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# CHENNAI TOP NODE IN TORTOISE TRAFFICKING NETWORK, SAYS STUDY

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

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September 30, 2023 07:52 pm | Updated October 01, 2023 02:23 am IST - Guwahati:

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Red-crowned roofed turtle, one of the two species of freshwater turtles found in India. Wild populations of tortoises and freshwater turtles have suffered immensely due to the onslaught of habitat destruction and illegal and unsustainable harvest, researchers said. Photo: Special Arrangement

Chennai is the highest-ranked node in the tortoise and hard-shell turtle trafficking network fuelling the global pet trade, a new study has found.

Mumbai, Kolkata, Bengaluru, Anantapur in Andhra Pradesh, Agra, and two districts of West Bengal — North 24 Parganas and Howrah — close to the India-Bangladesh border also rank high, the study published in the September edition of *Oryx, The International Journal of Conservation*, said.

The study titled [From pets to plates](#) also found that the trafficking of soft-shell turtles for meat was predominantly domestic in nature, with the international trafficking of the reptile from or to India almost restricted to Bangladesh.

The most frequent trafficking links in the soft-shell turtle trafficking network were from Jaunpur in Uttar Pradesh to unspecified districts in West Bengal and from North 24 Parganas to unspecified districts in Bangladesh, it said.

The authors of the study are Ramya Roopa Sengottuvel, Aristo Mendis, Nazneen Sultan, Shivira Shukla, Anirban Chaudhuri, and Uttara Mendiratta, all associated with the Counter Wildlife Trafficking Programme of the Wildlife Conservation Society-India.

'Asian turtle crisis' is a term often used to describe the current state of tortoises and freshwater turtles (TFTs) in the largest continent on earth. Wild populations of TFTs have suffered immensely due to the onslaught of habitat destruction and illegal and unsustainable harvest, the researchers said.

"The TFTs are under tremendous pressure from illegal trade, as pets, food, and medicines across the world. In India, at least 15 of the 30 TFT species, including those threatened by extinction, are illegally traded. Tens of thousands of TFTs are seized across India annually by law enforcement agencies," their study said.

Freshwater species, such as the Indian flapshell turtles, are in great demand in illegal markets.

Photo: Special Arrangement

The study aimed at examining the similarities and differences in the operation of illegal trade in tortoises and freshwater turtles that are in demand for different illegal markets, towards designing targeted interventions.

“Countering the complex trade in TFTs has been a challenge. This study is part of our attempt to break up the larger problem of illegal trade in TFTs into smaller and more manageable units, based on demand and type of markets,” Ms. Mendiratta said.

The researchers conducted a systematic online search for media reports on seizures of tortoises and freshwater turtles originating from India from January 1, 2013, to December 31, 2019.

From these reports, they reconstructed the illegal supply network for the two groups – tortoises and hard-shell turtles for illegal pet trade, and soft-shell turtles for meat trade – using 78 and 64 media-reported seizures respectively.

The identified nodes in the network represented districts (for locations within India) or cities (for locations outside India), and each link represented a trafficking connection between the nodes.

“Chennai was identified as the most central node in the tortoise/hard-shell turtle trafficking network... Kuala Lumpur (Malaysia), Bangkok (Thailand), and unspecified districts in Bangladesh were identified as the most important importing nodes,” the study said.

“Within India, Chennai and Mumbai had the highest numbers of incoming trafficking links in this network, indicating their role as transit or collection points for further export abroad,” it added.

The study found that the tortoise and hard-shell turtle network had a larger geographical scale with more international trafficking links than the soft-shell turtle network. They recorded complex routes in tortoise and hard-shell turtle smuggling, whereas the soft-shell turtle trafficking was one-directional from source to destination.

The authors explained that the results could indicate higher levels of organisation and complexity involved in the trafficking of tortoise and hard-shell turtles compared to soft-shell turtles.

Mr. Chaudhuri, an expert in reptile trade and rescue, and an author of the study, highlighted the effects of the trade. “The turtles that come in trade land up in very poor state. They are dehydrated and starved, and many come with broken or bruised shells, many times with irrecoverable external injuries. Mortality in these turtles is also high,” he said.

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# AS MANY AS 86 BIRD SPECIES FOUND IN TAMIL NADU FOUND TO BE IN 'RAPID DECLINE', SAYS NATIONWIDE REPORT

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

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October 01, 2023 10:16 pm | Updated October 02, 2023 12:21 am IST - CHENNAI

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According to birders, Indian rollers, which used to be common in open fields, have become hard to spot nowadays. Photo: File | Photo Credit: G. KARTHIKEYAN

An analysis of the State of India's Birds (SOIB) 2023 report shows nearly 110 species of birds recorded in Tamil Nadu are currently facing a state of decline nationwide.

As many as 86 species found in Tamil Nadu, including birds such as garganey, northern shoveler, common sandpiper, and common teal, are under "rapid decline". This has been highlighted by the Salem Ornithological Foundation (SOF) in a Tamil Nadu-specific report using the data in the SOIB 2023 report.

What elicited surprise among researchers, according to S.V. Ganeshwar, founder-director of SOF, is that species "taken for granted" by the birding community have been categorised as declining. "Indian rollers are very casually seen everywhere in the open fields. But their population is declining nationwide," he says.

Aravind A.M., an avid birder, says Indian rollers, which are not common in Chennai but are spotted widely in outer areas and towns, have become hard to spot nowadays. He had spotted the birds in Vellore quite regularly since 2012. In 2017, he once saw a congregation of 60 rollers, with males engaging in mating displays and rolls for females perched on coconut trees, in Vellore. "In the last three to four years, seeing even one pair has become difficult," he says.

"Within Chennai, one species that is not being sighted as commonly as earlier is the rufous treepie," Mr. Aravind adds.

With urbanisation and rapidly changing landscapes, a detailed regional report is important to understand the bird patterns, says Mr. Ganeshwar. The trends assessed in the SOIB report were primarily carried out using data uploaded to eBird, a citizen portal for birders and researchers. Mr. Ganeshwar noted that out of 451 species in Tamil Nadu, there are long term trends available only for 39 species. "This is extremely low," he adds.

The SOF report says going by Tamil Nadu trends, the conclusive long-term and current annual

trends are available only for a very small number of species.

“This is exactly why the excerpt document was based on the India trends, where a larger number of species was analyzed. Maybe in the future, as more birders continue to contribute information to eBird, the data deficiencies will be lessened, and we will have more of the State’s bird species analysed,” the report reads.

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# MINT

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

A report by the European Union's Copernicus Climate Change Service shows just how bad global warming has got. This September was the hottest globally on record, with its temperature beating the month's previous high in 2020 by 0.5° Celsius. August was a scorcher too, while July was simply the hottest ever month. Last month was 1.8° Celsius higher than pre-industrial levels.

This summer has put 2023 on track to hit a warmest-ever-year record, with mean mercury levels seen exceeding the pre-industrial level by 1.4° Celsius. Yes, if that sounds close to the Paris goal of a 1.5° cap, it is, although only a sustained trend of such high readings over the next decade or so (to clip out blip effects) will confirm how close to that limit we already are. This year, the Pacific's El Niño phenomenon saw warm water slop across that ocean to its American side, pushing up the mercury there, even as it had a drying effect on the Asian side, causing a drop in heat-relief rainfall in this part of the planet.

Whether this is a blip year or not, climate action cannot wait. And it's important that a green transition finds political backing globally. CoP-28 will be an occasion to review our progress. The clock's ticking.

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# NEW DRAGONFLY SPECIES DISCOVERED IN WAYANAD

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October 06, 2023 08:08 pm | Updated 10:47 pm IST - KANNUR

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A new species of dragonfly, Red-rumped Hawklet (*Epithemis wayanadensis*), which was discovered from Wayanad by a team of researchers. Photo: Special Arrangement

A new dragonfly species has been discovered in the verdant landscapes of Wayanad. Christened Red-rumped Hawklet, the dragonfly has been given the scientific nomenclature *Epithemis wayanadensis*, to mark the lush and biodiverse Wayanad plateau nestled in the Western Ghats.

The discovery was a collaborative effort led by Vivek Chandran and Subin K. Jose, researchers of the Environmental Science department at Christ College, Irinjalakuda; David Raju, a seasoned naturalist and wildlife photographer; and Zeeshan Mirza, a researcher from the Max Planck Institute for Biology in Germany.

Mr. Chandran said this significant breakthrough transpired during an ongoing investigation into the odonates of Kerala. The team was collecting specimens from a population that bore a striking resemblance to *Epithemis mariae*, commonly known as the Ruby-tailed Hawklet, a dragonfly species that is native and exclusive to the Western Ghats.

Mr. Chandran said *E. mariae* is characterised by its diminutive size, with the male displaying hues of blackish brown and red and the female boasting golden yellow and black hues. *E. mariae* typically congregates in small colonies and its presence is strictly seasonal, limited to the southwest monsoon period. It primarily inhabits marshes and pools at the base of forested hills.

In stark contrast, the newly discovered dragonfly species was found amidst the foliage of shrubs flourishing along a shaded streamside marsh near Wayanad's forested terrain, as well as parts of the Nilgiri Coorg landscapes within the Western Ghats.

This newfound species is distinguished by its darker pigmentation, a restricted red coloration on the abdomen, and the absence of the yellow antehumeral stripe, Mr. Chandran said.

Upon a year-long study, the researchers ascertained that this dragonfly species is profoundly seasonal, taking to the skies exclusively during the month of October. By early November, it vanishes from sight, spending the remainder of the year in the aquatic larval stage, he added.

To validate their discovery, the team conducted DNA analysis, a critical step in confirming the species. Mr. Chandran said typically, a two percent genetic variance indicates the presence of a new species. In this case, an astonishing 12% genetic difference was observed.

This marks the first instance of an Indian dragonfly being documented with genetic evidence substantiating morphological distinctions, he said. Furthermore, this discovery hints at the possibility of other species awaiting revelation within this landscape, he added.

The paper detailing the discovery of the new dragonfly was published in the peer-reviewed, open-access journal, the *Journal of Asia-Pacific Biodiversity* by Elsevier Group.

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# NGT SEEKS REPORT ON REMOVAL OF INVASIVE MUSSEL SPECIES FROM ENNORE-PULICAT WETLAND

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

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October 06, 2023 08:02 pm | Updated 08:21 pm IST - CHENNAI

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Flamingos seen at Pulicat lake at Sriharikota near Chennai. | Photo Credit: Jothi Ramalingam

The Southern Bench of the National Green Tribunal (NGT) has asked the Fisheries Department and the Tamil Nadu State Wetland Authority to file a detailed report on the [removal of invasive mussel species](#) from Ennore-Pulicat wetland.

S. Kumaresan, a fisherman from Ennore, has filed an application stating that an invasive South American mussel species, *Mytella strigata*, has spread like a carpet over the riverbed, preventing prawns from grazing or burying themselves in the sediment. Referred to as *kaaka aazhi* locally, it is said to be wiping out the locally prevalent and commercially valuable yellow clams (*manja matti*) and green mussels (*pachai aazhi*).

Mr. Kumaresan sought a direction to the government to take urgent action against the spread of mussels to ensure that the wetland ecosystem and livelihood are protected. He said because of the invasive mussels, the river bottom is suffocated with one foot-deep sludge of black, foul-smelling slimy excreta.

The government pleader argued that *kaaka aazhi* is not an alien species as it has an entry in the Wildlife Protection Act, 1972 (WPA) and that the NGT does not have jurisdiction to hear any matters relating to the WPA, which is not listed in Schedule I of the NGT Act. Remarking that this aspect had to be examined in further hearings, the Bench comprising Justice Pushpa Sathyanarayana and expert member Satyagopal Korlapati asked the authorities to file a comprehensive report in response to the application.

“Let the government furnish information as to whether the act of dredging had begun or any action plan had been prepared by the Fisheries Department,” the Bench ordered.

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# HOW PLASTICS AFFECT OUR DAILY LIFE

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

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October 07, 2023 09:17 pm | Updated 09:17 pm IST

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Every year, 19-23 million tonnes of plastic waste leaks into aquatic ecosystems | Photo Credit: AFP

Recall what grandparents did, before the age of plastics. They would bring their own bags, normally of cotton or jute, bring home the purchase, and later, wash and dry the bags, ready for the next use. They also used glass and steel vessels and bottles. But now, in the age of plastics, when we go to the grocer, vegetable vendor and markets to buy stuff, we all use plastic bags. Traders use plastic bags and bottles for their products and even water. When did the age of plastics start? It was in 1907 that the Belgian scientist Leo Baekeland synthesised the first plastic using formaldehyde and phenol, called it Bakelite, mass produced it and marketed it. This was the dawn of the plastics age. Some of the early products that became 20th century icons were the camera, telephone and radio. Today, just about everything is made of plastics - water bottles, straws, plastic cutlery, polythene bags, baby products, laptops, cell phones, drones and aircrafts. Even Chandrayaan used materials made of a combination of metals, glass and plastic in its voyage.

However, there is a downside to the plastic age. The UN Environment Programme (UNEP) points out that every day, the equivalent of 2,000 garbage trucks full of plastic are dumped into the world's oceans, rivers, and lakes. Plastic pollution is a global problem. Every year, 19-23 million tonnes of plastic waste leaks into aquatic ecosystems, polluting lakes, rivers and seas. Plastic pollution can alter habitats and natural processes, reducing ecosystems' ability to adapt to climate change, directly affecting millions of people's livelihoods, food production capabilities and social well-being. The UNEP points out that the environmental, social, economic and health risks of plastics need to be assessed alongside other environmental stressors, like climate change. Very little of plastics we discard every day is recycled or incinerated in waste-to-energy facilities. Much of it ends in the soil and the sea. The greenhouse gases emitted by plastics affect the global temperature, costing over 300 billion dollars annually.

O Bhongade and R Bhargava from the IIST Indore, write in the journal *International Journal of Research and Applied Sciences, Engineering and Technology* (2019) that since disposal of postconsumer plastics is increasingly being constrained by legislation and escalating costs, we need alternatives to disposal or land filling. Recycling of plastics is a method for production of the vital resource of liquid and gaseous fuels. Thermal and catalytic degradation, and gasification are alternative methods for recycling of plastic waste to produce fuel having properties similar to commercial fuels. These processes can be done in order to overcome the shortage of commercial fuel and the problem of plastic waste.

Given that we cannot but use plastic material every day, what are the various precautions and positive steps that we can take in our everyday lives? One is not to discard plastic bottles and bags after use, but reuse them. The second is to use more and more glass and steel products. Follow what our ancestors were doing.

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# 19 DOLPHINS RESCUED ALIVE FROM CANALS OF GANGA-GHAGRA BASIN, SAYS STUDY

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

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October 07, 2023 07:48 pm | Updated 11:48 pm IST - Kolkata

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A dolphin being rescued from a canal in the Ganga-Ghagra basin in Uttar Pradesh | Photo Credit: TSA, India

A recent publication by scientists and researchers has revealed that 19 Gangetic river dolphins had been rescued from the irrigation canals of the Ganga-Ghagra basin in Uttar Pradesh between 2013 and 2020.

The publication titled '[Rescuing Ganges river dolphins \(\*Platanista gangetica\*\) from irrigation canals in Uttar Pradesh, North India, 2013–2020](#)' not only highlights the capture and relocation methods but also describes the behavioural and demographic details of rescued animals and locations of these canals where the animals had been trapped.

The paper points out that 24 rescue operations had been conducted from 2013 to 2020 and five dolphins had died.

"There were 19 successful rescue operations and 14 dolphins were identified as female and 10 as male. The TBL (total body length) of these dolphins was found to be between 128 cm and 275 cm. The size of male dolphins ranged from 128 cm to 195 cm, whereas the females ranged from 190 cm to 274 cm. Of the five dolphins that died, three had a length over 243 cm," the paper said.

The publication said dams and barrages had severely affected this habitat as dolphins moved into irrigation canals where they were at a risk of injury or death from a multiple factors, such as rapidly receding waters, heat stroke and human interferences.

The Ganges river dolphin is in Schedule 1 of the Indian Wildlife (Protection) Act 1972, Appendix 1 of the Convention on International Trade in Endangered Species (CITES) and Appendix 1 of the Convention on Migratory Species (CMS).

The species, also considered the national aquatic animal, is listed as "endangered" on the IUCN Red List.

Though the species is not known to be gregarious, the researchers observed and handled at least one adult male and female together on five occasions. "Furthermore, adult females have

been seen with a calf on two occasions. These observations suggest that they may prefer to live and/or hunt in the pod. The dolphins may either stray into the canal while following prey upstream or get flushed into the canal by a sudden discharge of water from the barrage gates," the paper said.

The researchers also pointed out the higher proportion of females to males, and said larger animals and pregnant females look for an easier prey base in the canal system.

A dolphin being rescued from a canal in the Ganga-Ghagra basin in Uttar Pradesh

Over 70% of entrapments were reported either post monsoon or during peak winter. This suggests straying incidents are directly related to the release of water into canals during or after the monsoon.

"The other 30% of dolphins were rescued during peak summer when water levels fall and the minimum water flow is maintained. Among the rescued dolphins, females were found trapped between September and May with maximum occurrence during peak winter (December to February). In contrast, males were mostly recorded post monsoon and during the summer season, with least occurrence in peak winter," the paper says.

Shailendra Singh of the Turtle Survival Alliance Foundation India, one of the lead authors of the paper, said that the paper gives data for eight years but from 2013 to 2023, 28 dolphins had been rescued. He explained that the rescue of dolphins required expertise as it was a delicate animal. Keeping them alive after the rescue was also a challenge.

"This is a big issue; on an average, we rescue two or three animals and another two or three animals may die in canal network of Gangetic basin every year without timely information. Considering that the dolphins are found in the Ganga-Brahmaputra-Meghna delta, this is a huge problem to monitor this huge area and canal system," he said.

The other authors of the paper are Arunima Singh, Sreeparna Dutta and Sanjay Srivastava, a senior forest official of the Uttar Pradesh cadre.

The publication states that in 2016, the International Whaling Commission's (IWC) scientific committee recognised that both Ganges and Indus river dolphins require prompt and coordinated action to protect them from imminent threats.

In 2017, the IWC created the Asian River Dolphin Task Team (ARTT) to identify information gaps and research priorities and develop concerted action for the protection of the Ganges and Indus river species in their range.

One of the key recommendations of the scientists is that IWC ARTT recognised the issue of canal entrapment and suggested a focused study be conducted to understand the movements of dolphins across barrages in all countries. The publication recommends a pilot scheme using sonic devices or 'pingers' at all three barrages in the Ghaghara subbasin to test their efficacy as deterrents, with a view to expanding their use across the range of present species.

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# CALL FOR FOSSIL FUEL PHASE-OUT ON GLOBAL STOCKTAKE AGENDA: U.N. REPORT

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

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October 08, 2023 06:23 pm | Updated 06:23 pm IST - New Delhi

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The global stocktake outcome may also include a call for a “global phase-out of unabated coal power generation by 2040 in a just manner” and tripling the capacity deployment of renewable and clean energy by 2030. File | Photo Credit: AP

Calls to phase out unabated fossil fuels, reform subsidies on it and triple global renewable energy capacity may find their way into the outcome of the first-ever global stocktake, a periodic assessment of collective efforts to achieve the Paris Agreement goals.

Initiated in Glasgow in 2021, the first-ever global stocktake will conclude at the annual climate talks (COP28) in Dubai in December.

The United Nations Framework Convention on Climate Change (UNFCCC) recently released a report summarising submissions made by countries and non-party stakeholders regarding the political response to the global stocktake.

"They will inform negotiations but there's no guarantee any particular element will make it into the final text. With that said, fossil fuel phase-out is prominently featured in this long list of possible decision elements," Natalie Jones, a policy advisor at climate policy think tank International Institute for Sustainable Development (IISD), said.

According to the UNFCCC report, possible elements of the global stocktake outcome could include a call to parties on "phase-out of fossil fuels, support global commitment to accelerate the phase-out of unabated fossil fuels, and efforts to phase out inefficient fuel subsidies by 2025, supported by enabling environments and upscaling investments in renewable energy".

The International Energy Agency (IEA) said in September that global demand for oil, natural gas and coal is likely to peak by 2030. The IEA termed it an encouraging development but "not nearly enough" to limit the rise in global average temperatures to 1.5 degrees Celsius.

Countries promised to phase out "inefficient" fossil fuel subsidies at COP26 in Glasgow in 2021 and COP27 in Sharm El Sheikh in 2022, but they hit record highs in 2022.

A report that came ahead of the G20 Leaders' Summit in New Delhi in September said countries in the bloc allocated a staggering USD 1.4 trillion of public funds to support fossil fuels in 2022,

aiming to counter the impact of their soaring prices due to the Ukraine war and strengthen energy reserves.

Earth's global surface temperature has risen by around 1.15 degrees Celsius. The CO2 spewed mostly by the developed countries into the atmosphere since the start of the industrial revolution is closely tied to it.

In the business-as-usual scenario, the world is heading for a temperature rise of around 3 degrees Celsius by the end of the century.

Climate science says the world must halve emissions by 2030 from the 2009 levels to limit global average temperature rise to 1.5 degrees Celsius as compared to the pre-industrial levels to avoid extreme, destructive and likely irreversible effects of climate change.

According to global agencies, the last four months (June, July, August and September) were the hottest on record, with 2023 on track to be the warmest year ever.

Developing countries argue that wealthier nations should take greater responsibility for emission reductions, given their massive historical emissions and provide the necessary means of implementation, including finance and technology, to assist developing and vulnerable nations in transitioning to clean energy and adapting to climate change.

The global stocktake outcome may also include a call for a "global phase-out of unabated coal power generation by 2040 in a just manner" and tripling the capacity deployment of renewable and clean energy by 2030.

Doubling the rate of energy efficiency improvements from 2.2 per cent to over 4 per cent annually across sectors by 2030 is also among the possible elements listed in the U.N. report for discussion at COP28.

The final discussions could also include a call for supporting the doubling of low-carbon hydrogen production across sectors by 2030 and recognising the role of natural gas as an efficient transitional fuel.

The UNFCCC report highlights the possible element that the global North cannot be asking to end financing for fossil fuels in the global South "without taking corresponding actions" in their own countries.

India had also highlighted this issue in its submission to the UNFCCC regarding its expectations from the global stocktake outcome.

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# PREY, HABITAT DICTATE ASIATIC WILD DOG-TIGER COEXISTENCE, SAYS STUDY

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

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October 08, 2023 02:28 pm | Updated 08:34 pm IST - GUWAHATI

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Dholes or Asiatic wild dogs at Manas National Park, Assam. Photo: Special Arrangement

**GUWAHATI** Overlapping prey availability or habitat suitability could dictate a positive association between dholes and tigers, facilitating co-existence or even cooperative behaviours between the two species of carnivores, a new study has found.

The dhole or Asiatic wild dog (*Cuon alpinus*) is the only endangered wild pack-living canid in the tropical Indian forests and is considered at high risk of extinction.

The study through camera traps by Urjit Bhatt and Salvador Lyngdoh in western Assam's Manas National Park also revealed that the diurnal activity of the dholes had the highest temporal overlap with leopards and the lowest with clouded leopards.

The two scientists are associated with the Department of Landscape Level Planning and Management at the Dehradun-based Wildlife Institute of India. Their paper titled 'Do dholes segregate themselves from their sympatrids? Habitat use and carnivore coexistence in the tropical forest' was published in the latest issue of *Mammalian Biology*, a peer-reviewed international scientific journal edited by the German Society for Mammalian Biology.

Sympatric refers to animals, plant species, and populations within the same or overlapping geographical areas.

The scientists studied the dholes in three phases from April 2017 to May 2019 in the 500 sq. km Manas National Park, a UNESCO World Heritage Site. This park and the adjoining Royal Manas National Park in Bhutan form one of the largest areas of conservation significance in South Asia, representing the full range of habitats from the subtropical plains to the alpine zone.

The range of habitats in the cross-border national park is ideal for the dholes.

Operating in packs of 5-10 individuals — larger groups of more than 30 were observed in 2004 — dholes were once widespread across southern and eastern Asia. Factors such as habitat loss, declining prey availability, persecution, disease, and interspecific competition have contributed to the ongoing fragmentation of its populations.

An Asiatic wild dog at Manas National Park, Assam. | Photo Credit: Special Arrangement

The global population of adult dholes, now classified as endangered on the International Union for Conservation of Nature's Red List, is estimated to be between 949 and 2,215 individuals, scattered in localised areas of India and Thailand.

"We aimed to assess the relative abundance index, habitat use and factors (space and time) influencing dhole co-existence with other sympatric carnivores in Manas National Park," the study, testing five hypotheses, said.

The hypotheses included conflict with humans on the periphery of protected areas as the primary threat to dholes, higher habitat utilisation where small-medium prey species such as rodents, hares, and rhesus macaques, and a negative relationship between dhole habitat use and other large carnivores.

"However, our study findings revealed a surprising positive relationship between dhole habitat use and tiger, rejecting the habitat exclusivity hypothesis. This unexpected result challenges the assumption of antagonistic interactions between these two species and suggests a more complex ecological dynamic," the study said.

"The positive association could be attributed to factors such as overlapping prey availability or habitat suitability, which may facilitate co-existence or even cooperative behaviours between dholes and tigers," the study said, suggesting further research to unravel the mechanisms underlying this positive relationship.

"Good habitats and forests are like wildlife mega cities or hotspots which provide many niches and possibilities. This is why places like Manas are important and any disruption will wipe out such ecological balance we often do not understand," Dr. Lyngdoh told *The Hindu*.

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## INDIA-EU TRADE AND TECHNOLOGY COUNCIL WORKING GROUP 2 HOLDS TWO-DAY INTERNATIONAL WORKSHOP ON GREEN & CLEAN ENERGY TECHNOLOGIES

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

The India-European Union (EU) Trade & Technology Council (TTC) Working Group 2 (WG2) convened a two-day international workshop on “Green & Clean Energy Technologies” during October 10-11, 2023. The workshop was organized by the Office of Principal Scientific Adviser to the Government of India and hosted by the Ministry of New and Renewable Energy (MNRE) in hybrid mode.

India-EU-TTC is strategic coordination and engagement on trade and technology between India and Europe. It was formally announced on 25 April 2022 after the bilateral cooperation meeting between the Hon'ble Prime Minister of India, Shri Narendra Modi and the President of the European Commission Ursula von der Leyen. Within the framework of the TTC, three working groups have been set up. The Working Group 2 on Green & Clean Energy Technologies is chaired by Professor Ajay Kumar Sood, Principal Scientific Adviser (PSA) to the Government of India from the Indian side and Mr. Marc Lemaître, Director-General, Directorate General for 'Research and innovation', European Commission, Brussels from the European side.

Professor Sood, in his inaugural address at the workshop, emphasized on the role of the India-EU TTC partnership in fostering India-Europe trade and technology ties. He outlined the workshop's objectives, which included exchanging insights on policy and regulatory frameworks, identifying cutting-edge green technologies, pinpointing collaboration opportunities and gaps, fostering co-development of technologies, and establishing institutional collaboration initiatives.



*(PSA Prof. Ajay Kumar Sood delivering inaugural address at India-EU TTC WG2 workshop)*

Mr. Lemaître, who joined the workshop via video conferencing, highlighted the pivotal role of research and regulation in accelerating the growth of green and clean energy technologies. He further emphasized the importance of India-EU collaboration towards a shared vision for a sustainable future and also highlighted e-vehicles as a key solution, paving the way to achieve future targets.



*(Mr. Marc Lemaître delivering address through virtual mode at India-EU TTC WG2 workshop)*

The workshop comprised of four insightful sessions:

The first session '**Waste to Green Hydrogen**' was chaired by Dr. Arun Tripathi, (Advisor, MNRE, India) and co-chaired by Ms. Helene Chrays (Head of Unit, DG R&I Directorate C1 - Unit on Clean Energy Transition, EU). The session witnessed multiple presentations on possible ways of collaboration between India and EU on Hydrogen Storage, transportation, Safety Standards, and regulatory framework. Technologies, solutions, and opportunities to convert Waste into Green Hydrogen were discussed.

The second session '**Marine Plastic litter and Wastewater**' was chaired by Ms. Szilvia Nemeth (Deputy Head of Unit, Directorate B4 on Healthy Oceans and Seas, EU) and co-chaired by Mr. M.V. Ramana Murthy (Mission Director, Deep Ocean Mission, Ministry of Earth Sciences, India). Topics discussed included marine plastic pollution mitigation and wastewater treatment strategies to combat the ocean plastic crisis and urban water challenges.

The third session was divided into two sub-sessions. Session 3(a) on '**E-mobility: Circulatory Aspects of Batteries**' was chaired by Sudhendu Jyoti Sinha (Adviser, Infrastructure, Connectivity & E-mobility, NITI Aayog) and co-chaired by Philippe Froissard (DG R&I - Head of Unit, Directorate C2 on Future Urban & Mobility Systems). Insights into battery circulatory



considerations and the potential of the EV & battery recycling sector were presented.

Session 3(b) on '**Interoperability of Charging Infrastructure**' chaired by Ashok Rajput, (Member (Power System), Central Electricity Authority (CEA)) and co-chaired by Harald Scholz, (Head of Mobility Lab in JRC-ISPRA) discussed the possibilities of co-development of charging infrastructure technologies between India and EU. Further, the session explored the collaboration between Automotive Research Association of India (ARAI) and Joint Research Center (JRC), EU in applicability of standards, testing methodology, and optimization.

The fourth session '**Standards**' was chaired by Ms. Kirsi Haavisto (DG R&I - Head of Unit in Directorate C1 on Valorisation policies & IPR) and co-chaired by Mr. Pramod Kr. Tiwari (DG-Bureau of Indian Standards (BIS)). The session witnessed intense discussions on the importance of harnessing data and scientific insights to form standards and initiate R&I and standards early in new technology research phases. A potential Code of Practice on Standardisation was also discussed.

Mr. Hervé Delphin, Ambassador-designate of the EU to India underscored the vital need for ongoing dialogue & technological cooperation between India & the EU.



*(Dr. Parvinder Maini, Scientific Secretary, Office of PSA with Mr. Hervé Delphin, Ambassador-designate of the EU to India)*

Dr. Parvinder Maini (Scientific Secretary, Office of Principal Scientific Adviser to Government of India) shared key takeaways on Sessions I and III, which included R&D on Lithium ion batteries and recycling technologies, formalization of uniform waste collection system, and development of a business model for complete value chain.

Ms. Cristina Russo (Director, Global Approach & International Cooperation in R&I, EU) shared key takeaways on Sessions II and IV. She stressed on the need for a harmonized method to

address plastic litter. As next steps, she proposed developing standards for specific technologies under each of the thematic topics.

Dr. Maini concluded the workshop by thanking the chairs, co-chairs and rapporteurs in each of the sessions. She also thanked each of the stakeholder Ministries which included MNRE, Ministry of External Affairs, Ministry of Heavy Industries, Ministry of Earth Sciences, BIS, Department of Science and Technology, Ministry of Housing and Urban Affairs, and Ministry of Environment, Forest and Climate Change for their support in making the workshop a resounding success.

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# SIKKIM FLASH FLOODS

Relevant for: Environment | Topic: Disaster and disaster management

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October 14, 2023 04:11 am | Updated 04:11 am IST

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Vehicles that got washed away in the floods lie in the sand along the Teesta river in Rongpo, Sikkim. | Photo Credit: Ritu Raj Konwar

There is a popular folk tale in Sikkim, told and retold in regions where the Lepchas live. The Lepchas are one of the three main ethnic groups of the State, the others being the Bhutia and Nepalese. The story goes that the male river Rangeet, angry after having lost a race downhill to the female river Rungnyu, turned from the spot of their proposed meeting back towards the Himalayas with an intensity that wreaked havoc in the region. In 2021, a song gave a modern twist to this folk tale. The song of resistance sung by Ongyal Lepcha goes, “I can drown everything that stands. Do tell them, so many rocks and hills I have cut through, how can these little hurdles hold me back?” The song apparently refers to the rage of the river, at the slew of hydropower projects in Sikkim.

On October 4, the song proved to be prophetic not for the Rangeet but for the Rungnyu, popularly known as the Teesta. The South Lhonak glacial lake, formed from the gradual melting of a Himalayan glacier and located about 17,000 feet above sea level in north-western Sikkim, suddenly breached its embankments and “burst”, [inundating the Teesta river basin](#). This caused flash floods, which swept away 14 bridges and the dam of a 1,200-megawatt hydropower project, damaged 1,825 houses, claimed at least 94 human lives, and forced 2,563 displaced people into 21 relief camps, according to government data. Seventy-eight people are reported missing.

Bishnumaya Shanti, 70, a homemaker, is familiar with the folk tale. She says she had experienced the Teesta’s destructive mood in October 1968, the last time the river had inflicted large-scale damage. “But that was nothing compared to what the river has done to us today,” says Shanti whose house, built with the life savings of her family, was swept away. She is now at the Majigaon community hall-turned-relief camp near the police station in Rangpo town. This is the point of access to Sikkim via National Highway 10 from West Bengal. Shanti is heartbroken about losing all her belongings, but she is more relieved that all the members of her family managed to escape the river’s fury in the nick of time.

Flood victims take shelter in a relief camp in Rongpo. | Photo Credit: Ritu Raj Konwar

Rangpo, in Pakyong district, has a population of 10,450 people. This is where the Rangpo river meets the Teesta. It was most badly hit by the floods along with Singtam, a major market 11 km upstream of the Teesta on the road to Gangtok, the State’s capital. An Army unit at Bardang in

between these regions was buried under debris. At least 23 personnel were swept away.

At Singtam, Prakash Pradhan, a trader, recalls watching in disbelief as the iconic Sherwani bridge across the Teesta facing his four-storey building swayed against the surging water and debris for about two minutes before giving way. The bridge connects Singtam in Gangtok district with Namchi, the headquarters of South Sikkim district. “As the water level kept rising and our first floor was half submerged, we rushed to the roof, hopped onto the top of the next building and the next until we were at a safe distance from the river,” he says. It was about 3:30 a.m. and raining hard.

**Also read | [Damages due to Sikkim flash floods worth thousands of crores of rupees, says CM Tamang](#)**

Pradhan and the residents of some 2,000 dwelling units in Singtam’s market area returned the next morning to find their houses buried in about 15 feet of sand. The local administration advised two of his neighbours not to return to their houses. Both their buildings were cracked and hanging precariously over the river. A footpath behind them had already been swallowed up by the river.

Rongpo town was devastated by the flash floods, east Sikkim on 11 October 2023. The cloudburst occurred over Lhonak Lake in North Sikkim leading to the flooding of the river which flows through Sikkim and West Bengal. Photo: RITU RAJ KONWAR / The Hindu | Photo Credit: Ritu Raj Konwar

“At least 18 people from our area are either dead or missing. They probably had no time to react to the river’s fury,” says Vishal Rai, a college student from the West Bengal part of Rangpo.

While Sikkim — aided by the Army, Border Roads Organisation, and other agencies — has been prompt in responding to the disaster in four of its districts, West Bengal is yet to assess the damage across the Kalimpong, Darjeeling, Jalpaiguri, and Cooch Behar districts through which the Teesta flows before meeting the Brahmaputra in Bangladesh. Access to Sikkim has been disrupted primarily because a 30-metre stretch of NH10 — that falls within the Gorkhaland Territorial Administration (GTA) in West Bengal — has been damaged.

“Many villages on the banks of the Teesta have been washed away and there are reports of several people dead and injured. We are holding an administrative meeting soon to assess the damage,” says Anit Thapa, GTA’s chief executive. The GTA, he adds, received 25 crore as assistance from the Mamata Banerjee government but [nothing from the Centre](#), unlike Sikkim which received more than 44 crore.

The push for industrialisation led to Sikkim becoming a pharmaceutical hub more than a decade ago. The State has production units of 14 top Indian and international pharmaceutical companies, almost all of them along the Teesta, between Rangpo and Singtam.

The pharmaceutical boom led to an increase in real estate prices. Multi-storeyed buildings started coming up along the banks of the Teesta and its tributaries soon after the 2011 Sikkim earthquake that officially claimed 60 lives. A majority of the tenants are employees of these pharmaceutical companies.

Sanjib Tamang built his three-storey house at Rangpo in 2012 at an elevation considered safe from inundation during high floods. “This flash flood was much higher than what we encountered in the past,” he says. Tamang salvaged only about 10% of the goods in his silt-filled grocery shop and shifted his two tenants — both pharmaceutical employees — to his restaurant in the



market on higher ground.

O.P. Niroula, who leased out his house to Sarthak Patnaik and Rajesh Sahu, both from Odisha, shifted them to his second house in the almost untouched Majitar town upstream of the Teesta. Unfortunately, they lost all their belongings.

A portion of the NH-10 was washed away by the flash floods near Gangtok. | Photo Credit: Ritu Raj Konwar

Rangpo resident H.N. Sapkota, who rescued about 150 people from drowning on that fateful night, says everything happened too fast for him to process. “Had I known nature would batter us, I would never have built a house here,” he says.

Teesta washed away the plot that Maita Hangma Subba, a homemaker, bought to build a permanent house. She had constructed a temporary structure and rented it out for a vehicle workshop, which was swept away along with a few vehicles. “I will probably think 10 times before deciding to build a house there,” she says pointing to the confluence of the Teesta and the Rangpo rivers.

Despite their losses, she and Sapkota have been central to preparing community meals for the rescue and relief workers – from the National Disaster Response Force, Sashastra Seema Bal, district authorities, members of NGOs, and villagers from places 50-60 km away.

“We are short of manpower but voluntary service from the people is seeing us through,” says Pakyong’s Deputy Commissioner, Tashi Chophel. He has been coordinating the evacuation of some 3,000 tourists stranded in northern Sikkim by Indian Air Force choppers to the Pakyong Airport. The exercise has been weather-dictated; 371 tourists were evacuated on October 9 and 10 but the choppers could not fly on October 11.

Buddha Bangar, a self-employed man, came with 50 people armed with spades and shovels from Namchi, about 55 km away, to clear the debris as fast as possible. Likewise, Dilu Tamang, who runs a dance academy in Gangtok, also about 45 km from Rangpo, came with about 80 members of her academy to collect relief materials and lend a hand in clearing the debris.

“Helping each other out is a community trait but the government is not depending on the people alone. An inter-ministerial central team is assessing the damage for the government to work on a comprehensive rehabilitation programme,” says Assembly Speaker Arun Kumar Upreti.

The disaster in Sikkim and West Bengal downstream has been attributed to the glacial lake outburst flood (GLOF). The floodwaters from the South Lhonak glacial lake reached the 1,200-MW Teesta-III hydel project at Chungthang via the Lachen River. The 60-metre-high rock-filled concrete dam, Sikkim’s highest, is where the Lachen meets the Lachung to flow down as the Teesta. An investigation is being conducted to ascertain if the dam’s spillways or openings to allow excess water to flow out were opened before the floodwaters from the GLOF reached Chungthang, which is about 55 km downstream of the lake.

Teesta-III had a gross storage capacity of 5.08 million cubic meters and a live storage capacity of 3.3 million cubic meters. The combined discharge of storage water and GLOF from Teesta-III hit the NHPC’s 510 MW Teesta-V and the under-construction 500 MW Teesta-VI downstream in about an hour, causing considerable damage.

Sunil Saraogi, the executive chairman of Sikkim Urja Limited, which operates the hydropower project, says the project operators received information from the Indo-Tibetan Border Police

about the GLOF at 11:58 p.m. on October 3.

“Our team of 12 or 13 people headed to the dam at Chungthang to open the gates, but the flash floods struck before they could act, forcing them to flee for their lives. The dam got washed away in 10 minutes after midnight. The bridge connecting the powerhouse was also washed away,” he says. Eleven employees of the project have been missing since the flash floods.

The Sikkim government has a 60.08% stake in the Chungthang project. Sikkim Chief Minister Prem Singh Tamang attributed the disaster to the “substandard construction” of the Teesta-III dam at Chungthang and said the Sikkim Democratic Front (SDF) government headed by Pawan K. Chamling was to blame for it. The BJP legislator representing the Gangtok seat, Y.T. Lepcha, went to the extent of filing a police complaint against Chamling. However, the BJP, an ally of Tamang’s Sikkim Krantikari Morcha which Tamang belongs to, softened its stand later. “This is not the time to blame each other but to work together for seeking more funds from the Centre to deal with natural disasters better,” stated State BJP spokesperson Dolaram Giri.

The SDF said the Chief Minister was trying to score brownie points with the Assembly elections due in the first part of 2024. “There should be a forensic probe by central agencies into the dam break. Before making flippant statements, the Chief Minister should realise that Chungthang was given environmental clearance by the Environment Ministry, and technical clearances by the Central Water Commission and the Central Electricity Authority. It has become a habit for him to blame the SDF for everything,” SDF leader M.K. Subba says.

The Lepchas who revere the Teesta believe that Chungthang should not have been built in the first place. “The State government pushed the project despite two years of hunger strikes against it from June 2007 to September 2009. Our worst fear about Chungthang became a reality although, thankfully, the disaster struck at night. Had it been during the daytime, the damage would have been much higher,” Gyatso Lepcha, the general secretary of Affected Citizens of Teesta (ACT), says.

High rise buildings on the bank of the Teesta river in Singtam area | Photo Credit: Ritu Raj Konwar

The ACT has renewed its demand for scrapping the Chungthang project and decommissioning the NHPC’s 510-MW Teesta-V located at Dikchu, downstream. Locals say the dam has become a threat to the people of Zang village.

Sikkim’s Forest and Environment Minister Karma Loday Bhutia has taken a stand against reconstructing the dam. “Our soil is very young, and North Sikkim is a landslide-prone area. So, I feel the construction of a dam is not advisable,” he says. But Sikkim Urja Limited insists that the dam and bridge have to be rebuilt for the State’s energy security, entailing a huge expenditure.

Khamsung Lepcha, a resident of Chungthang, claims the dam could have been damaged by Army explosives swept down from a unit at Chhaten, about 3 km upstream of Chungthang. This could have weakened the structure for the surging waters to burst through. “We saw fireworks in the river,” he says. There have been reports of Army explosives being recovered from the downstream of Teesta up to the Bangladesh border.

Sikkim’s Chief Secretary V.B. Pathak says there was no official confirmation about explosives having impacted the dam, but admits that the possibility needs to be examined. He also says that an Advanced Warning System was installed in September at the South Lhonak Lake and Sakochu Lake – both glacial lakes – jointly by the National Disaster Management Authority (NDMA), the Sikkim State Disaster Management Authority, and the Swiss Development

Corporation. The system was to give reports to be monitored by the Swiss agency in consultation with the NDMA. “Most probably, the system was not working when this incident took place,” he says.

The police did sound the alarm in habitations along the Teesta but most residents took it to be a routine exercise. “The authorities should consider a different alarm system during an imminent major disaster,” says Karma Bhutia, a student helping out at Singtam.

Mayalmit Lepcha, president of the Sikkim Indigenous Lepcha Tribal Association, says Sikkim is “Mayal Lyang” or a land blessed by the gods. “How can it remain that way if we do not let our rivers, specifically the sacred Teesta, flow freely,” he says.

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# FIRST SET OF MIGRATORY BIRDS FLOCK CHENNAI'S PALLIKARANAI MARSHLAND

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

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October 15, 2023 09:43 pm | Updated October 16, 2023 12:13 am IST - CHENNAI

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Common teal | Photo Credit: The Nature Trust

With over 150 garganeys, and several other species, including waders and raptors, flocking the Pallikaranai marshland, the curtain for the migratory season has been raised.

Birder and The Nature Trust founder K.V.R.K. Thirunaranan said garganey, northern pintail, northern shoveler, common teal, western yellow wagtail, grey-headed lapwing, common sandpiper, and wood sandpiper have arrived. Raptors, such as red-necked falcon, osprey, and greater-spotted eagle were also sighted.

Western yellow wagtail | Photo Credit: The Nature Trust

Grey-headed lapwing | Photo Credit: The Nature Trust

Good rainfall in Chennai during the southwest monsoon has kept the Pallikaranai marsh filled and there is freshwater coming in from nearby lakes, said Mr. Thirunaranan. He added that from monitoring birds in Pallikaranai for 13 years, it has been observed that the western yellow wagtail arrives from northern latitudes at the marshland every first week of September and the grey-headed lapwing comes between September 28 and October 2. "This year also both arrived on time as expected," he said.

White wagtail and forest wagtail are expected to arrive in ten days and one month respectively, he said. Despite threats of new infrastructure and encroachments, winged visitors continue to arrive at the marshland, where 196 species including 72 migratory birds have been documented over two decades, according to Mr. Thirunaranan.

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# THE INDIAN HIMALAYAN REGION NEEDS ITS OWN EIA

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

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October 17, 2023 12:16 am | Updated 08:15 am IST

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In the Singtam area, east Sikkim | Photo Credit: RITU RAJ KONWAR

The Teesta dam breach in Sikkim in early October and the recent floods and landslides in Himachal Pradesh are a stark reminder of the havoc our development model is wreaking on our environment and ecology especially in the mountains. It is imperative to assess the worthiness of any significant human endeavour in terms of its impact on the environment.

Environment Impact Assessment (EIA) is one such process defined by the United Nations Environment Programme (UNEP) as a tool to identify the environmental, social, and economic impacts of a project before it is implemented. This tool compares various alternatives for the proposed project, predicts and analyses all possible environmental repercussions in various scenarios. The EIA also helps decide appropriate mitigation strategies. The EIA process would need comprehensive, reliable data and would deliver results only if it is designed to seek the most appropriate, relevant and reliable information regarding the project. Hence, the base line data on the basis of which future likely impacts are being predicted are very crucial.

In India, a precursor to the EIA began in 1976-77 when the Planning Commission directed the Department of Science and Technology to assess the river valley projects from the environmental point of view. It was later extended for all those projects that required approval from the Public Investment Board. Environment clearance then was just an administrative decision of the central government. On January 27, 1994, the Union Ministry of Environment, Forests and Climate Change under the Environment (Protection) Act 1986 (EPA), promulgated the first EIA notification making Environmental Clearance (EC) mandatory for setting up some specified new projects and also for expansion or modernisation of some specific activities. The notification of 1994 saw 12 amendments in 11 years before it was replaced by the EIA 2006 notification.

The hallmark of the 2006 notification was the decentralisation of the process of EC. State governments were also given powers to issue EC in certain cases. The 2006 notification has also been amended, in the name of fine-tuning the process several times. The Union Ministry of Environment, Forests and Climate Change floated a draft EIA in 2020 for public comments which created quite a furore as it was perceived to be pro industry and compromising the ecological concerns.

Used diligently, the EIA could be the most potent regulatory tool in the arsenal of environmental governance to further the vision of sustainable development in the country.

The EIA 2006 notification lays down the procedure as well as institutional set-up to give environmental clearance for the projects that need such clearance as per this notification. Only projects enumerated in the schedule attached to the notification require prior EC. An EIA is not required for many projects as they do not fall within the ambit of this notification.

This notification has categorised projects under various heads such as mining, extraction of natural resources and power generation, and physical infrastructure. Unfortunately, the threshold limits beyond which EIA is warranted for all these projects is the same across the country.

Despite all levels of government being acutely aware of the special needs of the Indian Himalayan Region (IHR), the region's vulnerabilities and fragility have not been considered separately. While some industries mentioned in the schedule to the notification cannot be set up in the IHR States due to the industrial policies of the respective States, other industries and projects have to meet the same threshold in the rest of the country. Even the draft 2020 notification which was floated for public discussion does not treat the IHR differently than the rest of the country and is not cognisant of the special developmental needs of IHR.

The Indian regulatory system uses a graded approach, a differentiated risk management approach depending on whether a project is coming up within a protected forest, a reserved forest, a national park, or a critical tiger habitat. The stringency of environmental conditions proposed in the terms of references at the scoping stage of the EIA process is proportionate to the value and sensitivity of the habitat being impacted by the project.

One unfortunate miss from this graded approach for differentiated risk management has been the IHR. Despite its special needs and as an area of immense ecological importance to the entire country (it serves as a water tower and the provider of ecosystem services), this region is treated like any other part of the country.

While categorising projects it is important that the impacts of all such projects and activities are seen in the IHR in the context of this region's fragility and vulnerability *vis-à-vis* ecology and environment. We have enough systemic understanding that the Himalayas are inherently vulnerable to extreme weather conditions such as heavy rains, flash floods, and landslides and are seismically active. Climate change has added another layer of vulnerability to this ecosystem. Despite this understanding of the fragility and vulnerability of the Himalayas, there is no mention of a different set of environmental standards needed if the project is located in the IHR.

The increasing frequency with which the Himalayan States are witnessing devastation every year after extreme weather conditions shows that the region is already paying a heavy price for this indifference.

The needs of these mountains could be addressed at all four stages of the EIA — screening, scoping, public consultation, and appraisal — if the yardstick for projects and activities requiring EC in mountainous regions is made commensurate with the ecological needs of this region.

General conditions mandated for all projects at the end of the notification could also have had a clause about the IHR or mountains above a certain altitude, or with some specified characteristics that could increase the liability of the project proponent.

There is no regulator at the national level, as suggested by the Supreme Court of India in 2011 in *Lafarge Umiam Mining (P) Ltd.; T.N. Godavarma Thirumulpad vs Union of India* to carry out an independent, objective and transparent appraisal and approval of the projects for ECs and to

monitor the implementation of the conditions laid down in the EC. The EIA process now reacts to development proposals rather than anticipate them. Due to the fact that they are financed by the project proponent, there is a veering in favour of the project. The process now does not adequately consider cumulative impacts as far as impacts caused by several projects in the area are concerned but does to some extent cover the project's subcomponents or ancillary developments.

In many cases, the EIA is done in a 'box ticking approach' manner, as a mere formality that needs to be done for EC before a project can be started. The consequences of all these limitations are amplified in the IHR as on top of the inherent limitations of the process, the EIA process is not at all cognisant of the special needs of the IHR. Policymakers would do well to explore other tools such as the strategic environmental assessment which takes into account the cumulative impact of development in an area to address the needs of the IHR as a fundamental policy.

Archana Vaidya is a Natural Resource Management (NRM) and Environment Law consultant and an advocate at the High Court of Himachal Pradesh. Vikram Hegde is an advocate in the Supreme Court of India

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# WHY IS BENGALURU EXPANDING ITS WASTE-MANAGEMENT CAPACITY?

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

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October 16, 2023 10:47 pm | Updated October 17, 2023 09:56 am IST

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BBMP garbage trucks on the way to the landfill in Mittaganahalli quarry pit, in north Bengaluru, September 11, 2022. | Photo Credit: Murali Kumar K./The Hindu

The Government of Karnataka is contemplating the [relocation of waste processing facilities](#), operational in Bengaluru, to the outskirts of the city. Officials have been tasked with identifying land parcels, each spanning 100 acres, in various directions from the city, preferably in Bengaluru Rural and Ramanagara districts.

Currently, the city generates approximately 5,000 tonnes per day (TPD) of waste, which is expected to rise to around 6,000 TPD over the next four or five years. The existing waste processing capacity in Bengaluru stands at about 2,000 TPD, including small-scale decentralised ward-level waste processing facilities, leaving roughly 3,000 TPD of waste to be disposed of in landfill quarries without processing.

Due to this capacity shortfall, Bengaluru has made a commendable decision to identify locations for four additional waste-processing facilities outside the city. However, this initiative will face significant challenges, primarily from the villages surrounding the locations.

Historically, composting facilities at most waste-processing sites set up by the Bruhat Bengaluru Mahanagara Palike (BBMP), such as at Kudlu, Mavallipura, Mandur, Lingadeeranahalli, Kannahalli, and Seegehalli, have encountered strong opposition rooted largely in the inefficient operations at these plants. The plants have indeed consistently received more waste than their designed capacities and have operated at less than [50% efficiency](#).

This excess quantity of material in the process has resulted in leachate and odour issues, affecting the environs and livelihoods of people living nearby.

Given the issues posed by existing plants, it is crucial to make sure that the city's waste processing capacity is increased to handle 6,000 TPD, through a combination of centralised and decentralised processing systems. This expansion should ensure that no facility receives more waste than its designed capacity. By increasing the capacity and ensuring that waste deliveries are never more than the design capacity, it should be possible to mitigate leachate and odour issues effectively.

The new waste-processing facilities should ideally have the capacity to process 1,000 TPD to ensure that all the 6,000 TPD of waste generated in the city are processed.

The technology of choice should be composting of fresh waste, which is also suitable to the weather conditions of Bengaluru. About 60% of the waste here is biodegradable wet waste, some 25% is dry waste (including plastics and other recyclable materials), and the remaining 15% consists of inert materials, such as silt and stones.

Each facility should be designed to incorporate a 600-TPD composting facility, a 250-TPD material recovery facility (to manage dry waste), and a 150-TPD [scientific landfill](#) to dispose of the inert fraction.

Addressing odour and leachate concerns is paramount. These plants should have tertiary-level facilities to treat leachate and ensure they are properly treated, making them suitable for internal use.

The main cause of odour in waste-processing facilities is the high moisture content in the material when it is being composted. To manage this, the waste-processing plants should be equipped with high-capacity lane turners or windrow-turning equipment instead of having to be turned manually using excavators. Turning the composting material around at frequent intervals can expedite the composting process and minimise odour because the material will be well aerated and regulated.

Another major concern is likely to be land acquisition and changes in land-use patterns. Considering the new plants will have to be set up quickly, the government may opt for state-owned vacant plots, as it has in the past, to avoid the tedious process of land acquisition. However, change in the use of land from an open space to waste-processing will affect the local terrain and rainwater management. To address these issues, the government must conduct thorough geotechnical investigations first.

Considering these plants will be located in rural areas, the government should also engage the primary consumers of the compost – i.e. farmers – in the process in addition to offering free organic compost to villages settled near these facilities. This initiative can substantially reduce the farmers' reliance on chemical fertilisers, saving them around 15,000-20,000 rupees per annum (which they currently spend to buy fertilisers).

In fact, the annual waste output of Bengaluru, around 2.16 crore tonnes, could yield approximately 32.4 lakh tonnes of organic compost, ultimately replacing a significant portion (possibly up to 50%) of chemical fertilisers used in the Bangalore Rural and Ramanagara districts.

Existing facilities have been a source of concern for residents and have faced demands for closure due to odour and leachate issues. Given the significant government investment of Rs 450 crore to set up seven composting facilities of 150-300 TPD capacity each in 2014, a more practical approach will be to convert these wet-waste-processing facilities into dry-waste management facilities.

These converted plants can handle about 150 TPD each of the dry waste generated in the city, thus reducing the transportation cost for the BBMP by 20%. This approach could also ensure that the proposed new plants can operate at 80-85% capacity, which is a more feasible utilisation rate.

Moreover, dry-waste segregation facilities are less likely to pose problems to residents, as they

don't produce leachate or odour. They can also create job opportunities for at least 50 people for sorting, baling, bagging, and other related activities in each facility.

Setting up new waste processing facilities will attract opposition and cost the government more to transport waste to distant sites. However, it is necessary to increase the waste-processing capacity of Bengaluru in order to comply with municipal solid waste management rules and the National Green Tribunal's guidelines, and as an environmental obligation towards the State.

The success of the proposed facilities and the sustainable use of existing facilities (within the city) depends on strategies that consider technology, environmental impact, social impact, past experiences, and community involvement. Not considering these factors will inevitably lead to the waste-processing sites becoming landfills. By focusing on these factors, Karnataka can pave the way for a more sustainable and efficient waste-management system.

The present situation of unprocessed waste disposal in the city and rampant use of chemical fertilisers in rural areas can also be ameliorated by setting up and operating scientific waste-processing, which will benefit both city dwellers and rural residents.

*Pushkara S.V. is a practitioner at the Indian Institute for Human Settlements. He has provided advisory services on solid waste management to 75 urban local bodies on waste management and has headed operations at a 750-tonne-capacity waste processing facility.*

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# THE SHAPE OF CLIMATE JUSTICE IN A WARMING INDIA

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

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October 20, 2023 12:16 am | Updated 02:00 am IST

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'Data show that manufacturing is far more energy- and carbon-intensive than agriculture and services' | Photo Credit: REUTERS

The G-20 summit that was held in Delhi (September 9-10) agreed on tripling renewable energy capacity and a voluntary doubling of the rate of energy efficiency improvement by 2030. However, this Delhi Declaration on the climate question did not find consensus on the most contentious issue, which is the root cause of the climate crisis — of the phasing out of fossil fuels. Any energy transition initiative must embrace two normative ideals: first, internalising cost requires those who emit greenhouse gases to pay the social and environmental costs. Second, climate justice requires compensation for those who are harmed. Often, those who contribute to climate change are not the ones who are affected by it. Therefore, any mitigation effort must invert this carbon injustice by making the richer countries or richer classes within a country pay for the energy transition.

While these two principles are articulated at the international level, how such policies and politics affect the domestic front do not get debated. India's stance on the matter has largely been framed through the lens of foreign policy and its approach to common but differentiated responsibilities (CBDR) in international negotiations, which allows developing countries in the global south to prioritise economic growth and development over climate mitigation. Given the country's historically lower emissions, focusing on economic growth has naturally taken precedence over climate concerns. Such an approach evades concerns of climate justice within India, particularly its effect on inequality across levels class, caste and region.

It is now well documented across the world that climate change and energy transition disproportionately affect the poor. The climate-induced problems and droughts have compounded the agrarian crisis and allied economic activities. Variations in rainfall, temperature and extreme climate events directly impact agricultural productivity, compounding farmers' income loss. Rising temperature in the ocean ecosystem has already begun squeezing fish stocks in parts of the country, hurting fishing communities.

While the relationship between inequality and carbon emissions is complex, it is clear that addressing both environmental and socio-economic inequalities simultaneously is essential for sustainable and equitable development. It is now evident that less equitable societies tend to have higher emission outputs per unit of economic activity. Given its highly unequal economic

structure, India is falling in that trap. Global experience suggests that societal responses which are necessary to address climate change (such as public action and state capacity), are impeded in more unequal settings. The cost of carbon emissions, in terms of societal impact, becomes significantly higher in such contexts. Recognising and mitigating the barriers that these inequality matrices pose to effective climate action is a critical step toward a more sustainable and just future.

If climate change compounds existing inequalities, India's energy transition policies, though crucial, will affect the livelihoods of the poor and exacerbate existing class, caste, and regional disparities. India's Nationally Determined Contributions (NDC) aim to ensure that 40% of the total installed power generation capacity is clean energy. The country has pledged to achieve net-zero emissions by 2070. Such an ambitious target necessitates careful study of its implications. As of 2021, coal was the major contributor to the total energy supply in India (accounting for 56.1%), followed by crude oil (it accounts for 33.4%).

Similarly, the industrial sector was the largest consumer of energy, using more than half, i.e., 51% of the total final energy consumption, followed by transport (11%), residential (10%), and agriculture (3.6%) sectors. Data show that manufacturing is far more energy- and carbon-intensive than agriculture and services. Consequently, any increase in energy price is likely to lead to a contraction of manufacturing, which India cannot afford given its already low manufacturing level. Thus, a just transition entails a holistic approach that considers economic, social, and regional inequalities. While renewable energy adoption is crucial, this shift should not exacerbate existing disparities. For instance, regions that are heavily reliant on coal production face a unique set of challenges. These regions often struggle with pollution, poverty, and low-quality employment.

Transitioning to renewables requires a deliberate focus on protecting livelihoods, offering alternative job opportunities, and ensuring that vulnerable communities are not adversely impacted. The emphasis in the Paris Agreement (2015) is: "taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs per nationally defined development priorities". The skill sets required and the jobs generated per unit of output in renewable vastly differ from fossil fuel industries. Many fossil fuel firms are in the public sector and act as a critical avenue for creating job opportunities for Dalits and the lower castes in India. A shift to renewable energy can potentially halt this generational mobility achieved by these disadvantaged groups. To ensure an equitable and sustainable transition, strategies must target inequality reduction and green investment simultaneously.

Similarly, regions heavily reliant on coal production may lose revenues and livelihoods. This regional divide in economic inequality correlates with the energy source divide in India. Coal, the cheapest source of energy, is located in the poorer regions in eastern and central India while renewable energy hubs, powered by wind and solar photovoltaics (PV) technologies, are located in the relatively wealthy southern and western India.

Despite the pollution it causes, the coal sector, owned by the public sector miners (85%), is the main source of revenue via taxes, royalties, and mining fees and employment for the State governments in Odisha, Jharkhand, and Chhattisgarh. India's energy transition strategy must pay attention to these regional inequalities, transfer funds to States dependent on coal, and carve out State-specific programmes for reskilling development and local rehabilitation needs.

Thus, the Green Deal needs to have a federal deal. India's federal governance structure implies that sub-national governments play a significant role in addressing climate concerns. However, their priorities can differ significantly from those of the Union government. Examining sub-national responses reveals how State entities are vital in tackling the challenge of climate

inequality mitigation. State governments have been found to implement policies, including those related to climate justice, climate adaptation, and disaster management laid out by the Union government, that are often at odds with the development aspirations of the States. We must delve into the intricate interactions between fiscal federalism and climate mitigation to understand how policy alignment and cooperation can be achieved across the levels of government.

***Kalaiyaran A. is Assistant Professor at the Madras Institute of Development Studies, and Visiting Research Fellow, King's College London. Santosh Kumar Sahu, Associate Professor, Indian Institute of Technology – Madras***

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# PAINTBRUSH SWIFT BUTTERFLY IS PHOTOGRAPHED FOR THE FIRST TIME IN HIMACHAL PRADESH

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

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October 22, 2023 02:36 am | Updated 02:36 am IST - CHANDIGARH

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Paintbrush Swift (*Baoris farrisi*) butterfly. Photo: Special Arrangement

A species of butterfly that is rare in the western Himalayas, the paintbrush swift butterfly has been photographed and documented for the first time in Himachal Pradesh's Chamba district. The State supports around 430 butterfly species or about 25% of the total number of butterfly species found in India.

The paintbrush swift (*Baoris farrisi*), a butterfly species of the HesperIIDae family, was sighted and photographed in the second week of October this year during a field survey conducted under the Wild Bhattiyat Project initiated by the Bhattiyat Forest Range of the Dalhousie Forest Division of the Himachal Pradesh Forest Department in 2022.

"The species has never been photographed in Himachal Pradesh since its discovery in 1878. This is the first time that we have photographed and documented it. It was first described by lepidopterist Frederic Moore, more than 145 years ago, from the eastern Himalayas," Sanjeev Kumar, Range Forest Officer at the Bhattiyat Forest Range, who is leading the project, told *The Hindu*.

Since the launch of the project, the department has so far documented 120 butterfly species. "We have recorded and documented various uncommon butterfly species like the anomalous nawab, blank swift, tailed jay, siren, etc., which are frequently sighted, but the paintbrush swift has been sighted and photographed for the first time in the lower hills of the Dhauladhar mountain range. We are hopeful of finding more rare butterfly species in the region in the coming days," Mr. Kumar said.

He added that the paintbrush swift's habitat distribution is common in northeast, central and south India, and rare in Uttarakhand.

Lovish Garlani, a butterfly expert and researcher associated with the Forest Department as a technical consultant, detailed the paintbrush swift butterfly's characteristics. "The paintbrush swift is identified based on two separated spots in the upper forewing cell. Other closely related species like the blank swift have no cell spot while the figure-of-eight swift has two conjoined cell spots. The species' larvae feed on bamboo and some other grass species. Till now, there is only one record of the paintbrush swift mentioned from the Shivalik mountain range in the State, but

that record is doubtful as no photographic or specimen pieces of evidence were provided in the study. This is the first time the paintbrush swift has been spotted and photographed in Himachal Pradesh. It's an encouraging indication of flourishing biodiversity, which is good for wildlife," Mr. Garlani said.

Mr. Garlani pointed out that butterflies depend on wild host and nectar plants which made them particularly vulnerable to changes in their environment. "The butterflies of Himachal Pradesh are no exception, and in recent times, the number of butterflies has been declining. Habitat loss and scarcity of larval host plants are major causes of the decline in the butterfly population. An increase in pesticide use, deforestation, and climate change are some of the other causes of habitat loss of butterflies," he said.

Mr. Garlani, who has published his research in national and international journals, stressed the urgent need for the conservation of butterflies. "The paintbrush swift's sighting in Himachal Pradesh shows that the host plant is available in the hills, where the swift could survive. This calls for the immediate need for conservation efforts in the region, including the establishment of butterfly parks and conservation reserves in the State. Butterfly rearing or breeding centres should also be established. Focus should be given to the plantation of native host plant species and habitat improvement. Creating awareness on the importance of butterflies through community participation will also serve the purpose of conservation. Moreover, special focus should be given to high altitude butterfly species as they are facing major threats in habitat destruction, and their number has declined significantly in recent years," he said.

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# CLIMATE 'LOSS AND DAMAGE' TALKS END IN FAILURE

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

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October 21, 2023 11:07 pm | Updated October 22, 2023 12:23 am IST - Paris

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A transition committee on the establishment of the fund met late Friday and into Saturday in Aswan, in southern Egypt. File | Photo Credit: Reuters

A crucial meeting on climate "loss and damages" ahead of COP28 ended in failure on Saturday, with countries from the global north and south unable to reach an agreement, according to sources involved in the talks.

The agreement to set up a dedicated fund to help vulnerable countries cope with climate "loss and damage" was a flagship achievement of last year's COP27 talks in Egypt.

But countries left the details to be worked out later.

A series of talks held this year have tried to tease out consensus on fundamentals like the structure, beneficiaries and contributors — a key issue for richer nations who want China to pay into the fund.

A transition committee on the establishment of the fund met late Friday and into Saturday in Aswan, in southern Egypt.

But the delegates were unable to reach an agreement and deferred the decision to another meeting due November 3 to 5 in the United Arab Emirates, according to a webcast of the debate on the official YouTube channel of the United Nations.

Ahead of the breakdown, the discussion hit a hurdle over where the funds should be held.

There was a divide over it being managed by the World Bank, accused of being in the hands of the West, or in a new independent structure, called for by many developing nations, but would be time consuming and complex to replenish with new funds.

The failure "is a clear indication of the deep chasm between rich and poor nations", Harjeet Singh, head of global political strategy for Climate Action Network International, said in a statement to *AFP* on Saturday.

"Developed countries must be held accountable for their shameless attempts to push the World

Bank as the host of the fund, their refusal to discuss the necessary scale of finance, and their blatant disregard for their responsibilities" under the terms of already established international climate agreements, he said.

Rachel Cleetus with the Union of Concerned Scientists said that "today's disappointing outcome is a blow to communities... facing an unrelenting onslaught of climate impacts".

"The United States and other rich countries seem more focused on evading or minimizing their responsibility than engaging in good faith negotiations," she added.

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# RESTORING THE ECOLOGICAL HEALTH OF THE HIMALAYAS

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October 23, 2023 12:08 am | Updated 01:22 am IST

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'The focus has to be on sustainable development that encompasses the larger canvas of carrying capacity, and the process should be people-centric' | Photo Credit: PTI

The environmental devastation caused in the Himalayan States of Himachal Pradesh, Uttarakhand and Sikkim has reinvigorated the debate on the "carrying capacity" of the regions. The Supreme Court of India, in response to a petition filed by a retired Indian Police Service officer, has asked the Union government to suggest a way forward regarding the carrying capacity of the Indian Himalayan Region (IHR), which includes its towns and cities.

The Union government's affidavit (filed by the Ministry of Environment) states that the Director of the G.B. Pant National Institute of Himalayan Environment should be the lead in assessing carrying capacity and that the carrying capacity of all 13 Himalayan States and Union Territories (UT) should be determined. The affidavit adds that there can be a technical support group comprising nominees of the National Institute of Disaster Management, Bhopal; National Institute of Hydrology, Roorkee; Indian Institute of Remote Sensing, Dehradun; National Environmental Engineering Research Institute, Nagpur; Wadia Institute of Himalayan Geology, Dehradun; Indian Council of Forestry Research and Education, Dehradun; Wildlife Institute of India, Dehradun; and School of Planning and Architecture.

The affidavit further suggests that representatives of State disaster management authorities, the Geological Survey of India, Survey of India and member secretaries or nominees of the Central Pollution Control Board and Central Ground Water Board should also be its members.

The government has requested the Court to direct the Himalayan States/UTs to set up a committee headed by the Chief Secretary of the respective State, with its members being inducted as the Chief Secretary feels appropriate.

In technical terms, carrying capacity of a region is based on the maximum population size that an ecosystem or environment can sustainably support over a specific period without causing significant degradation or harm to its natural resources and overall health. It is crucial in understanding and managing the balance between human activities and the preservation of natural ecosystems to ensure long-term sustainability.

There have been initiatives by the Union government regarding overall development in the IHR.

Some of them are the National Mission for Sustaining the Himalayan Ecosystem (2010), the Indian Himalayas Climate Adaptation Programme, Secure Himalaya Project, and the recent guidelines on 'Carrying Capacity in the IHR' circulated on January 30, 2020. There was a reminder by the Ministry of Environment and Forests on May 19, 2023, asking all the States that if such a study had not been undertaken, then States should submit an action plan (carrying capacity) at the earliest.

Despite past initiatives especially since the January 2020 guidelines, hardly any progress has been made. The reasons are obvious. There is no report on the total number of States that have been able to prepare action plans on carrying capacity of their regions.

Failures in the past have been on account of two major reasons. The recommendations made by the Ministry in forming such groups are flawed. The same set of people responsible for the havoc and devastation in the mountains are now being made responsible in finding solutions.

The focus has to be on sustainable development that encompasses the larger canvas of carrying capacity, and the process should be people-centric.

The suggestion made by the Environment Ministry focuses on one institution, i.e., the G.B. Pant National Institute of Himalayan Environment, while others are just a part of the technical group. Almost all the other institutes are important players in their respective domains and should be equal partners in policy making.

Though the suggestion of including the entire IHR is relevant, and also desired, just measuring the carrying capacity of towns and cities is pointless. Take for example the road network in the Himalayan States that has spontaneously created settlements. Hence, the entire region should be the focus of the top court. The emphasis should be on the "Sustainable Population" of the Himalayan States, and the focus of the current inquiry (which is in the offing) should be the "carrying capacity for the sustainable populations for the different Himalayan States."

There is a wider and longer term need for assessing the overall sustainable capacity of the environment of the whole State (which includes all biological species, food, habitat, water including ecology and agriculture). The expert committee should be asked to focus on the social aspects or population sustainability of the respective States.

Given the importance of the resident population in the IHR living in towns and villages, the expert committee should not become a bureaucratic or technical group. Such a committee (at least a third) should include adequate citizen representation — from panchayats and other urban local bodies.

In order to evaluate the social dimension of sustainability, it is necessary for the expert committee to direct each panchayat samiti and municipality to present its recommendations by responding to the population sustainability criteria which is well established and should be circulated immediately to each local government centre.

### **Explained | [Why are hydropower projects in the Himalayas risky?](#)**

One must not forget that it is the forewarning of concerned people on the issue of the construction of hydropower projects and even four-lane highway projects in the IHR that has been brushed aside — particularly in the case of Sikkim. The results are before us. Engage with the people and build sustainable solutions.

*Tikender Singh Panwar is former Deputy Mayor, Shimla, author, and initiator for Alternatives in*

*the Himalayan Region*

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# CMFRI CALLS FOR CLIMATE SMART VILLAGES TO CHECK RISKS IN COASTAL REGION

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

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October 22, 2023 06:56 pm | Updated 06:56 pm IST - KOCHI

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ICAR-Central Marine Fisheries Research Institute has suggested the setting up of climate smart villages to check risks in the coastal region. The institute is prioritising the development of climate smart villages by providing training and resources to fishers and farmers in vulnerable villages to help them adapt to the climate crisis.

The challenges from climate change range from flooding and shoreline changes to disease outbreaks. Water clinics, AI and satellite remote sensing-based prediction of harvest to address inter-annual fluctuations, species distribution models and exploration of untapped deep-sea resources are some of the other solutions from the CMFRI.

The CMFRI report was presented at a global conclave on mainstreaming climate change into international fisheries governance organised under the leadership of the Food and Agriculture Organisation in collaboration with the Union Department of Fisheries and the Bay of Bengal Programme Inter-Governmental Organisation in Chennai, said a press release here.

The report pointed out that increased frequency of cyclones, subsequent storm surges and coastal flooding were causing social and economic hardships among coastal communities, making them the most vulnerable to climate emergencies. Tropical cyclones, floods, excess rainfall and receding coastline have a cascading impact on fishers' safety and livelihoods, resulting in loss of income, loss of property, health problems and unemployment, said Grinson George, head of the Marine Biodiversity Management and Environment Division of the CMFRI while presenting the report at the conclave.

Water clinics to tackle disease outbreaks, smart solutions like integrated multi-trophic aquaculture, seaweed farming and mangrove forestation were also suggested by the CMFRI.

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# COUNTRIES DEADLOCKED ON 'LOSS AND DAMAGE' FUND AS UN CLIMATE SUMMIT NEARS

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

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October 24, 2023 02:06 pm | Updated 02:06 pm IST

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'Cop28 UAE' logo is displayed on the screen during the opening ceremony of Abu Dhabi Sustainability Week (ADSW) under the theme of 'United on Climate Action Toward COP28', in Abu Dhabi, UAE, January 16, 2023. | Photo Credit: Reuters

Countries are deadlocked over how to design a fund to help countries recover and rebuild from [climate change-driven damage](#), with just over 30 days left before crucial United Nations climate negotiations kick off in Dubai.

Two dozen countries involved in a committee tasked with designing a "loss and damage" fund wrapped up the last meeting in the early hours of Saturday in Aswan, Egypt, with developing and developed countries at odds over central questions: which entity should oversee the fund, who should pay and which countries would be eligible to receive funding.

The committee was expected to draft a list of recommendations for implementing the fund, which was agreed in a breakthrough last year at COP27 in Sharm el-Sheikh, Egypt, and would be the first U.N. fund dedicated to addressing irreparable climate-driven damage from drought, floods and rising sea levels.

Instead, the group agreed to meet one more time in Abu Dhabi on Nov. 3 and Nov. 4 before the COP28 U.N. summit begins in Dubai on Nov. 30 to try to bridge divisions, which could set the tone for the two-week climate negotiations.

"The entire COP28 negotiations could get derailed if developing countries' priorities on funding for loss and damage are not adequately addressed," said Preeti Bhandari, a senior adviser on finance at the World Resources Institute.

[Also Read | Loss and Damage decisions, pitfalls and promises](#)

Among the most contentious issues last week was whether the World Bank should host the fund - a position pushed by the U.S. and developed countries - or whether the U.N. create a new body to run the fund, as developing countries have urged.

Housing a fund at the World Bank, whose presidents are appointed by the United States, would give donor countries outsized influence over the fund and result in high fees for recipient



countries, developing countries argue.

"Its operational culture, the way in which the World Bank has been assisting countries in their development policies, I think it's not fit for purpose in relation to what we're looking for from this new climate facility," said Cuba's U.N. Ambassador Pedro Pedrosa Cuesta, chair of the G77 (developing countries) and China.

He said the creation of a "new independent entity" to run the fund is the core of its position.

In response to these criticisms, a spokesperson for the World Bank told Reuters: "We are supporting the process and are committed to working with countries once they agree on how to structure the loss and damage fund."

### [Also Read | COP27 establishes 'Loss and Damages' fund for climate reparations](#)

While the issue of which body will host the fund dominated the meeting, other key issues remain unresolved. The United States, the European Union and others want a more targeted fund. The EU wants a fund dedicated to the most "vulnerable" while the U.S. has said the fund should focus on areas like slow-onset climate impacts such as sea-level rise.

Countries are also split over who should pay.

Brandon Wu, director of policy & campaigns for NGO ActionAid USA called on the United States to back off its insistence that the World Bank house the fund.

A State Department official said on Monday that U.S. support of the World Bank as the fund's host is not a red line for negotiations and it is open to other arrangements.

The official said it is open to a proposal floated at the meeting for the World Bank to host the fund on an interim basis while countries evaluate its performance.

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# INTERNATIONAL SOLAR ALLIANCE TO RELEASE REPORT ON GLOBAL ADOPTION OF SOLAR TECHNOLOGY IN NOVEMBER

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

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October 25, 2023 11:20 pm | Updated October 26, 2023 01:36 am IST - NEW DELHI

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A technician examines solar panels atop the roof of a building. | Photo Credit: AP

The [International Solar Alliance \(ISA\)](#), a gathering of 116 member countries formed to accelerate the global adoption of solar technology, will for the first time compile and release a 'global solar stock-take report.' This is inspired by the first ever 'Global Stocktake' of the [United Nations Conference of Parties, scheduled in Dubai](#) later this year. Here countries are expected to give an account of the actions taken until now to transition their economies away from fossil fuel and lay out plans to course correct, if their commitments are insufficient to prevent runaway global warming. The Global Stocktake follows from the Paris Agreement signed in 2015 and is expected once in five years.

The 'solar stocktake' would be released sometime mid-November, said Ajay Mathur, Director General, ISA and would take stock of the progress made by countries. "In 2020, nearly \$300 billion of investment in solar has taken place and around \$380 billion in 2022. However, manufacturing is uneven with most of it concentrated in China. The stocktake will look at ways to broaden this," said Mr. Mathur.

**Also Read | [International Solar Alliance approves funding facility](#)**

The ISA, which is steered by India and France, is scheduled to hold its sixth annual meeting in Delhi later this month. A key focus area for the organisation is expanding solar installations in Africa and to that end the organisation has set up the Global Solar Facility (GSF). The aim is to boost the scale of solar investment there and following that expand to West Asia, Latin America and the Caribbean. The GSF will have three funds: a payment guarantee fund, an insurance fund to mitigate project risks and an investment fund for technical assistance.

Solar photovoltaic installations globally touched 1,133 gigawatts (GW) as of 2022 with 191 GW being added in 2022. Nearly a fourth, or about 350 MW, is installed in China, which is not a member of the ISA. China is followed by the United States, a member country at 111 GW. India ranks among the top 5 countries globally with 62 GW.

"We believe that the ISA has a seminal role to play in energy transition as it is focused only on

renewables and solar. India's experience in this regard has been substantial. The rate of growth of renewable energy capacity in our country has been among the highest in the world. We find that among the various renewables, solar energy has the edge. It is much more reliable, it is much more dependable and it is available for more months in a year. For universal energy access, solar energy is the solution," said R.K. Singh, Minister for Power and Renewable Energy.

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# STUDY LINKS INCREASING PEAFOWL POPULATION TO DROP IN NATURAL PREDATORS, RISING TEMPERATURES

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

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October 27, 2023 04:12 am | Updated 04:12 am IST - Chennai

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Peafowls found at the residential area in Tamil Nadu's Erode. | Photo Credit: The Hindu

Growing incidents of peafowl deaths in farms across Tamil Nadu, mostly due to poisoning, have raised the need for a detailed population study of the birds.

The Indian peafowl (*Pavo cristatus*), regarded as the national bird, is listed under Schedule-I of the Wildlife Protection Amendment Act, 2022, with the highest degree of protection.

Preliminary observations from an ongoing research at the Salim Ali Centre for Ornithology (SACON) in Coimbatore suggest that the population of peafowls has increased exponentially across Tamil Nadu in the last five to 10 years. The questionnaire survey sought to address the possible reasons for the population rise and whether conflict has increased. S. Babu, senior scientist at SACON, says while the results are still being analysed, a few hypotheses have emerged.

One of the reasons for the proliferation of peafowls is due to a drop in the numbers of predators such as jackals as a result of reducing thickets. Another could be due to the rising temperatures due to climate change and subsequent increase in dry areas, which are preferred by the bird, Mr. Babu says. The high clutch size of peafowls with about five to six eggs also add to the numbers.

"When we were in school, peafowls were hard to spot. If one had a peacock feather, he was considered a *crorepati*. You could see them only in Sathyamangalam or Viralimalai," says C. Nallasami, secretary of Farmers Forum of India. These days, however, peafowls have become as common as crows, he says, adding that mongoose, jackals, and wild cats have reduced.

Increased conflict has only been reported in some districts, not all. "It's a serious problem in the Western districts. In Cauvery delta regions there is an issue [peafowl conflict] but it's not serious," H. N. Kumara, principal scientist at SACON, says. The survey indicates peafowls prefer paddy, tomato, and chilli fields, he adds.

From field observations, V. Kirubanandhini, a researcher, says with concrete compound walls

replacing biofences, ground-dwelling carnivores tend to reduce in the area, giving more space to birds such as peafowls. According to Mr. Babu, the SACON survey also shows that awareness about the legal protection peafowls enjoy has increased among farmers and *narikuravars*, who are known to collect and sell peacock feathers, peahen eggs, and oil. At present, farmers use loud sounds from beating plates or drums to prevent the birds from entering fields or chase them away.

While the major deterrent for 'hunting' peafowls is the stringent law, more awareness on using sound to protect crops must be given, says Chief Wildlife Warden Srinivas Reddy.

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# INDIA'S GREEN HYDROGEN MOVE MAY WORSEN POLLUTION IF STEPS ARE NOT IN PLACE, SAYS STUDY

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

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October 26, 2023 08:39 pm | Updated October 27, 2023 02:45 am IST - NEW DELHI

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File photo of solar panels near a hydrogen plant at Oil India Limited in Jorhat. Representational image. | Photo Credit: AP

[India's plans to produce so-called 'green hydrogen'](#) — where the gas is produced without resulting in fossil fuel emissions — might end up worsening pollution if proper checks and balances are not in place, according to a study by environmental and energy think-tank, Climate Risk Horizons (CRH).

India's National Green Hydrogen Mission, piloted by the Ministry of New and Renewable Energy (MNRE) expects to manufacture five million tonnes by 2030. This would require the installation of renewable energy capacity worth 125 GW (1 GW is 1,000 megawatts) and the use of 250,000 gigawatt-hr units of power, equivalent to about 13% of India's present electricity generation.

As of August 2023, India's total renewable energy (RE) capacity (excluding hydropower dams bigger than 25 MW) stood at 131 GW; the 2030 green hydrogen plan thus envisages adding an equivalent RE capacity by 2030. This is over and above the 500 GW of RE capacity that India has committed to install by 2030 as part of its Nationally Determined Contribution under the Paris Agreement. To put that in perspective, India installed only 15 GW of new solar and wind capacity in 2023, against the 45 GW per year needed to reach the 2030 target.

The MNRE has defined green hydrogen as hydrogen produced in a way that emits no more than 2 kg of carbon dioxide per kg of such hydrogen. Currently, producing 1 kg of 'grey hydrogen', as it is known, ends up emitting 9 kg of carbon dioxide. "While a detailed methodology is awaited, the definition as it stands leaves a lot to interpretation," said CRH's chief executive Ashish Fernandes, in the report released on Thursday.

The main concern is that if electrolyzers, which split water to produce hydrogen and oxygen, were run 24x7, they would be expected to operate even at night when no solar power is available. This would then mean tapping into conventional coal-fired electricity.

"Where will the electricity come from? If it comes from India's coal-powered grid in general, it will in fact increase carbon emissions, since about 70% of the electricity on the grid is coal-

generated — more in non-daylight hours when solar generation is nil,” the report notes. “The vast majority of projects have not disclosed their source of electricity. It is also not clear if those few projects that have committed...to meet 100% of their requirement from these sources.”

Another challenge is that India’s standards allow the use of biomass — which also results in carbon emissions when burnt — for the production of green hydrogen, the report said. Moreover, diverting scarce renewable energy capacity towards the production of green hydrogen might mean inadequate clean electricity being made available for consumers.

“India’s ambitious renewable energy target of 450 GW by 2030 already requires huge investment. The green hydrogen mission will require an additional 125 GW of RE. The MNRE needs to guard against the risk that finance for RE projects that would otherwise decarbonise the electricity grid will instead be diverted to produce green hydrogen. This would delay India’s journey to net zero, undermine a nascent industry, and deny States and electricity consumers the cost benefits that cheap renewable energy has to offer,” Mr. Fernandes said.

Several large power utilities in India — including Reliance Industries, the Adani Group, and the National Thermal Power Corporation — have announced ambitious plans to scale up green hydrogen production. The Centre’s green hydrogen mission has committed nearly 20,000 crore to develop and expand the industry.

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# DEVELOPED COUNTRIES TO OVERSHOOT CARBON EMISSIONS GOAL: STUDY

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

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October 30, 2023 01:20 am | Updated 01:20 am IST - NEW DELHI

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Steam rises from the stacks of the coal-fired Jim Bridger Power Plant outside Point of the Rocks, Wyoming, U.S. File | Photo Credit: Reuters

In the run-up to a key global climate summit, an analysis shows that developed countries — responsible for three-fourths of existing carbon emissions in the atmosphere — will end up emitting 38% more carbon in 2030 than they have committed to, going by current trajectories. In fact, 83% of this overshoot will be caused by the United States, Russia, and the European Union, according to a study published last week by the Council for Energy Environment and Water (CEEW), a Delhi-based thinktank.

The UN Framework Convention on Climate Change will hold its [28th Conference of Parties \(COP-28\) at Dubai](#) in November and December. Countries are expected to give an account of their Nationally Determined Contributions (NDCs), which are their commitments to the UN on emission cuts.

The CEEW study noted that the NDCs of developed countries already fall short of the global average reduction of emissions to 43% below 2019 levels that is needed to keep temperatures from rising above 1.5°C. Instead, developed countries' collective NDCs only amount to a 36% cut.

For a fighting chance at keeping warming below critical tipping points, decades of negotiations have obliged developed countries to lead global efforts to reduce greenhouse gas emissions with legally binding targets. Collectively, developed countries were to reduce emissions by 5% from their 1990 levels between 2008 and 2012, and by 18% per cent during 2013 to 2020.

While these countries ostensibly kept their promise and cut emissions by 20%, it was not the result of any "planned exercise"; in fact, a significant chunk of the cuts were the result of the COVID-19 pandemic that caused a global economic slowdown, the CEEW researchers said.

Several countries have committed to achieving net zero carbon emissions by 2050. Doing so would require steady measurable cuts every decade until that year. As an intermediate objective, countries presented data to the UN on their projected cuts until 2030. To keep temperatures below 1.5°C, developed countries need to cut emissions to 43% below their 2019 level. However, the CEEW study found that, based on their current emissions trajectories, their



cuts would likely amount to only 11% by 2030. Except for two countries — Belarus and Norway — none of the developed countries seem to be on the path to meet their 2030 targets, though Japan and Kazakhstan are close, and are expected to miss their targets by only a single percentage point.

Most developed countries appear to be planning to achieve their 2050 net zero targets by taking on deep emission cuts only after 2030; which, going by their own track record, seems over-ambitious. For instance, were all developed countries to reach net zero by 2050, they would require more than four times the average annual reductions they achieved between 1990 and 2020.

“The climate journey of developed countries — historical and proposed — does not show deep enough emission reductions to reflect climate leadership. This means that the burden to mitigate global warming shifts to developing countries, which is problematic in a context where financial support to developing countries to achieve this transition has not been forthcoming, as promised,” said CEEW programme lead Sumit Prasad, one of the authors of the study. “Instead of relying on future events, developed countries should define clear year-on-year reduction plans to meet their targets in this critical decade. Further, to build trust, developed countries need to be reliable and stay committed to the Paris Agreement,” the study’s authors aver.

One of the major sticking points in global climate negotiations is the extent and speed with which individual countries must transition away from the use of fossil fuels. Developing countries say that developed countries, who are responsible for most of the carbon burden, must pay developing countries for transitioning and wean themselves away faster. Developed countries argue that countries such as India and China, given their size, cannot entirely absolve themselves from steeper emission cuts. Developing countries have also not received much of the billions of dollars promised by developed countries to aid renewable-energy infrastructure.

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## **NATIONAL TIGER CONSERVATION AUTHORITY ( NTCA ) ORGANISING AN ART EXHIBITION “SILENT CONVERSATION: FROM MARGINS TO THE CENTRE” , 3RD- 5TH NOVEMBER 2023 IN NEW DELHI**

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

The National Tiger Conservation Authority ( NTCA ) Ministry for Environment, Forest & Climate Change in collaboration with the Sankala Foundation is organising an art exhibition titled, “Silent Conversation: From Margins to the Centre”, from 3rd November 2023 to 5th November 2023 at India Habitat Centre, New Delhi. The Hon’ble President of India, SmtDroupadiMurmu will be the chief guest of the inauguration ceremony which will be held on the 3rd November 2023 from 4:00 pm onwards. The Union Minister for Environment, Forest and Climate Change, Shri Bhupender Yadav, Union Minister for Tribal Affairs, Shri Arjun Munda and Minister of State, Environment, Forest and Climate Change, Shri Ashwini Kumar Choubey, will also be present .

NTCA along with Sankala Foundation through this art exhibition is paying a tribute to the successful completion of 50 years of Project Tiger. Project Tiger is a wildlife conservation initiative in India that was launched in 1973 with the primary objective of protecting and preserving the Bengal Tiger, India's national animal and restoring its habitat so as to reverse the animal's alarming decline in previous decades. The project focuses on the selection and preservation of areas which are specially managed to conserve the tiger population and their associated ecosystems. Over the years, the number of Tiger Reserves has increased, and there are now 54 reserves across the country. An essential aspect of Project Tiger is involving local communities in conservation efforts by providing livelihood opportunities and reducing human-wildlife conflicts.

The art exhibition will showcase the unique relationship between tribal communities and other forest dwellers residing around India's tiger reserves and their deep-rooted connection with the forest and wildlife, all conveyed through their artwork. The art work displayed will be in the form of paintings and reflect the age-old bonds of various tribal communities such as the Gond, Bhil, and many others. The paintings will be available for purchase, with the proceeds flowing directly into the bank accounts of the artists. Throughout the exhibition, not only will these diverse art forms be on display, but numerous tribal artists will also travel to Delhi and be present at the event, providing visitors and art enthusiasts with an opportunity for direct interaction.

The National Tiger Conservation Authority (NTCA) was established in 2006. It has been at the forefront of tiger conservation work in India. Its work domain extends from on the ground protection initiatives to science based monitoring of tigers and their habitat using latest technological tools, independent assessment of tiger reserves, financial and technical support to tiger reserves, creating inviolate space for wildlife while ensuring community development to international co-operation are the few thrust areas of NTCA. The exhibition is being organised jointly by NTCA and the Sankala Foundation and will be the first in the series of such exhibitions in different Indian cities and across the globe.

### **MJPS**

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