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PLASTIC POLLUTION FROM FISHING NETS THREATENING GANGES WILDLIFE: STUDY

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

The Gangetic river dolphin *Platanista gangetica* on the Ganga river in Bihar. | Photo Credit: [Kadamabari Deshpande](#)

Plastic pollution from discarded fishing gear in the Ganges River poses a threat to wildlife such as the critically endangered three-striped roofed turtle and the endangered Ganges river dolphin, according to an international team including researchers from the Wildlife Institute of India.

In the study, published in the journal *Science of The Total Environment*, surveys along the length of the river, from the mouth in Bangladesh to the Himalayas in India, show levels of waste fishing gear are highest near to the sea. The researchers noted that fishing nets — all made of plastic — were the most common type of gear found.

Interviews with local fishers showed high rates of fishing equipment being discarded in the river — driven by short gear lifespans and lack of appropriate disposal systems, they said.

“The Ganges River supports some of the world’s largest inland fisheries, but no research has been done to assess plastic pollution from this industry, and its impacts on wildlife,” said Sarah Nelms from the University of Exeter in the U.K. “Ingesting plastic can harm wildlife, but our threat assessment focussed on entanglement, which is known to injure and kill a wide range of marine species.”

(Credit: *Science of The Total Environment*)

The researchers used a list of 21 river species of “conservation concern” identified by the Wildlife Institute of India in Uttarakhand. They combined existing information on entanglements of similar species worldwide with the new data on levels of waste fishing gear in the Ganges to estimate which species are most at risk.

“There is no system for fishers to recycle their nets. Most fishers told us they mend and repurpose nets if they can, but if they can’t do that the nets are often discarded in the river,” said Nelms. “Many held the view that the river ‘cleans it away’, so one useful step would be to raise awareness of the real environmental impacts.”

The findings offer hope for solutions based on “circular economy” where waste is dramatically reduced by reusing materials, according to Professor Heather Koldewey, from the Zoological Society of London (ZSL). “A high proportion of the fishing gear we found was made of nylon 6, which is valuable and can be used to make products including carpets and clothing,” Koldewey said. “Collection and recycling of nylon 6 has strong potential as a solution because it would cut plastic pollution and provide an income.”

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DE-RISKING CLIMATE CHANGE

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

Written by Suvojoy Sengupta and Mekala Krishnan

Asia is at the front line of climate change. Extreme heat in India, Pakistan, and Bangladesh, wildfires in Australia, typhoons in Japan, are real and present dangers and likely to become more frequent as climate change intensifies. McKinsey's report on "Climate risk and response in Asia", finds that, without adaptation and mitigation, Asia is expected to experience more severe socioeconomic impacts of climate change than other parts of the world.

Large cities in the Indian Subcontinent could be among the first places in the world to experience heat waves that exceed the survivability threshold. Without mitigation and adaptation, the average share of working hours lost each year in India due to extreme heat and humidity could increase by over 40 per cent by 2050. The impact will fall disproportionately on the economically vulnerable who are engaged in outdoor employment such as construction, agriculture, and logistics. The risk going forward will increase as the climate continues to change.

Leading Indian corporates tell us they are already observing physical manifestations of climate change. One major industrial company reported unprecedented patterns of localised rainfall and flooding in the past three years (exceeding 65-year maximum levels), requiring them to replace and reinforce drainage systems in certain facilities. According to a study commissioned by Tata Global Beverages in 2016, Assam's tea growing productivity could decline by up to 40 per cent due to the impact of climate change by 2050.

Our research makes the case for a localised understanding of the physical risks and impacts of climate change, and the need for policy, business leaders, and community leaders to incorporate adaptation and mitigation measures into decision making at every level. Just as information systems and cybersecurity have become integrated into corporate and public-sector decision making, climate change will also need to feature as a major factor in decisions. Organisations must take decisive steps to adopt new mindsets that incorporate climate risk, build the necessary tools and capabilities to diagnose risks, and integrate understanding of climate risk into all decision making.

Climate science tells us that some amount of warming over the next decade is already locked in due to past emissions, and temperatures will continue to rise. This implies the need for adaptation strategies to offset the impact of severe and/or frequent climate hazards. An effective adaptation plan for the region includes reducing exposure, hardening assets, investing in resilience, crowding-in private capital financing, and new data-driven approaches to measure climate risk.

India anticipates a significant infrastructure build out over the next decades with projects worth \$1.77 trillion across 34 sub sectors, according to the National Infrastructure Pipeline. These provide a unique opportunity to embed climate risk into infrastructure design. For brownfield assets such as highways, hydroelectric dams and coastal construction, we see an urgent need for climate risk impact assessments and appropriate adaptive and remedial actions.

Robust regulations around outdoor work could significantly reduce the economic risk of lost hours as well as the toll on life from heat waves. Investment in adaptive technology — active cooling measures, such as air-conditioning, and passive cooling measures including traditional

building design — can reduce the direct impacts.

The good news is that we have started to see some Indian states and cities pursuing such policies. Ahmedabad City Corporation introduced a heat action plan — the first of its kind in India — in response to the 2010 heat wave that killed 300 people in a single day. The city now has a heat-wave early warning system, a citywide programme of roof reflectivity to keep buildings cool, and teams to distribute cool water and rehydration tablets during heat waves.

Mitigation is essential to prevent a buildup of risk, particularly given that Asia accounts for 45 per cent of global emissions. Key mitigation actions in Asia include: a shift from coal to renewables, as coal accounts for 90 per cent of power emissions in the region; decarbonising industrial operations that account for more than one-third of the region's overall emissions; transforming agriculture and forestry, which, combined, account for 10 percent of CO2 emissions in Asia; and decarbonising road transport and buildings, which account for more than 30 per cent of global greenhouse gas emissions.

A major challenge for India is to reduce reliance on coal while continuing to meet its growing energy needs in a manner that is affordable to the broadest section of population. Renewable energy has grown rapidly in India and can contribute 30 per cent of gross electricity generation by 2030, according to the Central Electricity Authority. McKinsey's analysis indicates that renewable hybrid systems could be competitive with coal fired plants over the next 8-10 years. Such a transition must be accompanied by programmes for providing skilling and employment opportunities for the 1.5 million strong workforce who are currently employed in the coal value chain.

Climate change is real and present, and it brings both dangers and opportunities. Through mitigation and adaptation, India can not only survive but thrive on the front lines of climate change.

(Sengupta is partner at McKinsey & Company and Krishnan is senior fellow at McKinsey Global Institute)

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ON THE CLIMATE, A NEW WARNING

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

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2020 is on track to be the second warmest year on record globally since temperature record-keeping began in 1850, says the World Meteorological Organization (WMO)'s *State of the Global Climate 2020* report released on Wednesday. It is preceded by 2016 and followed by 2019. Despite a global halt in economic activities due to Covid-19 and the cooling effect of La Nina, the global mean temperature for January to October 2020 was around 1.2 degrees Celsius above pre-industrial levels, dangerously close to breaching the 1.5-degree threshold above which scientists warn of catastrophic impacts of the climate crisis. The results of high global mean temperature have been evident across the world. These 10 months were dominated by extreme climate events, including excessive heat, wildfires and floods.

For India, high temperatures have had a devastating impact on communities, the economy, and biodiversity. According to the *Lancet Countdown On Health And Climate Change* report, released on Thursday, the country recorded the highest loss in work hours (118.3 billion work hours) or productivity because of extreme heat in 2019 — the year saw a record number of above-baseline days of heat wave exposure affecting its elderly population. June's super cyclone, Amphan, led to an economic loss amounting to about \$14 billion, says the WMO report.

The two reports serve as yet another round of warning and reminder that the defining task for the 21st century for the world and India will be to use the recovery from the pandemic as an opportunity to build a climate-resilient future. That the Centre has formed a panel to implement India's targets under the Paris Climate Agreement, which completes five years this month, is good news. While India is on target to achieve its Intended Nationally Determined Contribution — efforts by each country to reduce national emissions and adapt to the impact of the climate crisis — it needs to be more proactive in moving away from coal and stop investing in projects that erode its natural resource base; invest in climate-resilient infrastructure, green mobility, renewable energy; and ensure that planning, implementing and monitoring process is climate-resilient. For all of this, India needs global support for green technology and resources up to \$2.5 trillion in the 15-year period till 2030 for climate action. Building a climate-resilient future is not just a policy test; for every country, it's now a moral test as well.

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FOR INDIA, BIDEN'S CLIMATE PLAN IS AN OPPORTUNITY

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

(Written by Madhu Verma, Asi Guha, Elphin Tom Joe)

The outcome of the US Presidential Election 2020 is expected to have great impact on the world's environmental conservation and climate action. The detailed plan on climate and energy put forth by President-elect Joseph R Biden Jr. in his manifesto, is an ambitious one.

Indeed, the Biden Plan – to tackle climate emergency and advance a clean energy future – links economic growth with climate actions driven by research, innovation and prudent policy-making. The president-elect's commitment to this agenda is evident in the formation of transition teams embedded with climate experts, and his plans to set up a White House office to oversee mitigation efforts.

The target is to make the US a 100 per cent clean energy economy and achieve net-zero emissions by 2050. The strategy aims at revitalising US climate leadership by investing in clean energy and sustainable infrastructure to the tune of \$2 trillion in the first-term. It also talks about investing \$400 billion for clean energy research and innovation, over the next 10 years. That is twice as much as the iconic Apollo programme that put man on the moon!

Aside from clean energy, Biden's vision also covers forest, biodiversity and sustainable agriculture. It talks about raising a Civilian Climate Corps consisting of conservation and resilience workers to sustainably manage forest, restore wetlands, plant trees in urban landscapes, protect coastal ecosystems, support biodiversity and so on. The aim is to create well-paid jobs along with conservation of nature.

The Biden Plan pays due attention to foreign policy. Aside from his declaration to re-join the Paris climate accord, Biden has also acknowledged that mitigation and adaptation to climate change cannot be done in silos. Therefore, he aims to convene a climate world summit to bring global leaders together to go beyond the existing national targets.

Further, Biden has laid out a policy roadmap to label laggard countries "climate outlaws" in order to promote climate action. However, such an approach to foreign policy must be backed up by sound domestic ambitions and a serious commitment to climate finance. Towards this end, the US must submit a new NDC (Nationally determined contributions) as it re-enters the Paris Agreement, committing to cut its total emissions by 45 to 50 per cent by 2030 (from 2005 level). It must also re-establish financing for the Green Climate Fund – as Biden has promised to do – starting with the USD 2 billion, outstanding from its 2014 pledge.

An important aspect of this climate policy is its potential to impact macroeconomic levers of bilateral and multilateral trade systems. The plan proposes to link US trade policy with its climate objectives. This vision could have a significant impact for developing nations like India. India can use the opportunity to facilitate a shift towards greening of the economy by focussing on clean energy solutions, land restoration etc. However, in order to successfully ride with the tide, there is a need to build domestic capacity.

To step up and embrace this opportunity, India needs investment in research and development (R&D). The nation has a massive pool of talent and ever-growing demand for jobs due to an

increasing number of people entering its workforce. The domestic economy has been shaken due to [COVID-19](#), and India has a gruelling path ahead in its race to build back better.

Today, capacity building in renewable energy, sustainable agriculture, forestry and water management requires significant research and innovation to design suitable solutions. India invests around 0.6 to 0.7 per cent of its GDP in R&D whereas countries like the US, China, Israel and Korea invest around 2.8, 2.1, 4.3 and 4.2 per cent respectively. A progressive investment strategy in R&D is imperative for India to become climate leaders, as it is becoming increasingly clear that the future economic leadership is deeply entwined with it.

It is in the area of environmental research, education, and awareness that there is increasing convergence in interests for the Indo-US relationship. The US and India share a strong cultural bond through the ever-increasing Indian diaspora, especially in academia. There is a need for increasing the synergy between US and Indian universities for tackling climate change. The recently launched Fulbright Kalam Climate fellowship aims at engaging scientific and technical research scholars from India and the US. More such collaborations would be necessary to fully benefit from the comparative advantages the two countries have – India, in terms of human resources, and the US in technological specialisation.

Verma is chief economist, Guha and Joe are interns at Economics Centre, World Resources Institute (WRI) India. Views are personal.

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GREEN OVER BROWN: ON INDIA'S CLIMATE GOALS

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

India asserted at the [virtual Climate Ambition Summit](#), co-convened by the [UN to mark five years of the Paris Agreement](#), that it is well on its way to not just fulfilling its national pledge on emissions reduction, but exceeding the commitment. The performance, [outlined by Prime Minister Narendra Modi](#), rests primarily on the estimated present reduction of emissions intensity by 21% over 2005 levels (the goal is between 33% and 35% of GDP by 2030), and the twin pillars of renewable energy and higher forest cover. Indeed, the Emissions Gap Report 2020 of the UNEP includes India among nine G20 members who are on track to achieve their unconditional commitments under the Paris pact, based on pre-COVID-19 projections. Significantly, the G20 bloc as a whole, responsible for 78% of greenhouse gas emissions (GHG), was not expected to meet its pledges, but some countries and the EU as a group announced higher ambition at the summit. The brief reduction in global GHG emissions brought about by the pandemic has given all countries an opportunity to review their development trajectories. The unprecedented event has enabled them to deploy an extraordinary fiscal stimulus for rehabilitation of economies — estimated at \$12 trillion globally — making green growth a possibility. India faces a particular challenge, in moving its pandemic rehabilitation spending away from traditional brown sector policies aligned with fossil fuel use to green territory.

At the recent summit, Mr. Modi took credit for expansion of forests, which, according to the national pledge under the Paris Agreement, will serve as a carbon sink of 2.5 bn to 3 bn tonnes of carbon dioxide equivalent by 2030. This is a key goal, given that it has multiple benefits, protecting biodiversity, influencing the climate system and providing resources for communities. But it is fraught with uncertainty. The Centre has questioned the veracity of State afforestation data and said only a fourth of the claims they made were deemed credible. Clearly, without a cohesive policy on verifiable afforestation, the carbon sink approach may yield poor dividends, with questions hanging over the spending. Achieving 100 gigawatts of solar power capacity within the overall renewables goal, from 36 GW now, needs a steep scale-up that must actively promote rooftop solar installations. There is little evidence that this is a high priority for most States. Transport-related emissions, which are a major component of the whole, have risen sharply in the unlock phase of the pandemic as people prefer personal vehicles, but the issue received little support from States which failed to reorder cities for cycling and pedestrianisation. Large-scale agriculture insurance against climate disasters also needs attention. In the year that remains before countries meet at the UN Climate Change conference in Glasgow in 2021, India needs to focus on future emissions and plan green investments that qualify for global climate funding.

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GOVT PROPOSES ETHANOL-BLENDED GASOLINE AS AUTOMOBILE FUEL TO CURB POLLUTION

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

New Delhi: The union road transport and [highways ministry](#) has proposed the adoption of E20 fuel—blend of 20% of ethanol with gasoline--as an automobile fuel, in its attempt to reduce harmful emissions from vehicles and curb pollution.

The ministry has also proposed the adoption of mass emission standards for E20 fuel and has sought comments from relevant stakeholders for the same.

"The notification facilitates the development of E20 compliant vehicles. It will also help in reducing emissions of carbon dioxide, hydrocarbons, etc. It will help reduce the oil import bill, thereby saving foreign exchange and boosting energy security," an official statement said.

The compatibility of the vehicle to the percentage of ethanol in the blend of ethanol and gasoline shall be defined by the vehicle manufacturer and will be displayed on the vehicle by putting a visible sticker, it said.

The government has been trying to promote clean fuel for transportation as well as other alternatives such as electric mobility as one of its ways to reduce pollution and cut fuel import bill. In September, transport ministry had notified hydrogen-enriched compressed natural gas (CNG) as an automobile fuel to lower emissions, and promote green fuel for automobiles in the country.

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WHY ELEPHANTS AND TIGERS DID NOT GO EXTINCT IN INDIA

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

Tough mammals: Most of the megafauna of South Asia and Africa were resilient to the arrival of modern humans. Image shows fossils of the extinct mammals of India | Photo Credit: [Special Arrangement](#)

(Subscribe to *Science For All*, our weekly newsletter, where we aim to take the jargon out of science and put the fun in. [Click here.](#))

Over the last 100,000 years, several land-dwelling mammals including big carnivores have gone extinct across the globe. North America lost its saber-toothed cat, North American lion, scimitar-tooth cat, American cheetah, and the only big cats left now are the Puma and the Jaguar. But most of the megafauna of South Asia and Africa were resilient to the arrival of modern humans and the region still has large land mammals such as elephants, tigers, and rhinos. A team led by Advait Jukar from Yale University set out to investigate why these big mammals are still seen in India when they disappeared from the Americas.

A paper published last month notes that co-evolution - the fact that native animals learn to adapt to a new predator played an important role.

“If humans were hunting, these animals evolved techniques to avoid people. For example, if we like to hunt on the plains, maybe these animals lived in the forests. It's basically an evolutionary rat race where one species has to keep up with the other in order to survive,” explains Dr. Jukar from the Department of Anthropology at Yale University. He is the lead author of the paper published last month in *Palaeogeography, Palaeoclimatology, Palaeoecology*.

However, there were mammalian extinctions in the country: two massive elephant relatives (*Palaeoloxodon namadicus* and *Stegodon namadicus*), a hippo (*Hexaprotodon* sp), and a horse relative (*Equus namadicus*) were lost.

“So what's actually common to all of these animals? And, what was going on in the environment at this time? All the extinct species were large, slow reproducing species, and they go extinct when the climate is fluctuating. We know that environmental change can stress populations out, especially populations of animals that don't reproduce quickly. Elephants have a two-year pregnancy and it takes about six years between calving events. Hippos, when they're stressed out, don't breed well,” explains Dr. Jukar. “But based on the fossil record, we know that these animals have survived multiple periods of similar environmental change in the past. They only go extinct when people show up. So people probably were the last nail in the coffin for these animals. Had we not shown up, they would have probably been fine.”

India was also home to ostriches (*Struthio camelus*) and Dr. Jukar notes that humans may have been the reason for their local extinction. “We have ostriches in cave art and we have a lot of evidence of people using ostrich eggshells for ornamentation by making beads. Humans probably used eggs for food. And obviously, if you start eating up their offspring, the populations are going to crash.”

Dr. Jukar adds that humans may be driving the extinction of the mammals that fought and survived. “So most of the animals which survived, had a fairly large geographic range. But today,

these animals are being restricted to small pockets and in fragmented populations, a lot of interbreeding happens making the populations weaker. And with increased human pressure, it's just a matter of time before they start going extinct. So we need active conservation to make sure that these animals don't go the way of Indian hippos or ostriches.

Prof. Parth R. Chauhan, a paleoanthropologist from IISER Mohali, who was not part of the study, says that different factors may be behind the extinction of different species. "I don't think humans played equal roles across the Indian Subcontinent for all the species that become extinct. Nor can you point fingers only at climate change. For example, hippos and ostriches become extinct roughly at the same time. But if you look at their respective adaptations, hippos are used to water environments and ostriches are used to dry environments. So you cannot assign climate climatic factors to both of the species equally across India. There cannot be one dominant factor across India for these extinctions and more studies are needed."

He adds that one has to keep in mind that not all species are represented in the fossils and there are still missing links and biological dead ends.

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OVEREXPLOITATION, LONG LIFE CYCLE HAVE ENDANGERED A COMMON HIMALAYAN HERB

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

Medicinal herb: *Trillium govaniatum* is often called Nagchatri in local areas | [File](#) | [Photo](#)
Credit: [Elizabeth Byers](#)

(Subscribe to Science For All, our weekly newsletter, where we aim to take the jargon out of science and put the fun in. [Click here.](#))

The Himalayan trillium (*Trillium govaniatum*), a common herb of the Himalayas was declared 'endangered' by the International Union for Conservation of Nature (IUCN) last week.

In recent years, the plant has become one of the most traded commercial plants of the Himalayan region, due to its high medicinal quality. It has been used in traditional medicine to cure diseases like dysentery, wounds, skin boils, inflammation, sepsis, as well as menstrual and sexual disorders. Recent experiments have shown that the rhizome of the herb is a source of steroidal saponins and can be used as an anti-cancer and anti-aging agent. This increased its market value and has now become an easy target for poachers.

Found in temperate and sub-alpine zones of the Himalayas, at an altitude from 2,400-4,000 metres above sea level, the existence of the plant has been traced across India, Bhutan, Nepal, China, Afghanistan and Pakistan. In India, it is found in four states only- Himachal Pradesh, Jammu and Kashmir, Sikkim, and Uttarakhand. Often called Nagchatri, in local areas this herb grows to a height of 15-20 cm.

"Given the suspected rate of decline and an expected continued demand for rhizomes into the foreseeable future, population declines of at least 50% are expected to occur between 2010 and 2079," says Harsh Kumar Chauhan from Kumaun University, the member of IUCN-Species Survival Commission who has been studying the plant and helped assess its status for IUCN.

"There are several factors threatening the survival of the plant such as over-exploitation, long life cycle - slow to reach reproductive maturity - and poor capacity for seed dispersal. The highly specific habitat requirement, high trade value, and increasing market demand are all causing its decline," remarks Anil Kumar Bisht, Professor of Botany, Kumaun University who co-authored the study.

The researchers note that in 2017, the herb was recorded as a medicinal plant traded from India. Since then its price has increased and sold at \$50-315 per kilogram.

To prevent its illegal trade, Dr. Chauhan says, "Implementation and enforcement of sustainable collection protocols and quotas are needed. Designation of areas of natural habitat to local communities for management of harvest is the best option to control its illegal trade. Further, the implantation of FairWild Standard (a set of ecological and fair trade guidelines) can help traders, and concerned agencies in the sustainable harvest and trade of the species."

He adds that educational efforts including elevation of public awareness surrounding the threats to the species, and dissemination of best practices for harvest are also needed.

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Suresh Nambath

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Two scientists followed six large herbivore species — Asian elephant, greater one-horned rhinoceros, Asiatic water buffalo, sambar, hog deer and muntjac.

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60 PERCENT RISE IN LEOPARD POPULATION ACROSS THE COUNTRY;INDIA NOW HAS 12,852 LEOPARDS.

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

Releasing the Status of Leopards report in New Delhi today, Minister for Environment, Forest and Climate Change, Shri Prakash Javadekar has said that increase in Tiger, Lion & Leopards numbers over the last few years is a testimony to the conservation efforts and of the fledgling wildlife & biodiversity of the country.

Congratulations to the States of MP(3,421), Karnataka(1783) and Maharashtra(1690) who have recorded the highest leopard estimates.

Increase in Tiger, Lion & Leopards population over the last few years is a testimony to fledgling wildlife & biodiversity. pic.twitter.com/LsJcUPOEsr

India now has 12,852 leopards as compared to the previous estimate of 7910 conducted 2014. More than 60% increase in population has been recorded. The States of Madhya Pradesh, Karnataka and Maharashtra recorded the highest leopard estimates at 3,421, 1,783 and 1,690 respectively.

Speaking on the occasion, Shri Javadekar remarked that monitoring of the tiger in India has clearly shown its umbrella role in the ecosystem, which has shed light on other charismatic species like the Leopard.

India's world record tiger survey also estimated the population of leopards and the tiger range was found home to 12,852 (12,172-13,535) leopards. They occur in prey rich protected areas as well as multi-use forests. A total of 5,240 adult individual leopards were identified in a total of 51,337 leopard photographs using pattern recognition software. Statistical analysis estimates the leopard population at - 12,800 leopards within the tiger's range.

The leopard was estimated across forested habitats in tiger range areas of the country but other leopard occupied areas such as non-forested habitats (coffee and tea plantations and other land uses from where leopards are known to occur), higher elevations in the Himalayas, arid landscapes and majority of North East landscape were not sampled and, therefore, the population estimation should be considered as minimum number of leopards in each of the landscapes.

Tiger has not only served as an umbrella species but even its monitoring has helped evaluate the status of other species, like the leopard. The National Tiger Conservation Authority-Wildlife Institute of India (NTCA-WII) shall be reporting on several other species shortly.

[Full Report](#)

GK.

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WESTERN GHATS HOME TO 3,387 LEOPARDS

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

Cat count: India has an estimated population of 12,852 leopards. M.A. SRIRAM

The Western Ghats region is home to 3,387 leopards stealthily roaming around its forests.

Karnataka tops the list with 1,783 leopards, followed by Tamil Nadu with 868, according to the Status of Leopards in India 2018 report.

With 650 leopards, Kerala has the third highest number of big cats in the Western Ghats region. Goa has 86.

“The Western Ghats is home to 3,387 leopards, against India’s population of 12,852,” says the report released recently by the Ministry of Environment, Forest and Climate Change.

The leopard population was counted during the tiger population assessment undertaken in 2018. The leopard population was estimated to be within the forested habitats in tiger-occupied States, the report said.

The presence of the animal was recorded in the forested areas of Western Ghats, Nilgiris, and sporadically across much of the dry forests of Central Karnataka. Leopard population of the Western Ghats landscape was reported from the four distinct blocks.

The Northern block covered the contiguous forests of Radhanagari and Goa covering Haliyal-Kali Tiger Reserve, Karwar, Honnavar, Madikeri, Kudremukh, Shettihali Wild Life Sanctuary (WLS), Bhadra and Chikmagalur.

The Central population covered southern Karnataka, Tamil Nadu, and northern Kerala covering the forests of Virajpet, Nagarhole, Bandipur, Madumalai, Satyamangalam, Nilgiris, Silent Valley, Wayanad, BRT Hills, MM Hills, Cauvery WLS, Bannerghatta National Park.

A second central cluster covering central Kerala and Tamil Nadu comprising the Parambikulam-Anamalai - Eravikulam - Vazachal population.

Camera traps

The southern leopard population block in southern Kerala and Tamil Nadu comprised the forests of Periyar-Kalakad Mundanthurai -Kanyakumari.

A total of 6,758 leopard photographs were obtained from Western Ghats from camera traps. The images helped in the identification of 1,681 adults and sub-adults. While noting that the leopard population had increased in most of the tiger reserves in the Western Ghats landscape, the report cautioned that the growing human population and increasing fragmentation of landscape led to increased human-wildlife interactions in the region.

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FIVE YEARS SINCE PARIS, AN OPPORTUNITY TO BUILD BACK BETTER

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

December 12 marked the [five-year anniversary](#) of the [Paris Agreement](#). The international community, including the European Union (EU) and India, gathered at the Climate Ambition Summit 2020 to celebrate and recognise our resolve in working towards a safer, more resilient world with net-zero emissions. A world we can be proud to leave to our grandchildren.

During the past five years, the determination of the global community has certainly been tested and, in the past few months, we have all been hit by a virus with a potentially long-lasting impact on our society and economies.

Comment | [The Paris Agreement is no panacea](#)

In the midst of this pandemic, is it realistic to call for stronger global action to fight climate change? We believe that the case is more valid now than ever. Faced with overwhelming scientific evidence, a more pertinent question might be: Can we afford to let things worsen?

The science is irrefutable: for future prosperity, we must invest in greening the global economy. We cannot afford not to do so. Post-COVID-19 recovery needs to be a green recovery.

Back in December 2019, the European Commission launched the European Green Deal — a new growth model and roadmap to achieve climate neutrality in the EU by 2050. Our- “Next Generation EU” recovery package and our next long-term budget earmark more than half a trillion euros to address climate change.

Paris Accord | [A race against the clock to keep the planet cool](#)

To reach climate neutrality by 2050, on December 11, EU leaders unanimously agreed on the 2030 target of reducing greenhouse gas emissions by at least 55% compared to 1990 levels. This will further accelerate the fast decrease in the costs of low carbon technologies. The cost of solar photovoltaics has already declined by 82% between 2010 and 2019. Achieving the 55% target will even help us to save €100 billion in the next decade and up to €3 trillion by 2050.

No government can tackle climate change alone. We will pursue all avenues to foster cooperation with partners from all around the world. India is a key player in this global endeavour. The rapid development of solar and wind energy in India in the last few years is a good example of the action needed worldwide.

Also read | [India set to exceed climate targets: Modi](#)

The EU and India are committed to the full implementation of the Paris Agreement. India has taken a number of very significant flagship initiatives in this respect, such as the International Solar Alliance, the Coalition for Disaster Resilient Infrastructure and the Leadership Group for Industry Transition. India and Team Europe are engaged to make a success of the forthcoming international gatherings: COP 26 in Glasgow on climate change and COP 15 in Kunming on biodiversity.

There is a sense of global momentum emerging towards keeping the promise of the Paris

Agreement and securing our future on this planet. Five years after the signing of the Paris Agreement, it is more important than ever that the international community comes forward with clear strategies for net-zero emissions and to enhance the global level of ambition for 2030.

Also read | [We are still in denial despite Paris climate deal: Greta Thunberg](#)

Together with the delivery of the \$100 billion of climate financing to countries most in need, these will be deliverables for the climate negotiations when they resume at COP 26 in Glasgow next November. Team Europe will continue to work closely with India on green investments and the sharing of best practices and technologies.

We can avoid the most dramatic impacts of climate change on our societies. Our global, regional, national, local and individual recovery plans are an opportunity to 'build back better'. We owe it to the next generation who will have to bear the burden of climate change and pay off the debt of the recovery.

Editorial | [Green over brown: On India's climate goals](#)

Good public policies are indispensable but not sufficient. We will also need to foster small individual actions to attain a big collective impact. This is the snowball effect we need starting from the Paris Agreement. With climate neutrality as our goal, the world should mobilise its best scientists, business people, policymakers, academics, civil society actors and citizens to protect together something we all share beyond borders and species: our planet.

Ugo Astuto is Ambassador of the European Union (EU). This opinion piece is endorsed by the Ambassadors and High Commissioners of the 27 EU member states

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THE RISE IN EXTREME CLIMATE EVENTS - EDITORIALS - HINDUSTAN TIMES

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

Dec 23, 2020-Wednesday

-°C

Humidity

-

Wind

-

[Delhi](#), [Mumbai](#), [Chennai](#), [Kolkata](#)

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

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More than 75% of India's districts are hotspots of extreme climate events and are bearing the lethal effects of a rapidly-changing microclimate with loss of property, livelihoods and lives, according to a study by the Council on Energy, Environment and Water (CEEW). The report notes that while India witnessed 250 extreme climate events between 1970 and 2005, the country recorded 310 extreme weather events after 2005.

That India has been at the receiving end of the climate crisis is known. According to the Climate Risk Index, 2018, the country jumped nine places in climate vulnerability rankings, and was ranked the fifth-most climate-vulnerable country in the world. Storms are escalating into cyclones, droughts are affecting more than half the country, and floods of an unprecedented scale are causing catastrophic damage. The Centre has done well in treating climate as a priority issue — but the scale of the destruction of lives, livelihoods and critical infrastructure warrants more action.

It is not just the Centre; states have a key role too. The State Action Plans on Climate Change (SAPCCs) need upscaling and capacity enhancement. Many pilot projects on resilience are taking place; the effective ones need to be replicated quickly. There has to be a sharper focus on building institutional and human capacity and district-level localisation of SAPCCs so that the authorities can respond to changing climate challenges quickly and effectively. The report provides yet another warning that business-as-usual isn't sustainable.

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THE DEBILITATING IMPACT OF POLLUTION ON THE ECONOMY - EDITORIALS - HINDUSTAN TIMES

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

Dec 28, 2020-Monday

-°C

Humidity

-

Wind

-

[Delhi](#), [Mumbai](#), [Chennai](#), [Kolkata](#)

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Delhi suffered the highest per-capita economic loss due to air pollution last year in India, according to a study published in The Lancet on Tuesday. The economic loss due to lost output from premature deaths and illness attributable to air pollution (outdoor and household) as a percentage of state GDP was 1.08% in Delhi. The highest loss to GDP was recorded by Uttar Pradesh (2.15%), followed by Bihar (1.95%), Madhya Pradesh (1.70%) and Rajasthan (1.70%). Overall deaths and disease due to air pollution, according to The Lancet, is responsible for a loss of 1.36% of the nation's GDP.

The impact of air pollution on the economy can be deep, yet not immediately obvious. For example, higher rates of asthma, diabetes or chronic respiratory diseases can lead to reduced ability to work and lower participation rates in the labour force. Children susceptible to asthma attacks also miss school days, which can severely impact their learning and subsequently future growth, while health care requirements can result in their parents taking extra time off from work. Deaths of children and young people bring an economic cost through lost contributions to society and the economy, which can be large. Earlier this year, a study released by MIT Sloan said that a large-scale review demonstrates that air pollution is not only detrimental to people's physiological health, but also their psychological health. It increases depression, and impairs cognitive functioning and decision-making.

In a developing country such as India, there is a continuing debate on carbon-intensive growth versus environment and health. But as The Lancet study shows, increasing pollution load is erasing the very economic and human development gains that the country aspires to achieve. The pollution-related losses will also hit the poorer states with weaker social infrastructure harder, deepening the already existing social and economic inequities further.

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THE CLIMATE POLICY NEEDS NEW IDEAS

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

2021 will be the year for a new global climate policy and India has the soft power to bring together the high and low emitters. Among the 'major economies', India will meet its Paris Agreement target for 2030. Its per capita emissions are one-third of the global average and it will remain within its share of ecological space.

In an urbanised world, two-third of emissions arise from the demand of the middle class for infrastructure, mobility, buildings and diet. Well-being in cities is reflected in saturation levels of infrastructure with consumption, not production, driving growth as well as high urban per capita emissions. Infrastructure worldwide has used half of total materials, mainly construction, cement and steel, which have no substitute, and will need half of the available carbon space before comparable levels of infrastructure are reached globally around 2050. Peaking of emissions comes some 20-30 years after saturation of infrastructure has been achieved, with related high levels of well-being, as in the case of the West, before net zero emissions are considered. Prime Minister Narendra Modi was justifiably cautious at the Climate Action Summit and avoided commitments to cap emissions.

Editorial | [Green over brown: On India's climate goals](#)

Inequity is built into the climate treaty, which considers total emissions, size, and population, making India the fourth largest emitter, even though, according to the United Nations, the richest 1% of the global population emits more than two times the emissions of the bottom 50%. Clearly, net zero or carbon neutrality by 2050, and the cap on emissions it implies, applies only to countries with high per capita emissions, GDP and well-being.

The focus on physical quantities indicates effects on nature whereas solutions require analysis of drivers, trends and patterns of resource use. This anomaly explains why the link between well-being, energy use and emissions is not on the global agenda. New thinking must enable politics to acknowledge transformational social goals and the material boundaries of economic activity and not the latter without the former. Modifying unsustainable patterns of natural resource use and ensuring comparable levels of well-being are societal transformations and two sides of a coin interlinked with international cooperation to serve sustainable development.

The vaguely worded 'carbon neutrality', balancing emitting carbon with absorbing carbon from the atmosphere in forests, for example, is a triple whammy for latecomers like India. Such countries already have less energy-intensive pathways that will not encroach on others' ecological space, a young population, and are growing fast to reach comparable levels of well-being with those already urbanised and in the middle class.

Also read | [India set to exceed climate targets: Modi](#)

Industrialisation and urbanisation are not the problem 'per se'; the problem is the way they were designed in the colonial context: keeping commodity prices low, overly resource-intensive, defining progress as material abundance, and assuming that technology would solve the ecological problem.

By 1950, the contribution of the U.S. to total emissions peaked at 40%. It has declined to approximately 26%, the largest in the world. North America and Europe, with less than one-quarter of the world population, are responsible for almost half of global material use. The share

decreased to one-fifth in 2010, when Asia with half the world population used its legitimate share of half of global resource use. But the ecological damage had already been done. China, with four times the population of the U.S., accounts for 12% of cumulative emissions, and India, with a population close to that of China's, for just 3% of cumulative emissions that lead to global warming.

Also read | [UN chief urges global summit to declare 'climate emergency'](#)

Reconstruction in the West after World War II led to acceleration of material use, resulting emissions and sharp rise in global temperature around 1970, before growth commenced in Asia. Urban transformation requires huge amounts of iron and steel, cement, construction materials and energy for infrastructure. Before infrastructure reaches saturation levels and manufacturing stabilises, material use shapes ways in which countries build houses and transport infrastructure, and how they organise mobility and deliver manufactured goods, food and energy. With the population moving to cities, growth in per capita incomes drives consumption and vehicle emissions becomes the continuing driver of increasing levels of material use, far more significant than manufacturing.

In each sustainability benchmark like housing size and density, public bicycle transport and eliminating food waste, India is doing better than the West. The rising prosperity of the world's poor does not endanger the planet; the challenge is to change wasteful behaviour in the West, and these changes occur at decadal scales.

Comment | [Reject this inequitable climate proposal](#)

India must highlight its unique national circumstances. For example, the meat industry, especially beef, contributes to one-third of global emissions. Indians eat just 4 kg of meat a year compared to those in the European Union who eat about 65 kg and Americans who eat about 100 kg. Also to be noted is the fact that the average American household wastes nearly one-third of its food.

Transport emissions account for a quarter of global emissions. They are the fastest-growing emissions worldwide and have surpassed emissions from generation of electricity in the U.S. Transport emissions are the symbol of Western civilisation and are not on the global agenda.

Comment | [Flattening the climate curve](#)

Coal accounts for a quarter of energy use. It powered colonialism. Rising Asia uses three-quarters as coal drives industry and supports the renewable energy push into cities. India, with abundant reserves and per capita electricity use that is one-tenth that of the U.S., is under pressure to stop using coal, even as it aims to shift to electric vehicles and eliminate oil instead.

India has the credibility and legitimacy to push an alternate 2050 goal for countries currently with per capita emissions below the global average — for example, the goal of well-being within ecological limits, the frame of the Sustainable Development Goals, as well as multilateral technological knowledge cooperation around electric vehicles, energy efficiency, building insulation and a less wasteful diet.

Emissions are the symptom, not the cause of the problem. India, in the UN Security Council, must push new ideas based on its civilisational and long-standing alternate values for the transition to sustainability.

Mukul Sanwal is former Director of the United Nations Framework Convention on Climate

Change

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THE TRAGEDY OF CONSERVATION

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

The Western Ghats. File | Photo Credit: [The Hindu](#)

In 2012, 39 areas covering national parks, wildlife sanctuaries, and reserved forests in the Western Ghats were declared a World Heritage Site by UNESCO. These sites are crucial for their biodiversity value. Ten of them are in Karnataka.

Since the time the Ministry of Environment and Forests began identifying the potential heritage sites, there has been unrest among the indigenous people. When the exercise began, they feared for their existence in lands that they had inhabited for decades. The restrictions on movement following the declaration of these territories as ecologically sensitive areas aggrieved them further.

Comment | [The taproot of conservation justice](#)

Against the backdrop of the enactment of the Forest Rights Act of 2006 in India and the Declaration on the Rights of Indigenous People in 2007 by the United Nations, the people residing in the Western Ghats did not anticipate that they would have to deal with the uncertainty about their future following the announcement of the World Heritage Site.

The indigenous people of the Western Ghats, including the Particularly Vulnerable Tribal Groups, constitute 44.2% of the tribal population of 6.95% of Karnataka. The Western Ghats are also home to a sizeable population of communities like Gowlis, Kunbis, Halakki Vakkala, Kare Vakkala, Kunbi, and Kulvadi Marathi. In the context of the Forest Rights Act, they are treated as 'other traditional forest dwellers' since they have been living there for at least three generations prior to December 13, 2005 and depend on the forest or forest land for their livelihood needs. They eke out their living by collecting 'minor forest produce' such as cinnamon and kokum from the forest.

Karnataka has a dismal record in implementing the Forest Rights Act compared to other States. According to the Ministry of Tribal Affairs, as of April 30, 2018, the State had recognised only 5.7% of the total claims made. Notably, 70% of the claims were disposed off. There appeared to be clear inconsistency in the government's approach in settling the claims made by the tribals versus the claims made by other traditional forest dwellers. The inconsistency reflected in their argument. According to them, tribal applications constituted 17.5% of the claims and nearly all of them were settled, while other claims were rejected as they were not backed by valid evidence. This means that claims made by other traditional forest dwellers were treated as inconsequential.

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Assuming that denying tribals or other traditional forest dwellers their rights in the forest would serve the purpose of conservation is far from the truth. The Forest Rights Act is not about the indiscriminate distribution of forest land to anyone applying for it. As per the law, only those lands are recognised where people prove their occupation not later than December 13, 2005. Moreover, the combined stretch of land claimed by them is comparatively smaller by any account than what has been taken away for building dams, mining, laying railway lines and roads, power plants, etc. The government records also reveal that 43 lakh hectares of forestland were encroached both legally and illegally until 1980 when the Forest Conservation Act came

into force. Sadly, there is no significant conservation even after this landmark law.

Invariably, an approach adopted to isolate the indigenous people from their natural habitats to protect biodiversity is the root cause of conflict between them and conservationists. The latter think that resources have to be controlled and managed. However, this theory is fast proving unproductive. The Global Environment Outlook Report 5 mentions that there is decreased biodiversity across the globe even as 'protected areas' have been expanding. People living in nature's surroundings are integral to conservation as they relate with it in a more integrated and spiritual way.

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Declaration of the Western Ghats as a World Heritage Site is as important in preserving the rich biodiversity of the region as the recognition of the rights of the people who depend on the forests. As confirmed internationally, preserving biodiversity requires the legal empowerment of the people living in those areas. The Forest Rights Act is an ideal instrument to push forward the objective. To realise it on the ground, the government must make an effort to build trust between its agencies in the area and the people who depend on these forests by treating them as equal citizens like everyone else in the country.

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