrolled veterinary usage of non-steroidal anti-inflammatory drugs (NSAID), including Aceclofenac, Ketoprofen and Nimesulide, and the illegal use of the banned drug Diclofenac, are toxic to vultures if they feed on carcasses within 72 hours of the drugs' administration to such livestock.

## 97% decline

The vulture population in India was estimated at 40 million once. Populations of three species of vultures — the Oriental white-backed vulture, the Long-billed vulture and the Slender-billed vulture — have declined by over 97% since the 1990s, and that of the Oriental white-backed vultures by a drastic 99.9%. It has been established that the vulture population was decimated by the veterinary usage of Diclofenac in India.

“In 2006, the veterinary use of Diclofenac was banned. Later, in 2015, after the Government of India placed restrictions on the size of Diclofenac vials for human consumption to just 3 ml, the prevalence of Diclofenac in cattle carcasses was reduced to less than 2%, which is safe for vultures. But while the use of Diclofenac has gone down, its unlawful usage is still reported. Moreover, the continued use of vulture toxic drugs could pose a major impediment to the reintroduction programme,” said Dr Prakash.

Navjit Singh, secretary of the non-profit Avian Habitat and Wetland Society, said the key reason behind the use of Diclofenac is the fact that it’s a very low-cost drug.

“Governments need to ensure that alternative drugs are subsidised to be cheaper than Diclofenac,” Navjit Singh said.

The VCBC was established in 2001 to investigate the devastating declines in India’s Gyps species of vultures. It’s a collaborative initiative between the BNHS and the Haryana Forest and Wildlife Department, to save the three resident Gyps species of vultures in the State from looming extinction.

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## IMPROVED WATER MANAGEMENT SYSTEM FOR TOXIC TEXTILE EFFLUENTS DEVELOPED

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

Textile effluents are let out into a canal in Tamil Nadu's Erode district. File | Photo Credit: [The Hindu](#)

Indian researchers have developed an improved water management system that can completely reuse dye wastewater from textile industries, eliminating its toxicity and making it suitable for domestic and industrial usage, the Department of Science and Technology said on September 9. It can reduce water treatment costs and facilitate reuse of water in dry regions, it added. The current three-stage treatment process for wastewater consisting of primary, secondary, and tertiary treatment is unable to treat toxic industrial wastewater.

The stand-alone advanced oxidation process (AOP) treatment technique for colour and odour properties in industrial effluents (dye-based) may be insufficient to meet the set government standards and is also limited due to the high cost of AOPs involving continuous supply of chemical reagents.

It cannot remove the synthetic industrial dyes and the effervescent colour and odour, which have a long-lasting carcinogenic and toxic effect on the ecological balance, especially aquatic life. In order to remove this toxicity, an upgraded solution with the AOP technology is the need of the day, it added. Working towards this, researchers from Indian Institute of Technology (IIT) Kanpur along with Malaviya National Institute of Technology, Jaipur, and MBM College, Jodhpur, have developed a modified AOP solution.

This completely modified treatment process consisting of the primary dosing step, followed by the sand filtration step, another AOP and subsequent carbon filtration step.

It eliminates the need for the conventional primary, secondary, and tertiary processes, resulting in maximum colour removal, and meets the inland water discharge standards.

The DST – Water Technology Initiative (WTI), along with the Indian National Academy of Engineering (INAE) – supported the development of this technology at pilot-level in collaboration with Laxmi Textile Prints, Jaipur.

The much-improved AOP technology targeting zero discharge water management system is being utilised for complete reuse of industrial dye wastewater for domestic and industrial usage at a rate of 10 kilo litres/day. The treatment of toxic and highly carcinogenic industrial dyes of textile effluents is performed using this AOP technology for degrading and mineralising recalcitrant organic matter from effluent wastewater.

It is a direct replacement of the existing treatment plant processes and consists of a low-cost solution of dye adsorption on acid-modified soil, followed by a photochemical reaction step within a photocatalytic visible light filter and a unique carbon and PAN (polyacrylonitrile) nano-mat fibre filtration process. Having been set up on a pilot basis, it remediates industrial wastewater.

The technology has resulted in the recuperation of 50% of the treatment cost incurred from conventional processes for water treatment (especially due to the high cost of sludge

disposability) in the water-scarce regions of Rajasthan. Further, scaling up of this plant to 100 kilolitres/day capacity to meet the current industrial requirement is underway, it added.

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407 new species, 150 new records documented from the world's 8th highest 'mega biodiverse' country

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# HOW AND WHY THESE TIGERS IN ODISHA CHANGED THEIR STRIPES

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

A captive pseudomelanistic tiger at Nandankanan Biological Park in Bhubaneswar, Odisha.  
Photo: Dr. Rajesh Kumar Mohapatra

More than half a century ago, when the tribals of Similipal in Mayurbhanj district of Odisha reported sightings of “black tigers” — their stripes almost fused together in patches threatening to obliterate parts of their burnished orange coats — nobody believed them at first.

But an estimated 37% of *Panthera tigris* in the Similipal Tiger Reserve (in eastern India) are pseudomelanistic, characterised by wide, merged stripes.

This is the result of a rare mutation in one gene, Transmembrane Aminopeptidase Q or Taqpep, recessively inherited variants of which are responsible for the marks in domestic cats and king cheetahs. What’s more, the mutation is rarely seen in tigers outside Similipal.

The discovery of the genetic basis for the physical characteristics or phenotype in the wild is a culmination of years of research by a team of scientists led by the National Centre for Biological Sciences (NCBS).

“Our results indicate that Taqpep p.H454Y is likely absent or extremely rare outside of Similipal,” said the authors in their paper published in the peer-reviewed journal *PNAS* on September 14. Uma Ramakrishnan, molecular ecologist and professor at NCBS, likened it to watching evolution in action. “You can imagine it in bacteria or the SARS-CoV-2, but in tigers?”

Two factors are probably driving this change in appearance caused by the rare Taqpep p.H454Y: a founder bottleneck effect when a small subset of a large population, in this case tigers, establishes a new population, and the resulting genetic drift, where chance, more than natural selection, changes how common or rare genetic variants are.

With shrinking habitats, the tiger population becomes increasingly isolated. This causes inbreeding, resulting in a lack of genetic variation, making them prone to extinction.

Of the 12 unique individual tigers studied, four were found to be pseudo-melanistic. Vinay Sagar, a PhD student in Dr. Ramakrishnan’s lab and the lead author of the paper said, “That 37% of tigers are showing a particular phenotype may not be very high. But coupled with the phenotype’s absence from everywhere else, this makes it a relatively high percentage.”

To gather information on wild tigers, researchers collected samples of their faecal matter, shed hair from scratch marks in the ground, and saliva from lick marks on a prey’s body suspected to be killed by a tiger. The DNA extracted from these samples, as well as two skins of tigers that had been seized, were compared with samples of five captive pseudo-melanistic tigers in the Nandankanan Biological Park, Bhubaneswar, and the Arignar Anna Zoological Park, Chennai.

The findings of this study offers a nuanced view of India’s tiger conservation efforts. For the endangered animal to survive and thrive in the wild, there needs to be more genetic variation. “The population at Similipal Tiger Reserve is small and potentially disconnected from other populations. It is likely that related individuals are mating with each other. That is why the driver

of this evolutionary change is likely. But given the small population size, yes, Similipal tigers are undergoing inbreeding,” Mr. Vinay added.

In the paper, researchers said simulations suggest that one migrant tiger per generation would most likely result in the loss of the melanistic mutation from Similipal.

“Regardless of how the frequency of this mutation changes in the future, genetic rescue should benefit the population by increasing heterozygosity and decreasing the probability of inbreeding depression. Careful consideration would be required when selecting the immigrant,” the paper stated.

For Dr. Ramakrishnan and her team, what began as a curiosity driven investigation — “What is the genetic basis of pseudo-melanism?” — has given them insight into the evolutionary trajectory of a small and isolated population of an endangered species, and solved a long standing mystery of why these tigers look the way they do.

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The study has been published as a letter in the ‘Astronomy and Astrophysics’ journal

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## GOVT. CURBS FUNDING FOR 10 CLIMATE CHANGE, CHILD LABOUR NGOS

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

Five years after it cancelled the registration of international non-governmental organisation (NGO) Greenpeace to receive foreign funds, the government has moved to restrict the funding for a group of 10 American, Australian and European NGOs dealing with environmental, climate change and child labour issues.

An internal Reserve Bank of India note, dated July 1, 2021, which was sent to all banks, said the government had specified a number of foreign entities to be placed on the “Prior Reference Category” (PRC list) using the stringent Foreign Contribution Regulation Act 2010, which was tightened in September 2020, making both banks and chartered accountants accountable for any unauthorised funds that come through.

The NGOs are the European Climate Foundation; the U.S.-based Omidyar Network International, Humanity United and Stardust Foundation; the Australia-based Walk Free Foundation and Minderoo Foundation; the U.K.-based Children’s Investment Fund Foundation, Freedom Fund and Laudes Foundation, and the U.K./ UAE-based Legatum Fund.

They add to the more than 80 international voluntary agencies now on the PRC list of the government.

“The RBI has instructed that any fund flow from the (specified) donor agencies to any NGO/Voluntary organisation/ persons in India should be brought to the Ministry of Home Affairs so that the funds are allowed to be credited to the recipients only after clearance/ prior permission from the MHA’s Foreigners Division of the FCRA wing,” the notice sent out recently by a private bank to its branches, which *The Hindu* obtained a copy of, said. The RBI did not respond to a request for a comment, but officials confirmed informally that the note had been sent out, in line with previous such circulars sent to banks warning them of NGOs banned or suspended from acquiring or disbursing foreign funds.

Significantly all the NGOs on the latest list work on climate change and environmental projects and/or child rights and slavery projects, subjects where the government has been sensitive to international criticism.

### Focus on coal

When asked why so many environmental NGOs are on the list, given the government’s stated international commitments on fighting climate change, an official said that despite India’s record in complying with the Paris agreement, “global pressures are intensifying on India to raise the Nationally Determined Contributions”.

“In order to create noise in the media, several pro-climate NGOs are focusing on advocacy against coal, which is considered a violation of FCRA provisions,” the official added.

In 2017, the Ministry of Home Affairs (MHA) had also objected strongly to the International Labour Organisation’s Global Slavery Index, “questioning the credibility of data” which had ranked India 53rd of 167 countries where “modern slavery” was prevalent, and as the country with highest number of people in forced labour, according to a reply in Parliament.

The index is part of the Australian Walk Free Foundation's annual survey that is used by other NGOs working in the field. Both the Walk Free Foundation, and its founding agency Minderoo Foundation did not respond to emails from *The Hindu* requesting a response.

The MHA too declined to comment on the PCR listing, which is not made public, although the government has released numbers of NGOs under the scanner of security agencies.

According to the MHA responses in Parliament, between 2016 and 2020, the government cancelled the FCRA licences of more than 6,600 NGOs and suspended those of about 264.

A U.K.-based NGO Commonwealth Human Rights Initiative (CHRI) has now taken the government to court for suspending its FCRA licence, and won temporary relief in the Delhi High Court in, allowing it to access 25% of its funds, A final order is expected in October.

*(With inputs from Vikas Dhoot and Devesh K. Pandey)*

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## THE US COMPLIMENTS INDIA FOR ITS COMMITMENT TO ACHIEVE 450 GW OF RE BY 2030

Relevant for: Environment | Topic: Infrastructure: Energy incl. Renewable & Non-renewable

Shri R.K. Singh, Union Minister for Power and New and Renewable Energy met a delegation led by Mr. John Kerry, U.S. Special Presidential Envoy for Climate here today. The purpose of the meeting was to discuss further collaboration on climate change issues and to work towards a genuine partnership between the two countries to pave the way for the rest of the world on Energy Transition. Shri Alok Kumar, Secretary Ministry of Power and other senior officials from the ministry were also present.



The US side appreciated India for its Energy Access drive and commitment to achieve 450 GW of RE by 2030. They also lauded India for electrifying 28.02 million homes in 18 months and achieved universal household electrification.



The Minister informed the US side about Gol's intent to move towards clean energy transition. He further informed that the biggest challenge for infusing of RE was "Storage" which needs to be addressed immediately to make power accessible to the masses. He mentioned that huge

bids for Green Hydrogen and Electrolyzers are planned in the upcoming months. Shri Singh requested the US side to send their companies to participate in the bids. He also highlighted India's upcoming projects in Ladakh on Green Hydrogen and Green Energy Corridors.

SPEC proposed that USA is willing to enter into a genuine collaboration with India to enable us realise the ambitious target of reaching 450 GW Renewable Energy by 2030 which would pave the way to India achieving sub 2°C level, much more than what has been committed under Paris Climate Agreement.

Shri Singh showed his concern towards over 800 million people across the world who do not have access to electricity. He urged the US side to join the International Solar Alliance which can benefit many countries.

Both sides agreed that Indian labs could work with the US labs with the objective of reducing costs and finding alternative chemistry for making energy transition economically viable. SPEC highlighted that India and USA could take a Global Leadership role on the Energy Transition front and show the rest of the world that ambitious RE targets can be achieved.

The US side informed that both India and USA have similar goals and share the same zeal towards climate change issues and this partnership would be an inspiration to the rest of the world of revise their Nationally Determined Goals (NDCs) and strengthen the fight towards climate change.

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## EXPLAINED

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

Chimneys of a coal-fired power plant in New Delhi. File | Photo Credit: [REUTERS](#)

**The story so far:** On his recent visit to India ahead of the U.N. Climate Change conference in Glasgow, U.S. Special Presidential Envoy for Climate [John Kerry said he had not received any assurance that India](#) was working to raise its ambition to cut carbon dioxide emissions. Mr. Kerry is trying to build momentum, under the Paris Agreement framework, for countries with high CO<sub>2</sub> emissions to commit themselves to a target date when they will reach net zero, meaning when they will achieve nil man-made emissions or ensure removal of such emissions to achieve neutrality. India, as the country with the third largest emissions, is under pressure to come up with a higher ambition on cutting CO<sub>2</sub> emissions. The net zero concept, according to the United Nations, has appealed to 130 countries that have either committed themselves to carbon neutrality by 2050, or are considering that target.

India is working to reduce its emissions, aligned with the goal of less than 2°C global temperature rise, seen in its headline [pledge to cut the emissions intensity of GDP by 33%-35% by 2030](#) over the 2005 level. But it has not favoured a binding commitment towards carbon neutrality. It is also not aligned with the more ambitious goal of 1.5°C temperature rise. Among the contentious issues it faces is heavy reliance on coal. According to the International Energy Agency's India Energy Outlook 2021, coal accounts for close to 70% of electricity generation. Cutting greenhouse gases which heat the atmosphere and contribute to climate change involves shifting power production away from coal, greater adoption of renewables, and transforming mobility through electric vehicles. India is praised by some for its renewables target: scaling up power from renewables such as solar and wind to 450 GW by 2030.

### India must commit to net zero emissions

In recent comments, after the discussions with Mr. Kerry, Union Environment Minister Bhupendra Yadav said net zero was not the only goal of national policy. Moreover, domestic political opinion favours room for some growth in CO<sub>2</sub> emissions before peaking. The U.N. Framework Convention on Climate Change (UNFCCC) provides for common, but differentiated, responsibilities of nations, favouring countries like India. Some politicians support a net zero target as it can put India on a green development trajectory, attracting investment in innovative technologies.

As the largest emitter of GHGs, China told the U.N. in 2020 that it would move to net zero by 2060. Its pledge to peak CO<sub>2</sub> emissions before 2030 and achieve carbon neutrality three decades later is among the most high-profile commitments. To operationalise this goal, China's State Council has issued a guideline on the transition to a green and low-carbon circular economic development system, focusing on industrial production, logistics, infrastructure, consumption, innovation, and enabling policies. But changing winds in global politics, resumed U.S. leadership of the climate campaign, and likely taxes on unsustainably produced export goods could influence Chinese policies. The U.S., as the second biggest emitter with large historical emissions, returned to the Paris Agreement under President Joe Biden with an ambitious 2050 net zero plan. Its Department of Energy announced two programmes that are also expected to boost employment: slashing the current cost of solar power by 60%, and putting up 30 GW of offshore wind power by 2030. The European Union (EU) member-states have committed themselves to reducing emissions by at least 55% by 2030 over 1990 levels. In July, the EU published a climate law that binds the bloc to its 2030 emissions target and carbon

neutrality by 2050.

Although a global coalition has coalesced around the concept, an increasingly vocal group views it as a distraction, useful only to score political points. Carbon neutrality looks to nascent technology to suck out CO<sub>2</sub> from the atmosphere. Youth movements and some scientists call this procrastination, since it enables the fossil fuel industry to continue expanding. Many fossil fuel companies support net zero goals.

Mid-century target for net zero emission inadequate, says India

Getting a stronger economic dividend for the same volume of CO<sub>2</sub> emitted by reforming energy, industry and buildings, and achieving higher energy efficiency in all sectors can slow emissions. State governments must be part of such a climate plan, and climate governance institutions must be set up at the national and State levels.

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## IISC RESEARCHERS FIND A WAY TO SUBSTITUTE FOR SINGLE-USE PLASTICS

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

Models: Bag, cutlery and tumbler made using biodegradable, material developed at IISc, Bengaluru. | Photo Credit: [SPECIAL ARRANGEMENT](#)

According to a report by Central Pollution Control Board of India, for the year 2018-2019, 3.3 million metric tonnes of plastic waste are generated by Indians. The bad news is that this may well be an under-estimation of the problem. Another alarming statistic is that of all the plastic waste produced in the world, 79% enters the environment. Only 9% of all plastic waste is recycled. Accumulation of plastic waste is detrimental to the environment and when this waste finds its way into the sea, there can be major harm to aquatic ecosystems, too.

Researchers from Department of Material Engineering, Indian Institute of Science, Bengaluru (IISc) have found a way to make a substitute for single-use plastic that can, in principle help mitigate the problem of accumulating plastic waste in the environment.

While plastic waste causes one type of pollution, agricultural stubble burning is responsible for air pollution in several States. In Delhi, for example, the air quality index dips to indicate “severe” or “hazardous” level of pollution every winter, and this is due in part to the burning of agricultural stubble in the surrounding regions.

Indranil Chakraborty, a Research Associate working in the labs led by Suryasarathi Bose and Kaushik Chatterjee, has, along with coworkers, developed polymers using non-edible oil and cellulose extracted from agricultural stubble. These polymers can be moulded into sheets having properties suitable for making bags, cutlery or containers. The material so made is biodegradable, leak-proof and non-toxic.

Non-edible Castor oil was used in this process of making the polymer which involves allowing them to react with the cellulose and di-isocyanate compound. “All precursors are mixed in toluene solvent and heated at 80 degree for 8 hours. Then [we] poured the solution mixture in a teflon sheet and allowed the toluene to evaporate. After 12 hours, nice polyurethane sheet is obtained because of the crosslink between the functional groups present in the precursors,” explains Dr Chakraborty, in an email to *The Hindu*. The sheets are then moulded in compression moulding to make the articles such as a bag or pieces of cutlery.

“We already used castor oil for our experiment. Currently, we are doing the same experiment with other non-edible oils such as jatropha oil and neem oil,” he adds.

The sheets of polymer made were subjected to a leaching test and were also tested for thermal stability and were found to hold against the tests. These preliminary tests suggest that the material can be used for food packaging. Further tests are on to establish the sheet as food-grade.

In order to obtain sheets with properties like flexibility suitable for making different articles, the researchers played with the proportions of cellulose to non-edible oil. The more cellulose they added, and less non-edible oil, the stiffer was the material, so that it was more suitable to making tumblers and cutlery. The greater the proportion of oil, the more flexible was the material and it could be moulded into sheets for making bags.

While Indranil Chakraborty designed the experiment, synthesised the sheet, and moulded it to make the articles, Pritiranjana Mondal characterised the material. The group has already filed a provisional patent.

“As the material is bio-degradable and non-toxic, we are planning to use the material for healthcare applications also,” says Prof. Chatterjee. “We are in discussion with various companies for technology transfer.”

“Given the surge in the usage of single use plastics and the challenge of managing the landfills choked with SUPs, such alternatives could bring paradigm shift especially in packaging sector, the largest consumer of SUPs,” says Prof Bose.

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The study has been published as a letter in the ‘Astronomy and Astrophysics’ journal

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## TWO MORE INDIAN BEACHES GET COVETED INTERNATIONAL BLUE FLAG CERTIFICATION

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

In yet another recognition of India's commitment to protect and conserve the pristine coastal and marine ecosystems through holistic management of the resources the globally recognized and the coveted International eco-label "Blue Flag", has accorded the Blue Flag Certification for 2 new beaches this year –Kovalam in Tamil Nadu and Eden in Puducherry beaches.

Foundation for Environment Education in Denmark (FEE) which accords the globally recognized eco-label - Blue Flag certification, has also given re-certification for 8 nominated beaches Shivrajpur-Gujarat, Ghoghla-Diu, Kasarkod and Padubidri-Karnataka, Kappad-Kerala, Rushikonda- Andhra Pradesh, Golden-Odisha and Radhanagar- Andaman and Nicobar, which were awarded the Blue Flag certificate last year.

Announcing the same in a twitter message, Minister for Environment, Forest and Climate Change, Shri Bhupender Yadav expressed happiness and congratulated everyone stating that it is another milestone in India's journey towards a Clean and Green India led by Prime Minister Shri Narendra Modi.

Happy to announce India now has 10 International Blue Flag beaches with the addition of Kovalam & Eden beaches this year and recertification for 8 beaches which got the tag in 2020. Another milestone in our journey towards a clean and green India led by PM Shri [@NarendraModi](https://twitter.com/NarendraModi) Ji. [pic.twitter.com/UzoclJhyzD](https://pic.twitter.com/UzoclJhyzD)

The Ministry of Environment, Forest and Climate Change in its pursuit of "Sustainable Development" of the coastal regions of India embarked upon a highly acclaimed & flagship program Beach Environment & Aesthetics Management Services (BEAMS) which is one of the initiatives under ICZM approach that the MoEF&CC has undertaken for the sustainable development of coastal regions of India, with a prime objective to protect and conserve the pristine coastal and marine ecosystems through holistic management of the resources.

This was aimed for achieving the globally recognized and the coveted International eco-label "Blue Flag", accorded by International Jury comprising of members from IUCN, UNWTO, UNEP, UNESCO etc. FEE Denmark conduct regular monitoring & audits for strict compliance of the 33 criteria at all times. A waving "Blue Flag" is an indication of 100% compliance to these 33 stringent criteria and sound health of the beach.

The objective of BEAMS program is to abate pollution in coastal waters, promote sustainable development of beach facilities, protect & conserve coastal ecosystems & natural resources, and seriously challenge local authorities & stakeholders to strive and maintain high standards of cleanliness, hygiene & safety for beachgoers in accordance with coastal environment & regulations. In the last 3 years or so, our Ministry have achieved commendable results in environmental management of these 10 beaches and some of them are enumerated below:

The Ministry is further committed to develop and deliver 100 more beaches under its ICZM initiative in the ensuing 5 years of Ministry's vision agenda.

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## TWO MORE INDIAN BEACHES AWARDED COVETED 'BLUE FLAG' TAG. CHECK DETAILS

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

Two more beaches in India have been awarded 'Blue Flag' certification, an international eco-level tag, taking the total number of such beaches in the country to 10

Two more beaches in India have been awarded 'Blue Flag' certification, an international eco-level tag, taking the total number of such beaches in the country to 10, the Environment Ministry said on Tuesday.

The two beaches to receive the certification this year are Kovalam in Tamil Nadu and Eden in Puducherry, the ministry said.

Foundation for Environment Education in Denmark (FEE) which accords the globally recognized eco-label - Blue Flag certification, has also given re-certification for eight nominated beaches Shivrajpur- Gujarat, Ghoghla-Diu, Kasarkod and Padubidri-Karnataka, Kappad-Kerala, Rushikonda- Andhra Pradesh, Golden-Odisha and Radhanagar- Andaman and Nicobar, which were awarded the Blue Flag certificate last year.

These eight beaches got the Blue Flag certification on October 6 last year.

Minister for Environment, Forest and Climate Change Bhupender Yadav took to Twitter to express happiness and congratulated everyone stating that it is another milestone in India's journey towards a Clean and Green India led by Prime Minister Narendra Modi.

'Happy to announce India now has 10 International Blue Flag beaches with the addition of Kovalam and Eden beaches this year and recertification for 8 beaches which got the tag in 2020. Another milestone in our journey towards a clean and green India led by PM @NarendraModi Ji," Yadav tweeted.

The Ministry of Environment, Forest and Climate Change in its pursuit of "Sustainable Development" of the coastal regions of India embarked upon a highly acclaimed and flagship program Beach Environment and Aesthetics Management Services (BEAMS) which is one of the initiatives under the ICZM approach that the MoEF&CC has undertaken for the sustainable development of coastal regions of India, with a prime objective to protect and conserve the pristine coastal and marine ecosystems through holistic management of the resources.

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The Ministry is further committed to develop and deliver 100 more beaches under its ICZM initiative in the ensuing 5 years of the Ministry's vision agenda, the ministry said.

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## WHO TIGHTENS GLOBAL AIR QUALITY NORMS

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

The World Health Organisation (WHO), in its first-ever update since 2005, has tightened global air pollution standards in recognition of the emerging science in the past decade that the impact of air pollution on health is much more serious than earlier envisaged.

The move does not have an immediate effect in India as the National Ambient Air Quality Standards (NAAQS) do not meet the WHO's existing standards. The government has a dedicated National Clean Air Programme that aims for a 20% to 30% reduction in particulate matter concentrations by 2024 in 122 cities, keeping 2017 as the base year for the comparison of concentration. These are cities that do not meet the NAAQS when calculated from 2011 to 2015.

However, experts say the WHO move sets the stage for eventual shifts in policy in the government towards evolving newer stricter standards.

"This will soon become part of policy discussions — much like climate targets to reduce greenhouse gas emissions keep getting stricter over time — and once cities and States are set targets for meeting pollution emission standards, it could lead to overall changes in national standards," said a senior official, who is part of a high-level commission to monitor air quality standards. The person declined to be identified as he is not authorised to speak to the media.

The upper limit of annual PM2.5 as per the 2005 standards, which is what countries now follow, is 10 microgram per cubic metre. That has now been revised to five microgram per cubic metre. The 24-hour ceiling used to be 25 microgram but has now dropped to 15. The upper limit of PM10, or particulate matter of size exceeding 10 microgram, is 20 microgram and has now been revised to 15, whereas the 24-hour value has been revised from 50 to 45 microgram.

India's NAAQs — last revised in 2009 — specify an annual limit of 60 microgram per cubic metre for PM10 and 100 for a 24-hour period. Similarly it's 40 for PM 2.5 annually and 60 on a 24-hour period. There are also standards for a host of chemical pollutants including sulphur dioxide, lead and nitrogen dioxide.

Environmental organisation Greenpeace, in a statement, said the new guidelines meant that among 100 global cities, Delhi's annual PM2.5 trends in 2020 was 16.8 times more than the WHO's revised air quality guidelines, while Mumbai's exceeded eight-fold, Kolkata's 9.4, Chennai's 5.4, Hyderabad's 7 and Ahmedabad's 9.8.

"WHO's new Air Quality Guidelines are an evidence-based and practical tool for improving the quality of the air on which all life depends. I urge all countries and all those fighting to protect our environment to put them to use to reduce suffering and save lives," WHO Director-General Tedros Adhanom Ghebreyesus said in a statement.

Every year, exposure to air pollution is estimated to cause 7 million premature deaths and result in the loss of millions more healthy years of life.

### Severe health crisis

"Air pollution is a severe health crisis and WHO's revised air quality guidelines bring back the focus to the issue," said S.N. Tripathi, Professor, IIT Kanpur & Steering Committee Member,

National Clean Air Programme, India.

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## SEA LEVEL RISE IS CERTAIN

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

The recently published Intergovernmental Panel on Climate Change (IPCC) Assessment Report from Working Group I — [‘Climate Change 2021: The Physical Science Basis’](#) — is [a clarion call for climate action](#). It provides one of the most expansive scientific reviews on the science and impacts of climate change.

The report discusses five different shared socio-economic pathways for the future with varying levels of greenhouse gas (GHG) emissions. The scenarios illustrated are the following: very low and low GHG emissions, where emissions decline to net zero around or after the middle of the century, beyond which emissions are net negative; intermediate GHG emissions; high and very high emissions where they are double the current levels by 2100 and 2050, respectively. Even in the intermediate scenario, it is extremely likely that average warming will exceed 2°C near mid-century. The average global temperature is already 1.09°C higher than pre-industrial levels and CO<sub>2</sub> concentration in the atmosphere is currently 410 ppm compared to 285 ppm in 1850.

### The message from the IPCC report

Over 200 experts working in several domains of climate have put the report together by assessing the evidence and the uncertainties. They express their level of confidence (a qualitative measure of the validity of the findings) ranging from very low to very high. They also assess likelihood (a quantitative measure of uncertainty in a finding) which is expressed probabilistically based on observations or modelling results.

Close to 700 million people worldwide live along the coast and there continue to be plans to expand coastal cities. Therefore, understanding the risks involved from climate change and sea level rise in the 21st and 22nd centuries is crucial. Sea level rise will continue after emissions no longer increase, because oceans respond slowly to warming. The centennial-scale irreversibility of sea level rise has implications for the future even under the low emissions scenarios.

Sea level rise occurs mainly due to the expansion of warm ocean waters, melting of glaciers on land, and the melting of ice sheets in Greenland and Antarctica. Global mean sea level (GMSL) rose by 0.2m between 1901 and 2018. The average rate of sea level rise was 1.3 mm/year (1901-1971) and rose to 3.7 mm/year (2006-2018). While sea level rise in the last century was mainly due to thermal expansion, glacier and ice sheet melt are now big contributors.

### Threat of climate change looms over Vizag, Kakinada, Masula

In the low emissions scenario, GMSL is expected to be 0.19m in 2050 and 0.44m by 2100. In the very high emissions scenario, GMSL is expected to be about 0.23m in 2050 and 0.77m in 2100. These increases are relative to 1995-2014 and do not include uncertainties in ice sheet processes.

Scientists rely on ice sheet models to estimate future glacier melt. While these models have improved over the years, there are shortcomings in the knowledge and representation of the physical processes.

Ice sheets can destabilise rapidly as the water gets warm (marine ice sheet instability or MISI). Ice cliffs can collapse swiftly in a related process, leading to rapid sea level rise; this is marine ice cliff instability (MICI). Such changes are difficult to model and MICI events are not included in

the sea level projections mentioned above.

### Kochi vulnerable to extreme climate events, say experts

As Siegert et al. indicate, changes in ice-ocean interactions can cause extensive and rapid sea level rise. This happens from mass loss of ice shelves (ice that flows into cold oceans while attached to the land), which may disintegrate suddenly. Under strong warming scenarios, ice shelves become vulnerable and lead to MISI. In the very high emissions scenario, with low confidence (and in the 17th-83rd percentile range), sea level rise can be as high as 1.61m by 2100.

Using ice sheet models coupled with ocean models to create probabilistic scenarios for the future is therefore tricky. The models do not capture the abrupt and non-linear dynamics of changes that take place. The report has a high-end storyline that includes processes where there is uncertainty. The main uncertainty lies in 'when' rather than 'if' the high-end scenario occurs. Projections based on 'structured expert judgments' indicate that sea level rise as high as 2.3m by 2100 cannot be ruled out.

Also read

### IPCC Report 2021: Climate change is very real

According to the UN Environment Programme Emissions Gap Report, the world is heading for a temperature rise above 3°C this century, which is double the Paris Agreement aspiration. And there is deep uncertainty in sea level projections for warming above 3°C.

Communities along the coast in India are vulnerable to sea level rise and storms, which will become more intense and frequent. They will be accompanied by storm surges, heavy rain and flooding. Even the 0.1m to 0.2m rise expected along India in the next few decades can cause frequent coastal flooding. A speculator might think that if less than a metre sea level rise by 2100 is the likely scenario, they have another 60-80 years to continue developing infrastructure along the coast. That would not, however, be the right way to interpret the IPCC data.

Explained | Where will climate change strike?

The uncertainty regarding a metre or more of sea level rise before 2100 is related to a lack of knowledge and inability to run models with the accuracy needed. Low confidence does not mean higher sea level rise findings are not to be trusted. In this case, the low confidence is from unknowns — poor data and difficulty representing these processes well in models. Ignoring the unknowns can prove dangerous.

Also read | [IPCC report forecasts a future of severe weather](#)

Adaptation to sea level rise must include a range of measures, along with coastal regulation, which should be stricter, not laxer, as it has become with each update of the Coastal Regulation Zone. The government should not insure or bail out speculators, coastal communities should be alerted in advance and protected during severe weather events, natural and other barriers should be considered in a limited manner to protect certain vulnerable areas, and retreat should be part of the adaptation strategies for some very low-lying areas.

*Sujatha Byravan is a scientist who studies science, technology and policy*

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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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## MEMORANDUM OF UNDERSTANDING (MOU) SIGNED BETWEEN ZOOLOGICAL SURVEY OF INDIA AND THE NATURAL HISTORY MUSEUM OF UNITED KINGDOM

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

The Zoological Survey of India (ZSI), Kolkata and the Natural History Museum (NHM), London have been working together over many years on mutually beneficial projects focused on the study of the fauna of India, and to recognize this long-standing relationship, and to promote its continuance for many years into the future a Memorandum of Understanding between the two great Institutions, was formally signed by the Director of ZSI and Director, NHM, London today on a virtual platform.



The MoU was signed between Dr. Dhriti Banerjee, the first lady Director of ZSI and Dr. Douglas Gurr, Director, Natural History Museum London in the presence of Dr. David Gower, Head of Vertebrates Division Department of Life Sciences at the Natural History Museum London and Dr. John Jackson, Head of Science, Policy and Communication and Rosalind Glass, Executive Assistant to the Director and Board of Trustees of the Natural History Museum, London.

Terming the MoU as historic, Dr. Dhriti Banerjee, Director of ZSI said that this MoU was long overdue and the NHM, London and ZSI, Kolkata are going to be mutually benefited on the faunal diversity research through scientific exchange between the two great institutions and long standing relationship. ZSI is the umbrella institute for Biodiversity studies in India headquartered in Calcutta and has 16 Regional Centres instituted to cater to the faunal diversity of the various biogeographic areas of India. ZSI has around 5 million animal collection holding, 20,000 type collections and around 450 scientists and scientific staff work towards curatorial and research on the vast animal collections present in ZSI.



Dr. Douglas Gurr, Director, NHM, London while thanking the Government of India for agreeing into this MoU with them expressed his gratitude to ZSI and said that ZSI and NHM, London look forward for joint research activities by both and since share a joint passion on natural history collections and accelerate towards better science. This collaboration will not only benefit both institutions, the millions of vital collections present in NHM, London and ZSI including type materials are important nationally and across the world for understanding and conserving the biodiversity, curing natural resource loss and sustainable management of bio-resources as well as impact of climate change.

Through this MoU both the institutions are committed to implementing the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Fauna ("CITES"), the 1992 Convention on Biological Diversity ("CBD") and relevant national and regional laws and regulations concerning biodiversity including laws relating to access to faunal specimens, associated benefit sharing and traditional knowledge.

The NHM, London and ZSI will be working together to collect, study and conserve faunal specimens for science and to create and exchange associated data and images. There are plans for conducting of joint fieldwork expeditions, transfer of duplicate animal material and associated data and images by ZSI, Kolkata to NHM, London, and vice versa, capacity-building in the areas of Systematic Zoology and Conservation to ensure greater long-term conservation of animal genetic resources in India. Nevertheless, all faunal material and information exchange would be subject to all relevant extant domestic regulations of the participants as well as international laws to which either of the participants is a party. This MoU will be for a period of five years.

The MoU is expected to bring together practicing taxonomists, conservation biologists, biodiversity managers, policy makers and other stakeholders of both the country for discussing, networking and identifying gap areas to formulate the strategies for long term scientific documentation as well as conservation of faunal diversity through international exchange.

India has only 2.4% of the world's land area but the species diversity in India is 8.1 percent which makes India one of twelve mega diversity countries of the world. There are average 350-400 species new to science from India are being discovered by ZSI scientists and others working on natural history and conservation. India is one of the megadiverse countries in the world with 45,000 species of plants and more than 100,000 of the animals have been recorded in India. The identified Megadiverse Countries are: United States of America, Mexico, Colombia, Ecuador, Peru, Venezuela, Brazil, Democratic Republic of Congo, South Africa, Madagascar, India, Malaysia, Indonesia, Philippines, Papua New Guinea, China, and Australia.

While many of the natural history collections from India are available in the NHM, London before Independence, India started housing its own collections in ZSI since 1947 independently and as a result of which, ZSI is the largest repository of Fauna in the entire south and Southeast Asia region. With more than 100,000 species of animals known to occur in India, it is the Zoological Survey of India (ZSI) that brought to the knowledge of scientific communities about many of them as the new and endemic species. ZSI is the premier institution on animal taxonomy in India under the Ministry of Environment, Forests & Climate Change of Government of India.

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## DEEP DEPRESSION INTENSIFIES INTO CYCLONE 'GULAB'; ALERT ISSUED FOR ANDHRA, ODISHA

Relevant for: Environment | Topic: Disaster and disaster management

Cyclonic Storm 'Gulab': The India Meteorological Department (IMD) has issued alert for north Andhra Pradesh and adjoining south Odisha coasts as the deep depression over the Bay of Bengal intensified into Cyclone 'Gulab'.

The cyclonic storm is likely to move nearly westwards and cross north Andhra Pradesh-south Odisha coasts between Kalingapatnam and Gopalpur around Sunday evening, the Cyclone Warning Division of the IMD said.

"The deep depression over northwest and adjoining westcentral Bay of Bengal moved nearly westwards with a speed of 7 kmph in last six hours, and intensified into Cyclonic Storm 'Gulab'," the IMD said.

The department has issued a cyclone warning for north Andhra Pradesh and adjoining south Odisha coasts. An 'orange' alert has also been issued for Andhra Pradesh and Odisha coasts.

The 'orange' alert is a warning of extremely bad weather with the potential of disruption in commute with road and rail closures, and interruption of power supply.

Andhra Pradesh Chief Minister YS Jagan Mohan Reddy today held a review meeting on the preparedness in wake of the weather office report on cyclone alert and directed the officials to take all necessary steps, the Chief Minister's Office (CMO) said.

The officials informed the chief minister that they have alerted district collectors and suggested to take all necessary steps. They said control rooms were setup village secretariat wise and added that they have readied disaster management staff in Srikakulam and Visakhapatnam districts, according to the CMO.

The officials said that the district collectors were taking steps to setup relief camps at required locations. The Chief Minister directed the officials to be alert and take necessary steps as there are chances of heavy rains after cyclonic storm crosses the coast.

"Cyclone Alert for north Andhra Pradesh and adjoining south Odisha coasts: DD is centred near 18.4°N/88.7°E. To cross north Andhra Pradesh - south Odisha coasts b/w Kalingapatnam and Gopalpur by the evening of September 26," the IMD said in a tweet.

The National Crisis Management Committee (NCMC) under the Chairmanship of Cabinet Secretary Rajiv Gauba reviewed the preparedness of central ministries/agencies and state governments to deal with the situation arising out of a Cyclonic storm.

Director General, India Meteorological Department (IMD), briefed the Committee about the current status of the Deep Depression in the Bay of Bengal, which has developed into a cyclonic storm.

It is expected to cross the North Andhra Pradesh and South Odisha coasts by the evening of September 26, with wind speeds ranging from 75-85 kmph, gusting to 95 kmph, accompanied by heavy rainfall in the coastal districts of the states. It is likely to affect the districts of

Srikakulam, Vizianagaram and Vishakhapatnam in Andhra Pradesh and Ganjam and Gajapati in Odisha.

Chief Secretaries of Odisha and Andhra Pradesh apprised the Committee of the preparatory measures being undertaken to protect the population in the expected path of the cyclonic storm as also measures being taken to ensure that there is minimal damage to infrastructure such as telecom and power and other infrastructure in the aftermath of the cyclonic storm.

NDRF has deployed 18 teams in these states and additional teams are also kept in readiness. Rescue and relief teams of the Army and Navy along with ships and aircrafts have also been deployed.

*(With inputs from agencies)*

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