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**22\_11\_2024 DAILY CURRENT AFFAIRS**

**TOPICS COVERED**

- 1. Gautam Adani indicted in U.S. over charges of bribery, securities fraud**
- 2. Consensus on new climate finance goal remains elusive (GS Paper-III: Environment)**
- 3. CAQM's submissions in Supreme Court ignore increase in paddy burnt area in Punjab, Haryana (GS Paper-III: Environment)**
- 4. U.P. govt. comes under fire over ad 'outsourcing' jobs in Gorakhpur civic body (GS Paper-II: Reservation)**
- 5. Kolkata air quality moderate in November, industrial cities face challenges: report (GS Paper-III: Environment)**
- 6. India to host global meet of cooperatives in Delhi from Nov. 25 (PCS)**
- 7. Artistes from 12 countries to take part in Telangana event**
- 8. Rock-cut footprints, human figure dating back to Megalithic period unearthed at Kerala's Kanhirapoil (GS Paper-I: Art & Culture)**
- 9. Curbs imposed on annual temple jathra in Bandipur Tiger Reserve (GS Paper-III: Environment)**
- 10. 'Global consensus must to face challenges in using AI for governance'**
- 11. 'Students must learn to adapt to new technology for industrial adaptability' (GS Paper-III: Science & Technology)**

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- 12. 'Human intervention and ethical considerations are essential to AI' (GS Paper-IV: Ethics)**
- 13. 'To fight AI's dark side, use artificial intelligence' (GS Paper-III: Science & Technology)**
- 14. AI is augmentative tech, not a replacement for human capital: Minister (GS Paper-III: Science & Technology)**
- 15. India needs an environmental health regulatory agency (GS Paper-III: Environment)**
- 16. A bilateral investment treaty with a 'bit' of change (GS Paper-II: India-UAE)**
- 17. Is social media doing more harm than good to democracy? (GS Paper-III: Science & Technology)**
- 18. Is Delhi becoming an uninhabitable city? (GS Paper-III: Environment/Urbanization)**
- 19. World should embrace Buddhist doctrines to resolve conflicts: Rajnath**
- 20. A 'bribery scheme' to bag lucrative solar power deals (GS Paper-II: Governance)**
- 21. Telecom surprise: BSNL gains, private telcos lose one crore subscribers this September**
- 22. ICC issues arrest warrants against Netanyahu, Gallant, Hamas leaders (GS Paper-II: International Organization)**
- 23. Children make up 40% of displaced in, Myanmar, says UN**





# Gautam Adani indicted in U.S. over charges of bribery, securities fraud

He and associates allegedly promised over \$250 million in bribes to Indian officials

Regulator says they defrauded U.S. investors, global financial institutions

Shares of Adani firms lose \$27 billion in market value; Group denies allegations

**G. Sampath**  
NEW DELHI

District of New York late on November 20.

The U.S. Department of Justice (DOJ) has issued a five-count criminal indictment of Gautam Adani, chairman of the Adani Group, and several of his business associates.

The charges include promising more than \$250 million in bribes to Indian government officials to secure solar energy contracts, conspiracies to commit securities and wire fraud, and orchestrating “a multi-billion dollar scheme” to defraud U.S. investors and global financial institutions by giving “false and misleading statements”.

The indictment was unsealed by the U.S. Attorney’s Office for the Eastern

In a parallel move, the U.S. Securities and Exchange Commission (SEC) has also charged Mr. Gautam Adani and Sagar Adani (the former’s nephew and head of Adani Green Energy), along with Cyril Cabanes, a top executive of Azure Power Global Ltd. (a New Delhi-headquartered renewable energy company that used to be listed on the New York Stock Exchange), with a massive bribery scheme involving Adani Green and Azure Power.

In the U.S., it is illegal to make payments to foreign government officials in a bid to obtain or retain business. Raising money by misleading investors about key corporate governance decisions and hiding the



**Under a cloud:** The Adani Group said it would seek all possible legal measures against the indictment. VIJAY SONEJI

authorisation of bribery practices in company reports are also treated as offences.

While the DOJ indictment constitutes a criminal case, the SEC’s is a civil complaint, and if proved, could result in a “permanent injunction, a civil penalty, and an officer and director bar”.

The SEC’s complaints were filed in the U.S. District Court for the Eastern District of New York.

**Withdraws bond issue**  
Reacting to the news of the indictment, Adani Green Energy Ltd. said on Thursday it was withdrawing a proposed \$600-million bond issue.

**‘A.P. CM, officials were paid bribe of ₹1,750 crore’**

**AMARAVATI**  
The Adani Group paid ₹1,750 crore in bribes to a former Chief Minister of Andhra Pradesh and some officials for a power purchase agreement, says the U.S. Securities and Exchange Commission. » **PAGE 17**

**No links with Adani companies, says T.N. Minister**

**KARUR**  
Tamil Nadu Electricity Minister V. Senthilbalaji on Thursday said there was no commercial link between the Tamil Nadu Generation and Distribution Corporation (Tangedco) and the Adani Group companies in any manner. » **PAGE 17**

Shares of Adani Group companies lost about \$27 billion in market value in the domestic markets, led by an over 23% decline in its flagship, Adani Enterprises Ltd. This was the steepest drop in its share value since February 2023, when it was hit by allegations of misdemeanour and corporate malfeasance

levelled by U.S.-based Hindenberg Research.

The Adani Group denied the allegations of the U.S. Department of Justice and the SEC, terming them “baseless”.

**CONTINUED ON**  
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**FULL COVERAGE**  
» **PAGES 17 & 18**

## Indictment of Gautam Adani in U.S.

### गौतम अडानी पर अमेरिका में अभियोग

- The **U.S. Department of Justice (DOJ)** issued a **five-count criminal indictment** against **Gautam Adani**, chairman of the **Adani Group**, and several of his business associates.

**अमेरिकी न्याय विभाग (DOJ) ने अडानी समूह के अध्यक्ष गौतम अडानी और उनके कई व्यावसायिक सहयोगियों के खिलाफ पांच आरोपों वाला आपराधिक अभियोग जारी किया।**

- Charges include **promising more than \$250 million in bribes** to Indian government officials for solar energy contracts, conspiracies to commit **securities and wire fraud**, and defrauding U.S. investors and financial institutions through **false and misleading statements**.

आरोपों में भारतीय सरकारी अधिकारियों को \$250 मिलियन से अधिक की रिश्वत का वादा करना, सिक्योरिटीज और वायर धोखाधड़ी की साजिश, और झूठे और भ्रामक बयान देकर अमेरिकी निवेशकों और वित्तीय संस्थानों को धोखा देना शामिल है।

- The indictment was unsealed by the **U.S. Attorney’s Office for the Eastern District of New York** on **November 20, 2024**.





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यह अभियोग 20 नवंबर 2024 को न्यूयॉर्क के ईस्टर्न डिस्ट्रिक्ट के अमेरिकी अटॉर्नी कार्यालय द्वारा सार्वजनिक किया गया।

- The **U.S. Securities and Exchange Commission (SEC)** also charged **Gautam Adani, Sagar Adani** (head of **Adani Green Energy**), and **Cyril Cabanes** (a top executive of **Azure Power Global Ltd.**) with a **bribery scheme** involving **Adani Green** and **Azure Power**.

अमेरिकी सिक्योरिटीज एंड एक्सचेंज कमीशन (SEC) ने गौतम अडानी, सागर अडानी (अडानी ग्रीन एनर्जी के प्रमुख) और साइरिल कबेनेस (एज्योर पावर ग्लोबल लिमिटेड के शीर्ष कार्यकारी) पर अडानी ग्रीन और एज्योर पावर से जुड़े रिश्वतखोरी के षड्यंत्र का आरोप लगाया।

- In the U.S., it is **illegal to pay foreign government officials** for securing or retaining business. Misleading investors about corporate governance decisions and hiding bribery practices in company reports are also **offenses**.

अमेरिका में विदेशी सरकारी अधिकारियों को भुगतान करना अवैध है। निवेशकों को कॉर्पोरेट प्रशासन निर्णयों के बारे में गुमराह करना और कंपनी रिपोर्टों में रिश्वतखोरी छिपाना भी अपराध है।

- The DOJ indictment is a **criminal case**, while the SEC's is a **civil complaint** that could lead to a **permanent injunction, civil penalty, and a ban on serving as officer or director**.

DOJ का अभियोग आपराधिक मामला है, जबकि SEC की नागरिक शिकायत से स्थायी निषेधाज्ञा, नागरिक दंड, और अधिकारी या निदेशक के रूप में सेवा करने पर प्रतिबंध लग सकता है।

- The SEC's complaints were filed in the **U.S. District Court for the Eastern District of New York**.

SEC की शिकायतें न्यूयॉर्क के ईस्टर्न डिस्ट्रिक्ट की अमेरिकी जिला अदालत में दर्ज की गईं।

- **Adani Green Energy Ltd.** announced the withdrawal of a proposed **\$600-million bond issue** following the indictment.

अडानी ग्रीन एनर्जी लिमिटेड ने अभियोग के बाद प्रस्तावित **\$600 मिलियन बॉन्ड जारी** करने का निर्णय वापस ले लिया।

- Adani Group companies lost approximately **\$27 billion** in market value in domestic markets, with a **23% decline** in **Adani Enterprises Ltd.**, the steepest drop since February 2023.

अडानी समूह की कंपनियों ने घरेलू बाजारों में लगभग **\$27 बिलियन** का बाजार मूल्य खो दिया, जिसमें **अडानी एंटरप्राइजेज लिमिटेड** में **23% गिरावट** आई, जो **फरवरी 2023** के बाद सबसे बड़ी गिरावट है।

- The Adani Group denied the allegations, calling them "**baseless**".

अडानी समूह ने आरोपों को "बेसलेस" बताया।

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# Kolkata air quality moderate in November, industrial cities face challenges: report

## Shiv Sahay Singh

KOLKATA

An analysis of the air quality of prominent cities in West Bengal has revealed that Kolkata maintained 'moderate' quality, Siliguri recorded the cleanest air, but industrial cities Durgapur and Asansol faced pollution challenges in the first two weeks of November.

### **Targeted plans**

"While Kolkata maintained moderate air quality with an average PM 2.5 level of  $61\text{g}/\text{m}^3$ , industrial cities like Asansol ( $95.2\text{ g}/\text{m}^3$ ) and Durgapur ( $96.2\text{ g}/\text{m}^3$ ) fell into the poor and upper satisfactory categories, highlighting the need for targeted interventions in industrial and urban zones," a recent analysis of the State's air quality pointed out.

The latest analysis was

### **The report calls for enhanced measures, including stricter enforcement of emission controls, to tackle pollution in industrial centres**

done by the Atlas AQ platform of Respirer Living Sciences which has highlighted a diverse air quality scenario across West Bengal during the early winter period from November 3-16.

The findings indicate a clear divide between cities benefiting from effective urban management and those struggling with the impacts of industrial and vehicular emissions, a statement said.

The report calls for enhanced measures to tackle pollution in urban and industrial centres including stricter enforcement of

emission controls in industries, improved vehicular emission standards, and the expansion of green spaces in polluted regions. "The mixed trends in West Bengal demonstrate both progress and the need for immediate action. By focusing on industrial hot-spots and urban infrastructure, the State can make significant strides toward cleaner air for all," it said.

### **Region-specific**

Respirer Living Science founder and CEO Ronak Sutaria said these trends showcase the importance of region-specific strategies to tackle pollution.

"While Kolkata's air quality highlights moderate improvement, the challenges in industrial hubs like Asansol underline the pressing need for stricter pollution controls and sustainable urban development," he said.





## Kolkata air quality moderate in November, industrial cities face challenges: report

### नवंबर में कोलकाता की वायु गुणवत्ता मध्यम, औद्योगिक शहरों को चुनौतियों का सामना: रिपोर्ट

- An analysis of the air quality of prominent cities in West Bengal revealed that Kolkata maintained 'moderate' quality, **Siliguri recorded the cleanest air**, while industrial cities Durgapur and Asansol faced pollution challenges during the first two weeks of **November**.

पश्चिम बंगाल के प्रमुख शहरों की वायु गुणवत्ता का विश्लेषण दर्शाता है कि **कोलकाता** ने 'मध्यम' गुणवत्ता बनाए रखी, **सिलीगुड़ी** में सबसे स्वच्छ हवा दर्ज की गई, जबकि **दुर्गापुर और आसनसोल** जैसे औद्योगिक शहरों को नवंबर के पहले दो हफ्तों में प्रदूषण चुनौतियों का सामना करना पड़ा।

- Kolkata maintained moderate air quality with **an average PM 2.5 level of 61 µg/m<sup>3</sup>**, while **Asansol (95.2 µg/m<sup>3</sup>) and Durgapur (96.2 µg/m<sup>3</sup>)** fell into the poor and upper satisfactory categories.

कोलकाता ने **PM 2.5 स्तर 61 µg/m<sup>3</sup>** के साथ मध्यम वायु गुणवत्ता बनाए रखी, जबकि **आसनसोल (95.2 µg/m<sup>3</sup>) और दुर्गापुर (96.2 µg/m<sup>3</sup>)** की स्थिति खराब और उच्च संतोषजनक श्रेणियों में पाई गई।

- The latest analysis was conducted by the **Atlas AQ platform of Respirer Living Sciences** from **November 3–16**, showcasing a diverse air quality scenario across West Bengal.

यह नवीनतम विश्लेषण **रेस्पायरर लिविंग साइंसेज के एटलस AQ प्लेटफॉर्म** द्वारा **3–16 नवंबर** के दौरान किया गया, जिसमें पश्चिम बंगाल में विविध वायु गुणवत्ता स्थिति का खुलासा हुआ।

- The **findings show a clear divide between cities with effective urban management and those impacted by industrial and vehicular emissions**.

इस अध्ययन में उन शहरों के बीच स्पष्ट अंतर दिखता है, जहां प्रभावी शहरी प्रबंधन है और जहां औद्योगिक और वाहन उत्सर्जन का प्रभाव पड़ता है।

- The report recommends **stricter emission controls in industries, better vehicular emission standards, and the expansion of green spaces in polluted regions**.

रिपोर्ट में उद्योगों में **उत्सर्जन नियंत्रण**, वाहनों के उत्सर्जन मानकों में सुधार, और प्रदूषित क्षेत्रों में **हरे क्षेत्रों के विस्तार** की सिफारिश की गई है।

- "Mixed trends in West Bengal demonstrate progress and the need for immediate action to improve air quality," the report states.

रिपोर्ट में कहा गया है कि "पश्चिम बंगाल में मिले-जुले रुझान प्रगति और वायु गुणवत्ता सुधार के लिए तत्काल कदम उठाने की आवश्यकता को दर्शाते हैं।"

- Respirer Living Science founder and CEO **Ronak Sutaria** emphasized the importance of region-specific strategies to tackle pollution.

**रेस्पायरर लिविंग साइंसेज के संस्थापक और सीईओ रोनक सुतारिया** ने प्रदूषण से निपटने के लिए क्षेत्र-विशिष्ट रणनीतियों की आवश्यकता पर जोर दिया।

- He noted that while Kolkata showed moderate improvement, industrial hubs like Asansol need stricter pollution controls and sustainable urban development.





उन्होंने कहा कि कोलकाता ने मध्यम सुधार दिखाया है, लेकिन आसनसोल जैसे औद्योगिक केंद्रों में सख्त प्रदूषण नियंत्रण और सतत शहरी विकास की आवश्यकता है।

## India to host global meet of cooperatives in Delhi from Nov. 25

**The Hindu Bureau**  
NEW DELHI

India is all set to host the global conference of the International Cooperative Alliance (ICA) next week in Delhi. Prime Minister Narendra Modi will launch the 'United Nations International Year of Cooperatives 2025' at the conference on Monday.

First time in the 130-year-long history of the ICA, the premier body for global cooperative movement, with the initiative of IFFCO, the ICA General Assembly and Global Cooperative Conference will be hosted by India. The event is scheduled to be held from November 25 to 30.

Addressing a press conference, Cooperation Secretary Ashish Kumar Bhutani informed that around 3,000 delegates were expected to attend the event and out of that 1,000 would be delegates from foreign countries.

Bhutan Prime Minister Dasho Tshering Tobgay and Fiji Deputy Prime Minister Manoa Kamikamica will also attend the event as esteemed guests.

Union Cooperation Minister Amit Shah will attend the event on November 25. He will chair the inaugural session of the conference as chief guest.

### Will Pak. participate?

Asked if Pakistan is participating in the event, the Secretary said, "More than 100 countries are participating. We have received request from many countries for participation.



Prime Minister Narendra Modi will launch the 'United Nations International Year of Cooperatives 2025' at the conference. FILE PHOTO

There are approvals and protocols required for some countries. The protocols are being followed by the Ministry of External Affairs regarding allowing representatives from such countries to participate in the event."

Of all cooperatives globally, Mr. Bhutani said, 25% were in India and the event would give an opportunity to showcase the might of Indian cooperatives.

IFFCO Managing Director U.S. Awasthi said the event would be carbon-neutral and 10,000 peepal trees had been planted across the country, he added.

He said the theme of the event would be 'Cooperatives Build Prosperity of All', and the sub-themes would be - Enabling Policy and Entrepreneurial Eco-systems; Nurturing Purposeful Leadership to Create Prosperity for All; Reaffirming The Cooperative Identity; Shaping the Future: Towards Realising Prosperity for all in 21st Century.

## India to host global meet of cooperatives in Delhi from Nov. 25 भारत 25 नवंबर से दिल्ली में वैश्विक सहकारी सम्मेलन की मेजबानी करेगा

- India is set to host the **global conference of the International Cooperative Alliance (ICA)** next week in Delhi. भारत अगले सप्ताह दिल्ली में इंटरनेशनल कोऑपरेटिव अलायंस (ICA) के वैश्विक सम्मेलन की मेजबानी करने के लिए तैयार है।

- Prime Minister **Narendra Modi** will launch the '**United Nations International Year of Cooperatives 2025**' at the conference on Monday.

**प्रधानमंत्री नरेंद्र मोदी** सोमवार को सम्मेलन में 'संयुक्त राष्ट्र अंतर्राष्ट्रीय सहकारी वर्ष 2025' का शुभारंभ करेंगे।

- For the **first time in the 130-year history** of ICA, with the initiative of **IFFCO**, the ICA General Assembly and Global Cooperative Conference will be hosted by India.

**ICA के 130 वर्षों के इतिहास** में पहली बार, **IFFCO** की पहल पर, ICA की सामान्य सभा और वैश्विक सहकारी सम्मेलन भारत में आयोजित किया जाएगा।

- The event is scheduled from **November 25 to 30**.

यह कार्यक्रम **25 से 30 नवंबर** तक निर्धारित है।

- Cooperation Secretary **Ashish Kumar Bhutani** informed that around **3,000 delegates** are expected, with **1,000 delegates** from foreign countries.

**सहकारिता सचिव आशिष कुमार भूतानी** ने जानकारी दी कि इस कार्यक्रम में **3,000 प्रतिनिधियों** के शामिल होने की उम्मीद है, जिनमें से **1,000 विदेशी प्रतिनिधि** होंगे।

- **Bhutan Prime Minister Dasho Tshering Tobgay** and Fiji Deputy Prime Minister **Manoa Kamikamica** will attend as esteemed guests.

**भूटान के प्रधानमंत्री दाशो शेरिंग तोबगो** और **फिजी के उपप्रधानमंत्री मानोआ कामिकामिका** इस कार्यक्रम में विशिष्ट अतिथि के रूप में भाग लेंगे।





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- **Union Cooperation Minister Amit Shah** will attend the event on **November 25** and chair the inaugural session as the chief guest.  
सहकारिता मंत्री अमित शाह 25 नवंबर को कार्यक्रम में भाग लेंगे और उद्घाटन सत्र की अध्यक्षता करेंगे।
- Regarding Pakistan's participation, the Secretary stated, "More than **100 countries** are participating, and approvals for certain countries are being processed by the **Ministry of External Affairs.**"  
पाकिस्तान की भागीदारी पर सचिव ने कहा, "100 से अधिक देश भाग ले रहे हैं, और कुछ देशों के लिए अनुमति प्रक्रियाएं विदेश मंत्रालय द्वारा की जा रही हैं।"
- **Of all cooperatives globally, 25% are in India, providing an opportunity to showcase Indian cooperatives' strength.**  
दुनिया भर में सभी सहकारी समितियों में से 25% भारत में हैं, जो भारतीय सहकारी समितियों की ताकत दिखाने का अवसर प्रदान करता है।
- **IFFCO Managing Director U.S. Awasthi** mentioned that the event would be **carbon-neutral**, with **10,000 peepal trees planted across the country.**  
IFFCO के प्रबंध निदेशक यू.एस. अवस्थी ने बताया कि यह कार्यक्रम कार्बन-न्यूट्रल होगा और देश भर में 10,000 पीपल के पेड़ लगाए गए हैं।
- The **theme of the event is 'Cooperatives Build Prosperity of All'**, with sub-themes such as enabling policy and entrepreneurial ecosystems, nurturing purposeful leadership, and reaffirming the cooperative identity.  
कार्यक्रम का विषय है 'सहकारी समितियां सभी की समृद्धि का निर्माण करती हैं', जिसमें सहायक नीतियां और उद्यमशीलता पारिस्थितिकी तंत्र, नेतृत्व को सशक्त बनाना, और सहकारी पहचान को पुनः स्थापित करना जैसे उप-विषय शामिल हैं।

**Website: [patrioticias.in](http://patrioticias.in)**

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# Rock-cut footprints, human figure dating back to Megalithic period unearthed at Kerala's Kanhirapoil

**C.P. Sajit**

KASARAGOD

A remarkable archaeological discovery has come to light at Kanhirapoil in Madikkai grama panchayat of Kerala where 24 pairs of prehistoric footprints and a human figure have been found carved into rock on private property. Experts believe these carvings date back to the Megalithic period, providing a fascinating glimpse into ancient culture.

The find was first reported by local archaeology enthusiast Satheesan Kaliyanam recently, following which archaeologist Professor Ajith Kumar and history Professor Nanda-



**Archaeological discovery:** Megalithic era rock-cut footprints discovered at a private property in Kanhirapoil in Kasaragod.

kumar Koroth confirmed its significance during a site visit.

The carvings, made with iron tools, include footprints varying in size from six to 10 inches, sug-

gesting representations of both children and adults. At the end of the footprints, a human figure has been intricately etched, accompanied by four circular pits around it.

Mr. Kumar said that the footprints represent souls of dead people and have been carved out to honour them. All the footprints are pointing towards the west. However, local people believe these footmarks to be that of a goddess.

He further said these carvings bear similarities to prehistoric rock art found in Avalakki Pera in Udupi district in Karnataka. Notably, this discovery aligns with earlier findings in north Kerala, including a temple decoration at Erikulam Valiyapara in Kasaragod, a running tiger near Bangalam Government Higher Secondary School in Neeleswaram, human figures in Cheemeni Ariyit-

tapara, bull figures at Ettukudukka in Kannur, and the celebrated carvings at Edakkal Caves in Wayanad.

He said the 2,000-year-old rock art sheds light on the lives and artistic expressions of early inhabitants of Madikkai grama panchayat and Kerala as a whole.

These carvings and artefacts found here have long been attributed to the Megalithic period, indicating a shared cultural heritage in prehistoric north Kerala, Mr. Kumar said. He added that this discovery reinforces the historical significance of the area and invites further exploration into the region's ancient past.

## Rock-cut footprints, human figure dating back to Megalithic period unearthed at Kerala's Kanhirapoil

केरल के कन्हिरापोइल में मेगालिथिक काल के रॉक-कट पदचिह्न और मानव आकृति की खोज

### (GS Paper I: Ancient History)

- A remarkable archaeological discovery was made at **Kanhirapoil** in **Madikkai grama panchayat**, Kerala, where **24 pairs of prehistoric footprints** and a **human figure** were carved into rock on private property.

केरल के मदिक्कई ग्राम पंचायत के कन्हिरापोइल में एक अद्वितीय पुरातात्विक खोज की गई, जहां 24 जोड़े प्राचीन पदचिह्न और एक मानव आकृति निजी संपत्ति पर चट्टान में उकेरी गई।





- Experts believe these carvings **date back to the Megalithic period**, offering a glimpse into ancient culture.  
विशेषज्ञों का मानना है कि ये नक्काशियां **मेगालिथिक काल** की हैं, जो प्राचीन संस्कृति की झलक प्रदान करती हैं।
- The discovery was first reported by **Satheesan Kaliyanam**, a local archaeology enthusiast, and its significance was confirmed by archaeologist **Professor Ajith Kumar** and historian **Professor Nandakumar Koroth**.  
इस खोज की पहली जानकारी स्थानीय पुरातत्व उत्साही **सतीसन कलियानम** ने दी थी, और इसकी महत्ता की पुष्टि पुरातत्वविद् **प्रोफेसर अजीत कुमार** और इतिहासकार **प्रोफेसर नंदकुमार कोरोट** ने की।
- The carvings, made with **iron tools**, include footprints ranging in **size from 6 to 10 inches**, representing both children and adults.  
ये नक्काशियां **लोहे के औजारों** से बनाई गई हैं और इनमें **6 से 10 इंच** आकार के पदचिह्न शामिल हैं, जो बच्चों और वयस्कों दोनों का प्रतिनिधित्व करते हैं।
- At the end of the footprints, a **human figure** has been intricately etched, accompanied by **four circular pits** around it.  
पदचिह्नों के अंत में एक **मानव आकृति** को जटिल रूप से उकेरा गया है, जिसके चारों ओर **चार गोल गड्ढे** हैं।
- **Professor Kumar explained that the footprints symbolize the souls of dead people and were carved to honor them. All the footprints point westward.**  
प्रोफेसर कुमार ने बताया कि ये पदचिह्न **मृत लोगों की आत्माओं** का प्रतीक हैं और उन्हें सम्मानित करने के लिए उकेरे गए हैं। सभी पदचिह्न **पश्चिम दिशा** की ओर संकेत करते हैं।
- **Local people, however, believe these footmarks belong to a goddess.**  
हालांकि, स्थानीय लोगों का मानना है कि ये पदचिह्न एक **देवी** के हैं।
- These carvings are similar to **prehistoric rock art found in Avalakki Pera in Udupi district, Karnataka.**  
ये नक्काशियां **कर्नाटक के उडुपी जिले के अवलक्की पेरा** में पाए गए **प्रागैतिहासिक रॉक आर्ट** के समान हैं।
- The discovery aligns with earlier findings in **north Kerala**, such as:  
यह खोज **उत्तरी केरल** में पहले की गई खोजों से मेल खाती है, जैसे:
  - **Temple decoration** at Erikulam Valiyapara, Kasaragod.  
**कसरगोड के एरिकुलम वलियापारा** में मंदिर सजावट।
  - A **running tiger** near Bangalam Government Higher Secondary School, Neeleswaram.  
**नीलश्वरम के बंगालम सरकारी उच्चतर माध्यमिक विद्यालय** के पास दौड़ते हुए बाघ की आकृति।
  - **Human figures** in Cheemeni Ariyittapara.  
**चीमनी अरियिट्टापारा** में मानव आकृतियां।
  - **Bull figures** at Ettukudukka, Kannur.  
**कन्नूर के एट्टुकुडुक्का** में बैल की आकृतियां।
  - Celebrated carvings at **Edakkal Caves**, Wayanad.  
**वायनाड की एडक्कल गुफाओं** में प्रसिद्ध नक्काशियां।
- The **2,000-year-old rock art** sheds light on the lives and artistic expressions of early inhabitants of **Madikkai grama panchayat** and Kerala.





2,000 वर्ष पुराना रॉक आर्ट मदिक्कई ग्राम पंचायत और केरल के शुरुआती निवासियों के जीवन और कलात्मक अभिव्यक्तियों पर प्रकाश डालता है।

- These carvings and artefacts reflect a **shared cultural heritage** of **prehistoric north Kerala**, reinforcing the region's historical significance.

ये नक्काशियां और कलाकृतियां प्रागैतिहासिक उत्तरी केरल की साझा सांस्कृतिक विरासत को दर्शाती हैं और क्षेत्र के ऐतिहासिक महत्व को मजबूत करती हैं।

- This discovery invites further exploration into Kerala's **ancient past**. यह खोज केरल के प्राचीन अतीत की और अधिक खोज के लिए प्रेरित करती है।

## The Megalithic Period in India: An Overview

- The **Megalithic period** in India marks a distinct phase in the prehistoric and protohistoric periods, characterized by the construction of large stone structures known as **megaliths**.
- These were predominantly used as burial sites but also held ceremonial and social significance.
- This period spans roughly from **1000 BCE to 300 CE** and is especially prominent in peninsular India, though its influence extended to other regions as well.

### Key Features of the Megalithic Period:

- **Megalithic Structures:**
  - These structures were made using large, uncut or partially cut stones.
  - Types include dolmens, stone circles, cairns, and menhirs.
- **Burial Practices:**
  - Megalithic sites were often burial sites, containing skeletons along with grave goods such as pottery, tools, and ornaments.
  - The presence of iron objects in burials signifies advanced metallurgy.
- **Geographical Spread:**
  - Prominent in **southern India**, particularly in Tamil Nadu, Karnataka, Andhra Pradesh, and Kerala.
  - Found in **eastern India** (Odisha), the **northeast**, and **Kashmir**.
- **Use of Iron:**
  - The period saw the extensive use of **iron tools and weapons**, marking the transition from the Neolithic period.
- **Cultural Significance:**
  - Megaliths indicate complex social structures and rituals. The associated goods suggest trade networks and technological advancements.

### Megalithic Sites in India:

1. **Bhimbetka, Madhya Pradesh:** Known for its rock shelters and art, it contains megalithic burial sites.
2. **Adichanallur, Tamil Nadu:** A rich burial site with numerous artifacts, including pottery and iron implements.





3. **Hire Benkal, Karnataka:** Famous for its dolmens and stone circles.
4. **Jorwe, Maharashtra:** Combines megalithic and Chalcolithic traits.

#### **Importance of the Megalithic Period:**

- It bridges the gap between prehistory and the historical period.
- Provides insights into early human settlements, technology, and societal norms in India.

## **Curbs imposed on annual temple jathra in Bandipur Tiger Reserve**

**The Hindu Bureau**  
MYSURU

The Karnataka Forest Department has imposed restrictions on the annual jathra of Beladakuppe Sri Mahadeshwaraswamy Temple which is in the core area of Bandipur Tiger Reserve. This year's event will take place from November 23 to 25.

S. Prabhakaran, Director, Bandipur Tiger Reserve, said, "the ban on entry of private vehicles, which came into force a few years ago, will continue".

Meanwhile, temple trustees said they expected

nearly one lakh devotees to take part in the rituals.

The situation had come to such a pass in recent years that the core critical area of the tiger reserve used to resemble the site of a rural mela as temporary kiosks and stalls dealing with eatables, toys, etc., stages with colourful lights and loudspeakers used to be installed.

Though most of it has been banned over the years, what is of concern to conservation activists is that the movement of many people inside the critical area continues and this causes disturbance to the wildlife habitat.

**a few years ago, will continue.**

**एस. प्रभाकरण**, बांदीपुर टाइगर रिजर्व के निदेशक ने कहा कि **कुछ वर्ष पहले लगाया गया** निजी वाहनों के प्रवेश पर प्रतिबंध जारी रहेगा।

- Temple trustees expect nearly **one lakh devotees** to take part in the rituals this year. मंदिर के ट्रस्टियों का अनुमान है कि इस वर्ष लगभग **एक लाख श्रद्धालु** इन अनुष्ठानों में भाग लेंगे।
- In recent years, the **core critical area** of the tiger reserve had resembled a rural fair with **temporary kiosks**, stalls for eatables and toys, and stages with colourful lights and loudspeakers. हाल के वर्षों में, टाइगर रिजर्व का **महत्वपूर्ण क्षेत्र** ग्रामीण मेले जैसा दिखने लगा था, जिसमें **अस्थायी कियोस्क**, खाने-पीने और खिलौनों की दुकानें, रंगीन रोशनी और लाउडस्पीकर के साथ मंच शामिल थे।
- While most of these activities have been banned, conservation activists are concerned about the continued movement of many people inside the **critical area**, which disturbs the wildlife habitat.

## **Curbs imposed on annual temple jathra in Bandipur Tiger Reserve** **बांदीपुर टाइगर रिजर्व में वार्षिक मंदिर जात्रा पर प्रतिबंध लगाए गए**

- The Karnataka Forest Department has imposed restrictions on the **annual jathra of Beladakuppe Sri Mahadeshwaraswamy Temple located in the core area of Bandipur Tiger Reserve.**

कर्नाटक वन विभाग ने बेलदकुप्पे श्री महादेश्वरस्वामी मंदिर के वार्षिक जात्रा पर प्रतिबंध लगाए हैं, जो बांदीपुर टाइगर रिजर्व के कोर क्षेत्र में स्थित है।

- This year's event will take place from **November 23 to 25, 2024.**

इस वर्ष यह कार्यक्रम **23 से 25 नवंबर 2024** तक आयोजित होगा।

- **S. Prabhakaran**, Director, Bandipur Tiger Reserve, stated that the ban on entry of private vehicles, which was imposed





हालांकि इनमें से अधिकांश गतिविधियों पर प्रतिबंध लगाया गया है, लेकिन संरक्षण कार्यकर्ता महत्वपूर्ण क्षेत्र के अंदर लोगों की निरंतर आवाजाही को लेकर चिंतित हैं, जो वन्यजीव आवास को परेशान करता है।

**1. Bandipur Tiger Reserve**

- **Established:** 1973 (under Project Tiger)
- **Location:** Chamarajanagar district
- **Notable Features:** Part of the Nilgiri Biosphere Reserve; known for dry deciduous forests and rich biodiversity.
- **Flora and Fauna:** Includes teak, sandalwood, and Indian elephants.

**2. Nagarahole Tiger Reserve (Rajiv Gandhi National Park)**

- **Established:** 1999 (as a Tiger Reserve)
- **Location:** Mysuru and Kodagu districts
- **Notable Features:** Part of the Nilgiri Biosphere Reserve; includes dense forests and a healthy tiger population.
- **Flora and Fauna:** Tropical moist deciduous forests; includes leopards and dhole (Indian wild dog).

**3. Bhadra Tiger Reserve**

- **Established:** 1998
- **Location:** Chikkamagaluru and Shivamogga districts
- **Notable Features:** Known for its scenic beauty and the Bhadra River that flows through it.
- **Flora and Fauna:** Semi-evergreen and moist deciduous forests; home to gaurs and Malabar giant squirrels.

**4. Dandeli-Anshi Tiger Reserve (Kali Tiger Reserve)**

- **Established:** 2015 (renamed as Kali Tiger Reserve)
- **Location:** Uttara Kannada district
- **Notable Features:** Located in the Western Ghats, it includes the Anshi and Dandeli Wildlife Sanctuaries.
- **Flora and Fauna:** Evergreen forests; includes black panthers and hornbills.

**5. Bilgiri Rangaswamy Temple (BRT) Tiger Reserve**

- **Established:** 2011
- **Location:** Chamarajanagar district
- **Notable Features:** Part of the Eastern and Western Ghats junction; culturally significant due to the presence of the Biligiri Ranganatha Temple.
- **Flora and Fauna:** Evergreen and deciduous forests; home to tigers and sloth bears.

**Important Facts:**

- Karnataka has **5 Tiger Reserves**, and it is one of the top states in India in terms of tiger population.
- **Tiger Census 2018:** Karnataka had **524 tigers**, the second-highest after Madhya Pradesh.
- Karnataka's reserves are part of the **Western Ghats**, a UNESCO World Heritage Site.





## Beladakuppe Sri Mahadeshwaraswamy Temple

- The temple is dedicated to Lord Mahadeshwara, an incarnation of Lord Shiva.
- बेलडाकुप्पे कर्नाटक के मैसूर जिले में स्थित है।
- यह मंदिर भगवान महादेव (महादेश्वर) को समर्पित है, जो भगवान शिव का अवतार माने जाते हैं।

### Architectural Style

- The temple showcases the Dravidian style of architecture, known for its intricate carvings and tall gopurams (temple towers).  
मंदिर द्रविड़ वास्तुकला शैली में निर्मित है, जिसमें सुंदर नक्काशी और ऊंचे गोपुरम (मंदिर के शिखर) प्रमुख हैं।

### Historical Background

- The temple is believed to have been built during the reign of the Chola dynasty and later received patronage from the Hoysala rulers.  
यह मंदिर चोल साम्राज्य के शासनकाल के दौरान बनाया गया माना जाता है और बाद में इसे होयसल शासकों का संरक्षण प्राप्त हुआ।

### Religious Importance

- Lord Mahadeshwara is considered a protector and guide for devotees. The temple is a center for spiritual practices and festivals.
- Major festivals include Maha Shivaratri, when thousands of devotees gather to seek blessings.  
भगवान महादेश्वर को भक्तों का रक्षक और मार्गदर्शक माना जाता है। मंदिर में धार्मिक अनुष्ठान और त्योहार आयोजित होते हैं।  
महाशिवरात्रि जैसे प्रमुख त्योहारों पर हजारों श्रद्धालु यहां दर्शन करने आते हैं।

### 5. Cultural Significance

The temple is closely associated with the folklore of Karnataka. It celebrates traditions and values through rituals and annual events.

यह मंदिर कर्नाटक की लोक कथाओं से गहराई से जुड़ा है। यह परंपराओं और मूल्यों का उत्सव वार्षिक अनुष्ठानों के माध्यम से मनाता है।

### 6. Recent Updates

The Karnataka government, along with local authorities, has initiated several renovation projects to preserve the temple's heritage. Facilities for pilgrims have been enhanced, including better transportation and lodging.

कर्नाटक सरकार और स्थानीय प्राधिकरणों ने मंदिर की विरासत को संरक्षित करने के लिए कई पुनर्निर्माण परियोजनाएं शुरू की हैं। तीर्थयात्रियों के लिए परिवहन और आवास जैसी सुविधाओं में सुधार किया गया है।



## 'Global consensus must to face challenges in using AI for governance'

**The Hindu Bureau**  
CHENNAI

Global consensus is required in formulating regulations for using Artificial Intelligence (AI) in governance to face emerging challenges such as copyrights, data protection, and cyber vulnerability issues, and it is time to think of expanding the usage of AI to newer areas, said panellists at the *The Hindu* AI Summit 2024 here on Thursday.

During a panel discussion on the topic 'AI Driven Governance-Concept to Practical Application', moderated by Ramya Kannan, Chief of Bureau, Tamil Nadu, *The Hindu*, Supriya Sahu, Additional Chief Secretary, Department of Health and Family Welfare, Government of Tamil Nadu, said the Health Department, in 2022, had introduced AI in

diagnosing tuberculosis in six districts in the State.

"We have 45 mobile vans fitted with digital X-ray machines to go around in remote and inaccessible areas. Out of these, six vans have been fitted with an AI tool, and more than 56,000 people have been screened by this tool in the last two years. The rate of detection, in comparison to the traditional models, is twice, and it is as precise as it would be done manually."

### Expanding use

Ms. Sahu said it is time to think of expanding the use of AI to newer areas.

"We were wondering what we can do to prevent elephant deaths on railway tracks in Coimbatore district, where the railway tracks pass through the forest and divide two reserve forest patches. Elephants migrate from one patch to



**Call for regulation:** Thamaraiselvan S., AVP, Infosoc Governance; Hasti Trivedi, President, Chief Digital and AI Officer, Firstsource; B. Ravindran, head, Department of Data Science and AI, IIT-M; and Supriya Sahu, Additional Chief Secretary, Department of Health and Family Welfare, at a session moderated by Ramya Kannan (left), Chief of Bureau, Tamil Nadu, *The Hindu*, in Chennai on Thursday. AKHILA EASWARAN

another to drink water and forage. There were accidents resulting in the death of elephants. But AI came to our rescue," she said.

She said in the health sector, AI had the potential to play an important role in screening refractive eye errors among children and detecting pregnancy-induced hypertension (PIH).

Stressing the need to

build adequate digital infrastructure before AI can have an impact, B. Ravindran, head, Data Science and Artificial Intelligence, Indian Institute of Technology-Madras, urged governments to actively work towards this.

"AI is not a single technology, but a slew of different things. We don't need AI to solve all problems.

We have to figure out what is the right solution that we need, especially in governance... What we see in most of the places where AI has made an impact, the actual AI solution itself is about 20 to 30% of the system," he said.

### A note of caution

He also sounded a note of caution that pushing the

current state of AI models into governance would institutionalise models and is likely to ignore our cultural map. "We can talk about building AI models for the Indian condition. But we need to put in a lot of effort trying to build these safeguards for India. There is so much that is unique, like language, cuisine, literature to every State and re-

gion in this country that we need to capture." He also said the Union government is planning to set up an AI safety institute soon.

Hasit Trivedi, president, Chief Digital and AI Officer, Firstsource, said India has taken the lead in getting a global consensus on AI in governance.

"The bias, fairness, and risks have always been there since the birth of AI. But new things which came because of generative AI are copyright issues, data protection issues, and cyber vulnerability, and they require global consensus... From the Indian context, we have to be very careful because we should not be exporting the data. Data protection, usage, and localisation are extremely critical. I think we should ensure that we as a country do not become digital slaves."

He also said, only the United States of America,

China, and India have the potential to create AI technologies. "The U.S. has already created AI. China is in the race. India is the potential third country which can make a meaningful contribution to global AI."

S. Thamaraiselvan, Assistant Vice-President, Infosoc Governance, Hexaware, said: "The accuracy of the output that AI provides depends on the amount of data fed. In this context, we are already witnessing the digitisation in government sectors that is yielding results in terms of the efficiencies in consuming various services... Indians are the largest consumers of generative AI today. But we should explore how India can become a generator of AI technologies rather than consuming it. Even if we are consuming the data, we should explore to localise it to the Indian context."

## Global consensus must to face challenges in using AI for governance

### शासन में AI के उपयोग से उत्पन्न चुनौतियों से निपटने के लिए

### वैश्विक सहमति आवश्यक

- **Global consensus** is required for formulating regulations on Artificial Intelligence (AI) usage in governance to address challenges like **copyrights, data protection, and cyber vulnerabilities**. Expanding AI to new areas is also needed, said panellists at **The Hindu AI Summit 2024** on Thursday.

शासन में AI के उपयोग के लिए नियम बनाने हेतु वैश्विक सहमति आवश्यक है, ताकि कॉपीराइट्स, डेटा सुरक्षा, और साइबर खामियों जैसी चुनौतियों का समाधान किया जा सके। हिंदू AI शिखर सम्मेलन 2024 में गुरुवार को विशेषज्ञों ने यह बात कही।

- During the panel discussion on 'AI Driven Governance-Concept to Practical Application', Supriya Sahu, **Additional Chief Secretary**, Department of Health and





Family Welfare, Tamil Nadu, highlighted the use of AI in **diagnosing tuberculosis** in six districts in **2022**.

‘AI संचालित शासन - अवधारणा से व्यावहारिक अनुप्रयोग तक’ विषय पर चर्चा के दौरान, तमिलनाडु के स्वास्थ्य और परिवार कल्याण विभाग की अतिरिक्त मुख्य सचिव सुप्रिया साहू ने बताया कि **2022** में **छह जिलों** में टीबी का निदान करने के लिए AI का उपयोग किया गया।

- Tamil Nadu Health Department deployed **45 mobile vans** equipped with **digital X-ray machines**, with **six vans** integrated with AI tools. In the last **two years**, **56,000 people** were screened, achieving **double the detection rate** compared to traditional models, with manual-level precision.

तमिलनाडु स्वास्थ्य विभाग ने **45 मोबाइल वैन** लगाई हैं, जिनमें **डिजिटल एक्स-रे मशीनें** हैं, और इनमें से **छह वैन** में AI उपकरण लगाए गए हैं। पिछले **दो वर्षों** में, इन उपकरणों से **56,000 लोगों** की जांच की गई, और **पारंपरिक मॉडलों** की तुलना में **दोगुनी पहचान दर** हासिल की गई, जो **मैन्युअल स्तर** की सटीकता प्रदान करती है।

- Ms. Sahu emphasized the need to expand AI applications into newer areas. She cited **AI's role in preventing elephant deaths on railway tracks in Coimbatore district**, where tracks divide **two reserve forest patches**.

सुप्रिया साहू ने AI अनुप्रयोगों को **नए क्षेत्रों** में विस्तारित करने की आवश्यकता पर जोर दिया। उन्होंने बताया कि **कोयंबटूर जिले** में रेल पटरियों पर **हाथियों की मौतों** को रोकने में AI ने कैसे मदद की, जहां पटरियां **दो संरक्षित वन क्षेत्रों** को विभाजित करती हैं।

- In the **health sector**, AI has significant potential for screening **refractive eye errors in children** and detecting **pregnancy-induced hypertension (PIH)**.

स्वास्थ्य क्षेत्र में, बच्चों में **आंखों की अपवर्तक त्रुटियाँ** और **गर्भावस्था के कारण होने वाले उच्च रक्तचाप (PIH)** का पता लगाने में AI की बड़ी भूमिका हो सकती है।

- **B. Ravindran**, head of Data Science and AI, **IIT-Madras**, stressed the importance of building adequate **digital infrastructure** for effective AI implementation. He pointed out that AI is not a **single technology** but a combination of several technologies, and its solutions typically constitute **20-30% of the system**.

**बी. रविंद्रन**, डेटा विज्ञान और AI प्रमुख, **IIT-मद्रास**, ने प्रभावी AI कार्यान्वयन के लिए **डिजिटल इन्फ्रास्ट्रक्चर** को मजबूत बनाने पर जोर दिया। उन्होंने कहा कि AI **एकल तकनीक** नहीं है बल्कि कई तकनीकों का संयोजन है, और इसके समाधान आमतौर पर **20-30% सिस्टम** में योगदान देते हैं।

## A Note of Caution

### सावधानी का संकेत

- He also sounded a note of caution that pushing the current state of **AI models into governance** would institutionalize models and is likely to ignore India's **cultural map**. उन्होंने यह भी चेतावनी दी कि वर्तमान **एआई मॉडलों** को शासन में लागू करने से ये मॉडल संस्थागत हो सकते हैं और भारत की **सांस्कृतिक संरचना** को नजरअंदाज कर सकते हैं।
- “We can talk about building AI models for the **Indian condition**, but we need to put in a lot of effort to build safeguards for **India**. There is so much that is unique, like **language, cuisine, and literature** to every state and region in the country, that needs to be captured.”





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"हम भारतीय परिस्थितियों के लिए एआई मॉडल बनाने की बात कर सकते हैं, लेकिन इसके लिए हमें भारत के लिए सुरक्षा उपाय विकसित करने में बहुत प्रयास करना होगा। यहां हर राज्य और क्षेत्र में भाषा, व्यंजन और साहित्य जैसे अद्वितीय पहलू हैं जिन्हें संरक्षित करना जरूरी है।"

- He also mentioned that the **Union government** is planning to set up an **AI safety institute** soon.  
उन्होंने यह भी बताया कि केंद्र सरकार जल्द ही एक एआई सुरक्षा संस्थान स्थापित करने की योजना बना रही है।
- **Hasit Trivedi**, President, Chief Digital and AI Officer, Firstsource, said that **India** has taken the lead in getting a **global consensus** on AI in governance.  
हसित त्रिवेदी, अध्यक्ष और चीफ डिजिटल और एआई अधिकारी, फर्स्टसोर्स, ने कहा कि भारत ने शासन में एआई के लिए वैश्विक सहमति प्राप्त करने में नेतृत्व किया है।
- "The **bias, fairness, and risks** have always existed since the birth of AI. But with **generative AI**, new challenges like **copyright issues, data protection issues, and cyber vulnerabilities** have emerged, which require a global consensus."  
"एआई के जन्म से ही पक्षपात, निष्पक्षता और जोखिम मौजूद रहे हैं। लेकिन जनरेटिव एआई के साथ कॉपीराइट मुद्दे, डेटा सुरक्षा, और साइबर कमजोरियां जैसी नई चुनौतियां सामने आई हैं, जो वैश्विक सहमति की मांग करती हैं।"
- He emphasized that **data protection, usage, and localization** are critical to ensure India does not become a **digital slave**.  
उन्होंने जोर दिया कि डेटा संरक्षण, उपयोग, और स्थानीयकरण महत्वपूर्ण हैं ताकि भारत डिजिटल गुलाम न बन जाए।
- He stated that **only the U.S., China, and India** have the potential to create **AI technologies**.  
उन्होंने कहा कि केवल अमेरिका, चीन, और भारत के पास एआई तकनीकों को विकसित करने की क्षमता है।
- "The U.S. has already created AI, China is in the race, and **India** is the potential **third country** that can make a meaningful contribution to global AI."  
"अमेरिका पहले ही एआई विकसित कर चुका है, चीन इस दौड़ में है, और भारत वह तीसरा संभावित देश है जो वैश्विक एआई में सार्थक योगदान दे सकता है।"
- **S. Thamaraiselvan**, Assistant Vice-President, Infosec Governance, Hexaware, said the accuracy of AI's output depends on the **amount of data** fed.  
एस. थमराईसेलवन, असिस्टेंट वाइस-प्रेसिडेंट, इंफोसेक गवर्नेंस, हेक्सावेयर, ने कहा कि एआई के आउटपुट की सटीकता उसमें दी गई डेटा की मात्रा पर निर्भर करती है।
- He highlighted that digitization in **government sectors** is yielding results in terms of **efficiency in consuming services**.  
उन्होंने बताया कि सरकारी क्षेत्रों में डिजिटलाइजेशन सेवाओं की दक्षता के मामले में परिणाम दे रहा है।
- He said **Indians are the largest consumers of generative AI** today, but the country should aim to become a **generator of AI technologies**.  
उन्होंने कहा कि आज भारतीय जनरेटिव एआई के सबसे बड़े उपभोक्ता हैं, लेकिन देश को एआई तकनीकों के उत्पादक बनने का लक्ष्य रखना चाहिए।

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- “Even if we are consuming data, we should explore how to **localize it to the Indian context.**”  
"अगर हम डेटा का उपभोग भी कर रहे हैं, तो हमें इसे **भारतीय संदर्भ** में स्थानीय बनाने के तरीके तलाशने चाहिए।"

## ‘T.N. govt. to set up centre of excellence with AI lab’

Its services will be offered to start-ups and other small players for a low operation fee, says Kumar Jayant, Additional Chief Secretary, Department of Information Technology and Digital Services

**The Hindu Bureau**  
CHENNAI

**T**he Tamil Nadu government will set up a Centre of Excellence with an Artificial Intelligence (AI) lab and will offer this to start-ups and other small players with a minimal operation fee, said Kumar Jayant, Additional Chief Secretary, Department of Information Technology and Digital Services, Government of Tamil Nadu.

Delivering his keynote address after inaugurating *The Hindu* AI Summit 2024, Mr. Jayant highlighted that the State recently announced its AI mission, and said that he would speak to the ICT Academy and explore how AI could be built into academics. ICT Academy is a not-for-profit, Government of India initiative that aims at training higher education teachers and students.

Speaking about the impact of AI on specific sectors, Mr. Jayant said: “One sector that has totally transformed is how we consume information. If you search for anything on Google, it gives an AI overview.” He, however, added: “One of the biggest issues is bias, such as algorithm-based bias and basic cognitive bias.”



**Leveraging technology:** Kumar Jayant speaking at the inaugural of the *The Hindu* AI Summit 2024 in Chennai. AKHILA EASWARAN

Santhosh T.G., secretary of the CIO Association, said that though AI had been around for several decades, it has now emerged in a new avatar. We need to understand its capabilities and explore its full potential, he said.

### Challenges ahead

Suresh Raman, convenor, CII TN ICT Panel and vice president and regional head, Tata Consultancy Services, said Tamil Nadu has always been ahead of the curve and has come out with policies pertaining to AI. Pointing out the challenges ahead, he said: “The real challenges lie in end-to-end infrastructure for IT for AI to freely scale. When I say infrastructure, I’m talking about infrastructure for AI training it-

self, and it is not as easy as it appears. The cost of AI hardware is going to be so high. Eventually, the hardware cost will come down.”

L.V. Navaneeth, CEO of The Hindu Group, said that AI is no longer a thing of the distant future; it is here and is shaping the way we live, work, and innovate. “While some important voices have argued that the impact of AI on humanity is likely to be as fundamental as fire, others have cautioned that, without the right guardrails, it could turn out to be an uncontrollable, raging wildfire,” he added.

A robot warmly greeted the guests upon arrival, offering a unique and innovative welcome experience at the event.



**T**he event is presented by the SRM Institute of Science and Technology and powered by Sify, in association with ManageEngine.

The Confederation of Indian Industry is the industry partner, and CIO Association is the strategic partner.

RetailGPT is the phygital commerce partner for the summit; Tamil Nadu Health Systems Project is the healthcare partner, and LatentView Analytics is the data analytics partner. Tamil Nadu Technology Hub has been roped in as the digital transformation partner while Tamil Nadu Skill Development Corporation has come in as the skilling partner.

Chennai Metro Rail Limited is the mobility partner, and the TV partner is *Puthiya Thalaimurai*.

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## **T.N. Govt. to Set Up Centre of Excellence with AI Lab** **तमिलनाडु सरकार एआई लैब के साथ उत्कृष्टता केंद्र स्थापित करेगी**

- The Tamil Nadu government will set up a **Centre of Excellence with an Artificial Intelligence (AI) lab** and offer its services to start-ups and other small players for a **minimal operation fee**, said Kumar Jayant, Additional Chief Secretary, Department of Information Technology and Digital Services.  
तमिलनाडु सरकार **आर्टिफिशियल इंटेलिजेंस (AI) लैब** के साथ एक **उत्कृष्टता केंद्र** स्थापित करेगी और इसे **न्यूनतम संचालन शुल्क** पर स्टार्ट-अप्स और छोटे खिलाड़ियों को उपलब्ध कराएगी, ऐसा कुमार जयंती, अतिरिक्त मुख्य सचिव, सूचना प्रौद्योगिकी और डिजिटल सेवाएं विभाग ने कहा।
- Delivering his keynote address at the **Hindu AI Summit 2024**, Mr. Jayant mentioned the **recent announcement of Tamil Nadu's AI mission** and plans to explore the integration of AI into academics through **ICT Academy**.  
हिंदू एआई समिट 2024 में अपना मुख्य वक्तव्य देते हुए, श्री जयंती ने **तमिलनाडु के एआई मिशन की हाल की घोषणा** और **आईसीटी अकादमी** के माध्यम से अकादमिक में एआई के एकीकरण की योजनाओं का उल्लेख किया।
- ICT Academy is a **not-for-profit initiative** by the Government of India aimed at training higher education teachers and students.  
**आईसीटी अकादमी**, भारत सरकार की एक **गैर-लाभकारी पहल** है, जिसका उद्देश्य उच्च शिक्षा के शिक्षकों और छात्रों को प्रशिक्षण देना है।
- Speaking on AI's impact on sectors, Mr. Jayant remarked on the **transformation in information consumption**, adding concerns about **algorithm-based and cognitive biases**.  
एआई के प्रभाव पर चर्चा करते हुए, श्री जयंती ने **सूचना खपत में परिवर्तन** का उल्लेख किया और **एल्गोरिदम आधारित और संज्ञानात्मक पक्षपात** के मुद्दों पर चिंता व्यक्त की।
- Santhosh T.G., Secretary of the CIO Association, noted that while AI has been around for decades, it has emerged in a **new avatar** and requires understanding of its **capabilities and potential**.  
संतोष टी.जी., सीआईओ एसोसिएशन के सचिव, ने कहा कि भले ही एआई कई दशकों से मौजूद है, लेकिन यह एक **नए रूप** में उभरा है और इसकी **क्षमताओं और संभावनाओं** को समझने की आवश्यकता है।

### **Challenges Ahead**

#### **आगे की चुनौतियां**

- Suresh Raman, convenor of the **CII TN ICT Panel** and vice president at Tata Consultancy Services, emphasized challenges like **end-to-end AI infrastructure** and **high hardware costs**, predicting eventual reductions.  
सुरेश रमण, **सीआईआई टीएन आईसीटी पैनल** के संयोजक और टाटा कंसल्टेंसी सर्विसेज के उपाध्यक्ष, ने





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एआई प्रशिक्षण के लिए बुनियादी ढांचे और उच्च हार्डवेयर लागतों जैसी चुनौतियों पर जोर दिया और भविष्य में इनके कम होने की संभावना व्यक्त की।

- L.V. Navaneeth, CEO of The Hindu Group, remarked on AI's profound impact on life, comparing its significance to **fire** while cautioning about potential risks of an **uncontrollable wildfire** without proper safeguards.

द हिंदू ग्रुप के सीईओ एल.वी. नवनीत ने एआई के जीवन पर गहरे प्रभाव का उल्लेख करते हुए इसे **आग** की तरह महत्वपूर्ण बताया, लेकिन उचित सुरक्षा उपायों के बिना इसे **अनियंत्रित जंगल की आग** बनने की चेतावनी दी।

- At the event, a **robot welcomed guests**, offering a unique and innovative experience. कार्यक्रम में एक **रोबोट ने मेहमानों का स्वागत किया**, जिससे एक अनूठा और अभिनव अनुभव प्रदान हुआ।

## Partnerships for the Event

### कार्यक्रम के लिए साझेदार

- The event was presented by **SRM Institute of Science and Technology** and powered by **Sify**, with associations from **ManageEngine**, **CII**, and **CIO Association**.

इस कार्यक्रम को **एसआरएम विज्ञान और प्रौद्योगिकी संस्थान** द्वारा प्रस्तुत किया गया और **सिफी** द्वारा संचालित किया गया, जिसमें **मैनेजइंजन**, **सीआईआई**, और **सीआईओ एसोसिएशन** से जुड़ी साझेदारियां थीं।

- **RetailGPT** was the **phygital commerce partner**, Tamil Nadu Health Systems Project served as the **healthcare partner**, and **LatentView Analytics** was the **data analytics partner**.

**रीटेलजीपीटी फिजिटल कॉमर्स पार्टनर** था, तमिलनाडु हेल्थ सिस्टम्स प्रोजेक्ट ने **स्वास्थ्य सेवा पार्टनर** के रूप में कार्य किया, और **लेटन्टव्यू एनालिटिक्स डेटा एनालिटिक्स पार्टनर** था।

- Tamil Nadu Technology Hub and Tamil Nadu Skill Development Corporation contributed as the **digital transformation and skilling partners**, respectively.

तमिलनाडु टेक्नोलॉजी हब और तमिलनाडु स्किल डेवलपमेंट कॉर्पोरेशन ने क्रमशः **डिजिटल ट्रांसफॉर्मेशन और स्किलिंग पार्टनर्स** के रूप में योगदान दिया।

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# 'Students must learn to adapt to new technology for industrial adaptability'

GS Paper III: S&T

**The Hindu Bureau**  
CHENNAI

Students must learn to adapt to new technology and equip themselves with artificial intelligence (AI) skills for industrial adaptability, Revathi Venkataraman, chairperson, School of Computing, SRMIST, said here on Thursday.

In a fireside chat on 'Empowering Students in the Age of AI: Skills for Tomorrow's Innovators' with Srinivasan Ramani, Deputy National Editor, *The Hindu*, as part of *The Hindu* AI Summit 2024, she said while the core engineering subjects were leveraging AI tools now, it was essential for engineering professionals to focus on fundamental engineering skills, such



**Stress on skilling:** Revathi Venkataraman, chairperson, School of Computing, SRMIST, in conversation with Srinivasan Ramani, Deputy National Editor, *The Hindu*. AKHILA EASWARAN

as creative thinking and problem solving. She stressed that AI skills could be a complementary tool and not a replacement.

To a question posed by Mr. Ramani on whether AI has been incorporated in

the curriculum of other disciplines, she said Gen AI and design thinking had been included in the course curriculum of all the disciplines in SRM Institutions. Students also gain hands-on experience

through various multi-disciplinary projects.

## **Ethics and AI**

Speaking about AI ethics training for students, Ms. Venkataraman said it had been interwoven into their curriculum, and that students were often questioned about the ethical interpretations of their projects. They were also guided towards contributing to sustainable development goals. Gen AI tools were now used by both students and teachers, she added.

Earlier, Mr. Ramani observed that AI had evolved beyond technology and had democratised knowledge to a wider range of people through the use of various applications.

## 'Students must learn to adapt to new technology for industrial adaptability'

## 'छात्रों को औद्योगिक अनुकूलता के लिए नई प्रौद्योगिकी के साथ अनुकूलित होना सीखना चाहिए'

- Students must learn to adapt to new technology and equip themselves with artificial intelligence (AI) skills for industrial adaptability, said Revathi Venkataraman, chairperson, School of Computing, SRMIST, on Thursday.

छात्रों को नई प्रौद्योगिकी के साथ अनुकूलित होना सीखना चाहिए और औद्योगिक अनुकूलता के लिए कृत्रिम बुद्धिमत्ता (AI) कौशल से लैस होना चाहिए, जैसा कि रेवाथी वेंकटारामन, अध्यक्ष, स्कूल ऑफ कंप्यूटिंग, SRMIST ने गुरुवार को कहा।

- In a fireside chat on 'Empowering Students in the Age of AI: Skills for Tomorrow's Innovators' with Srinivasan Ramani, Deputy National Editor, *The Hindu*, as part of *The Hindu* AI Summit 2024, she said **while the core engineering subjects were leveraging AI tools now, it was essential for engineering professionals to focus on fundamental engineering skills, such as creative thinking and problem solving.**





'The Hindu AI Summit 2024' के तहत श्रीनिवासन रामानी, डिप्टी नेशनल एडिटर, द हिंदू के साथ 'AI के युग में छात्रों को सशक्त बनाना: कल के इन्वेंटर्स के लिए कौशल' पर एक संवाद सत्र में उन्होंने कहा कि हालांकि अब मुख्य इंजीनियरिंग विषय **AI उपकरणों** का उपयोग कर रहे हैं, यह इंजीनियरिंग पेशेवरों के लिए **मौलिक इंजीनियरिंग कौशल** पर ध्यान केंद्रित करना आवश्यक है, जैसे कि **रचनात्मक सोच** और **समस्या हल करना**।

- She stressed that AI skills could be a complementary tool and not a replacement. उन्होंने जोर दिया कि AI कौशल एक सहायक उपकरण हो सकता है, न कि एक प्रतिस्थापन।
- To a question posed by Mr. Ramani on whether AI has been incorporated in the curriculum of other disciplines, she said Gen AI and design thinking had been included in the course curriculum of all the disciplines in SRM Institutions.

श्रीरामानी द्वारा पूछे गए एक सवाल के जवाब में कि क्या AI अन्य विषयों के पाठ्यक्रम में शामिल किया गया है, उन्होंने कहा कि **Gen AI** और **डिज़ाइन थिंकिंग** को SRM संस्थानों के सभी विषयों के पाठ्यक्रम में शामिल किया गया है।

- Students also gain hands-on experience through various multi-disciplinary projects. छात्रों को विभिन्न **बहु-विषयक परियोजनाओं** के माध्यम से **व्यावहारिक अनुभव** भी मिलता है।
- Speaking about AI ethics training for students, Ms. Venkataraman said it had been interwoven into their curriculum, and that students were often questioned about the ethical interpretations of their projects.

छात्रों के लिए AI **नैतिकता प्रशिक्षण** पर बोलते हुए, श्रीमती वेंकटारामन ने कहा कि इसे उनके पाठ्यक्रम में समाहित किया गया है, और छात्रों से अक्सर उनके परियोजनाओं के **नैतिक व्याख्याओं** के बारे में सवाल पूछे जाते हैं।

- They were also guided towards contributing to sustainable development goals. उन्हें **सतत विकास लक्ष्यों** में योगदान देने की दिशा में भी मार्गदर्शन दिया जाता है।
- Gen AI tools were now used by both students and teachers, she added. उन्होंने कहा कि अब **Gen AI उपकरण** छात्रों और शिक्षकों दोनों द्वारा उपयोग किए जाते हैं।
- Earlier, Mr. Ramani observed that AI had evolved beyond technology and had democratized knowledge to a wider range of people through the use of various applications.

इससे पहले श्रीरामानी ने देखा कि AI अब केवल प्रौद्योगिकी से परे विकसित हो चुका है और विभिन्न अनुप्रयोगों के उपयोग के माध्यम से ज्ञान को अधिक व्यापक रूप से लोगों तक पहुंचाया है।





# 'Human intervention and ethical considerations are essential to AI'

GS Paper IV: Ethics

**The Hindu Bureau**  
CHENNAI

While artificial intelligence (AI) has made significant strides in transforming industries and improving efficiency, there are areas where human intervention remains essential – this was the perspective shared by panellists at the session 'Transition from Hope to Reality: Navigating AI Challenges' during *The Hindu* AI Summit 2024.

"No one expected that GenAI would creep into all fields. Today, it has taken centre stage in the education sector and cine industry," Manjunath Prasad, Head, IT Operations, TVS Mobility, said. "There is a general conception that GenAI can do everything –



**Addressing challenges:** Manjunath Prasad, Head, IT Operations, TVS Mobility, Roopesh Kumar, Head, Data Centre Projects, Sify Infinit Spaces Ltd, Srinivasan A.N., VP-Information Technology, SRF Limited, and Annie Uthra, Head, Department of Computational Intelligence at SRMIST, at the session moderated by Suresh Vijayaraghavan, CTO, The Hindu Group. AKHILA EASWARAN

it cannot do everything. Giving the right input and the right data matters," he added. Mr. Prasad pointed out that human skill is needed to review whether we are on the right track.

The panel, moderated by Suresh Vijayaraghavan,

Chief Technology Officer (CTO), The Hindu Group, also spoke about specialists required to handle operations and manage AI. "GenAI is not just a simple programme. You need to consider the data, the security, and what gateway

you are going to use," said Srinivasan A.N., VP-Information Technology, SRF Limited.

"You need a domain specialist, a data scientist to manage the data, a software guy to integrate AI with the system," he added.

Roopesh Kumar, Head, Data Centre Projects, Sify Infinit Spaces Ltd, pointed out how digitisation is often confused with AI. "The resource required for digitisation is far lower than AI," he said.

Annie Uthra, Head, Department of Computational Intelligence at SRMIST, said GenAI was growing fast. "To cope with those changes, we have been upskilling students and faculty," she said.

## 'Human intervention and ethical considerations are essential to AI'

## 'मानव हस्तक्षेप और नैतिक विचार AI के लिए आवश्यक हैं'

- While artificial intelligence (AI) has made significant strides in transforming industries and improving efficiency, there are areas where human intervention remains essential — this was the perspective shared by panellists at the session 'Transition from Hope to Reality: Navigating AI Challenges' during *The Hindu* AI Summit 2024.

कृत्रिम बुद्धिमत्ता (AI) ने उद्योगों को बदलने और दक्षता सुधारने में महत्वपूर्ण प्रगति की है, लेकिन कुछ ऐसे क्षेत्र हैं जहाँ मानव हस्तक्षेप आवश्यक है — यह दृष्टिकोण 'Transition from Hope to Reality:

**Navigating AI Challenges'** सत्र में पैनलिस्टों द्वारा साझा किया गया था, जो **The Hindu AI Summit 2024** के दौरान हुआ था।

- "No one expected that GenAI would creep into all fields. Today, it has taken centre stage in the education sector and cine industry," Manjunath Prasad, Head, IT Operations, TVS Mobility, said.





“कोई नहीं सोचता था कि **GenAI** सभी क्षेत्रों में फैल जाएगा। आज, इसने शिक्षा क्षेत्र और सिनेमाई उद्योग में मुख्य भूमिका ले ली है,” मंजुनाथ प्रसाद, प्रमुख, आईटी संचालन, **TVS Mobility** ने कहा।

- “**There is a general conception that GenAI can do everything — it cannot do everything. Giving the right input and the right data matters,**” he added.

“यह सामान्य अवधारणा है कि **GenAI** सब कुछ कर सकता है — यह सब कुछ नहीं कर सकता। सही इनपुट और सही डेटा देना महत्वपूर्ण है,” उन्होंने जोड़ा।

- Mr. Prasad pointed out that human skill is needed to review whether we are on the right track.

श्री प्रसाद ने यह बताया कि यह **मानव कौशल** आवश्यक है कि यह जांचने के लिए कि हम सही रास्ते पर हैं या नहीं।

- The panel, moderated by Suresh Vijayaraghavan, Chief Technology Officer (CTO), The Hindu Group, also spoke about specialists required to handle operations and manage AI.

सत्र का संचालन **सुरेश विजयाराघवन**, मुख्य प्रौद्योगिकी अधिकारी (CTO), **The Hindu Group** ने किया, जिन्होंने ऑपरेशनों को संभालने और AI का प्रबंधन करने के लिए आवश्यक विशेषज्ञों के बारे में भी बात की।

- “**GenAI is not just a simple programme. You need to consider the data, the security, and what gateway you are going to use,**” said Srinivasan A.N., VP-Information Technology, SRF Limited.

“**GenAI** सिर्फ एक साधारण प्रोग्राम नहीं है। आपको **डेटा, सुरक्षा, और जिस गेटवे का आप उपयोग करेंगे, उसे ध्यान में रखना होगा,**” श्रीनिवासन ए.एन., वीपी-इन्फॉर्मेशन टेक्नोलॉजी, **SRF लिमिटेड** ने कहा।

- “**You need a domain specialist, a data scientist to manage the data, a software guy to integrate AI with the system,**” he added.

“आपको एक **डोमेन विशेषज्ञ, एक डेटा वैज्ञानिक को डेटा प्रबंधित करने के लिए, और एक सॉफ्टवेयर विशेषज्ञ को AI को सिस्टम से जोड़ने के लिए चाहिए,**” उन्होंने जोड़ा।

- Roopesh Kumar, Head, Data Centre Projects, Sify Infinit Spaces Ltd, pointed out how digitisation is often confused with AI. “The resource required for digitisation is far lower than AI,” he said.

**Roopesh Kumar**, प्रमुख, डेटा सेंटर प्रोजेक्ट्स, **Sify Infinit Spaces Ltd**, ने यह बताया कि कैसे **डिजिटलीकरण** को अक्सर **AI** से भ्रमित किया जाता है। “डिजिटलीकरण के लिए आवश्यक **संसाधन AI** की तुलना में बहुत कम हैं,” उन्होंने कहा।

- Annie Uthra, Head, Department of Computational Intelligence at SRMIST, said GenAI was growing fast. “To cope with those changes, we have been upskilling students and faculty,” she said.

**Annie Uthra**, प्रमुख, **SRMIST** में कम्प्यूटेशनल इंटेलिजेंस विभाग, ने कहा कि **GenAI** तेजी से बढ़ रहा है। “उन परिवर्तनों के साथ तालमेल बिठाने के लिए, हम छात्रों और फैकल्टी को **अपस्किलिंग** कर रहे हैं,” उन्होंने कहा।





# 'To fight AI's dark side, use artificial intelligence'

GS Paper III: S&T

**The Hindu Bureau**

CHENNAI

Like the saying goes, "Set a thief to catch a thief," one can use Artificial Intelligence (AI) to combat AI, Sujatha Iyer, Head of AI Security ManageEngine said at *The Hindu AI Summit 2024*.

"ChatGPT and Large Language Model (LLM) are increasing productivity levels. But there is a dark side to LLMs too. There are similar platforms which are used to generate convincing phishing campaigns. You won't even have a suspicion that it is a phishing campaign," she said during a fireside chat with Suresh Vijayaraghavan Chief Technology Officer of *The Hindu Group* on the topic 'AI in Cybersecurity: Building Next-Generation Defences Against Emerging Threats.'

Ms. Iyer further said, "If you look at the scenario today, digital has become the first touch point of every business. There is a lot of emphasis and momentum on security and privacy."

She pointed out that given the digitisation speed.. not every employee is going to be digitally aware.. so there are chances of phishing campaigns and people inadvertently enter their credentials online. In such cases AI will help you take a stand – they see suspicious sites and alert you, she added. AI helps take the next big action, she said adding that it is important to monitor your sample set to see if there is any drift in data.

बनाने के लिए किया जाता है। आपको यह भी शक नहीं होगा कि यह एक फिशिंग अभियान है," उन्होंने **Suresh Vijayaraghavan**, मुख्य प्रौद्योगिकी अधिकारी, **The Hindu Group** के साथ 'AI in Cybersecurity: Building Next-Generation Defences Against Emerging Threats' विषय पर हुई चर्चा में कहा।

**'To fight AI's dark side, use artificial intelligence'**

**'AI के अंधेरे पक्ष से लड़ने के लिए कृत्रिम बुद्धिमत्ता का उपयोग करें'**



**AI versus AI:** Sujatha Iyer, head of AI Security, ManageEngine, at *The Hindu AI Summit 2024*. R. RAGU

• Like the saying goes, "**Set a thief to catch a thief,**" one can use **Artificial Intelligence (AI)** to combat **AI**, **Sujatha Iyer**, Head of **AI Security ManageEngine** said at **The Hindu AI Summit 2024**.

जैसा कि कहा जाता है, "चोर को पकड़ने के लिए चोर को लगाओ," **कृत्रिम बुद्धिमत्ता (AI)** का उपयोग **AI** से लड़ने के लिए किया जा सकता है, **Sujatha Iyer**, प्रमुख, **AI Security ManageEngine** ने **The Hindu AI Summit 2024** में कहा।

• "**ChatGPT and Large Language Model (LLM)** are increasing **productivity levels**. But there is a **dark side** to LLMs too. There are similar platforms which are used to generate convincing **phishing campaigns**. You won't even have a suspicion that it is a phishing campaign," she said during a fireside chat with **Suresh Vijayaraghavan**, Chief Technology Officer of **The Hindu Group** on the topic 'AI in **Cybersecurity: Building Next-Generation Defences** Against Emerging Threats.'

**"ChatGPT और Large Language Model (LLM)**

उत्पादकता स्तरों को बढ़ा रहे हैं। लेकिन LLMs का **अंधेरा पक्ष** भी है। ऐसे प्लेटफार्म हैं जिनका उपयोग प्रभावी **फिशिंग अभियान**





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Gorakhpur**

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- **Ms. Iyer** further said, “If you look at the scenario today, **digital** has become the first touch point of every business. There is a lot of emphasis and momentum on **security** and **privacy**.”  
**Ms. Iyer** ने आगे कहा, “अगर आप आज के परिदृश्य को देखें, तो **डिजिटल** हर व्यवसाय का **पहला संपर्क बिंदु** बन चुका है। **सुरक्षा** और **गोपनीयता** पर बहुत जोर और गति है।”
- She pointed out that given the **digitisation speed**, not every employee is going to be **digitally aware**, so there are chances of **phishing campaigns** and people inadvertently entering their **credentials** online.  
उन्होंने यह बताया कि **डिजिटलीकरण** की गति को देखते हुए, हर कर्मचारी **डिजिटल रूप से जागरूक** नहीं होगा, इसलिए **फिशिंग अभियान** के अवसर हैं और लोग अनजाने में अपने **क्रेडेंशियल्स** ऑनलाइन दर्ज कर सकते हैं।
- In such cases, **AI will help you take a stand — they see suspicious sites and alert you**, she added.  
ऐसे मामलों में, **AI** आपको एक कदम उठाने में मदद करेगा — यह **संदिग्ध साइट्स** को देखता है और आपको चेतावनी देता है, उन्होंने जोड़ा।
- **AI** helps take the next big action, she said, adding that it is important to **monitor your sample set** to see if there is any drift in **data**.  
**AI** अगला बड़ा कदम उठाने में मदद करता है, उन्होंने कहा और यह जोड़ते हुए कहा कि **डेटा में कोई बदलाव** देखने के लिए अपने **सैंपल सेट** की निगरानी रखना महत्वपूर्ण है।



# In Ranthambore, tigers and humans struggle for space and survival

In Rajasthan's overcrowded reserve, where restrictive territories cost humans and tigers their lives, a man was killed in a tiger attack and the tiger killed by angry villagers. **Alisha Dutta** travels to villages on the edge of the forest, where residents say the way tigers behave has changed over the years and that their losses are both emotional and financial

**O**n the morning of November 2, on a hillock adjacent to Uliyana village, the rhythmic bleating of goats suddenly went silent. Over the next few hours, the village, situated in Rajasthan's Sawai Madhopur district, witnessed the discovery of a corpse, flying axes and improvised low-intensity devices, a protest, and later in the night, the carcass of a 12-year-old tiger.

Bordering the over 1,500-square-kilometre Ranthambore Tiger Reserve, the village has often seen Royal Bengal Tigers descend from forested hillocks to the low-lying agricultural fields in search of easy prey like cattle. However, on that Saturday, the tiger was allegedly found sitting next to the mangled body of a villager, Bharat Lal Meena, 50. The tiger had one paw on the corpse, say villagers. Later, he was identified as Chirico, or T-86, the Forest Department's 'file name' used for tracking purposes.

According to government data, from 2019 to 2024, five human beings have lost their lives in tiger attacks, and over 2,000 cattle were killed by tigers in the same period. While the Forest Department records the number of tiger-related deaths, there is no record of them being killed.

A few days after the incident, there were reports in the media about the Forest Department recording that 25 of Ranthambore's 75 tigers were "missing". Officials clarified that 14 tigers had been missing for less than a year; 11 for over a year. An official says there could be many reasons for this: tigers not caught in the monitoring cameras, migration, death due to old age, and even poaching. Soon, 10 of the 14 were tracked. The National Tiger Conservation Authority, which conducts a tiger census every four years, has asked the Wildlife Crime Control Bureau to look into the matter.

## A village mourns

In Uliyana, a shroud of grief surrounds the newly constructed house of Bharat Lal's family. Prasathi Meena, his wife, is surrounded by women relatives in one corner of the house. "There was a lot of commotion; then someone said my husband had been attacked by a tiger. What happened after that is a blur now," says Prasathi in a hushed tone from beneath a *ghoonghat* (veil) that covers her face and neck.

Prasathi, who villagers say fainted seconds after receiving the news, recalls that her husband had stepped out to take his goats to graze in the buffer zone between the tiger reserve and their village. There are walls built around villages, but there are breaks, and many require repair.

"My husband would step out every day around 10.30 a.m. On that day too, he had his meal and left with the goats around noon," Prasathi says, her voice drowning amid the heavy, synchronised wails of women mourning around her. She never imagined that the tiger would take him. "Why did the tiger not take the goats and spare him?" she says.

Bharat Lal, the sarpanch of Uliyana, who was at the forefront of the attempted rescue mission, recalls seeing the tiger sitting next to the body of Bharat Lal. "We weren't sure what his condition was, but the chance of him surviving a tiger at-



**My husband would step out every day around 10.30 a.m. On that day too, he had his meal and left with the goats around noon. Why did the tiger not take the goats and spare him?**

**PRASATHI MEENA**  
Resident of Uliyana village

tack was slim," he says.

The low-lying buffer zone, which separates the agricultural land of the village from the lush green tiger terrain in the hills, soon saw the rise of a mob. Instinctively, villagers threw *tote* (country-made bombs used to break stones), axes, stones, and every sharp object they had at the tiger, Babu recounts. "I had called the Forest Department and the police, but they did not come immediately and we had to try and save our brother," he says.

Chirico retreated into the forest and the villagers rushed to Bharat Lal, who had grievous injuries. Angry and frustrated at the lack of a proactive approach by government agencies, the villagers carried his body to Sawai Madhopur-Kundera Road, almost 5 km away.

"Over 1,000 people sat in protest on the road, blocking it for passers-by. The mob refused to hand over the body for post-mortem until the family was paid ₹15 lakh," a senior Forest Department official says.

"Twenty-one hours later, State Agriculture Minister Kirodi Lal Meena met the angry villagers on the road that connects villages in the district. "The villagers handed over the body and cleared the road only after the Minister assured them of compensation," recalls the official.

## Years of anger

This distrust towards the Forest Department officials is not new, says Dharmendra Khandal, a wildlife biologist with Tiger Watch, a non-profit organisation involved in wildlife conservation in Ranthambore. "Fateh Singh Rathore [who went on to become Ranthambore's Field Director] was attacked by the villagers of Uliyana in the 1980s. The villagers had broken both his legs. His life was spared only because his driver managed to come between him and the angry mob," says Khandal.

Rathore, who founded Tiger Watch and is often called India's "Tiger Guru", was one of the members of the first Project Tiger started in 1973 to conserve tigers in the country. "The villagers were angry that they were being displaced by Rathore to give better structure to the tiger reserve," Khandal says. The belief among villagers today is that the reserve is being maintained to attract international tourists at the cost of the

lives of people who live in the forest, he says.

The day after Bharat Lal died, the Forest Department formed a search party to look for Chirico. "We could not enter the village as the residents were still agitated, and from what human intel we had received, the tiger was badly injured after he was attacked," says the official.

The department sent drones around the forest bordering Uliyana and spotted the tiger's carcass about 500 metres from the spot where the villagers had found Bharat Lal's body. "Chirico has often preyed on cattle in the nearby villages but not on any human. Contrary to what locals are saying, he was not a man-eater," he says.

The official adds that the tiger had old injuries on his front legs and chest from a fight for territory with another tiger in the forest. "The post-mortem report has shown that those wounds were healing. He died primarily due to traumatic injury on his face and back from sharp objects," he says.

**A grown goat can be sold for more than ₹10,000, but now fearing for our lives, most of us are selling them at ₹4,000-₹5,000**

**HANUMAN MEENA**  
Resident of Khava village

ing tiger is one that has been compelled through stress of circumstances to resort to preying on humans," the official says. These circumstances are usually beyond the tiger's control. "Mostly wounded, old tigers resort to becoming man-eaters, but human beings are not their natural prey," he says.

Anoop K.R., Field Director, Ranthambore, says it is possible that T-86 had wanted to attack the cattle, but since the man was a barrier, the tiger attacked him instead.

## Changing patterns

Despite villagers coexisting with tigers and other wildlife in the area, increased human-animal conflict has forced people to make changes in their ways of living and working.

In Khava village in the same district, Bhatti Lal says his brother was mauled and killed by a tiger last year when he took his goats out to graze not far from the boundary wall that separates the village from the forest. "He was sitting in the hilly area while the goats were grazing. The tiger attacked him from behind and dragged him into the forest," says Bhatti. Since then, the pastoralists in the area have started making loud sounds when they take cattle to graze, he adds.

Hanuman Meena, another resident of Khava village, says most villagers are selling their livestock at a loss. "A grown goat can be sold for more than ₹10,000, but now fearing for our lives, most of us are selling them at ₹4,000-₹5,000," says Hanuman. This has also deprived them of a livelihood from dairy products. Most villagers in the area depend on growing wheat, jowar, or bajra. A few are employed in the tourism industry.

News of Bharat Lal's death also reached the neighbouring villages like Padli. Here, in 2019, a woman was attacked by a tiger while defecating in the fields. While in Uliyana and Khava, tigers had attacked villagers on the periphery of the forest, in Padli, Munni Devi was killed about 6 km from the forest area, say villagers.

According to her neighbour, Rekha Devi, tigers often roam in the village's guava patches, but it was for the first time that it had attacked a human. "Then houses in the village did not have bathrooms, so women would use the fields, going early," explains Rekha, adding that the incident took place at 5 a.m. Since then, women go in groups to defecate or work in the fields.

Villagers also complain that despite many representations to the Forest Department to increase the height of the boundary walls and maintain them, nothing has been done. "At least 30% of our crops are destroyed by wild animals (nilgai, brown bears, leopards). The cost of this is not met by the Forest Department," says Ramesh Meena, a resident of Padli.

Ramesh adds that while the Forest Department is supposed to provide compensation of ₹5,000 to ₹10,000 for the loss of cattle, in most instances the hassle of travelling over 15 km to a government office many times, over a number of months, is more harrowing than bearing the loss. "Many villagers give up on the compensation," he says.

Villagers living in the buffer zone say the behaviour of tigers over the past decade has changed. Laad Devi, 70, from Khava village, says tigers and humans have long coexisted in this area. "Tigers would wander about the fields in the early morning. They did kill cattle, but never attacked humans in this region," she says.

Laad recalls one such day from her childhood when a tiger had made its way into her millet field. "It was a misty morning and when I spotted the tiger in the field, I just stood still. It passed by me and went towards the other end of the field," she says.

Villagers and the retired Forest Department official say Ranthambore is overcrowded with both tigers and humans. Tigers in the area have historically migrated to Madhya Pradesh and Rajasthan, but of late outmigration has been negligible, they say.



Prasathi Meena, whose husband Bharat Lal Meena was killed in a tiger attack, with her son at Uliyana village in Rajasthan's Sawai Madhopur district; (right) pugmarks at Ranthambore Tiger Reserve, often used to track tiger movement. SABIKA SYED





**PATRIOTIC IAS: Near Rajbanshi Hospital, Paidleyganj Road,  
Gorakhpur**

**Contact Number: 9971932488**



Tigers at the Ranthambore Tiger Reserve in Rajasthan, where a man was killed in a tiger attack in November. SABINA SYED

## **Tigers and Humans Struggle for Space and Survival in Ranthambore**

**रणथंबोर में बाघों और मनुष्यों के बीच स्थान और अस्तित्व की संघर्ष**

**On the morning of November 2, on a hillock adjacent to Uliyana village, the rhythmic bleating of goats suddenly went silent.**

**2 नवंबर की सुबह, उलियाना गांव के पास एक पहाड़ी पर बकरियों की लयबद्ध बकर-बकर अचानक चुप हो गई।**

- Later in the night, the carcass of a **12-year-old tiger** was found.  
रात को, **12 साल पुराने बाघ** का शव पाया गया।
- The village, bordering the over **1,500-square-kilometre Ranthambore Tiger Reserve**, has often seen tigers descend from forested hillocks to the low-lying agricultural fields in search of easy prey.  
गांव, जो **1,500 वर्ग किलोमीटर के रणथंबोर टाइगर रिजर्व** से सटा हुआ है, अक्सर बाघों को पहाड़ी क्षेत्रों से निचले कृषि क्षेत्रों में आते हुए देखता है, जहाँ वे आसानी से शिकार करते हैं।

**Website: [patrioticias.in](http://patrioticias.in)  
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- Bharat Lal Meena, 50, was found mauled by the tiger.  
**भारत लाल मीना**, 50, बाघ के हमले में मरे पाए गए।
- According to government data, from **2019 to 2024, five human beings** have lost their lives in tiger attacks, and over **2,000 cattle** were killed by tigers in the same period.  
सरकारी आंकड़ों के अनुसार, **2019 से 2024 तक पाँच लोग** बाघों के हमलों में मारे गए और **2,000 से अधिक मवेशी** इस दौरान बाघों द्वारा मारे गए।
- There is no record of tigers being killed, even though human fatalities and cattle deaths are recorded.  
मानव मृत्यु और मवेशी मौतों का रिकॉर्ड है, लेकिन बाघों के मारे जाने का कोई रिकॉर्ड नहीं है।
- There were reports that **25 of Ranthambore's 75 tigers** were missing, with 14 missing for less than a year and 11 for over a year.  
**रणथंबोर के 75 बाघों में से 25** बाघ गायब थे, जिनमें से 14 बाघ कम समय के लिए और 11 बाघ एक साल से अधिक समय से गायब थे।
- The National Tiger Conservation Authority has asked the Wildlife Crime Control Bureau to look into the matter.  
राष्ट्रीय बाघ संरक्षण प्राधिकरण ने इस मामले की जांच के लिए वाइल्डलाइफ क्राइम कंट्रोल ब्यूरो से कहा है।
- In Uliyana, a shroud of grief surrounds the newly constructed house of Bharat Lal's family.  
उलियाना में, भारत लाल के परिवार के नए बने घर के चारों ओर शोक का माहौल है।
- Prasathi Meena, Bharat Lal's wife, recalls her husband went out to take his goats to graze when the attack occurred.  
भारत लाल की पत्नी **प्रसथी मीना** याद करती हैं कि उनके पति बकरियों को घास खिलाने के लिए बाहर गए थे, तभी हमला हुआ।
- Babu Lal, the sarpanch of Uliyana, was at the forefront of the attempted rescue mission.  
उलियाना के सरपंच **बाबू लाल** बचाव मिशन के अग्रभाग में थे।
- Villagers used axes, stones, and bombs to try to save the victim.  
गांववालों ने शिकार को बचाने के लिए कुल्हाड़ी, पत्थर और बमों का इस्तेमाल किया।
- The villagers protested on the road, blocking it for **21 hours**, demanding compensation of **₹15 lakh** for the family.  
गांववालों ने **21 घंटे** तक सड़क पर विरोध प्रदर्शन किया और परिवार के लिए **₹15 लाख** मुआवजे की मांग की।
- The State Agriculture Minister met the angry villagers and assured them of compensation.  
राज्य के कृषि मंत्री ने गुस्साए गांववालों से मिलकर उन्हें मुआवजे का आश्वासन दिया।

## Years of Anger

### क्रोध के वर्षों

- This distrust towards the Forest Department officials is not new, says Dharmendra Khandal, a wildlife biologist with Tiger Watch, a non-profit organisation involved in wildlife conservation in Ranthambore.

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यह वन विभाग के अधिकारियों के प्रति अविश्वास नया नहीं है, कहते हैं **धर्मेन्द्र खंडल**, एक वन्यजीव जैवविज्ञानी जो **टाइगर वॉच**, रणथंबोर में वन्यजीव संरक्षण में लगी एक गैर-लाभकारी संस्था से जुड़े हैं।

- “Fateh Singh Rathore [who went on to become Ranthambhore’s Field Director] was attacked by the villagers of Uliyana in the 1980s. The villagers had broken both his legs. His life was spared only because his driver managed to come between him and the angry mob,” says Khandal.

“**फतेह सिंह राठौड़** [जो बाद में रणथंबोर के फील्ड डायरेक्टर बने] को 1980 के दशक में उलियाना के गांववालों ने हमला किया था। गांववालों ने उनके दोनों पैरों को तोड़ दिया था। उनकी जान सिर्फ इस वजह से बची क्योंकि उनके ड्राइवर ने उन्हें और गुस्साई भीड़ के बीच आकर उन्हें बचाया,” कहते हैं खंडल।

- **Rathore, who founded Tiger Watch and is often called India’s ‘Tiger Guru’, was one of the members of the first Project Tiger started in 1973 to conserve tigers in the country.**

**राठौड़**, जिन्होंने **टाइगर वॉच** की स्थापना की और जिन्हें भारत के ‘**टाइगर गुरु**’ के नाम से भी जाना जाता है, 1973 में देश में बाघों के संरक्षण के लिए शुरू की गई पहली परियोजना टाइगर के सदस्य थे।

- “The villagers were angry that they were being displaced by Rathore to give better structure to the tiger reserve,” Khandal says.

“गांववाले गुस्से में थे क्योंकि राठौड़ उन्हें बाघ आरक्षित क्षेत्र की बेहतर संरचना देने के लिए विस्थापित कर रहे थे,” कहते हैं खंडल।

- The belief among villagers today is that the reserve is being maintained to attract international tourists at the cost of the lives of people who live in the forest, he says. आज गांववालों का यह विश्वास है कि आरक्षित क्षेत्र को अंतरराष्ट्रीय पर्यटकों को आकर्षित करने के लिए बनाए रखा जा रहा है, जबकि इसके बदले में जंगल में रहने वाले लोगों की जान की कीमत चुकानी पड़ रही है, वे कहते हैं।

- The day after Bharat Lal died, the Forest Department formed a search party to look for Chirico.

**भारत लाल** की मृत्यु के अगले दिन, वन विभाग ने **चिरिको** की तलाश के लिए एक खोजी दल का गठन किया।

- “We could not enter the village as the residents were still agitated, and from what human intel we had received, the tiger was badly injured after he was attacked,” says the official.

“हम गांव में नहीं प्रवेश कर सके क्योंकि निवासी अभी भी उत्तेजित थे, और जो मानवीय जानकारी हमें मिली थी, उसके अनुसार बाघ उस समय बुरी तरह घायल हो गया था जब उस पर हमला हुआ था,” कहते हैं अधिकारी।

- The department sent drones around the forest bordering Uliyana and spotted the tiger’s carcass about 500 metres from the spot where the villagers had found Bharat Lal’s body. विभाग ने उलियाना से सटे जंगल के आसपास ड्रोन भेजे और बाघ का शव उस स्थान से लगभग **500**

**मीटर** दूर पाया, जहां गांववालों ने **भारत लाल** का शव पाया था।

- “Chirico has often preyed on cattle in the nearby villages but not on any human. Contrary to what locals are saying, he was not a man-eater,” he says.

“**चिरिको** ने अक्सर पास के गांवों में मवेशियों का शिकार किया है, लेकिन किसी भी मानव का नहीं।

स्थानीय लोग जो कह रहे हैं, उसके विपरीत, वह **मानवभक्षी** नहीं था,” कहते हैं वह।





- The official adds that the tiger had old injuries on his front legs and chest from a fight for territory with another tiger in the forest.  
अधिकारी यह भी बताते हैं कि बाघ के सामने के पैरों और सीने पर पुराने घाव थे, जो जंगल में दूसरे बाघ से इलाके के लिए लड़ा था।
- “The postmortem report has shown that those wounds were healing. He died primarily due to traumatic injury on his face and back from sharp objects,” he says.  
“पोस्टमॉर्टम रिपोर्ट से पता चला है कि ये घाव ठीक हो रहे थे। उसकी मृत्यु मुख्य रूप से चेहरे और पीठ पर तेज वस्तुओं से चोट लगने के कारण हुई,” कहते हैं वह।
- A retired Forest Department official says contrary to the perception of the villagers, a majority of Ranthambore’s tigers are not man-eaters.  
एक सेवानिवृत्त वन विभाग अधिकारी कहते हैं कि गांववालों की धारणा के विपरीत, रणथंबोर के अधिकांश बाघ **मानवभक्षी नहीं हैं।**
- **“A man-eating tiger is one that has been compelled through stress of circumstances to resort to preying on humans,”** the official says.  
“मानवभक्षी बाघ वह है जो परिस्थितियों के दबाव में आकर मानवों पर शिकार करने के लिए मजबूर हो जाता है,” कहते हैं अधिकारी।
- These circumstances are usually beyond the tiger’s control. **“Mostly wounded, old tigers resort to becoming man-eaters, but human beings are not their natural prey,”** he says.  
ये परिस्थितियाँ आमतौर पर बाघ के नियंत्रण से बाहर होती हैं। “अधिकतर घायल, बूढ़े बाघ मानवभक्षी बनने की ओर रुख करते हैं, लेकिन मनुष्य उनके प्राकृतिक शिकार नहीं होते,” कहते हैं वह।
- Anoop K.R., Field Director, Ranthambore, says it is possible that T-86 had wanted to attack the cattle, but since the man was a barrier, the tiger attacked him instead.  
**आनूप के.आर.,** फ़िल्ड डायरेक्टर, रणथंबोर कहते हैं कि यह संभव है कि **टी-86** ने मवेशियों पर हमला करने की योजना बनाई थी, लेकिन क्योंकि आदमी एक रुकावट था, बाघ ने उसे ही हमला कर दिया।

## Changing Patterns परिवर्तित पैटर्न

- Despite villagers coexisting with tigers and other wildlife in the area, increased human-animal conflict has forced people to make changes in their ways of living and working.  
हालांकि गांववाले क्षेत्र में बाघों और अन्य वन्यजीवों के साथ सह-अस्तित्व बनाए हुए हैं, बढ़ते मानव-प्राणी संघर्ष ने लोगों को अपने जीने और काम करने के तरीकों में बदलाव करने के लिए मजबूर किया है।
- In Khava village in the same district, Bhatti Lal says his brother was mauled and killed by a tiger last year when he took his goats out to graze not far from the boundary wall that separates the village from the forest.  
इसी जिले के **खावा गांव** में, **भट्टी लाल** कहते हैं कि पिछले साल उनके भाई को बाघ ने हमला करके मार डाला था जब वह अपनी बकरियों को घास खाने के लिए जंगल से अलग करने वाली सीमा दीवार के पास ले गए थे।
- “He was sitting in the hilly area while the goats were grazing. The tiger attacked him from behind and dragged him into the forest,” says Bhatti.





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“वह पहाड़ी क्षेत्र में बैठा था जब बकरियाँ घास खा रही थीं। बाघ ने उसे पीछे से हमला किया और जंगल में खींचकर ले गया,” कहते हैं भट्टी।

- Since then, the pastoralists in the area have started making loud sounds when they take cattle to graze, he adds.

तभी से, क्षेत्र में **पशुपालक** जब मवेशियों को घास खाने के लिए ले जाते हैं, तो तेज आवाजें करने लगे हैं, वे जोड़ते हैं।

- Hanuman Meena, another resident of Khava village, says most villagers are selling their livestock at a loss.

**हनुमान मीना**, खावा गांव के एक अन्य निवासी कहते हैं कि अधिकांश गांववाले अपनी **मवेशी** नुकसान में बेच रहे हैं।

- “A grown goat can be sold for more than ₹10,000, but now fearing for our lives, most of us are selling them at ₹4,000-₹5,000,” says Hanuman.

“एक पकी बकरी ₹10,000 से अधिक में बेची जा सकती है, लेकिन अब हमारी जान का डर है, इसलिए हममें से अधिकांश उन्हें ₹4,000-₹5,000 में बेच रहे हैं,” कहते हैं हनुमान।

- This has also deprived them of a livelihood from dairy products.

इससे उन्हें **दुग्ध उत्पादों** से होने वाली आजीविका से भी वंचित कर दिया है।

- Most villagers in the area depend on growing wheat, jowar, or bajra.

क्षेत्र के अधिकांश गांववाले **गेंहूँ**, **ज्वार** या **बाजरा** उगाने पर निर्भर करते हैं।

- A few are employed in the tourism industry.

कुछ लोग **पर्यटन उद्योग** में काम करते हैं।

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# India needs an environmental health regulatory agency

GS Paper III: Environment

**T**he 2024 Conference of Parties (COP 29) ends in Baku, Azerbaijan today. As a global voice for developing countries, India will push for ambitious climate mitigation financing from developed nations. At the same time, pollutants in our air, water and land continue to pose grave health risks. According to the **Emissions Gap Report 2024** from the United Nations Environment Programme, India has seen over 6% more greenhouse gas emissions than the previous year. These two examples show that India is at a critical juncture in its environmental and public health journey.

As a nation, India continues to experience rapid economic growth, so the interdependencies between climate, environment, health, and the economy are undeniable but capacities to address these issues holistically are limited. It is time for India to establish an environmental health regulatory agency (EHRA), which could lead to more comprehensive and cohesive environmental governance that focuses simultaneously on pollution control and health risk mitigation.

## The urgency of integration

There are profound and immediate environmental health challenges to address in India. Numerous epidemiological studies conducted across multiple States and rural and urban populations have uncovered the detrimental health effects of exposure to air, water and soil pollutants, which include a wide range of non-communicable diseases. For example, exposure to air pollution, PM<sub>2.5</sub> in particular, is now known to be associated with respiratory, cardiovascular and metabolic diseases, pregnancy outcomes, child growth and development and even mental health disorders. This poses risks to the most vulnerable populations, such as children, the elderly, and financially poor groups.

Building on efforts of the Central Pollution Control Board (CPCB) and the Ministry of Environment, Forest and Climate Change (MoEFCC), India's current environmental governance model needs to be more integrated with health. The CPCB focuses on pollution control, while the MoEFCC handles broader environmental policies, and the Ministry of Health and Family Welfare (MoHFW) undertakes integrated disease surveillance and management. There is a disconnect between environmental monitoring, health impact assessments, and emissions control, given little to no data flow across these Ministries.

A centralised agency such as an EHRA could integrate environmental and health data, allowing policymakers to track, regulate, and mitigate these impacts effectively, with much-needed inter-disciplinarity.

There are examples to inspire us: the U.S. Environmental Protection Agency (EPA),

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Chairperson,  
M.S. Swaminathan  
Research Foundation,  
Chennai, and  
Principal Adviser,  
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Family Welfare,  
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## Kalpna Balakrishnan

Dean (Research),  
Sri Ramachandra  
Institute of Higher  
Education and  
Research, (SRIHER),  
Chennai

## Vijay Shankar Balakrishnan

a science journalist  
with over 12 years of  
experience covering  
the life sciences, the  
environment, and  
public health, and has  
worked for the World  
Health Organization

Having such an agency in India, which it currently lacks, would look at the interlinked issues of climate, environment, health and the economy in a holistic way

Germany's Federal Environment Agency (UBA), and Japan's Ministry of the Environment (MOE) provide robust frameworks that bridge environmental management with public health protection.

The EPA's approach covers a lot of ground – it regulates air and water quality, manages waste, and controls toxic substances while relying on integrated science assessments that include health together with vigorous enforcement. Germany's UBA focuses on environmental policy, managing air, water and waste regulations while championing sustainable energy and climate initiatives. Japan's MOE tackles pollution, chemical safety, and ecosystem protection. It collaborates with health and science agencies to monitor environmental health, enforce pollution controls, and address urban pollution and radiation issues.

The explicit integration of environment and health is part of the routine operational framework at these global agencies. Having an agency such as an EHRA in place could help India formulate a unified response to all types of pollution, advocate cumulative accountability mechanisms and collaborate with international bodies to negotiate for and adopt best practices that simultaneously address health and environment.

## A data-driven, evidence-based framework

Effective regulation is built upon reliable and context-specific data. In this context, significant global funding is invested in environmental health effects research to establish a robust evidence base for policies. Even though organisations such as the Indian Council of Medical Research (ICMR) provide essential support for environmental health research, their impact is somewhat limited without a central body to bring together and translate this data into practical policies.

An EHRA would enable India to adopt an evidence-informed and science-driven regulatory framework, commissioning studies specific to the nation's unique environmental health challenges, such as poor air quality, vector-borne diseases, effects of persistent organic chemicals and heavy metal exposures in the context of changing land-use patterns and the consequences of climate change on health systems. Integrating health impact assessments (HIAs) into all significant projects, such as urban development and infrastructure planning, would allow decision-makers to understand and mitigate health risks before they escalate.

Contrary to concerns that environmental regulation may impede economic growth, an EHRA could promote sustainable practices that drive innovation, create green jobs, and support long-term financial resilience. For instance, the U.S. EPA has shown that its presence and work do not hinder economic growth but spur investments in renewable energy, sustainable

agriculture, and pollution prevention while also increasing life expectancy.

India's economic trajectory need not be at odds with environmental health. An incentivised energy transition and public health campaigns around environmental health could encourage enterprises to transition to cleaner technologies. An EHRA can develop policy instruments that will help the nation align environmental health objectives with economic policies, which in turn would promote sustainable development that benefits the environment, public health, and the economy at the same time.

Involving the public is essential for the success of environmental health initiatives. In India, an EHRA could be critical in educating citizens on environmental health risks and empowering communities to advocate cleaner air, water, and healthier living conditions. Citizen initiatives and the role of non-governmental organisations are pivotal, given the need for accountability to start bottom-up, from the local bodies and panchayat levels. The role of communicators and journalists is crucial in highlighting and supporting these initiatives.

India has signed the Paris Agreement and has committed to the Sustainable Development Goals. An EHRA would be instrumental in helping India meet these commitments by aligning national policies with global standards. It would also contribute to collective efforts to tackle climate and health challenges including addressing transboundary issues.

Environmental health issues vary significantly across India's regions, so we must move from a one-size-fits-all approach and localise interventions. An EHRA could work closely with State and municipal governments to ensure the development and enforcement of policies that are tailored to environmental solutions for the unique needs of each area. By developing a granular national platform for monitoring and accountability, India could track health outcomes in detail, leading to more effective and timely responses to local needs

## Building accountability

Establishing an EHRA in India would not be without challenges, from bureaucratic inertia to resistance from industry stakeholders wary of regulation. However, clear frameworks for inter-ministerial coordination, measurable objectives, and cross-sectoral cooperation could help overcome these barriers. An EHRA should be operationally independent, guided by scientific expertise, and empowered to enforce policies that prioritise public health.

India's recent successes in meeting renewable energy targets highlight the nation's capacity for ambitious, systemic change. An EHRA could build on these achievements to strengthen India's governance of its environmental health crisis by framing pollution control as both a public health imperative and an economic opportunity.





## India needs an environmental health regulatory agency

### भारत को एक पर्यावरण स्वास्थ्य नियामक एजेंसी की आवश्यकता है

India will push for ambitious climate mitigation financing from developed nations at the 2024 Conference of Parties (COP 29) in Baku, Azerbaijan.

भारत 2024 के कॉन्फ्रेंस ऑफ पार्टीज (COP 29) में बाकू, अज़रबैजान में विकसित देशों से महत्वाकांक्षी जलवायु शमन वित्तपोषण की मांग करेगा।

- According to the **Emissions Gap Report 2024 by the United Nations Environment Programme (UNEP)**, India saw **over 6% increase in greenhouse gas emissions compared to the previous year.**

संयुक्त राष्ट्र पर्यावरण कार्यक्रम (UNEP) की एमीशन गैप रिपोर्ट 2024 के अनुसार, भारत में पिछले साल की तुलना में 6% से अधिक की वृद्धि हुई है ग्रीनहाउस गैस उत्सर्जन में।

- India is at a **critical juncture** in its **environmental and public health journey**, with interconnected challenges in **climate, pollution, and health.**
- It is time for India to establish an **environmental health regulatory agency (EHRA) to integrate health and environmental monitoring.**

भारत अपने पर्यावरण और सार्वजनिक स्वास्थ्य यात्रा के एक महत्वपूर्ण मोड़ पर है, जिसमें जलवायु, प्रदूषण, और स्वास्थ्य से जुड़े समस्याएँ हैं। अब समय आ गया है कि भारत एक पर्यावरण स्वास्थ्य नियामक एजेंसी (EHRA) स्थापित करे, जो स्वास्थ्य और पर्यावरणीय निगरानी को एकीकृत करे।

- **The urgency of integration**  
इंटीग्रेशन की तात्कालिकता
- India faces **serious health risks** from exposure to **air, water, and soil pollutants, leading to respiratory diseases, cardiovascular diseases, metabolic issues, pregnancy complications, child growth problems, and mental health disorders.**
- **PM2.5 air pollution** is especially associated with these **health hazards.**
- Vulnerable populations, such as **children, the elderly, and financially poor groups,** are at higher risk of **environmental health hazards.**
- **Current Environmental Governance Model**  
वर्तमान पर्यावरणीय शासन मॉडल





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- **India's environmental governance** is fragmented across different agencies, with the **Central Pollution Control Board (CPCB)** handling **pollution control**, the **Ministry of Environment, Forest and Climate Change (MoEFCC)** managing **environmental policies**, and the **Ministry of Health and Family Welfare (MoHFW)** focusing on **health**.  
भारत का पर्यावरणीय शासन विभिन्न एजेंसियों में बंटा हुआ है, जिसमें **केंद्रीय प्रदूषण नियंत्रण बोर्ड (CPCB)** प्रदूषण नियंत्रण पर काम करता है, **पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (MoEFCC)** पर्यावरणीय नीतियों का प्रबंधन करता है, और **स्वास्थ्य और परिवार कल्याण मंत्रालय (MoHFW)** स्वास्थ्य पर ध्यान केंद्रित करता है।
- **A more integrated approach** is needed to address the challenges of **pollution control, disease surveillance, and emission reduction**.  
प्रदूषण नियंत्रण, रोग निगरानी, और उत्सर्जन कमी की चुनौतियों का समाधान करने के लिए एक अधिक समेकित दृष्टिकोण की आवश्यकता है।
- An **EHRA** could integrate **health and environmental data**, creating a **centralized system** to monitor, regulate, and mitigate impacts on health and the environment.  
**EHRA** स्वास्थ्य और पर्यावरणीय डेटा को एकीकृत कर सकता है, जिससे एक **केंद्रीकृत प्रणाली** बन सके जो स्वास्थ्य और पर्यावरण पर प्रभावों की निगरानी, विनियमन और न्यूनीकरण कर सके।
- **Global Examples for Inspiration**  
प्रेरणा के लिए वैश्विक उदाहरण
- Examples from global agencies such as the **U.S. Environmental Protection Agency (EPA)**, **Germany's Federal Environment Agency (UBA)**, and **Japan's Ministry of the Environment (MOE)** demonstrate the effectiveness of integrating **environmental and health governance**.  
वैश्विक एजेंसियों जैसे **यू.एस. पर्यावरण संरक्षण एजेंसी (EPA)**, **जर्मनी की संघीय पर्यावरण एजेंसी (UBA)**, और **जापान का पर्यावरण मंत्रालय (MOE)** के उदाहरण दिखाते हैं कि पर्यावरण और स्वास्थ्य शासन के एकीकरण में प्रभावशीलता है।
- The **U.S. EPA** integrates **air quality, water quality, toxic substance management, and health impact assessments** to address environmental health challenges.  
**यू.एस. EPA** वायु गुणवत्ता, जल गुणवत्ता, विषैले पदार्थों के प्रबंधन, और स्वास्थ्य प्रभाव आकलन को एकीकृत करता है ताकि पर्यावरणीय स्वास्थ्य चुनौतियों का समाधान किया जा सके।
- Germany's **UBA** handles **environmental policies** while promoting **sustainable energy and climate action**, integrating these with health initiatives.  
जर्मनी का **UBA** पर्यावरणीय नीतियों का प्रबंधन करता है जबकि सतत ऊर्जा और जलवायु कार्रवाई को बढ़ावा देता है, और इनको स्वास्थ्य पहलों के साथ एकीकृत करता है।
- Japan's **MOE** addresses **pollution, chemical safety, and ecosystem protection** while collaborating with **health and science agencies**.  
जापान का **MOE** प्रदूषण, रासायनिक सुरक्षा, और पारिस्थितिकी तंत्र संरक्षण से संबंधित समस्याओं का समाधान करता है, जबकि **स्वास्थ्य और विज्ञान एजेंसियों** के साथ सहयोग करता है।
- An agency like **EHRA** could help India adopt a **unified response to pollution control, health monitoring, and sustainable development**.  
\*\*EHRA जैसी एक एजेंसी भारत को **प्रदूषण नियंत्रण, स्वास्थ्य निगरानी, और सतत विकास** के प्रति एक एकीकृत प्रतिक्रिया अपनाने में मदद कर सकती है।

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- It can also collaborate with **international bodies** to adopt **best practices** in environmental health regulation.

यह अंतर्राष्ट्रीय निकायों के साथ सहयोग करके पर्यावरणीय स्वास्थ्य नियमन में सर्वोत्तम प्रथाओं को अपनाने में भी मदद कर सकती है।

## A data-driven, evidence-based framework

### डाटा-प्रेरित, प्रमाण-आधारित ढांचा

- Effective regulation is built upon **reliable** and **context-specific data**.  
प्रभावी नियमन विश्वसनीय और संदर्भ-विशेष डेटा पर आधारित होता है।
- **Significant global funding** is invested in environmental health effects research to establish a robust evidence base for policies.  
नीति बनाने के लिए मजबूत प्रमाण आधार स्थापित करने के लिए पर्यावरण स्वास्थ्य प्रभावों पर वैश्विक स्तर पर महत्वपूर्ण वित्तीय निवेश किया जाता है।
- Even though organisations such as the **Indian Council of Medical Research (ICMR)** provide essential support for environmental health research, their impact is somewhat limited without a **central body** to bring together and translate this data into practical policies.  
हालाँकि भारतीय चिकित्सा अनुसंधान परिषद (ICMR) जैसी संस्थाएँ पर्यावरण स्वास्थ्य अनुसंधान के लिए आवश्यक समर्थन प्रदान करती हैं, फिर भी उनका प्रभाव सीमित होता है जब तक कि एक केंद्रीय निकाय इसे एकत्र करके इसे व्यावहारिक नीतियों में अनुवादित न करे।
- An **EHRA** would enable India to adopt an evidence-informed and science-driven regulatory framework.  
एक EHRA भारत को प्रमाण-आधारित और विज्ञान-प्रेरित नियामक ढांचा अपनाने में सक्षम करेगा।
- Commissioning studies specific to the nation's unique environmental health challenges, such as poor **air quality**, **vector-borne diseases**, effects of **persistent organic chemicals**, and **heavy metal exposures** in the context of changing land-use patterns and the consequences of **climate change** on health systems.  
राष्ट्र की विशिष्ट पर्यावरणीय स्वास्थ्य चुनौतियों के लिए विशेष अध्ययन कराना, जैसे कि खराब वायु गुणवत्ता, वेक्टर जनित रोग, निरंतर जैविक रसायनों और भारी धातुओं के संपर्क का प्रभाव, भूमि उपयोग पैटर्न में परिवर्तन और जलवायु परिवर्तन के स्वास्थ्य प्रणाली पर परिणाम।
- Integrating **health impact assessments (HIAs)** into all significant projects, such as **urban development** and **infrastructure planning**, would allow decision-makers to understand and mitigate health risks before they escalate.  
स्वास्थ्य प्रभाव मूल्यांकनों (HIAs) को सभी महत्वपूर्ण परियोजनाओं में एकीकृत करना, जैसे कि शहरी विकास और अवसंरचना योजना, निर्णयकर्ताओं को स्वास्थ्य जोखिमों को समझने और बढ़ने से पहले उन्हें कम करने में सक्षम करेगा।
- An **EHRA** could promote sustainable practices that drive **innovation**, create **green jobs**, and support **long-term financial resilience**.  
\*\*एक EHRA स्थायी प्रथाओं को बढ़ावा दे सकता है जो नवाचार को प्रेरित करती हैं, हरे रोजगार पैदा करती हैं और दीर्घकालिक वित्तीय लचीलापन को समर्थन देती हैं।

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- India's **economic trajectory** need not be at odds with environmental health.  
**भारत की आर्थिक यात्रा पर्यावरण स्वास्थ्य के साथ विरोधाभासी नहीं होनी चाहिए।**
- An incentivised energy transition and **public health campaigns** could encourage enterprises to transition to cleaner technologies.  
**प्रोत्साहन आधारित ऊर्जा संक्रमण और सार्वजनिक स्वास्थ्य अभियान उद्यमों को स्वच्छ प्रौद्योगिकियों में संक्रमण करने के लिए प्रेरित कर सकते हैं।**
- Involving the public is essential for the success of environmental health initiatives.  
**पर्यावरणीय स्वास्थ्य पहलों की सफलता के लिए जनता की भागीदारी आवश्यक है।**
- An **EHRA** could be critical in educating citizens on **environmental health risks** and empowering communities to advocate **cleaner air, water**, and healthier living conditions.  
**एक EHRA नागरिकों को पर्यावरण स्वास्थ्य जोखिमों के बारे में शिक्षित करने और समुदायों को स्वच्छ हवा, पानी और स्वस्थ जीवन स्थितियों की वकालत करने के लिए सशक्त बनाने में महत्वपूर्ण हो सकता है।**
- India has signed the **Paris Agreement** and committed to the **Sustainable Development Goals**.  
**भारत ने पेरिस समझौते पर हस्ताक्षर किए हैं और सतत विकास लक्ष्यों के प्रति प्रतिबद्धता जताई है।**
- An **EHRA** would be instrumental in helping India meet these commitments by aligning national policies with **global standards**.  
**एक EHRA भारत को इन प्रतिबद्धताओं को पूरा करने में सहायक होगा, राष्ट्रीय नीतियों को वैश्विक मानकों के साथ संरेखित करके।**
- **Environmental health issues** vary significantly across India's regions, so we must move from a one-size-fits-all approach and **localise interventions**.  
**पर्यावरण स्वास्थ्य समस्याएँ भारत के विभिन्न क्षेत्रों में महत्वपूर्ण रूप से भिन्न होती हैं, इसलिए हमें एक ही आकार में सभी के लिए उपयुक्त दृष्टिकोण से हटकर हस्तक्षेपों को स्थानीय बनाना चाहिए।**
- An **EHRA** could work closely with **State and municipal governments** to ensure the development and enforcement of policies that are tailored to environmental solutions for the unique needs of each area.  
**एक EHRA राज्य और नगरपालिका सरकारों के साथ मिलकर काम कर सकता है, यह सुनिश्चित करने के लिए कि नीतियों का विकास और प्रवर्तन प्रत्येक क्षेत्र की विशिष्ट आवश्यकताओं के लिए पर्यावरण समाधान के अनुरूप हो।**
- **Building accountability**: Establishing an **EHRA** in India would not be without challenges, from **bureaucratic inertia** to resistance from **industry stakeholders** wary of regulation.  
**जवाबदेही बनाना: भारत में एक EHRA की स्थापना चुनौतियों के बिना नहीं होगी, प्रशासनिक सुस्ती से लेकर उद्योग के हितधारकों द्वारा नियमन के प्रति संकोच तक।**
- Clear frameworks for **inter-ministerial coordination, measurable objectives**, and **cross-sectoral cooperation** could help overcome these barriers.  
**मंत्रालयों के बीच समन्वय, मापनीय उद्देश्य, और पार-क्षेत्रीय सहयोग के लिए स्पष्ट ढांचे इन बाधाओं को पार करने में मदद कर सकते हैं।**
- India's recent successes in meeting **renewable energy targets** highlight the nation's capacity for **ambitious, systemic change**.

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भारत की हाल की सफलता, नवीकरणीय ऊर्जा लक्ष्यों को पूरा करने में, राष्ट्र की महत्वाकांक्षी, संविधानिक बदलाव की क्षमता को उजागर करती है।

- An **EHRA** could build on these achievements to strengthen India's governance of its environmental health crisis by framing **pollution control** as both a **public health imperative** and an **economic opportunity**.

एक EHRA इन उपलब्धियों पर निर्माण कर सकता है ताकि भारत के पर्यावरण स्वास्थ्य संकट के शासन को मजबूत किया जा सके, प्रदूषण नियंत्रण को एक सार्वजनिक स्वास्थ्य अनिवार्यता और आर्थिक अवसर के रूप में प्रस्तुत करके।

## A bilateral investment treaty with a 'bit' of change

GS Paper II: India-UAE

The bilateral investment treaty (BIT) between India and the United Arab Emirates (UAE) which was signed earlier this year was recently made public. This BIT, which will replace the 2014 India-UAE investment treaty, is critical. It reveals India's latest investment treaty practice and might elucidate India's ongoing negotiations with the United Kingdom and the European Union. A typical BIT should accomplish two objectives. First, it should balance the competing goals of investment protection and the state's sovereign right to regulate. Second, it should contain unambiguous provisions to reduce the discretion of investor-state dispute settlement (ISDS) tribunals.

### Departures from the Model

Though India adopted a Model BIT in 2015, it has barely managed to sign a handful of BITs based on this model. Intriguingly, the India-UAE BIT departs from the Model BIT on some significant issues.

First, it provides that a foreign investor must exhaust local remedies for at least three years before bringing an ISDS claim. This period in the Model BIT and subsequent BITs that India signed with countries such as Belarus and Kyrgyzstan is five years. Several countries lament that five years is too long. Given the overstretched Indian judicial system, it is unlikely that a foreign investor's legal dispute with the state would be resolved in five years. It seems India has taken these concerns on board and softened its stand. This gives foreign investors quicker access to ISDS, thus, bringing the pendulum somewhat back to the pole of investment protection. A shorter waiting period to invoke ISDS does not mean that India is exposing itself to treaty claims, as asserted by some. The function of investment treaties is to safeguard foreign investment from sovereign regulatory abuse. As long as India does



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Despite some departures, the India-UAE bilateral investment treaty establishes a continuity of India's investment treaty practice

not indulge in regulatory abuse it need not worry about ISDS claims.

Second, the definition of investment in the India-UAE BIT states that for an enterprise to qualify as an investment, and thus be eligible for treaty protection, it should possess key economic characteristics such as a commitment of capital, profit expectation, and risk assumption. The criterion that the investment should, in addition, be significant for the development of the host state, which is present in the Model BIT, has been done away with. This is a welcome development clarifying the jurisdictional question. Several ISDS tribunals have held that proving foreign investment is significant for the development of the host state, is an inherently value-laden exercise. Thus, by removing this subjective element from the definition of investment, India and the UAE have reduced arbitral discretion. At any rate, when a lawfully created enterprise satisfies other key economic investment characteristics, it is presumably significant for the host state's development.

### Greater clarity

Third, Article 4 of the India-UAE BIT, which talks of 'treatment of investments', specifically lists when state action will amount to a treaty violation such as when there is a denial of justice or when there is a fundamental breach of due process in dealing with investment. These grounds are mentioned in a similar provision in the Model BIT. However, in the Model BIT, these grounds are linked to customary international law (CIL) whereas in Article 4 of the India-UAE BIT, there is no reference to CIL. The content of CIL concerning various aspects of foreign investment is not settled. Thus, a reference to CIL in the treaty, as numerous ISDS cases show, gives too much discretion to these tribunals. Consequently, Article 4 brings greater clarity for states and

investors and curbs arbitral discretion.

### A continuity

Notwithstanding some departures, the India-UAE BIT establishes a continuity of India's investment treaty practice. For instance, the India-UAE BIT, like the Model, does not contain the most favoured nation (MFN) provision, which is a core non-discrimination standard in international economic relations. Likewise, state action on taxation is outside the scope of the India-UAE BIT. Thus, arguably, a foreign investor cannot challenge tax measures even if they are abusive. This maximises the state's regulatory power at the cost of investment protection. Like the Model BIT, Article 14.6(i) of the India-UAE BIT bars the jurisdiction of an ISDS tribunal to review the 'merits' of a domestic court decision. Arguably, 'merits' means that ISDS tribunals should not act as a court of appeal. However, 'merits' can also have an alternative interpretation.

Since the investor will bring an ISDS claim on the same issue adjudicated by the domestic court, the state can plausibly argue that the case is on the 'merits' of the domestic court decision. This might impede the tribunal's ability to hear the case. On some issues, the India-UAE BIT goes beyond the Model. For instance, it specifically disallows third-party funding and the unavailability of ISDS if an allegation of fraud or corruption is made against the investor.

One does not know whether the departures from the Model BIT signify India's change of heart or are specific to the UAE. Developed countries would be pleased with India's softening of the five-year domestic litigation requirement. However, they would remain concerned about India's continued stand of excluding MFN and taxation issues from the BIT's ambit.

*The views expressed are personal*

## A bilateral investment treaty with a 'bit' of change

## थोड़ा सा बदलाव के साथ द्विपक्षीय निवेश संधि

- The **bilateral investment treaty (BIT)** between **India** and the **United Arab Emirates (UAE)**, signed earlier this year, was recently made public.





भारत और संयुक्त अरब अमीरात (UAE) के बीच द्विपक्षीय निवेश संधि (BIT), जो इस साल पहले साइन की गई थी, हाल ही में सार्वजनिक की गई।

- This BIT, which will replace the **2014 India-UAE investment treaty**, is **critical**. यह **2014 भारत-UAE निवेश संधि** को प्रतिस्थापित करने वाली यह महत्वपूर्ण संधि है।
- It reveals India's latest **investment treaty practice** and might elucidate India's ongoing negotiations with the **United Kingdom** and the **European Union**. यह भारत की नवीनतम **निवेश संधि प्रथा** को उजागर करता है और **ब्रिटेन** और **यूरोपीय संघ** के साथ चल रही भारत की बातचीत को स्पष्ट कर सकता है।
- A typical BIT should accomplish **two objectives**: एक सामान्य BIT को **दो उद्देश्यों** को पूरा करना चाहिए:
  1. **Balance** the competing goals of **investment protection** and the state's **sovereign right to regulate**.  
**निवेश सुरक्षा** और राज्य के **स्वायत्त नियामक अधिकार** के प्रतिस्पर्धी लक्ष्यों के बीच **संतुलन** बनाना चाहिए।
  2. It should **contain unambiguous provisions** to reduce the **discretion of investor-state dispute settlement (ISDS) tribunals**.  
इसमें **स्पष्ट प्रावधान** होने चाहिए, जो **निवेशक-राज्य विवाद समाधान (ISDS) न्यायाधिकरणों** की **विवेकाधीनता** को कम करें।

## Departures from the Model

### मॉडल से विचलन

- India adopted a **Model BIT** in 2015, but it has barely signed a handful of BITs based on this model.  
भारत ने **2015 में एक मॉडल BIT** अपनाया था, लेकिन इस मॉडल पर आधारित केवल कुछ ही BITs पर हस्ताक्षर किए हैं।
- The **India-UAE BIT** departs from the **Model BIT** on some significant issues.  
**भारत-UAE BIT** कुछ महत्वपूर्ण मुद्दों पर **मॉडल BIT** से विचलित है।
  - First, it provides that **a foreign investor must exhaust local remedies for at least three years before bringing an ISDS claim**.  
पहला, यह प्रदान करता है कि एक विदेशी निवेशक को **स्थानीय उपायों** का उपयोग करने के लिए कम से कम **तीन साल** का समय देना होगा, इससे पहले कि वह **ISDS दावा** कर सके।
  - In the **Model BIT** and subsequent BITs signed by India with countries like **Belarus and Kyrgyzstan**, this period is **five years**.  
**मॉडल BIT** और भारत द्वारा देशों जैसे **बेलारूस** और **किर्गिज़स्तान** के साथ हस्ताक्षरित बाद की BITs में यह अवधि **पाँच साल** थी।
  - **Five years** is considered too long by several countries.  
कई देशों का मानना है कि **पाँच साल** बहुत लंबा है।
  - Given the overstretched **Indian judicial system**, it is unlikely that a foreign investor's legal dispute with the state would be resolved in **five years**.





भारतीय न्यायिक प्रणाली की अधिक खिंचाव को देखते हुए, यह संभावना नहीं है कि विदेशी निवेशक का राज्य के साथ कानूनी विवाद पाँच साल में हल हो।

- This shows India has taken these concerns into account and softened its stand, offering **quicker access to ISDS**.

यह दर्शाता है कि भारत ने इन चिंताओं को ध्यान में रखते हुए अपनी स्थिति को नरम किया है, और **ISDS तक शीघ्र पहुंच** की पेशकश की है।

- A shorter waiting period to invoke ISDS does not mean that India is exposing itself to **treaty claims**, as asserted by some.

ISDS को लागू करने के लिए छोटे इंतजार की अवधि का मतलब यह नहीं है कि भारत खुद को **संधि दावों** के लिए उजागर कर रहा है, जैसा कि कुछ ने दावा किया है।

- The function of investment treaties is to safeguard foreign investment from **sovereign regulatory abuse**.

निवेश संधियों का कार्य विदेशी निवेश को **स्वायत्त नियामक दुरुपयोग** से बचाना है।

- As long as India does not indulge in **regulatory abuse**, it need not worry about **ISDS claims**.

जब तक भारत **नियामक दुरुपयोग** में लिप्त नहीं होता, तब तक उसे **ISDS दावों** की चिंता करने की आवश्यकता नहीं है।

- Second, the **definition of investment** in the **India-UAE BIT** states that for an enterprise to qualify as an investment, it should possess key **economic characteristics** like **commitment of capital, profit expectation, and risk assumption**.

दूसरा, **भारत-UAE BIT** में **निवेश की परिभाषा** कहती है कि एक उद्यम को निवेश के रूप में मान्यता प्राप्त करने के लिए इसे **आर्थिक विशेषताएँ** जैसे पूंजी की प्रतिबद्धता, लाभ की अपेक्षा, और **जोखिम की स्वीकृति** होनी चाहिए।

- The criterion that the investment should be **significant for the development of the host state**, which is present in the **Model BIT**, has been **done away with**.

यह मापदंड कि निवेश को **मेज़बान राज्य के विकास के लिए महत्वपूर्ण होना चाहिए**, जो कि **मॉडल BIT** में था, उसे हटा दिया गया है।

- This is a **welcome development** clarifying the **jurisdictional question**.

यह एक **स्वागत योग्य विकास** है, जो **अधिकार क्षेत्र संबंधी प्रश्न** को स्पष्ट करता है।

- **Several ISDS tribunals have held that proving foreign investment is significant for the development of the host state is an inherently value-laden exercise.**

कई **ISDS न्यायाधिकरणों** ने यह माना है कि यह साबित करना कि विदेशी निवेश मेज़बान राज्य के विकास के लिए महत्वपूर्ण है, एक **मूल्य-निर्भर प्रक्रिया** है।

- **By removing this subjective element, India and the UAE have reduced arbitral discretion.**

इस **वस्तुनिष्ठ तत्व** को हटा कर, भारत और UAE ने **निर्णायक विवेकाधीनता** को कम किया है।

- When a lawfully created enterprise satisfies other key economic investment characteristics, it is **presumably significant** for the host state's development.

जब एक विधिपूर्वक निर्मित उद्यम अन्य प्रमुख आर्थिक निवेश विशेषताओं को पूरा करता है, तो यह **संदिग्ध रूप से महत्वपूर्ण** होता है मेज़बान राज्य के विकास के लिए।





## Greater clarity

### अधिक स्पष्टता

- Third, **Article 4 of the India-UAE BIT**, which talks of 'treatment of investments', specifically lists when state action will amount to a treaty violation such as when there is a **denial of justice** or when there is a **fundamental breach of due process in dealing with investment**.  
तीसरे, भारत-यूएई बीआईटी के **अनुच्छेद 4**, जो 'निवेशों के उपचार' के बारे में बात करता है, विशेष रूप से यह सूचीबद्ध किया गया है कि राज्य की क्रिया कब एक संधि उल्लंघन मानी जाएगी, जैसे जब **न्याय का इनकार** होता है या जब निवेश के साथ निपटने में **प्रक्रियात्मक उल्लंघन** होता है।
- These grounds are mentioned in a similar provision in the **Model BIT**. However, in the **Model BIT**, these grounds are linked to **customary international law (CIL)** whereas in **Article 4 of the India-UAE BIT**, there is no reference to CIL.  
ये कारण **मॉडल बीआईटी** में एक समान प्रावधान में उल्लेखित हैं। हालांकि, **मॉडल बीआईटी** में इन कारणों को **परंपरागत अंतर्राष्ट्रीय कानून (CIL)** से जोड़ा गया है, जबकि भारत-यूएई बीआईटी के **अनुच्छेद 4** में CIL का कोई संदर्भ नहीं है।
- The content of CIL concerning various aspects of foreign investment is not settled. Thus, a reference to CIL in the treaty, as numerous ISDS cases show, gives **too much discretion** to these tribunals.  
विदेशी निवेश के विभिन्न पहलुओं से संबंधित CIL की सामग्री स्थिर नहीं है। इस प्रकार, संधि में CIL का संदर्भ, जैसा कि कई **ISDS मामलों** में दिखाया गया है, इन न्यायाधिकरणों को **अत्यधिक विवेक** देता है।
- Consequently, **Article 4** brings greater clarity for states and investors and curbs **arbitral discretion**.  
परिणामस्वरूप, **अनुच्छेद 4** राज्यों और निवेशकों के लिए अधिक स्पष्टता लाता है और **न्यायिक विवेक** को सीमित करता है।

## A continuity

### एक निरंतरता

- Notwithstanding some departures, the **India-UAE BIT** establishes a continuity of India's investment treaty practice.  
कुछ विचलनों के बावजूद, **भारत-यूएई बीआईटी** भारत की निवेश संधि प्रथा की निरंतरता स्थापित करता है।
- For instance, the **India-UAE BIT**, like the **Model**, does not contain the **most favoured nation (MFN)** provision, which is a core non-discrimination standard in international economic relations.  
उदाहरण के लिए, **भारत-यूएई बीआईटी**, जैसे **मॉडल बीआईटी**, **सबसे Favored Nation (MFN)** प्रावधान को शामिल नहीं करता है, जो अंतर्राष्ट्रीय आर्थिक संबंधों में एक मूलभूत गैर-भेदभाव मानक है।
- Likewise, **state action on taxation** is outside the scope of the **India-UAE BIT**.  
इसी तरह, **कराधान पर राज्य की कार्रवाई** भारत-यूएई बीआईटी के दायरे से बाहर है।
- Thus, arguably, a foreign investor cannot challenge **tax measures** even if they are abusive.





इसलिए, यह कहा जा सकता है कि एक विदेशी निवेशक **कर उपायों** को चुनौती नहीं दे सकता, भले ही वे दुरुपयोगपूर्ण हों।

- This maximises the state's **regulatory power** at the cost of **investment protection**.  
यह निवेश संरक्षण की कीमत पर राज्य की **नियामक शक्ति** को अधिकतम करता है।
- Like the **Model BIT, Article 14.6(i) of the India-UAE BIT** bars the jurisdiction of an ISDS tribunal to review the '**merits**' of a **domestic court decision**.  
**मॉडल बीआईटी** की तरह, **भारत-यूई बीआईटी का अनुच्छेद 14.6(i)** ISDS न्यायाधिकरण के अधिकार क्षेत्र को घरेलू अदालत के निर्णय की '**योग्यता**' की समीक्षा करने से रोकता है।
- Arguably, '**merits**' means that ISDS tribunals should not act as a **court of appeal**.  
यह कहा जा सकता है कि '**योग्यता**' का मतलब है कि ISDS न्यायाधिकरण को **अपील अदालत** के रूप में कार्य नहीं करना चाहिए।
- However, '**merits**' can also have an alternative interpretation.  
हालांकि, '**योग्यता**' का एक वैकल्पिक व्याख्या भी हो सकता है।
- Since the investor will bring an ISDS claim on the same issue adjudicated by the domestic court, the state can plausibly argue that the case is on the '**merits**' of the **domestic court decision**.  
चूंकि निवेशक उसी मुद्दे पर ISDS दावा करेगा जिसे घरेलू अदालत ने निपटाया है, राज्य यह तर्क कर सकता है कि मामला घरेलू अदालत के निर्णय की '**योग्यता**' पर है।
- This might impede the tribunal's ability to hear the case.  
यह न्यायाधिकरण की मामले की सुनवाई करने की क्षमता को रोक सकता है।
- On some issues, the **India-UAE BIT** goes beyond the **Model**.  
कुछ मुद्दों पर, **भारत-यूई बीआईटी** मॉडल से आगे जाता है।
- For instance, it specifically disallows **third-party funding** and the **unavailability of ISDS** if an allegation of **fraud or corruption** is made against the investor.  
उदाहरण के लिए, यह विशेष रूप से **तीसरे पक्ष की वित्तीय सहायता** को अस्वीकृत करता है और **ISDS की अनुपलब्धता** को यदि निवेशक के खिलाफ **धोखाधड़ी** या **भ्रष्टाचार** का आरोप लगाया जाए।
- One does not know whether the departures from the **Model BIT** signify India's change of heart or are specific to the **UAE**.  
यह नहीं पता है कि **मॉडल बीआईटी** से विचलन **भारत** के मन परिवर्तन का संकेत देते हैं या **यूई** से संबंधित हैं।
- **Developed countries** would be pleased with India's softening of the **five-year domestic litigation requirement**.  
**विकसित देशों** को भारत द्वारा **पाँच साल के घरेलू मुकदमेबाजी** की आवश्यकता को नरम करने पर खुशी होगी।
- However, they would remain concerned about India's continued stand of excluding **MFN** and **taxation issues** from the BIT's ambit.  
हालांकि, वे भारत के **MFN** और **कराधान मुद्दों** को बीआईटी के दायरे से बाहर रखने के लगातार रुख को लेकर चिंतित रहेंगे।





# Is social media doing more harm than good to democracy?

SS Paper III: S&T

PARLEY



**Alan Rusbridger**

Editor of 'Prospect Magazine', former editor-in-chief of 'The Guardian' and a member of Meta's Oversight Board which makes content and policy recommendations for Facebook, Instagram, and Threads



**Pratik Sinha**

Co-founder and editor of AltNews, a fact-checking website

In the U.K., *The Guardian* newspaper announced earlier this month that it will no longer be posting on X, claiming that it is "a toxic media platform" and that its owner, Elon Musk, "has been able to use its influence to shape political discourse." Is social media a useful tool or is it becoming a threat to democratic societies? Alan Rusbridger and Pratik Sinha discuss the question in a conversation moderated by Priscilla Jebaraj. Edited excerpts:

**How much should a news outlet or even regular users be worried about the ownership of a social media platform in deciding where to post and where to consume news?**

**Alan Rusbridger:** It is a real dilemma because Twitter (now X) was for many years a really wonderful place for posting news, finding audiences, finding out news, and building relationships. In normal circumstances, who owns a media platform shouldn't worry us too much. But Elon Musk has so dominated Twitter, the platform that he bought, and insisted that people follow him, that it is difficult to ignore the question of ownership.

**Pratik Sinha:** We should be worried. One should think of online spaces just the way we think of offline spaces. Offline, we try to quit toxic spaces and some people have the privilege of being able to do so. When you are able to quit a toxic relationship, typically it is because you are financially independent. *The Guardian* is such a huge organisation that even if it doesn't have traffic from X, it is okay for the newspaper. X is probably just a little more toxic than other platforms. So, it is a privilege that one is able to quit a more toxic platform and focus on others. It is important to know who owns media organisations, but it is not the only factor. One also has to look at day-to-day reportage. Had Mr. Musk bought X and not used it as a political tool, it would have been a different matter. But not only did he buy it; he uses it as a personal tool and not just a political tool. The algorithm has been tweaked to ensure that everyone on X sees his posts. That is where the problem lies.

**How important is social media to disseminate content?**

**PS:** Very important, unfortunately. Our primary sources of information have become social media platforms which are controlled by multi-billion dollar companies. We have to use these platforms because, how else do we reach out to people? And that also makes censorship



The company headquarters of X in downtown San Francisco. AP

easy because the government only has to have a relationship with these two or three platforms, the kind of relationships that governments typically have with monopolies, to ensure that the information that should reach citizens is censored. We are in a tricky space because we have no free platforms where information can reach citizens without many layers of filters.

**AR:** It used to be really important. There are about 350 million people on X, so that is a considerable audience. In the digital world, for a long time, it was really important to be able to amplify journalism through that platform. But people who analyse these things say that the number of referrals from social media, and to some extent from search engines, has declined.

**Are some platforms worse than others?**

**AR:** I think the problem is that there is a huge mismatch between the editorial standards and values that the best news organisations represent and the editorial standards of Mr. Musk. He has none. He has abandoned all the trust and safety teams. He doesn't believe in content moderation; he sees it as censorship. The attempts by regulators and advertisers to try and clean up X have been met with the most foul-mouthed rejection. He also holds contempt for the free press. He is constantly telling people that they shouldn't believe anything on the legacy media and that the only place you can find the truth nowadays is X. So it is an act of peculiar masochism to keep appearing on his platform when he despises us. That is why people are thinking, well, let's go somewhere where we are valued and where facts and truth and journalism still count for something.

**What alternatives do you think are better?**

**AR:** There is Mastodon, which everyone found extremely hard to use, so it has not really worked. There is Threads, which has become quite popular quite quickly. And there is



Any communication system which works well is great for citizens and for democracy. But when that same communication system is subsumed by the very system that is committing the atrocity, that is a problem  
**PRATIK SINHA**

Bluesky, which a lot of journalists are now fleeing to. There is a view that you shouldn't moderate anything. That is not a view that has widely brought favour in the world apart from the U.S. under Donald Trump. Most people feel that there is a lot of illegal, harmful content which should be moderated in some way.

**PS:** The problem is centralisation of information. What I consider as true alternatives are decentralised systems. Mastodon and Bluesky have been designed to be decentralised. I don't consider Threads as an alternative because it is just another product by a monopoly which is not decentralised, though it is attempting to include some decentralisation features. Alternatives will not be as convenient to use and we should be okay with that because it is the only way that these platforms will have the opportunity to improve.

Misinformation is platform-agnostic. Quantitatively, it is very difficult to say whether there is more on one platform, because it also depends on usage. For instance, in India, there is more misinformation on WhatsApp simply because the usage of WhatsApp is high in India. What is different is the amount of hate speech that is being put out on different platforms. All platforms have a policy vis-a-vis hate speech, but the question is whether these policies are being implemented or not. I don't think there is a single X employee dedicated to moderating Indian content on the platform. Everyone was fired. So, maybe in that particular aspect, Facebook might be slightly better than X because people are moderating content there.

**What kind of checks should platforms be putting in place to reduce such toxicity?**

**PS:** They need to invest money in people to moderate content. When riots had happened in Sri Lanka, Facebook did not have a single moderator in Sri Lanka. There were a few sitting in an office in Hyderabad. When the Rohingya exodus happened, there was no moderator in a local language. If you look at the number of moderators per million of population, India would be one of the lowest in the world. In India, there are many languages and nuance. Dog whistling is different in every language. None of these platforms are able to do that

because they don't want to invest the money.

**AR:** The best platforms are developing systems and it is bound to involve a lot of AI to try and identify people who are trying to cause real harm. During the recent Southport riots in England, Mr. Musk himself was re-posting really dangerous stuff. You can't have social media being used to organise murder. That should be obvious. So, whether it is human fact-checkers and moderators or AI systems and content management moderation systems, most people think that you have got to have some systems to catch the worst behaviour. Otherwise, this technology can be used to cause immense harm.

**What role do you think social media can play in building democracy?**

**PS:** We confuse a communication system with a communication system controlled by monopolies. Any communication system which works well is great for citizens and for democracy; it will be used by people to put their voice out. We know what is happening in Palestine because it is being broadcast. The number of people who died in the Iraq war was much higher than the number of people who have died in Palestine. But Iraq happened when there was no social media. But when that same communication system is subsumed by the system committing the atrocity, it is a problem.

**AR:** Social media at its best is marvellous. On a platform like Facebook, there are, I think, three billion people who have the ability to publish and connect with each other. They are mostly using it for good purposes to organise, or for innocent purposes. So, it would be terrible to blacken all social media, abandon it or clamp down on it. But I think it is possible to stamp out the dangerous way of using social media.

[news outlets] need to start by choosing a platform which is run on ethical lines and recreate the kind of reasonably civilised discourse which was good for journalism. From what I have seen of Bluesky, people are rejoicing in the fact that it feels purer.

**PS:** We have to have media and information literacy classes in schools where children learn how to look at different sources of information and process them. We need to think about decentralised communication systems. There will be challenges, but those aren't insurmountable.



To listen to the full interview Scan the code or go to the link [www.thehindu.com](http://www.thehindu.com)

## Is Social Media Doing More Harm Than Good to Democracy?

### क्या सोशल मीडिया लोकतंत्र के लिए ज्यादा हानि कर रहा है या लाभ?

- **The Guardian** announced earlier this month that it will no longer be posting on X, calling it "a toxic media platform" and accusing its owner **Elon Musk** of using its influence to shape political discourse.

द गार्डियन ने इस महीने की शुरुआत में घोषणा की कि वह अब X पर पोस्ट नहीं करेगा, इसे "एक जहरीला मीडिया प्लेटफॉर्म" कहते हुए और इसके मालिक **एलोन मस्क** पर इसका उपयोग राजनीतिक संवाद को आकार देने के लिए करने का आरोप लगाया।





- It is a real dilemma because **Twitter (now X) was a wonderful place for posting news, finding audiences, and building relationships.** But Elon Musk's dominance and insistence on people following him makes ownership a serious concern.

**एलन रुसब्रिजर:** यह एक वास्तविक दुविधा है क्योंकि ट्विटर (अब X) समाचार पोस्ट करने, दर्शकों को ढूँढने और संबंध बनाने के लिए एक शानदार स्थान था। लेकिन एलोन मस्क का प्रभुत्व और लोगों को उनका अनुसरण करने पर जोर देना स्वामित्व को एक गंभीर चिंता का विषय बना देता है।

- We should be worried, as online spaces should be treated just like offline spaces. Quitting a toxic relationship, like leaving a platform, is often a privilege, especially for large organizations like **The Guardian.** हमें चिंतित होना चाहिए, क्योंकि ऑनलाइन स्थानों को ठीक वैसे ही देखना चाहिए जैसे ऑफलाइन स्थानों को। एक जहरीले रिश्ते को छोड़ना, जैसे एक प्लेटफॉर्म को छोड़ना, अक्सर एक विशेषाधिकार होता है, विशेष रूप से **द गार्डियन** जैसी बड़ी संस्थाओं के लिए।

- **Musk's ownership of X is not just a business decision but also a personal and political tool, manipulating the algorithm to ensure everyone sees his posts.**

मस्क का X का स्वामित्व सिर्फ एक व्यावसायिक निर्णय नहीं है बल्कि यह एक **व्यक्तिगत और राजनीतिक उपकरण** है, जो एल्गोरिथम को इस तरह से बदलता है कि हर कोई उनके पोस्ट देखे।

- **Social media platforms have become the primary sources of information, controlled by billion-dollar companies, making it harder to disseminate information without layers of censorship.**

**सोशल मीडिया प्लेटफॉर्म** अब जानकारी के मुख्य स्रोत बन गए हैं, जो अरबों डॉलर की कंपनियों द्वारा नियंत्रित होते हैं, जिससे सेंसरशिप की कई परतों के बिना जानकारी फैलाना मुश्किल हो जाता है।

- Governments can easily censor information by building relationships with a few dominant platforms, thus controlling what information reaches citizens. सरकारें कुछ प्रमुख प्लेटफॉर्म के साथ रिश्ते बना कर आसानी से जानकारी को सेंसर कर सकती हैं, इस प्रकार यह नियंत्रित कर सकती हैं कि कौन सी जानकारी नागरिकों तक पहुँचती है।

- **Alan Rusbridger: While X had around 350 million users, its influence on amplifying journalism has been declining, as fewer people are using social media for news.**

**एलन रुसब्रिजर:** जबकि X के पास लगभग 350 मिलियन उपयोगकर्ता थे, इसका पत्रकारिता को बढ़ावा देने पर प्रभाव घट रहा है, क्योंकि कम लोग समाचार के लिए सोशल मीडिया का उपयोग कर रहे हैं।

## Are Some Platforms Worse Than Others?

### क्या कुछ प्लेटफॉर्म अन्य प्लेटफॉर्म से बुरे हैं?

- **AR:** I think the problem is that there is a huge mismatch between the editorial standards and values that the best news organisations represent and the editorial standards of Mr. Musk. He has none. He has abandoned all the trust and safety teams. He doesn't believe in content moderation; he sees it as censorship.

**एआर:** मुझे लगता है कि समस्या यह है कि बेहतरीन समाचार संगठनों द्वारा प्रदत्त संपादकीय मानकों और मूल्यों और श्री मस्क के संपादकीय मानकों के बीच एक बड़ा अंतर है। उनके पास कोई मानक नहीं है। उन्होंने सभी ट्रस्ट और सेफ्टी टीमों को छोड़ दिया है। उन्हें **कंटेंट मॉडरेशन** पर विश्वास नहीं है; वे इसे सेंसरशिप मानते हैं।





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- The attempts by regulators and advertisers to try and clean up **X** have been met with the most foul-mouthed rejection. He also holds contempt for the free press.  
नियामकों और विज्ञापनदाताओं के **X** को साफ करने के प्रयासों का सबसे गंदा विरोध किया गया है। वह **स्वतंत्र प्रेस** का भी तिरस्कार करता है।
- He is constantly telling people that they shouldn't believe anything on the legacy media and that the only place you can find the truth nowadays is **X**.  
वह लगातार लोगों से कहता है कि वे **विरासत मीडिया** पर कुछ भी विश्वास न करें और अब सत्य केवल **X** पर ही मिलेगा।
- So it is an act of peculiar masochism to keep appearing on his platform when he despises us.  
इसलिए यह एक अजीब **मासोकिज़्म** का कार्य है कि हम उसके प्लेटफॉर्म पर तब भी दिखाई देते रहें, जब वह हमें नफरत करता है।
- That is why people are thinking, well, let's go somewhere where we are valued and where facts and truth and journalism still count for something.  
इसीलिए लोग सोच रहे हैं, अच्छा, हम किसी ऐसे स्थान पर जाएं जहां हमें महत्व दिया जाए और जहां **तथ्य, सत्य और पत्रकारिता** अब भी कुछ मायने रखती हो।
- **AR**: There is **Mastodon**, which everyone found extremely hard to use, so it has not really worked. There is **Threads**, which has become quite popular quite quickly. And there is **Bluesky**, which a lot of journalists are now fleeing to.  
**एआर**: **मास्टोडॉन** है, जिसे हर किसी ने उपयोग करने में बेहद कठिन पाया, इसलिए यह सच में काम नहीं किया। **थ्रेड्स** है, जो जल्दी ही काफी लोकप्रिय हो गया है। और **ब्लूस्की** है, जहां अब बहुत सारे पत्रकार जा रहे हैं।
- There is a view that you shouldn't moderate anything. That is not a view that has widely brought favour in the world apart from the U.S. under **Donald Trump**.  
यह एक दृष्टिकोण है कि आपको कुछ भी मॉडरेट नहीं करना चाहिए। यह एक ऐसा दृष्टिकोण नहीं है जिसे दुनिया भर में पसंद किया गया हो, **डोनाल्ड ट्रंप** के **अमेरिका** के अलावा।
- **PS**: The problem is centralisation of information. What I consider as true alternatives are decentralised systems. **Mastodon** and **Bluesky** have been designed to be decentralised.  
**पीएस**: समस्या **सूचना का केंद्रीकरण** है। जो मैं सच्चे विकल्प मानता हूँ, वे **विकेंद्रीकृत** प्रणालियाँ हैं। **मास्टोडॉन** और **ब्लूस्की** को विकेंद्रीकृत होने के लिए डिज़ाइन किया गया है।
- I don't consider **Threads** as an alternative because it is just another product by a monopoly which is not decentralised, though it is attempting to include some decentralisation features.  
मैं **थ्रेड्स** को विकल्प नहीं मानता क्योंकि यह बस एक और उत्पाद है, जो एक **एकाधिकार** द्वारा नियंत्रित है और विकेंद्रीकृत नहीं है, हालांकि यह कुछ विकेंद्रीकरण सुविधाएँ शामिल करने का प्रयास कर रहा है।
- **Misinformation is platform-agnostic**. Quantitatively, it is very difficult to say whether there is more on one platform, because it also depends on usage.  
**गलत जानकारी किसी भी प्लेटफॉर्म से संबंधित नहीं होती।** मात्रात्मक रूप से यह कहना बहुत मुश्किल है कि किसी एक प्लेटफॉर्म पर ज्यादा गलत जानकारी है, क्योंकि यह उपयोग पर भी निर्भर करता है।
- For instance, in **India**, there is more misinformation on **WhatsApp** simply because the usage of **WhatsApp** is high in India.

**Website: [patrioticias.in](http://patrioticias.in)**

**Telegram Channel: <https://t.me/patrioticIAS>**





उदाहरण के लिए, **भारत** में **व्हाट्सएप** पर गलत जानकारी ज्यादा है, बस इसलिए क्योंकि **व्हाट्सएप** का उपयोग **भारत** में ज्यादा है।

- What is different is the amount of **hate speech** that is being put out on different platforms.  
जो अलग है वह है **घृणा भाषण** की मात्रा जो विभिन्न प्लेटफॉर्म पर डाली जा रही है।
- All platforms have a policy vis-a-vis **hate speech**, but the question is whether these policies are being implemented or not.  
सभी प्लेटफॉर्म के पास **घृणा भाषण** के संबंध में नीति है, लेकिन सवाल यह है कि क्या ये नीतियाँ लागू हो रही हैं या नहीं।
- I don't think there is a single **X employee** dedicated to moderating Indian content on the platform. Everyone was fired.  
मुझे नहीं लगता कि **X** पर भारतीय सामग्री को मॉडरेट करने के लिए एक भी **कर्मचारी** है। सभी को निकाल दिया गया था।
- So, maybe in that particular aspect, **Facebook** might be slightly better than **X** because people are moderating content there.  
इसलिए, शायद उस विशेष पहलू में, **फेसबुक X** से थोड़ा बेहतर हो सकता है क्योंकि वहां लोग सामग्री का मॉडरेशन कर रहे हैं।
- **PS**: They need to invest money in people to moderate content. When riots had happened in **Sri Lanka**, **Facebook** did not have a single moderator in **Sri Lanka**.  
**पीएस**: उन्हें **कंटेंट मॉडरेट** करने के लिए लोगों में पैसे का निवेश करना होगा। जब **श्रीलंका** में दंगे हुए थे, **फेसबुक** में **श्रीलंका** में एक भी मॉडरेटर नहीं था।
- There were a few sitting in an office in **Hyderabad**. When the **Rohingya exodus** happened, there was no moderator in a local language.  
कुछ लोग **हैदराबाद** के कार्यालय में बैठे थे। जब **रोहिंग्या पलायन** हुआ, तो स्थानीय भाषा में कोई मॉडरेटर नहीं था।
- If you look at the number of moderators per million of population, **India** would be one of the lowest in the world.  
यदि आप प्रति मिलियन जनसंख्या पर मॉडरेटर की संख्या देखें, तो **भारत** दुनिया में सबसे कम मॉडरेटर वाले देशों में से एक होगा।
- In **India**, there are many languages and nuance. Dog whistling is different in every language.  
**भारत** में कई भाषाएँ और सूक्ष्म अंतर हैं। **डॉग व्हिसलिंग** हर भाषा में अलग होती है।
- None of these platforms are able to do that because they don't want to invest the money. इनमें से कोई भी प्लेटफॉर्म ऐसा नहीं कर पा रहा क्योंकि वे पैसे का निवेश नहीं करना चाहते।
- **AR**: The best platforms are developing systems and it is bound to involve a lot of **AI** to try and identify people who are trying to cause real harm.  
**एआर**: सबसे अच्छे प्लेटफॉर्म **AI** का उपयोग कर रहे हैं ताकि वे उन लोगों की पहचान कर सकें जो वास्तविक नुकसान पहुंचाने की कोशिश कर रहे हैं।
- During the recent **Southport riots** in **England**, Mr. Musk himself was reposting really dangerous stuff.





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हाल ही में साउथपोर्ट दंगों के दौरान इंग्लैंड में, श्री मस्क खुद बहुत खतरनाक सामग्री को फिर से पोस्ट कर रहे थे।

- You can't have social media being used to organise **murder**. That should be obvious. आप सोशल मीडिया का उपयोग **हत्या** को संगठित करने के लिए नहीं कर सकते। यह स्पष्ट होना चाहिए।
- Whether it is **human fact-checkers** and moderators or **AI systems** and **content management moderation systems**, most people think that you have got to have some systems to catch the worst behaviour.

चाहे वह **मानव फैक्ट-चेकर्स** और मॉडरेटर हों या **AI सिस्टम्स** और **कंटेंट प्रबंधन मॉडरेशन सिस्टम्स**, अधिकांश लोग मानते हैं कि आपको सबसे खराब व्यवहार को पकड़ने के लिए कुछ सिस्टम होना चाहिए।

- Otherwise, this technology can be used to cause immense harm. अन्यथा, इस प्रौद्योगिकी का उपयोग विशाल नुकसान पहुंचाने के लिए किया जा सकता है।
- **PS:** We confuse a communication system with a communication system controlled by monopolies.

**पीएस:** हम एक संचार प्रणाली को एक ऐसी संचार प्रणाली से भ्रमित करते हैं जो **एकाधिकार** द्वारा नियंत्रित है।





# Is Delhi becoming an uninhabitable city?

Delhi is perhaps going to become, if it has not already, an uninhabitable city for two different reasons. In the winters, pollution levels peak, while during summers, the heat waves are unbearable, both affecting Delhi's poor disproportionately

GS Paper III: Environment

GS Paper III: Urbanization

## EXPLAINER

**Rohit Azad**  
**Shouvik Chakraborty**

**A**ir quality index (AQI), according to the Central Pollution Control Board (CPCB), is a measure of the concentration of eight pollutants – particulate matter (PM)10, PM2.5, nitrogen dioxide (NO2), sulphur dioxide (SO2), carbon monoxide (CO), ozone (O3), ammonia (NH3), and lead (Pb) – in the air at a monitoring location. A sub-index is calculated for each of these pollutants (not all may be measured at every station); and the worst among them is the AQI for that location. So, AQI transforms complex air quality data into an index we can understand.

### How uninhabitable is Delhi?

Delhi is perhaps going to become, if it has not already, an uninhabitable city for two different reasons. In winters (October-February), pollution levels peak, while during summers (April-June), the heat waves are unbearable, both affecting Delhi's poor disproportionately. This piece concerns itself with air pollution. This article will focus on the PM2.5 in particular because it dominates the AQI reading in Delhi and is quite dangerous as it is likely to travel to the deeper parts of the lungs owing to its extremely small size, the largest of which is 30 times thinner than human hair.

Chart 1 shows how the quality of air has been over a period of seven years (2017-2023). AQI is categorised in six ranges in India. We have combined some of them to represent as: good (0-50), satisfactory to moderate (51-200), and poor to severe (201 and above). A few things stand out. One, Delhi has had only two days of healthy air per year. Two, more than half a year people are inhaling air unfit for breathing. Three, and quite remarkably, even for 2020, a lockdown year, things were only marginally better. It's clear there is something systemically wrong with the system.

### Why is Delhi's air quality so poor?

The government often tells us that stubble burning in Punjab, Haryana, and U.P. is responsible for Delhi's pollution. It's a half-truth. We pick the most intense days of November this year when stubble burning's contribution to PM2.5 has been at its peak (in the range of 15-35%). Chart 2 plots the actual AQI against a hypothetical scenario of zero stubble burning, and the result is startling. Not even on one of these days would the AQI have fallen below the very poor AQI benchmark (300). This exercise is not to downplay the role of stubble burning. It is to show that it is a red herring used by the two warring political parties, one which runs the Union Territory and the other this country, to avoid acting on the problem in any serious manner.

### What are the factors contributing to the AQI other than stubble burning?

An extensive 2023 report prepared by IIT Kanpur, IIT Delhi, TERI New Delhi, and Airshed Kanpur shows that, even during winter months, when sources of pollution external to Delhi are at their peak, half of the PM2.5 levels can be apportioned to Delhi itself (Chart 3). Vehicles alone contribute 58% – 34% of the exhaust and 24% due to wear and tear of tyres/brakes – to this total. The only realistic solution to air pollution is a massive shift in the way Delhi travels, that is, from private (cars and motorcycles) to

## Death by breath in Delhi

While Delhi's death rate attributable to household pollution is negligible in comparison to the Indian average, it is higher than the Indian average for ambient PM pollution, which reiterates the unhealthy levels of persistent exposure one has to PM2.5 and PM10 throughout the year

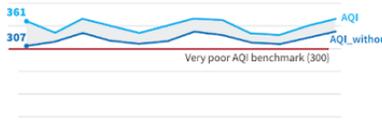
**Chart 1: Quality of Delhi's air over time**

Average number of days per year (2017-2023)



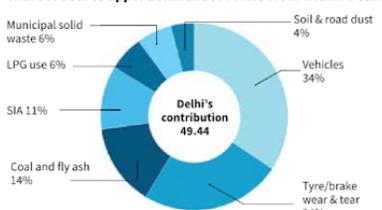
**Chart 2: Stubble burning and Delhi's AQI**

AQI with and without stubble burning (hypothetical)



1. PM2.5 figures are for Delhi ITO area 2. To construct the hypothetical AQI series without stubble burning, we have deducted the day specific contribution of stubble burning from PM2.5 and then converted those readings into CPCB's AQI calculator

**Chart 3: Source apportionment of PM2.5 from within Delhi**



public transport running on cleaner energy, with last mile connectivity, a step which will bring the number of vehicles on the road down significantly.

### Why are the winters so much worse?

The concentration of pollutants in the air depends not just on emissions but also on many meteorological factors – temperature, wind direction/speed, and rain, among other things. Hot air, being lighter, moves up (thereby carrying the pollutants with it), whereas cold air traps pollutants and keeps them closer to the ground. Similarly, wind can disperse the pollutants, while rain can force the most common air pollutants, like PM2.5 and PM10, to the ground. Cold air with slow wind speed and no rains make Delhi a pot of pollution with a lid on.

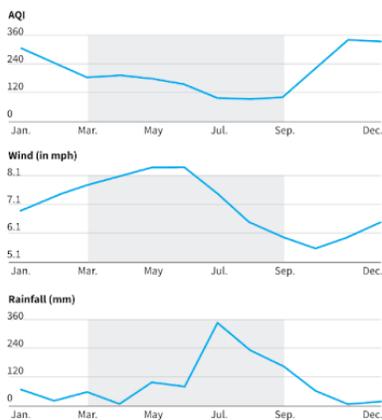
Chart 4 shows that for the months which have a moderate AQI, either the wind speed is relatively higher (February-June) or rainfall is greater (July-September) than the rest of the year. Both these factors, aided by warmer air, lift the air quality of Delhi from poor/severe to moderate. Given that Delhi's own emissions are not winter-specific, its air quality would have been poor throughout the year but for these favourable factors from March through September.

### What is the impact?

According to the WHO, 'almost every organ in the body can be impacted by air

**Chart 4: Weather factors and Delhi pollution**

Wind speed and rainfall play a role in bringing AQI down

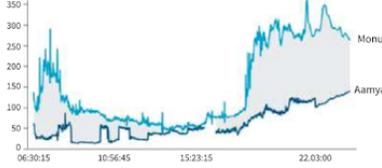


**Chart 5: Death rates attributable to air pollution**



**Chart 6: Exposure to PM2.5 by Monu and Aamya**

24 hour monitoring on December 3, 2019



Source: Data for the charts are taken from sansad.in, Indian Institute of Tropical Meteorology Pune (IITM), CPCB, weatherspark.com, DPCC 2023 report, Indian Agricultural Research Institute (IARI), Press Information Bureau (PIB), Lancet planet health, New York Times article

## THE GIST

▼ An extensive 2023 report prepared by IIT Kanpur, IIT Delhi, TERI New Delhi, and Airshed Kanpur shows that, even during winter months, when sources of pollution external to Delhi are at their peak, half of the PM2.5 levels can be apportioned to Delhi itself.

▼ According to the WHO, 'almost every organ in the body can be impacted by air pollution' and some air pollutants can enter the bloodstream via the lungs which can lead to systemic inflammation and carcinogenicity.

▼ Children whose lungs are still developing get adversely affected, and within those, poor children lose much more than their more affluent counterparts.





## Is Delhi becoming an uninhabitable city? क्या दिल्ली एक अवासीय शहर बनता जा रहा है?

- Delhi is becoming uninhabitable for two main reasons: **winter pollution peaks** and **summer heat waves**, both disproportionately affecting **Delhi's poor**.
- दिल्ली दो मुख्य कारणों से अवासीय शहर बनता जा रहा है: **सर्दियों में प्रदूषण का पीक होना** और **गर्मी की लहरें**, जो दिल्ली के गरीबों को असमान रूप से प्रभावित करती हैं।
- The **Air Quality Index (AQI)** measures eight pollutants: **PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb**.
- वायु गुणवत्ता सूचकांक (AQI) आठ प्रदूषकों को मापता है: **PM10, PM2.5, NO2, SO2, CO, O3, NH3, और Pb**।
- AQI categorizes the air as: **good (0-50), satisfactory to moderate (51-200), and poor to severe (201 and above)**.
- AQI वायु को इस प्रकार श्रेणीबद्ध करता है: **अच्छा (0-50), संतोषजनक से मध्यम (51-200), और खराब से गंभीर (201 और उससे अधिक)**।
- Delhi had only **two days of healthy air** per year between 2017-2023.
- दिल्ली के पास 2017-2023 के बीच केवल **दो दिन स्वस्थ हवा** के थे।
- More than **half a year**, people are inhaling **unfit air**.
- **आधा साल** से अधिक लोग **अस्वस्थ हवा** का श्वास लेते हैं।
- Even **2020, the lockdown year**, showed **marginally better** air quality.
- यहां तक कि **2020, लॉकडाउन वर्ष**, में भी हवा की गुणवत्ता **थोड़ी बेहतर** थी।

## Why is Delhi's air quality so poor? दिल्ली की वायु गुणवत्ता इतनी खराब क्यों है?

- The government blames **stubble burning** in **Punjab, Haryana, and U.P.**, but it is only a **half-truth**.
- सरकार **पंजाब, हरियाणा, और यूपी** में **पराली जलाने** को दोषी ठहराती है, लेकिन यह केवल एक **आधा सच** है।
- A **2023 report** by IIT Kanpur, IIT Delhi, TERI, and Airshed shows that even in winter, **half of the PM2.5 levels** come from **Delhi itself**.
- IIT कानपुर, IIT दिल्ली, TERI और एयरशेड द्वारा **2023 रिपोर्ट** दिखाती है कि सर्दियों में भी **PM2.5 स्तरों का आधा हिस्सा दिल्ली से ही** आता है।
- **Vehicles** contribute **58%** to PM2.5 levels, with **34%** from exhaust and **24%** from tire/brake wear and tear.
- **वाहन** PM2.5 स्तरों में **58%** का योगदान करते हैं, जिसमें **34%** निकासी से और **24%** टायर/ब्रेक की घिसाई से आता है।





- A realistic solution is a **massive shift to public transport** running on **clean energy** with improved **last-mile connectivity**.
- एक वास्तविक समाधान सार्वजनिक परिवहन की ओर एक विशाल बदलाव है, जो स्वच्छ ऊर्जा पर चल रहा हो और जिसमें अंतिम मील कनेक्टिविटी सुधार हो।

## Why are the winters so much worse?

### सर्दियाँ इतनी खराब क्यों होती हैं?

- The concentration of pollutants in the air depends not just on **emissions** but also on many **meteorological factors** — **temperature, wind direction/speed, and rain**, among other things.  
वायु में प्रदूषकों का सांद्रण केवल उत्सर्जन पर निर्भर नहीं होता, बल्कि कई मौसमीय कारकों पर भी निर्भर करता है — तापमान, हवा की दिशा/गति, और बारिश, आदि।
- **Hot air**, being lighter, moves up (thereby carrying the pollutants with it), whereas **cold air** traps pollutants and keeps them closer to the ground.  
**गर्म हवा**, हल्की होने के कारण ऊपर उठती है (जिससे प्रदूषक इसके साथ ऊपर जाते हैं), जबकि **ठंडी हवा** प्रदूषकों को फंसाती है और उन्हें जमीन के करीब रखती है।
- Similarly, **wind** can disperse the pollutants, while **rain** can force the most common air pollutants, like **PM2.5** and **PM10**, to the ground.  
इसी तरह, **हवा** प्रदूषकों को फैलाने में मदद कर सकती है, जबकि **बारिश** आमतौर पर वायु प्रदूषकों जैसे **PM2.5** और **PM10** को जमीन पर खींच सकती है।
- **Cold air with slow wind speed and no rains makes Delhi a pot of pollution with a lid on.**  
**ठंडी हवा और धीमी हवा की गति और बारिश के बिना** दिल्ली को एक प्रदूषण का बर्तन बना देती है जिसमें ढक्कन हो।
- Chart 4 shows that for the months which have a **moderate AQI**, either the **wind speed** is relatively higher (**February-June**) or **rainfall** is greater (**July-September**) than the rest of the year.  
चार्ट 4 दिखाता है कि उन महीनों के लिए जिनका **मध्यम AQI** है, या तो **हवा की गति** अपेक्षाकृत अधिक होती है (**फरवरी-जून**) या **बारिश** अधिक होती है (**जुलाई-सितंबर**) वर्ष के बाकी हिस्सों की तुलना में।
- Both these factors, aided by **warmer air**, lift the air quality of Delhi from **poor/severe** to **moderate**.  
ये दोनों कारक, **गर्म हवा** की मदद से, दिल्ली की वायु गुणवत्ता को **खराब/गंभीर** से **मध्यम** में उठा देते हैं।
- Given that Delhi's own **emissions** are not **winter-specific**, its air quality would have been poor throughout the year but for these favourable factors from **March through September**.  
यह देखते हुए कि दिल्ली के अपने **उत्सर्जन सर्दियों के विशिष्ट** नहीं हैं, इसकी वायु गुणवत्ता पूरे वर्ष खराब रहती, लेकिन **मार्च से सितंबर** तक इन अनुकूल कारकों के कारण स्थिति बेहतर रही।

## What is the impact?

### प्रभाव क्या है?





- According to the **WHO**, 'almost every organ in the body can be impacted by air pollution' and some air pollutants can enter the bloodstream via the **lungs**, leading to **systemic inflammation** and **carcinogenicity**.  
**WHO** के अनुसार, 'शरीर के लगभग हर अंग पर वायु प्रदूषण का प्रभाव पड़ सकता है' और कुछ वायु प्रदूषक **फेफड़ों** के माध्यम से रक्तप्रवाह में प्रवेश कर सकते हैं, जिससे **संवहनीय सूजन** और **कैंसरजनकता** हो सकती है।
- A study in the **Lancet Planet Health journal** shows that in **2019**, an estimated **1.67 million deaths** in India were attributable to pollution, and **one out of 10 deaths** were caused by **ambient particulate matter (PM)** pollution.  
लांसेट प्लैनेट हेल्थ जर्नल में एक अध्ययन दिखाता है कि **2019** में, **1.67 मिलियन मौतें** भारत में प्रदूषण के कारण हुईं, और **10 में से 1 मौतें वातावरणीय कण प्रदूषण (PM)** के कारण हुईं।
- The study categorises the deaths attributable to **ambient PM**, **household**, and **ambient ozone pollution**.  
यह अध्ययन **वातावरणीय PM**, **घरेलू**, और **वातावरणीय ओजोन प्रदूषण** के कारण होने वाली मौतों को वर्गीकृत करता है।
- Chart 5 contrasts the death rates (number of deaths per **1,00,000 population**) at the all-India level with those of **Delhi**.  
चार्ट 5 भारत स्तर पर मृत्यु दर (प्रति **1,00,000 जनसंख्या** मौतों की संख्या) की तुलना दिल्ली की मृत्यु दर से करता है।
- While Delhi's death rate attributable to **household pollution** is negligible in comparison to the **Indian average**, it is higher than the **Indian average** for **ambient PM pollution**, which reiterates the **unhealthy levels** of persistent exposure to **PM2.5** and **PM10** throughout the year.  
जबकि दिल्ली की **घरेलू प्रदूषण** से संबंधित मृत्यु दर **भारतीय औसत** की तुलना में नगण्य है, यह **वातावरणीय PM प्रदूषण** के लिए **भारतीय औसत** से अधिक है, जो वर्ष भर **PM2.5** और **PM10** के निरंतर संपर्क में आने के **अस्वस्थ स्तरों** को फिर से रेखांकित करता है।
- More importantly, this health impact is not undifferentiated across **class**. The **poor** and the **marginalised** suffer disproportionately more than the others.  
और अधिक महत्वपूर्ण बात यह है कि यह स्वास्थ्य प्रभाव **वर्ग** के बीच असमान रूप से होता है। **गरीब** और **हाशिए पर** रहने वाले लोग अन्य लोगों की तुलना में अधिक प्रभावित होते हैं।
- Based on a photo/data essay in the **New York Times**, Chart 6 plots the real-time exposure to **PM2.5** for two similar-aged children in Delhi, **Monu**, who comes from a poor neighbourhood across the **Yamuna**, and **Aanya**, who comes from a more affluent family living in **Greater Kailash**.  
**न्यूयॉर्क टाइम्स** में एक फोटो/डाटा निबंध के आधार पर, चार्ट 6 दिल्ली में दो समान आयु वर्ग के बच्चों के लिए **PM2.5** के वास्तविक समय के संपर्क को प्लॉट करता है, **मोनू**, जो **यमुना** के पार एक गरीब मोहल्ले से आता है, और **आम्या**, जो **ग्रेटर कैलाश** में एक अधिक संपन्न परिवार से आती है।
- The shaded area between the two lines in Chart 6 is the **class gap** to pollution exposure.  
चार्ट 6 में दो लाइनों के बीच की छायांकित क्षेत्र **प्रदूषण संपर्क में वर्ग अंतर** को दर्शाता है।
- With some simplifying assumptions, the article argues that this kind of **consistent exposure** over a long term could shorten **Monu's life** by around **five years**, compared





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to **Aamya** (whose life expectancy also gets shortened).

कुछ सरल मान्यताओं के साथ, लेख यह तर्क करता है कि इस प्रकार का **निरंतर संपर्क** लंबे समय तक **मोनु की जिंदगी** को लगभग **पाँच साल** कम कर सकता है, **आम्या** की तुलना में (जिसकी जीवन प्रत्याशा भी कम हो जाती है)।

- **Children** whose **lungs** are still developing get adversely affected, and within those, **poor children** lose much more than their more affluent counterparts.  
वे **बच्चे**, जिनके **फेफड़े** अभी भी विकसित हो रहे हैं, प्रतिकूल रूप से प्रभावित होते हैं, और उनमें से **गरीब बच्चे** अपने अधिक संपन्न साथियों की तुलना में बहुत अधिक खोते हैं।
- Calling Delhi a **gas chamber** is therefore definitely not an exaggeration.  
इसलिए दिल्ली को **गैस चैम्बर** कहना निश्चित रूप से कोई अतिशयोक्ति नहीं है।
- Sure, we don't want our kids (or residents in general) to lose precious years of their lives because of what is a **controllable problem**.  
निश्चित रूप से, हम नहीं चाहते कि हमारे बच्चे (या निवासी सामान्य रूप से) अपनी जिन्दगी के कीमती सालों को **नियंत्रित किए जा सकने वाले समस्या** के कारण खो दें।
- But it requires a **political will** and an **imagination**.  
लेकिन इसके लिए **राजनीतिक इच्छा** और **कल्पना** की आवश्यकता है।
- Stopgap measures like **odd-even**, **red-light on engine-off**, **water sprinklers** every winter by the **AAP government**, which has now been in power for almost a decade, or **distribution of masks** by the **BJP**, are mostly measures aimed at **media management**, which will have **little to no impact** on the problems at hand.

**आप सरकार द्वारा ऑड-ईवन, लाल बतियों पर इंजन बंद करना, हर सर्दी में पानी की छिड़काव, जो**





# A 'bribery scheme' to bag lucrative solar power deals

The indictment of Gautam Adani and his business associates by the U.S. Department of Justice details how the alleged bribery scheme was systematically piloted over time and across jurisdictions using 'Bribery Notes', in-person meetings, PowerPoint slides, and Excel analyses of different payment options; it also gives details of the multiple meetings among the 'co-conspirators'

GS Paper II: Governance

**G. Sampath**  
NEW DELHI

The indictment of industrialist Gautam Adani and his business associates by the U.S. Department of Justice (DoJ) presents detailed allegations regarding the processes followed by senior executives of Adani Green Energy Ltd. and Azure Power Global Ltd. (a renewable energy company headquartered in New Delhi, which used to be listed on the New York stock exchange) to bribe Indian government officials and secure lucrative solar power contracts.

The indictment starts by explaining the alleged motivation for resorting to a bribery scheme. Between December 2019 and July 2020, Azure Power and a subsidiary of Adani Green Energy won, and were issued, letters of award (LOAs) for a manufacturing-linked solar tender offered by the Solar Energy Corporation of India (SECI), a company of the Union Ministry of New and Renewable Energy whose mission is to increase the use of renewable energy.

As part of this award, Azure Power and Adani Green's subsidiary would supply 4 GW and 8 GW of solar power, respectively, to the SECI, which would

buy it at a fixed rate. The SECI, in turn, had to find State electricity distribution companies (discoms) that would purchase this 12 GW of solar power.

### High prices

However, "the high energy prices" set out in the LOA made it impossible for the SECI to find buyers, thus jeopardising the "lucrative LOAs and corresponding revenue", notes the indictment.

As a result, "Gautam S. Adani, Sagar R. Adani [Mr. Gautam's nephew and executive director of Adani Green Energy], Vneet S. Jaain [former CEO of Adani Green Energy], Ranjit Gupta [former CEO of Azure Power Global]... among others, devised a scheme to offer, authorise, make and promise to make bribe payments to Indian government officials" in exchange for the said officials getting the State discoms to enter into PSAs (power sale agreements) with the SECI. The PSAs would then allow Adani Green and Azure Power to secure PPAs (power purchase agreements) with the SECI. It was agreed that Azure Power "would pay for a portion of the promised bribes".

The co-conspirators regularly discussed the progress of the plans on their

mobile phones, using "an electronic messaging application". Mr. Gautam Adani "personally met with "Foreign Official #1 in Andhra Pradesh" in August, September, and November 2021.

The "co-conspirators" promised to Indian government officials around ₹2,029 crore (\$265 million) of bribes. Of this, around ₹1,750 crore was offered to Andhra Pradesh's "Foreign Official #1".

Between July 2021 and February 2022, discoms "for the States and regions of Odisha, Jammu and Kashmir, Tamil Nadu, Chhattisgarh, and Andhra Pradesh entered into PSAs with SECI".

Further, "Andhra Pradesh's electricity distribution companies entered into a PSA with SECI on or about December 1, 2021" after which the State agreed to "purchase approximately seven gigawatts of solar power, by far the largest amount of any Indian State or region".

With the PSAs done, between October 2021 and February 2022, Adani Green and Azure Power, through subsidiaries, executed PPAs with the SECI. It was agreed that Azure Power would supply 650 MW of solar power to the SECI for

## Elaborate plan

How the alleged bribery scheme unfolded

**Dec. 2019-July 2020:** The Solar Energy Corporation of India inks pact to buy 8 GW of solar power from Adani Green and 4 GW from Azure Power

■ Under the agreement, SECI has to find State discoms that would buy the 12 GW of solar power

■ 2020: High prices make it tough for SECI to find buyers

■ Gautam Adani, along with nephew Sagar, Vneet S. Jaain and other officials, come up with a scheme to "offer, authorise, make and promise to make bribe payments to Indian government officials" to find buyers for SECI

**Aug. to Nov. 2021:** Gautam Adani meets Andhra Pradesh "official"

■ "Co-conspirators" promise to Indian government officials around ₹2,029 cr. of bribes. Of this, around ₹1,750 cr. is offered to the official in Andhra Pradesh

**July 2021 to Feb. 2022:** Electricity firms in Odisha, J&K, Tamil Nadu, Chhattisgarh, and A.P. enter deals to buy power from SECI

**April 2022:** Gautam, Vneet, and Sagar meet Azure officials; Adani present "multiple options" how Azure could repay Adani Green around ₹538 crore for its share of the bribes



Gautam Adani

**June 2022:** Some Azure executives and the Adani finalise the mechanism to facilitate the payment by returning the power purchase agreements for 2.3 GW to SECI, which it would then award to Adani Green



Sagar Adani

**March 2024:** SECI allows reallocation of 2.3 GW of purchase deals from Azure Power to Adani Green's unit



Vneet S. Jaain

which officials had been offered a bribe, the total amount of the offered bribe, and the amount of solar power the State or region would agree to purchase for a bribe.

"The Bribe Notes also identified the per megawatt rate for the total bribe amount offered, the abbreviated titles of the government officials who would receive the bribes, and/or the allocation of the total bribe amount among government officials" within each State or region.

The indictment details the multiple meetings between Mr. Gautam Adani, Mr. Vneet S. Jaain, and the "co-conspirators" to get Azure Power to pay its share of the bribe amount. "In anticipation of the meeting", it states, "Jaain used his cellular phone to photograph a document summarising the amounts" Azure Power owed Adani Green "for its respective portion of the bribes".

Apparently, Azure Power owed Adani Green ₹55 crore "for the bribes that were promised to secure the 650 MW PPAs" and ₹583 crore "for the bribes that were promised to secure the 2.3 GW PPAs".

In one such bribery coordination meeting, Mr. Gautam Adani allegedly "presented multiple op-

ptions" by which Azure Power could conceal satisfaction of its portion of the bribe payments, including by transferring the 2.3 GW PPAs to Adani Green or its subsidiaries. To help the Azure Power management decide "which corrupt payment option was best", one of the alleged co-conspirators, Rupesh Agarwal, a former CEO of Azure Power, prepared "multiple analyses using PowerPoint and Excel".

The indictment alleges that the co-conspirators eventually agreed that Azure Power would return the 2.3 GW PPAs to the SECI, with the understanding that Adani Green or its subsidiary would acquire it for itself, "thereby satisfying a portion of" Azure Power's bribery obligations.

Azure Power also agreed to pay Adani Green "its portion - approximately \$7 million - of the bribe payments promised [by Adani Green] to Indian government officials" to secure the 650 MW PPAs, which would facilitate Azure Power retaining the project.

Mr. Agarwal and other senior executives of Azure Power then obtained Board approval for returning the 2.3 GW PPAs to the SECI by obfuscating the true reasons for this move and citing "deteriorating econom-

ics". Around November 22, 2022, Azure Power's Board of Directors authorised sending a letter to the SECI about withdrawing from the 2.3 GW PPAs. On the same day, Mr. Sagar Adani allegedly sent an electronic message to Mr. Gautam Adani stating that there is a Board meeting "where they are expected to approve the final letter to be sent to SECI. We will keep close track and chase it up properly". Mr. Gautam Adani allegedly replied, "Ok".

The actual letter from Azure Power to the SECI was sent on December 7, 2022. On December 8, Mr. Sagar Adani sent an electronic message to Mr. Gautam Adani, stating that Azure Power "has finally submitted letter to SECI today...will follow for next steps closely". The indictment concludes from these exchanges that the Adanis "were secretly directing [Azure Power's] return of the 2.3 GW PPAs to SECI".

The alleged bribery scheme fruited finally on March 18, 2024, the day "SECI sent letters to [Azure Power] terminating the 2.3 GW PPAs, authorising reallocation of the 2.3 GW PPAs to [Adani Green's] subsidiary and affirming [Azure Power's] obligation to continue developing the 650 MW PPAs".

## A 'bribery scheme' to bag lucrative solar power deals

### सोलर पावर डीलस हासिल करने के लिए 'रिश्वत योजना'

- The indictment of **Gautam Adani** and his business associates by the **U.S. Department of Justice (DoJ)** details how the alleged bribery scheme was systematically piloted over time and across jurisdictions using '**Bribery Notes**', in-person meetings, **PowerPoint slides**, and **Excel analyses** of different payment options.
- **यू.एस. न्याय विभाग (DoJ)** द्वारा **गौतम अडानी** और उनके व्यापारिक साथियों के खिलाफ आरोपपत्र में बताया गया है कि कैसे आरोपित रिश्वत योजना को समय के साथ और विभिन्न क्षेत्रों में व्यवस्थित रूप से लागू किया गया था, जिसमें '**रिश्वत नोट्स**', व्यक्तिगत मुलाकातें, **पॉवरपॉइंट स्लाइड्स**, और विभिन्न भुगतान विकल्पों के **एक्सेल विश्लेषण** शामिल थे।





- The indictment starts by explaining the alleged motivation for resorting to a bribery scheme. Between **December 2019** and **July 2020**, **Azure Power** and a subsidiary of **Adani Green Energy** won, and were issued, **letters of award (LOAs)** for a **manufacturing-linked solar tender** offered by the **Solar Energy Corporation of India (SECI)**.
- आरोपपत्र यह बताते हुए शुरू होता है कि रिश्वत योजना अपनाने के पीछे का कथित उद्देश्य क्या था। **दिसंबर 2019** और **जुलाई 2020** के बीच, **एज़योर पावर** और **अडानी ग्रीन एनर्जी** की एक सहायक कंपनी ने, और उन्हें, **निर्माण-लिंक्ड सोलर टेंडर** के लिए **सोलर एनर्जी कॉर्पोरेशन ऑफ इंडिया (SECI)** द्वारा **अवार्ड पत्र (LOAs)** जारी किए गए थे।
- As part of this award, **Azure Power** and **Adani Green's subsidiary** would supply **4 GW** and **8 GW** of solar power, respectively, to the **SECI**, which would buy it at a fixed rate.
- इस पुरस्कार के हिस्से के रूप में, **एज़योर पावर** और **अडानी ग्रीन की सहायक कंपनी** क्रमशः **4 GW** और **8 GW** सौर ऊर्जा **SECI** को आपूर्ति करेंगे, जो इसे एक निश्चित दर पर खरीदेगी।
- The SECI, in turn, had to find State electricity distribution companies (**discoms**) that would purchase this **12 GW** of solar power.
- SECI को इसके बदले में राज्य विद्युत वितरण कंपनियों (**डिस्कॉम**) को ढूँढना था जो इस **12 GW** सौर ऊर्जा को खरीदेगी।
- **High prices** in the LOA made it impossible for the SECI to find buyers, jeopardizing the lucrative **LOAs** and corresponding revenue.
- LOA में **उच्च मूल्य** ने SECI के लिए खरीदार ढूँढना असंभव बना दिया, जिससे लाभकारी **LOAs** और संबंधित राजस्व खतरे में पड़ गए।
- **Gautam S. Adani**, **Sagar R. Adani** (Adani's nephew), **Vneet S. Jaain** (former CEO of Adani Green Energy), and **Ranjit Gupta** (former CEO of Azure Power Global) devised a scheme to offer, authorize, and promise bribe payments to Indian government officials in exchange for securing **PSAs** and **PPAs**.
- **गौतम एस. अडानी**, **सागर आर. अडानी** (अडानी के भतीजे), **वनीत एस. जैन** (अडानी ग्रीन एनर्जी के पूर्व सीईओ), और **रंजीत गुप्ता** (एज़योर पावर ग्लोबल के पूर्व सीईओ) ने भारतीय सरकारी अधिकारियों को रिश्वत देने के लिए एक योजना बनाई ताकि **PSAs** और **PPAs** सुरक्षित किए जा सकें।
- The co-conspirators discussed their plans regularly over **mobile phones**, using an **electronic messaging application**.
- सह-षड्यंत्रकर्ताओं ने अपने योजनाओं पर नियमित रूप से **मोबाइल फोन** के माध्यम से चर्चा की, जिसमें **इलेक्ट्रॉनिक संदेश अनुप्रयोग** का उपयोग किया गया।
- **Gautam Adani** personally met with **Foreign Official #1** in **Andhra Pradesh** in **August**, **September**, and **November 2021**.
- **गौतम अडानी** ने आंध्र प्रदेश में अगस्त, सितंबर और नवंबर 2021 में व्यक्तिगत रूप से **विदेशी अधिकारी #1** से मुलाकात की।
- The **co-conspirators** promised around **₹2,029 crore (\$265 million)** in bribes, with approximately **₹1,750 crore** offered to **Andhra Pradesh's "Foreign Official #1"**.
- सह-षड्यंत्रकर्ताओं ने करीब **₹2,029 करोड़ (\$265 मिलियन)** रिश्वत देने का वादा किया, जिसमें लगभग **₹1,750 करोड़ आंध्र प्रदेश के "विदेशी अधिकारी #1"** को पेश किया गया।
- Between **July 2021** and **February 2022**, discoms from **Odisha**, **Jammu and Kashmir**, **Tamil Nadu**, **Chhattisgarh**, and **Andhra Pradesh** entered into **PSAs** with SECI.





- जुलाई 2021 से फरवरी 2022 के बीच, उड़ीसा, जम्मू और कश्मीर, तमिलनाडु, छत्तीसगढ़ और आंध्र प्रदेश के डिस्कॉम ने SECI के साथ **PSAs** में प्रवेश किया।
- **Andhra Pradesh's electricity distribution companies** entered into a **PSA with SECI on December 1, 2021**, agreeing to purchase approximately **seven gigawatts** of solar power, the largest amount by any Indian state.
- **आंध्र प्रदेश की विद्युत वितरण कंपनियों** ने **1 दिसंबर 2021** को SECI के साथ एक **PSA** पर हस्ताक्षर किए, जिसमें उन्होंने लगभग **सात गीगावाट** सौर ऊर्जा खरीदने पर सहमति जताई, जो किसी भारतीय राज्य द्वारा खरीदी गई सबसे बड़ी मात्रा थी।
- Between **October 2021 and February 2022**, **Adani Green** and **Azure Power** executed **PPAs** with SECI covering the same States and regions.
- **अक्टूबर 2021 से फरवरी 2022** के बीच, **अडानी ग्रीन** और **एज़योर पावर** ने SECI के साथ समान राज्यों और क्षेत्रों के लिए **PPAs** पर हस्ताक्षर किए।

## Bribe Notes

### रिश्वत नोट्स

- The indictment states that while this bribery scheme was unfolding, Mr. **Sagar Adani** was tracking on his mobile phone the “**specific details of the bribes offered and promised to government officials**”.  
अभियोग में कहा गया है कि जब यह रिश्वत स्कीम चल रही थी, श्री **सागर अडानी** अपने मोबाइल फोन पर “**सरकारी अधिकारियों को दी गई और वादा की गई रिश्वत की विशिष्ट जानकारी**” ट्रैक कर रहे थे।
- These “**Bribe Notes**” identified the **State or region** for which officials had been offered a bribe, the total amount of the offered bribe, and the amount of **solar power** the State or region would agree to purchase for a bribe.  
इन “**रिश्वत नोट्स**” में **राज्य या क्षेत्र** को पहचाना गया था जिसके लिए अधिकारियों को रिश्वत दी गई थी, दी गई रिश्वत की कुल राशि, और वह **सौर ऊर्जा** जिसकी खरीद के लिए राज्य या क्षेत्र रिश्वत के बदले सहमत होता।
- The **Bribe Notes** also identified the **per megawatt rate** for the total bribe amount offered, the abbreviated titles of the government officials who would receive the bribes, and/or the allocation of the total bribe amount among government officials within each State or region.  
**रिश्वत नोट्स** में यह भी पहचाना गया था कि दी गई कुल रिश्वत राशि के लिए **प्रति मेगावाट दर**, वह संक्षिप्त शीर्षक जिन अधिकारियों को रिश्वत मिलनी थी, और/या राज्य या क्षेत्र में प्रत्येक सरकारी अधिकारी के बीच रिश्वत राशि का वितरण किया गया था।
- The indictment details the multiple meetings between **Mr. Gautam Adani**, **Mr. Vneet S. Jaain**, and the “**co-conspirators**” to get **Azure Power** to pay its share of the bribe amount.  
अभियोग में बताया गया है कि श्री **गौतम अडानी**, श्री **विनीत एस. जैन**, और “**सह-अपराधियों**” के बीच कई बैठकें हुईं ताकि **एज़योर पावर** अपने हिस्से की रिश्वत राशि का भुगतान कर सके।
- **Azure Power** owed **Adani Green ₹55 crore** for the bribes that were promised to secure the **650 MW PPAs** and **₹583 crore** for the bribes that were promised to secure the **2.3 GW PPAs**.





एज़योर पावर को अडानी ग्रीन ₹55 करोड़ का उधार था जो कि 650 MW PPAs को सुरक्षित करने के लिए दी गई रिश्वत थी और ₹583 करोड़ जो कि 2.3 GW PPAs को सुरक्षित करने के लिए दी गई रिश्वत थी।

- In one such bribery coordination meeting, Mr. **Gautam Adani** allegedly presented multiple options by which **Azure Power** could conceal satisfaction of its portion of the bribe payments.

एक ऐसी रिश्वत समन्वय बैठक में, श्री **गौतम अडानी** ने कथित रूप से कई विकल्प प्रस्तुत किए जिनके माध्यम से एज़योर पावर अपनी हिस्से की रिश्वत भुगतान को छिपा सकता था।

- One of the alleged co-conspirators, **Rupesh Agarwal**, a former CEO of **Azure Power**, prepared “multiple analyses using PowerPoint and Excel” to help **Azure Power** management decide “which corrupt payment option was best”.

एक कथित सह-अपराधी, **रूपेश अग्रवाल**, एज़योर पावर के पूर्व सीईओ, ने “पावरपॉइंट और एक्सेल का उपयोग करके कई विश्लेषण तैयार किए” ताकि एज़योर पावर प्रबंधन यह निर्णय ले सके कि “कौन सा भ्रष्ट भुगतान विकल्प सबसे अच्छा था”।

- The indictment alleges that the co-conspirators eventually agreed that **Azure Power** would return the **2.3 GW PPAs** to the **SECI**, with the understanding that **Adani Green** or its subsidiary would acquire it for itself.

अभियोग में आरोप है कि सह-अपराधियों ने अंततः सहमति व्यक्त की कि एज़योर पावर 2.3 GW PPAs को **SECI** को लौटा देगा, इस समझ के साथ कि **अडानी ग्रीन** या इसकी सहायक कंपनी इसे अपने लिए अधिग्रहित करेगी।

- On **November 22, 2022**, **Azure Power's Board of Directors** authorized sending a letter to the **SECI** about withdrawing from the **2.3 GW PPAs**.

**22 नवंबर 2022** को, एज़योर पावर के बोर्ड ऑफ डायरेक्टर्स ने 2.3 GW PPAs से वापस लेने के बारे में **SECI** को एक पत्र भेजने की अनुमति दी।

- **Azure Power** sent the actual letter to the **SECI** on **December 7, 2022**.

एज़योर पावर ने **7 दिसंबर 2022** को वास्तविक पत्र **SECI** को भेजा।

- On **March 18, 2024**, the day **SECI** sent letters to **Azure Power** terminating the **2.3 GW PPAs**, authorizing reallocation of the 2.3 GW PPAs to **Adani Green's subsidiary** and affirming **Azure Power's obligation to continue developing the 650 MW PPAs**.

**18 मार्च 2024** को, जिस दिन **SECI** ने एज़योर पावर को 2.3 GW PPAs को समाप्त करने के पत्र भेजे, **अडानी ग्रीन** की सहायक कंपनी को 2.3 GW PPAs के पुनर्वितरण की अनुमति दी और एज़योर पावर के 650 MW PPAs को विकसित करने की जिम्मेदारी की पुष्टि की।

