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# PATRIOTIC IAS

THE HINDU NEWSPAPER

DAILY CURRENT AFFAIRS

25 MARCH 2025

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25\_03\_2025 DAILY CURRENT AFFAIRS

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समय आ गया है कि लिंगभेदी चुनावी नारों को छोड़ा जाए

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## Strength of cloud band influences movement and density of rain during Indian monsoons: IISc study

GS Paper I:  
Geography

The  
BENGALURU

A recent study from the Indian Institute of Science (IISc) has shown that contrary to previous understanding, the strength of a cloud band (a nearly continuous cloud formation) plays a key role in the movement and density of rain that the Indian subcontinent receives during the wet spells of monsoons.

The monsoons have long remained the lifeblood of India, providing the lion's share of water used for drinking and irri-



**Welcome spells:** The monsoons in India provides the lion's share of the water used for drinking and irrigation. BISWARANJAN ROUT

gation. The yearly arrival of the rains is caused by the movement of cloud

bands from the equator towards the north.

An IISc release said that

India receives 80% of its annual rainfall during the summer monsoon between June and September, which are marked by several wet and dry spells along with strong winds.

These spells are controlled by the Boreal Summer Intraseasonal Oscillation (BSISO), also called monsoon intraseasonal oscillations, which also brings a cloud band from the equator over to the Indian subcontinent, putting an end to the dry spell. The duration of the wet spell is determined by the size and strength of the cloud band.

Most theories suggest

the cloud band propagates northward regardless of the strength of disturbance at the equator.

"Most of the existing literature says that even if you put any small instability, it should always propagate northwards. What we have shown is that this is not the case. If the cloud band in the equator is weak to start with, then it cannot propagate north," said Aditya Kottapalli, PhD student at the Centre for Atmospheric and Oceanic Sciences (CAOS), IISc, and first author of the study published in *npj Climate and Atmospheric Science*.

## Strength of cloud band influences movement and density of rain during Indian monsoons: IISc study

बादल पट्टी की ताकत भारतीय मानसून के दौरान वर्षा की गति और घनत्व को प्रभावित करती है: IISc अध्ययन

A recent study from the Indian Institute of Science (IISc) has shown that the strength of a **cloud band** plays a key role in the movement and density of rain during the Indian monsoon.

भारतीय विज्ञान संस्थान (IISc) के हालिया अध्ययन से पता चला है कि बादल पट्टी की ताकत भारतीय मानसून के दौरान वर्षा की गति और घनत्व में महत्वपूर्ण भूमिका निभाती है।

- The monsoons have long been the **lifeblood of India**, providing the **major share of water** used for **drinking and irrigation**.

मानसून भारत की जीवनरेखा रहा है, जो पीने और सिंचाई के लिए प्रमुख जल स्रोत प्रदान करता है।

- The **arrival of monsoon rains** is caused by the **movement of cloud bands** from the **equator towards the north**.

मानसून की वर्षा का आगमन भूमध्य रेखा से उत्तर की ओर बादल पट्टियों के आंदोलन के कारण होता है।



- **India receives 80% of its annual rainfall during the summer monsoon (June-September), which consists of wet and dry spells along with strong winds.**  
भारत अपनी वार्षिक वर्षा का 80% ग्रीष्मकालीन मानसून (जून-सितंबर) के दौरान प्राप्त करता है, जिसमें नमी और शुष्क अवधि के साथ तेज़ हवाएँ शामिल होती हैं।
- **These spells are controlled by the Boreal Summer Intraseasonal Oscillation (BSISO), also known as monsoon intraseasonal oscillations.**  
यह अवधियां **बोरेल समर इंटरसीजनल ऑस्सीलेशन (BSISO)** द्वारा नियंत्रित होती हैं, जिसे **मानसून अंतःमौसमी दोलन** भी कहा जाता है।
- **BSISO brings a cloud band from the equator to the Indian subcontinent, ending the dry spell and determining the duration of the wet spell.**  
BSISO भूमध्य रेखा से भारतीय उपमहाद्वीप तक एक बादल पट्टी लाता है, जिससे शुष्क अवधि समाप्त होती है और नमी अवधि की अवधि निर्धारित होती है।
- **Earlier theories suggested that the cloud band moves northward regardless of disturbances at the equator.**  
पहले के सिद्धांतों के अनुसार, बादल पट्टी उत्तर की ओर बढ़ती है, चाहे भूमध्य रेखा पर कोई गड़बड़ी हो या न हो।
- **The study challenges this notion, stating that if the cloud band at the equator is weak, it cannot move northward.**  
यह अध्ययन इस धारणा को चुनौती देता है, और कहता है कि यदि भूमध्य रेखा पर बादल पट्टी कमजोर होती है, तो वह उत्तर की ओर नहीं बढ़ सकती।
- **Aditya Kottapalli, PhD student at IISc, is the first author of the study, published in npj Climate and Atmospheric Science.**  
आईआईएससी के पीएचडी छात्र आदित्य कोट्टापल्ली इस अध्ययन के प्रथम लेखक हैं, जिसे npj क्लाइमेट एंड एटमॉस्फेरिक साइंस में प्रकाशित किया गया है।



# As ice frozen for millennia thaws, Kashmir wakes up to new risks

According to a new study, permafrost covers 64.8% of the total area of J & K and Ladakh. Experts called the finding 'crucial' because permafrost has been largely overlooked as a source of risk in Kashmir even though the construction of dams, roads, and real estate have been known to affect it

GS Paper I: Geography

Hirra Azmat

**P**ermafrost melting is emerging as a unique environmental threat in the Kashmir Himalayas. A new study has found that thawing permafrost could affect 193 km of roads, 2,415 households, 903 alpine lakes, and eight hydropower projects in the mountainous region.

Permafrost is any type of ground – soil, sediment, rock, etc. – that has been continuously frozen for at least two years. Most of the permafrost on the earth has been that way for several millennia.

But with global warming, the permafrost is slowly beginning to thaw, with dramatic consequences. Permafrost stores several tonnes of organic carbon. As it melts, the carbon is released into the environment, including in the form of methane, a very potent greenhouse gas and climate pollutant.

The stability of permafrost in the Indian Himalayas is thus of great concern.

The new study, published in *Remote Sensing Applications: Society and Environment*, was coauthored by researchers from the University of Kashmir and IIT-Bombay.

According to the study, permafrost covers 64.8% of the total geographic area of Jammu & Kashmir (J&K) and Ladakh. Of this, 26.7% is continuous permafrost (most of the soil is frozen), 23.8% is discontinuous (more than half of the soil is frozen), and 14.3% is sporadic (intermittent patches of frozen soil).

## A 'crucial' study

"Region-wise, the Ladakh plateau contains the highest extent (87%) of permafrost, while the foothill plains of Jammu, Shigar Valley, and Siwaliks do not host any permafrost," the authors wrote in their paper.

The study's corresponding author, Irfan Rashid, assistant professor in the Department of Geoinformatics at the University of Kashmir, Srinagar, said the team analysed weekly satellite data for surface temperatures from 2002 to 2023.

"Over 21 years, we examined over 56 images each year, amounting to a total dataset of 1,176 land surface temperature images," he said. The data came from a NASA sensor onboard its Terra and Aqua satellites called MODIS. Rashid said, "Each pixel in [its images] represents an area of 1 sq. km." He continued, "We analysed approximately 222,236 pixels across J&K and Ladakh. This extensive dataset allowed us to identify areas with consistently frozen temperatures and those where freezing conditions are absent or intermittent."

Rest Kamal, associate professor in the Department of Civil Engineering at IIT-Ropar, said the study (in which he wasn't involved) could be a preliminary step in assessing the impact of permafrost degradation.

"It is a crucial study, as permafrost has been largely overlooked, and no similar research has been conducted in this region," Kamal said. "While some studies exist in Uttarakhand, there is a pressing need for more research to better understand the risks associated with permafrost degradation."

According to the experts, the primary factor driving permafrost degradation is the rise in surface temperature.



Tourists enjoying a horse ride at Thajiwaj Glacier in Sonmarg, 80 km from Srinagar. NISSAR AHMAD

Farooq Ahmad Dar, assistant professor in the Department of Geography and Disaster Management at the University of Kashmir, said that in addition to natural causes, human factors can also affect permafrost. "Activities such as deforestation, land-use change, and wildfires have a severe impact on the permafrost cover and its stability. Vegetation insulates and protects the permafrost from direct solar radiation. Natural processes such as [earthquakes] frequently shake the ground, including permafrost, and cause it to break apart," he said.

Likewise, he added, activities related to infrastructure development, such as the construction of dams, road-laying, and real estate development, have also affected permafrost in the western Himalayas. "It has also been observed that the tourism and associated activities in the region often lead to increased pressure and impact the stability of the permafrost regions," Dar said.

## Uncertainties abound

The study said the risks associated with permafrost thawing will be felt significantly across thousands of glacial lakes in the Indian Himalayan arc.

In J&K itself, the authors identified 332 proglacial lakes, of which 65 have differing (non-trivial) glacial lake outburst flood (GLOF) risks. A proglacial lake is formed when water from a melting glacier collects in a depression in the landscape or when its flow is dammed. The Central Water Commission reported last year that between 2011 and 2024, the coverage of "glacial lakes and other water bodies" in the Himalayas had increased by 33%.

In places with steep glacial landscapes, rapidly moving ice sometimes scours the underlying bedrock, further degrading permafrost. The rock-ice avalanche in Chamoli, Uttarakhand, in February 2021 is an example: the avalanche was



In Ladakh, steep slopes containing permafrost are home to residential settlements. Military infrastructure is at risk. Many strategic roads pass through permafrost, and their degradation could have severe implications for connectivity

triggered by a glacier on a sheer slope where the adjacent rock material was frozen.

The South Lhonak Lake in Sikkim suffered a significant GLOF in October 2023 in similar circumstances. The lake is surrounded by moraines composed primarily of permafrost-laden material. Over time, Rashid said, temperature fluctuations induced slope failure triggered by degraded permafrost.

According to Kamal of IIT-Ropar, permafrost degradation is also likely to adversely affect groundwater and the availability of river water. "Permafrost, in the form of rock glaciers, contributes to river flow, and in some areas, its degradation could affect the base flow of rivers. However, no comprehensive studies have been conducted to accurately identify or quantify these impacts in the Indian context. Therefore, making definitive statements on this matter would be premature," he said.

He added that permafrost "may also pose risks to infrastructure, but without in-depth studies, the extent of potential damage remains uncertain."

## Planning for permafrost

The experts suggested that while existing roads cannot be closed, the construction of future ones should be informed by the presence or absence of permafrost. This could be a long-term strategy to ensure

sustainable construction in ecologically fragile areas.

According to Rashid, while environmental impact assessments are conducted for projects like hydroelectric power projects, whether they adequately account for GLOFs and other cryospheric hazards is unclear. "Increased awareness of permafrost-related risks has only emerged following major disasters. Previously, GLOFs were primarily associated with Nepal, but events such as the Kedarnath disaster, the South Lhonak Lake outburst, and incidents in Ladakh have highlighted their broader relevance," Rashid said.

Dar agreed: to mitigate potential risk, he said it is crucial to bring these findings to the implementation level, particularly in places with permafrost.

"Households in permafrost-rich regions face varying degrees of risk," he added. "In Ladakh, steep slopes containing permafrost are home to residential settlements. Military infrastructure in Ladakh is at risk, posing concerns for national security. Many strategic roads pass through permafrost zones, and their degradation due to permafrost thaw or mass wasting could have severe implications for connectivity."

"We mostly rely on satellite remote sensing to monitor land surface temperatures," Kamal added.

"However, there is currently no *in-situ* monitoring in these regions. Deploying data loggers in the same catchment areas would allow us to track temperature fluctuations more accurately. These data loggers could also help calibrate satellite data and identify any biases, making permafrost monitoring more precise and reliable."

(Hirra Azmat is a Kashmir-based journalist who writes extensively on science, health, and environment. Her stories have appeared in various local and national publications. [azmathirra@gmail.com](mailto:azmathirra@gmail.com))

**As ice frozen for millennia thaws, Kashmir wakes up to new**



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## risks

हजारों वर्षों से जमी बर्फ के पिघलने से कश्मीर नए खतरों का सामना कर रहा है

A new study finds that **permafrost covers 64.8% of Jammu & Kashmir and Ladakh.**

एक नए अध्ययन में पाया गया कि परमाफ्रॉस्ट जम्मू और कश्मीर तथा लद्दाख के 64.8% क्षेत्र को कवर करता है।

- Experts called this finding 'crucial' as permafrost has been **overlooked as a source of risk in Kashmir**, despite **construction of dams, roads, and real estate** affecting it. विशेषज्ञों ने इस खोज को 'महत्वपूर्ण' बताया क्योंकि परमाफ्रॉस्ट को जोखिम के स्रोत के रूप में अनदेखा किया गया है, हालांकि बांध, सड़कों और रियल एस्टेट निर्माण इसे प्रभावित कर रहे हैं।

## Impact of Permafrost Melting

### परमाफ्रॉस्ट के पिघलने का प्रभाव

- Thawing permafrost could affect **193 km of roads, 2,415 households, 903 alpine lakes, and 8 hydropower projects** in the Kashmir Himalayas. पिघलता परमाफ्रॉस्ट 193 किमी सड़कें, 2,415 घर, 903 अल्पाइन झीलें और 8 जलविद्युत परियोजनाओं को प्रभावित कर सकता है।
- **Permafrost is ground (soil, sediment, rock) that has been frozen for at least two years; most permafrost has remained frozen for several millennia.** परमाफ्रॉस्ट वह भूमि (मिट्टी, तलछट, चट्टान) है जो कम से कम दो वर्षों से जमी हुई होती है; अधिकांश परमाफ्रॉस्ट हजारों वर्षों से जमी हुई है।
- With **global warming**, permafrost is **thawing**, releasing **methane, a potent greenhouse gas** contributing to climate change. वैश्विक तापमान वृद्धि के कारण परमाफ्रॉस्ट पिघल रहा है, जिससे मीथेन जैसी खतरनाक ग्रीनहाउस गैस उत्सर्जित हो रही है।

## Study Findings

### अध्ययन के निष्कर्ष

- The study, published in **Remote Sensing Applications: Society and Environment**, was conducted by researchers from the **University of Kashmir and IIT-Bombay**.

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यह अध्ययन रिमोट सेंसिंग एप्लीकेशंस: सोसाइटी एंड एनवायरनमेंट पत्रिका में प्रकाशित हुआ और इसे कश्मीर विश्वविद्यालय और आईआईटी-बॉम्बे के शोधकर्ताओं ने किया।

#### • Types of permafrost in J&K and Ladakh:

जम्मू और कश्मीर तथा लद्दाख में परमाफ्रॉस्ट के प्रकार:

- 26.7% continuous permafrost (most soil is frozen)  
26.7% सतत परमाफ्रॉस्ट (अधिकांश मिट्टी जमी हुई है)
- 23.8% discontinuous permafrost (more than half the soil is frozen)  
23.8% असतत परमाफ्रॉस्ट (अधिकांश मिट्टी आंशिक रूप से जमी हुई है)
- 14.3% sporadic permafrost (intermittent frozen patches)  
14.3% छिटपुट परमाफ्रॉस्ट (अंतराल में जमी हुई मिट्टी)
- Ladakh Plateau has the highest permafrost coverage (87%), while Jammu, Shigar Valley, and Siwaliks have no permafrost.

लद्दाख पठार में परमाफ्रॉस्ट का सबसे अधिक विस्तार (87%) है, जबकि जम्मू, शिगर घाटी और शिवालिक पहाड़ियों में कोई परमाफ्रॉस्ट नहीं है।

## Satellite Data Analysis

### उपग्रह डेटा विश्लेषण

- Researchers analyzed weekly satellite data from 2002 to 2023, examining 56 images per year, totaling 1,176 land surface temperature images.  
शोधकर्ताओं ने 2002 से 2023 तक साप्ताहिक उपग्रह डेटा का विश्लेषण किया, प्रति वर्ष 56 छवियां, कुल मिलाकर 1,176 भूमि सतह तापमान छवियां।
- Data was sourced from NASA's MODIS sensor onboard Terra and Aqua satellites. Each pixel in the images represents 1 sq. km.  
डेटा नासा के टेरा और एक्वा उपग्रहों पर लगे MODIS सेंसर से लिया गया था। प्रत्येक पिक्सेल 1 वर्ग किमी क्षेत्र को दर्शाता है।
- A total of 222,236 pixels across J&K and Ladakh were analyzed to identify frozen areas and regions with intermittent freezing conditions.  
जम्मू और कश्मीर तथा लद्दाख में कुल 222,236 पिक्सेल का विश्लेषण किया गया ताकि स्थायी रूप से जमे हुए और आंतरायिक रूप से जमे हुए क्षेत्रों की पहचान की जा सके।

## Experts' Views

### विशेषज्ञों की राय

- Reet Kamal, IIT-Ropar, said this study is crucial as permafrost has been largely overlooked, and no similar research has been conducted in the region.  
आईआईटी-रोपड़ के रीत कमल ने कहा कि यह अध्ययन अत्यंत महत्वपूर्ण है क्योंकि परमाफ्रॉस्ट को नजरअंदाज किया गया है, और इस क्षेत्र में अब तक ऐसा कोई शोध नहीं किया गया।



- Farooq Ahmad Dar, University of Kashmir, noted that **both natural and human factors contribute to permafrost degradation**, including:  
कश्मीर विश्वविद्यालय के फारूक अहमद डार ने बताया कि प्राकृतिक और मानवजनित दोनों कारण परमाफ्रॉस्ट के क्षरण में योगदान देते हैं, जिनमें शामिल हैं:
  - **Rising surface temperatures** (सतह का बढ़ता तापमान)
  - **Deforestation** (वनों की कटाई)
  - **Land-use changes** (भूमि उपयोग में बदलाव)
  - **Wildfires** (जंगल की आग)
  - **Infrastructure projects** (बांध, सड़कें, और रियल एस्टेट निर्माण)
- **Tourism and associated activities** have also increased pressure on permafrost stability.  
पर्यटन और संबंधित गतिविधियों ने भी परमाफ्रॉस्ट की स्थिरता पर दबाव बढ़ा दिया है।

## Risks Associated with Permafrost Thawing

### परमाफ्रॉस्ट के पिघलने से जुड़ी जोखिम

- The study highlighted that the **risks associated with permafrost thawing** will be significantly felt across **thousands of glacial lakes** in the **Indian Himalayan arc**.  
अध्ययन ने बताया कि परमाफ्रॉस्ट के पिघलने से जुड़े जोखिम भारतीय हिमालयी क्षेत्र की हजारों ग्लेशियर झीलों में महत्वपूर्ण रूप से महसूस किए जाएंगे।
- In **Jammu & Kashmir**, the study identified **332 proglacial lakes**, out of which **65 lakes pose glacial lake outburst flood (GLOF) risks**.  
जम्मू और कश्मीर में, अध्ययन ने 332 प्रोग्लेशियल झीलों की पहचान की, जिनमें से 65 झीलों में ग्लेशियर झील विस्फोट बाढ़ (GLOF) का जोखिम है।
- **A proglacial lake is formed when water from a melting glacier collects in a depression or when its flow is dammed**.  
प्रोग्लेशियल झील तब बनती है जब पिघलते हुए ग्लेशियर का पानी किसी अवसाद में इकट्ठा हो जाता है या जब उसका प्रवाह अवरुद्ध हो जाता है।
- The **Central Water Commission** reported that between **2011 and 2024**, the coverage of **glacial lakes and other water bodies in the Himalayas increased by 33%**.  
केंद्रीय जल आयोग ने रिपोर्ट दी कि 2011 से 2024 के बीच, हिमालय में ग्लेशियर झीलों और अन्य जल निकायों का क्षेत्रफल 33% बढ़ गया।
- In **steep glacial landscapes**, rapidly moving ice can **scour the underlying bedrock**, further degrading permafrost.  
**खड़ी ग्लेशियर भूमि में**, तेजी से बहने वाली बर्फ नीचे की चट्टान को खुरच सकती है, जिससे परमाफ्रॉस्ट और अधिक खराब होता है।
- The **rock-ice avalanche in Chamoli, Uttarakhand**, in **February 2021**, was triggered by a **glacier on a sheer slope**, where the adjacent rock material was frozen.



फरवरी 2021 में उत्तराखंड के चमोली में हुआ चट्टान-बर्फ हिमस्खलन, एक खड़ी ढलान पर स्थित ग्लेशियर के कारण हुआ, जहां समीप की चट्टान जमी हुई थी।

- The South Lhonak Lake in Sikkim suffered a significant GLOF in October 2023 due to similar circumstances.

सिक्किम की साउथ लोनाक झील में अक्टूबर 2023 में गंभीर GLOF हुआ, जो इसी प्रकार की परिस्थितियों के कारण था।

- Temperature fluctuations over time triggered slope failure due to degraded permafrost, according to experts.  
विशेषज्ञों के अनुसार, समय के साथ तापमान में उतार-चढ़ाव के कारण पर्माफ्रॉस्ट के खराब होने से ढलान ध्वस्त हुई।

## Impact on Groundwater and River Flow

### भूजल और नदी प्रवाह पर प्रभाव

- Permafrost degradation is also likely to adversely affect groundwater and river water availability.  
पर्माफ्रॉस्ट का क्षय भूजल और नदी जल की उपलब्धता पर प्रतिकूल प्रभाव डाल सकता है।
- Rock glaciers contribute to river flow, and their degradation could affect the base flow of rivers.  
चट्टान ग्लेशियर नदी प्रवाह में योगदान देते हैं, और उनका क्षरण नदियों के आधार प्रवाह को प्रभावित कर सकता है।
- However, there are no comprehensive studies yet to accurately identify or quantify these impacts in India.  
हालांकि, अभी तक भारत में इन प्रभावों की सटीक पहचान या मात्रात्मक अध्ययन नहीं किया गया है।

## Infrastructure and Security Risks

### बुनियादी ढांचे और सुरक्षा जोखिम

- Permafrost may pose risks to infrastructure, but in-depth studies are needed to determine the extent of potential damage.  
पर्माफ्रॉस्ट बुनियादी ढांचे के लिए जोखिम पैदा कर सकता है, लेकिन संभावित क्षति की सीमा निर्धारित करने के लिए गहन अध्ययन आवश्यक हैं।
- Ladakh's military infrastructure is at risk due to permafrost degradation, posing concerns for national security.  
लद्दाख की सैन्य संरचनाएं पर्माफ्रॉस्ट के क्षरण के कारण खतरे में हैं, जिससे राष्ट्रीय सुरक्षा पर प्रभाव पड़ सकता है।
- Many strategic roads pass through permafrost zones, and their degradation could have severe implications for connectivity.



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कई रणनीतिक सड़कें पर्माफ्रॉस्ट क्षेत्रों से गुजरती हैं, और उनका क्षरण संपर्क पर गंभीर प्रभाव डाल सकता है।

## Planning for Permafrost

### पर्माफ्रॉस्ट के लिए योजना बनाना

- Experts suggest that while **existing roads cannot be closed, future road construction** should consider the **presence or absence of permafrost**. विशेषज्ञों का सुझाव है कि मौजूदा सड़कों को बंद नहीं किया जा सकता, लेकिन भविष्य की सड़क निर्माण योजनाएं पर्माफ्रॉस्ट की उपस्थिति या अनुपस्थिति को ध्यान में रखनी चाहिए।
- **Environmental impact assessments (EIAs) for hydroelectric projects may not adequately account for GLOFs and cryospheric hazards.** हाइड्रोइलेक्ट्रिक परियोजनाओं के लिए पर्यावरण प्रभाव आकलन (EIA) GLOF और क्रायोस्फेरिक खतरों को पर्याप्त रूप से ध्यान में नहीं रख सकते हैं।
- There is a **need for better awareness and policy implementation** regarding permafrost-related risks. पर्माफ्रॉस्ट से जुड़े जोखिमों के प्रति बेहतर जागरूकता और नीति कार्यान्वयन की आवश्यकता है।
- **Deploying data loggers in catchment areas** would help **track temperature fluctuations accurately** and improve **permafrost monitoring**. कैचमेंट क्षेत्रों में डेटा लॉगर्स तैनात करना तापमान उतार-चढ़ाव को सटीक रूप से ट्रैक करने और पर्माफ्रॉस्ट निगरानी में सुधार करने में मदद करेगा।

### Cryosphere (क्रायोस्फीयर)

- The **Cryosphere** refers to the frozen components of the Earth's system, including glaciers, ice caps, sea ice, permafrost, and snow cover.
- **क्रायोस्फीयर** पृथ्वी की प्रणाली के जमे हुए घटकों को संदर्भित करता है, जिसमें ग्लेशियर, हिम टोपियां, समुद्री बर्फ, स्थायी रूप से जमी हुई मिट्टी (पर्माफ्रॉस्ट) और हिम आवरण शामिल हैं।

### Key Components of the Cryosphere (क्रायोस्फीयर के प्रमुख घटक)

- **Glaciers and Ice Caps (ग्लेशियर और हिम टोपियां):**
  - Glaciers are large masses of ice that move slowly over land.
  - **World's largest glacier: Lambert Glacier, Antarctica**
  - **India's largest glacier: Siachen Glacier (76 km), Karakoram Range**
  - ग्लेशियर विशाल बर्फीले संरचनाएँ होती हैं जो धीरे-धीरे भूमि पर गति करती हैं।



- विश्व का सबसे बड़ा ग्लेशियर: लैम्बर्ट ग्लेशियर, अंटार्कटिका
- भारत का सबसे बड़ा ग्लेशियर: सियाचिन ग्लेशियर (76 किमी), काराकोरम श्रेणी
- Sea Ice (समुद्री बर्फ):
  - Forms when seawater freezes in polar regions.
  - **Arctic sea ice has declined significantly** in recent decades due to global warming.
  - समुद्री जल के जमने से ध्रुवीय क्षेत्रों में समुद्री बर्फ बनती है।
  - आर्कटिक समुद्री बर्फ हाल के दशकों में काफी कम हुई है ग्लोबल वार्मिंग के कारण।
- Permafrost (स्थायी रूप से जमी हुई मिट्टी – पर्माफ्रॉस्ट):
  - Soil that remains frozen for more than two consecutive years.
  - Melting permafrost releases greenhouse gases like **methane (CH<sub>4</sub>)** and **carbon dioxide (CO<sub>2</sub>)**.
  - ऐसी मिट्टी जो लगातार दो वर्षों से अधिक समय तक जमी रहती है।
  - पर्माफ्रॉस्ट के पिघलने से **मीथेन (CH<sub>4</sub>)** और **कार्बन डाइऑक्साइड (CO<sub>2</sub>)** जैसी ग्रीनहाउस गैसों निकलती हैं।
- Snow Cover (हिम आवरण):
  - Seasonal snow plays a critical role in Earth's climate system.
  - **Himalayan snow melt feeds major Indian rivers like the Ganga, Yamuna, and Brahmaputra.**
  - मौसमी हिम पृथ्वी की जलवायु प्रणाली में महत्वपूर्ण भूमिका निभाता है।
  - हिमालय की बर्फ का पिघलना गंगा, यमुना और ब्रह्मपुत्र जैसी प्रमुख भारतीय नदियों को पोषण देता है।

### Significance of the Cryosphere (क्रायोस्फीयर का महत्व)

- Climate Regulation (जलवायु नियंत्रण):
  - The cryosphere reflects sunlight, regulating Earth's temperature.
  - **Without ice, global temperatures would rise significantly.**
  - क्रायोस्फीयर सूर्य के प्रकाश को परावर्तित करता है, जिससे पृथ्वी के तापमान का नियंत्रण होता है।
  - बर्फ के बिना, वैश्विक तापमान में उल्लेखनीय वृद्धि हो सकती है।
- Freshwater Storage (मीठे पानी का भंडारण):



- Around 69% of the world's freshwater is stored in glaciers and ice caps.
  - भारत में, हिमालयी ग्लेशियर 500 मिलियन से अधिक लोगों के लिए जल स्रोत हैं।
  - दुनिया के मीठे पानी का लगभग 69% ग्लेशियरों और हिम टोपियों में संग्रहित है।
  - भारत में, हिमालयी ग्लेशियर 500 मिलियन से अधिक लोगों के लिए जल स्रोत हैं।
- Sea Level Regulation (समुद्र स्तर का नियंत्रण):
- Melting glaciers contribute to rising sea levels, increasing the risk of coastal flooding.
  - ग्लेशियरों के पिघलने से समुद्र का स्तर बढ़ता है, जिससे तटीय बाढ़ का खतरा बढ़ जाता है।

### Cryosphere and Climate Change (क्रायोस्फीयर और जलवायु परिवर्तन)

- Rising Global Temperatures (वैश्विक तापमान में वृद्धि):
- The Arctic is warming nearly four times faster than the global average.
  - आर्कटिक वैश्विक औसत से लगभग चार गुना तेजी से गर्म हो रहा है।
- Melting Glaciers and Sea Level Rise (ग्लेशियरों का पिघलना और समुद्र स्तर में वृद्धि):
- Between 1993 and 2020, sea levels rose by approximately 9 cm.
  - 1993 से 2020 के बीच, समुद्र स्तर लगभग 9 सेमी बढ़ गया।
- Impact on the Indian Subcontinent (भारतीय उपमहाद्वीप पर प्रभाव):
- Himalayan glaciers are retreating at an alarming rate, affecting water availability in India.
  - हिमालयी ग्लेशियर तेजी से सिकुड़ रहे हैं, जिससे भारत में जल उपलब्धता प्रभावित हो रही है।

### Recent Updates and Government Initiatives (हालिया अपडेट और सरकारी पहल)

- National Mission on Sustaining the Himalayan Ecosystem (NMSHE) (हिमालयी पारिस्थितिकी तंत्र को बनाए रखने के लिए राष्ट्रीय मिशन - एनएमएसएचई):
- Aims to study glacier dynamics and climate change impact on the Himalayas.
  - यह हिमालय में ग्लेशियरों की गतिशीलता और जलवायु परिवर्तन के प्रभाव का अध्ययन करने के लिए शुरू किया गया है।



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• **National Centre for Polar and Ocean Research (NCPOR) (राष्ट्रीय ध्रुवीय और महासागर अनुसंधान केंद्र - एनसीपीओआर):**

- Conducts research on Antarctica, Arctic, and Himalayan glaciers.
- अंटार्कटिका, आर्कटिक और हिमालयी ग्लेशियरों पर अनुसंधान करता है।

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# It's time to ditch sexist campaign slogans

**GS Paper I: Society**

**E**lections are a continuous phenomenon in India. In just the last 10 years, we have seen significant electoral activity, substantial financial expenditure, and participation from an array of political parties and candidates. There has also been an increasing number of women voters, which plausibly hints at the changing nature of political communication and the feminisation and professionalisation of campaign practices. Despite these changes, sloganeering, which remains central to election campaigns and is seen as an effective means of voter mobilisation, is embedded in gendered stereotypes. Slogans often normalise violence and reduce women to being passive beneficiaries rather than as active agents in the electoral landscape.

## How communication grew

The evolution of voter mobilisation in India has transformed from grassroots efforts in the 1950s and '60s to sophisticated digital campaigns by the 2020s. Initially, direct voter contact through rallies, door-to-door canvassing, and print media dominated campaigning, with local party workers playing a crucial role. By the 1970s, slogan-driven campaigns assumed centrality, exemplified by Indira Gandhi's '*Garibi Hatao* (Remove poverty)'. In the 1980s, television and radio were introduced. These revolutionised outreach even as parties continued to use traditional methods of campaigning. Liberalisation in the 1990s and digital expansion in the 2000s led to Internet-based political messaging, which was further amplified by smartphones and social media. By the 2020s, Artificial Intelligence, Machine Learning, and data-driven strategies defined political campaigns, with real-time voter engagement and war rooms shaping electoral battles.

Despite evolving methods, slogans have remained pivotal in influencing public sentiment, from



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Slogans often reinforce traditional power structures and selectively engage with women's concerns

'*Bijli, Sadak, Pani* (electricity, roads, water)', to 'India Shining' to '*Na Khaunga, Na Khane Dunga* (neither will I indulge in corruption, nor will I allow anyone else to indulge in it)' to '*Sabka Saath, Sabka Vikas* (together, for everyone's growth)'. By encapsulating ideologies, promises, and emotions in a catchphrase, slogans create political identities, mobilise voters, influence electoral outcomes, and shape public opinion. However, these slogans have mostly reflected male-centric leadership and governance narratives. Women's issues are often selectively addressed rather than being integral to campaign rhetoric. Slogans often reinforce traditional power structures and selectively engage with women's concerns.

## Sexist undertones

The phrase "*Ghar ki Lakshmi* (goddess of the household)" reinforces the primary role of women as home-makers rather than as political actors; "*Mahilaon Ke Vikas Ke liye Vote Do* (vote for women's development)" highlights how political parties frame women as beneficiaries rather than as active decision-makers; "*Shakti Ka Pratik, Ma Ka Roop* (symbol of power, form of a mother)" reinforces the description of women leaders in maternal metaphors; "*Ladki Hoon, Lad Sakti Hoon* (I am a girl, I can fight)" gives into the gendered stereotype of women having to prove their ability to compete in politics; "*Beti Bachao, Beti Padhao* (Save the girl child, educate the girl child)" implies that daughters need saving rather than systemic social changes; and "*Mahilaon Ki Sarkar, Suraksha Aur Samman* (a government for women, ensuring safety and respect)" is a reiteration of how women's political agency is reduced to victimhood.

In a 2014 election rally, a politician said, "*Ladke, ladke hain, galti ho jati hai* (Boys are boys,

mistakes happen)". This not only trivialised sexual assault of women, but also reinforced the patriarchal role of what men are allowed to do and what women have to endure. Saying "*Beti ki izzat se vote ki izzat bari hoti hai* (the respect of a vote is more than that of a daughter)" reduces the dignity of women. A politician said earlier this year said that his party would make roads as smooth as a particular female politician's cheeks. Comparing women's bodies to infrastructure carries obvious sexist undertones.

## Smear campaigns

In addition to this portrayal of women voters as passive victims, there are also often smear campaigns against women leaders, questioning and assassinating their characters. Women leaders in India are continually assessed. They receive comments on their appearance, lifestyle choices, mannerisms, attire, and marital status, which reiterate and reaffirm the belief that women in politics must essentially conform to traditional social expectations. Despite their political philosophies and achievements, women leaders in India continue to be reduced to their gender, which overshadows their leadership, capabilities, and governance abilities.

A meaningful transformation requires that slogans not only be backed by systemic changes, but also that they disrupt and dismantle traditional ways of thinking about women's roles and possibilities. In Indian elections, there are rapid strides being made in the forms of communication. Electoral slogans can therefore go a long way in bringing about structural changes. We need to re-imagine slogans so that they are not weaponised to discredit women, do not reinforce patriarchal norms, do not trivialise gender-based violence, and portray women as active decision-makers spearheading change rather than as passive beneficiaries of schemes.



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## It's Time to Ditch Sexist Campaign Slogans

समय आ गया है कि लिंगभेदी चुनावी नारों को छोड़ा जाए

Elections are a continuous phenomenon in India. In the last 10 years, India has seen significant electoral activity, financial expenditure, and participation from various political parties and candidates.

भारत में चुनाव एक सतत प्रक्रिया है। पिछले 10 वर्षों में, भारत ने महत्वपूर्ण चुनावी गतिविधियां, वित्तीय खर्च और विभिन्न राजनीतिक दलों और उम्मीदवारों की भागीदारी देखी है।

- There has been an **increasing number of women voters**, hinting at the **changing nature of political communication and feminisation of campaign practices**.  
महिला मतदाताओं की संख्या में वृद्धि हो रही है, जो राजनीतिक संचार के बदलते स्वरूप और चुनावी अभियान में महिलाओं की भागीदारी में वृद्धि को दर्शाता है।
- Despite these changes, **sloganeering remains central to election campaigns** and is often **embedded in gendered stereotypes**.  
इन परिवर्तनों के बावजूद, चुनावी अभियान में नारेबाजी प्रमुख बनी हुई है और अक्सर लिंग आधारित रुढ़ियों से जुड़ी होती है।

## How Communication Grew

संचार का विकास कैसे हुआ

- **Voter mobilisation in India** has transformed from **grassroots efforts in the 1950s-60s** to **sophisticated digital campaigns by the 2020s**.  
भारत में मतदाता लामबंदी 1950-60 के दशक में जमीनी प्रयासों से विकसित होकर 2020 के दशक में डिजिटल अभियानों तक पहुंच गई है।
- In the **1970s**, **slogan-driven campaigns** gained prominence, with **Indira Gandhi's 'Garibi Hatao' (Remove Poverty)** as a key example.  
1970 के दशक में, नारा-आधारित अभियान लोकप्रिय हुए, जिसमें इंदिरा गांधी का 'गरीबी हटाओ' नारा प्रमुख था।
- The **1980s** saw **television and radio campaigns**, while **liberalisation in the 1990s** and **digital expansion in the 2000s** led to **Internet-based political messaging**.  
1980 के दशक में टेलीविजन और रेडियो अभियान शुरू हुए, जबकि 1990 के दशक में उदारीकरण और 2000 के दशक में डिजिटल विस्तार ने इंटरनेट-आधारित राजनीतिक संदेशों को बढ़ावा दिया।
- By the **2020s**, **AI, machine learning, and data-driven strategies** shaped **real-time voter engagement and election battles**.

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2020 के दशक तक, एआई, मशीन लर्निंग और डेटा-आधारित रणनीतियों ने वास्तविक समय में मतदाता जुड़ाव और चुनावी लड़ाइयों को आकार दिया।

- Despite evolving methods, **slogans remain pivotal in influencing public sentiment**, from **'Bijli, Sadak, Pani'** to **'India Shining'** to **'Na Khaunga, Na Khane Dunga'** to **'Sabka Saath, Sabka Vikas'**.

बदलते तरीकों के बावजूद, नारे जनता की भावना को प्रभावित करने में महत्वपूर्ण बने हुए हैं, जैसे 'बिजली, सड़क, पानी' से लेकर 'इंडिया शाइनिंग', 'ना खाऊंगा, ना खाने दूंगा', और 'सबका साथ, सबका विकास'।

- However, these **slogans often reflect male-centric leadership**, and **women's issues are selectively addressed** rather than being integral to campaign rhetoric. हालांकि, ये नारे अक्सर पुरुष-केंद्रित नेतृत्व को दर्शाते हैं, और महिला मुद्दों को चयनात्मक रूप से शामिल किया जाता है।

## Sexist Undertones

### लिंगभेदी भावार्थ

- The phrase **"Ghar ki Lakshmi" (goddess of the household)** reinforces the **primary role of women as homemakers rather than political actors**.  
"घर की लक्ष्मी" कहकर महिलाओं की भूमिका को केवल गृहिणी तक सीमित किया जाता है, न कि राजनीतिक भागीदार के रूप में।
- **"Mahilaon Ke Vikas Ke Liye Vote Do" (vote for women's development)** portrays women as **beneficiaries rather than active decision-makers**.  
"महिलाओं के विकास के लिए वोट दो" यह महिलाओं को सक्रिय निर्णयकर्ता के बजाय केवल लाभार्थी के रूप में प्रस्तुत करता है।
- **Comparing women's bodies to infrastructure**, like calling roads as smooth as a female politician's cheeks, carries **obvious sexist undertones**.  
महिलाओं के शरीर की तुलना बुनियादी ढांचे से करना, जैसे सड़क की चिकनाहट को महिला राजनेता के गालों से जोड़ना, स्पष्ट रूप से लिंगभेदी मानसिकता को दर्शाता है।

## Smear Campaigns

### महिला नेताओं के खिलाफ दुष्प्रचार

- Women leaders in India are **continuously assessed on their appearance, lifestyle, mannerisms, attire, and marital status**, rather than **their leadership and governance abilities**.  
भारत में महिला नेताओं को उनकी उपस्थिति, जीवनशैली, व्यवहार, पोशाक और वैवाहिक स्थिति के आधार पर आंका जाता है, न कि उनके नेतृत्व और शासन कौशल के आधार पर।
- Despite their **political achievements**, women leaders continue to be **reduced to their gender**, which **overshadows their leadership capabilities**.



राजनीतिक उपलब्धियों के बावजूद, महिला नेताओं को उनके लिंग तक सीमित कर दिया जाता है, जिससे उनकी नेतृत्व क्षमता दब जाती है।

## Need for Change

### परिवर्तन की आवश्यकता

- **Meaningful transformation** requires that slogans be **backed by systemic changes** and should **disrupt traditional gender norms**.  
सारथक परिवर्तन के लिए यह आवश्यक है कि नारों का समर्थन प्रणालीगत बदलावों से किया जाए और वे पारंपरिक लैंगिक मानदंडों को तोड़ें।
- **Electoral slogans** should not be **used to discredit women**, should not **reinforce patriarchal norms**, and should not **trivialise gender-based violence**.  
चुनावी नारे महिलाओं को बदनाम करने के लिए इस्तेमाल नहीं किए जाने चाहिए, पितृसत्तात्मक मानदंडों को मजबूत नहीं करना चाहिए, और लैंगिक-आधारित हिंसा को तुच्छ नहीं बनाना चाहिए।
- Women should be **portrayed as active decision-makers spearheading change**, rather than **passive beneficiaries of schemes**.  
महिलाओं को परिवर्तन की अगुवाई करने वाले सक्रिय निर्णयकर्ताओं के रूप में प्रस्तुत किया जाना चाहिए, न कि योजनाओं की निष्क्रिय लाभार्थी के रूप में।

## MAIQUETIA

### Venezuelans flown home as U.S. deportation flights resume



GS Paper I: Mapping

AFP

Venezuela on Monday received nearly 200 citizens deported from the U.S. via Honduras, as President Donald Trump cracks down on undocumented foreigners. A plane carrying the deportees touched down early on Monday at Maiquetia International Airport outside the capital Caracas. It was the latest in a string of repatriations. AFP



**TELEGRAM CHANNEL:** <https://t.me/patrioticIAS>

**YOUTUBE CHANNEL:** <https://www.youtube.com/@PatrioticIAS>

**CONTACT: 9971932488**



**TOPICS COVERED (GS Paper II: Polity, Governance, and International Relations))**

- 1. Collegium clears judge's transfer**  
कोलेजियम ने जज के तबादले को मंजूरी दी
- 2. Will not apologise, but ready to cooperate with police and courts, says Kunal Kamra**  
माफ़ी नहीं मांगूंगा, लेकिन पुलिस और अदालतों के साथ सहयोग के लिए तैयार हूं: कुणाल कामरा
- 3. Finance Bill is a classic case of patchwork solutions: Tharoor**  
वित्त विधेयक पैचवर्क समाधान का एक क्लासिक मामला है: थरूर
- 4. India Navy announces maiden India-African exercise, IOS Sagar**  
भारतीय नौसेना ने पहली भारत-अफ्रीका सैन्य अभ्यास IOS सागर की घोषणा की
- 5. China Ties — Beware Conciliation Without Deterrence**  
चीन से संबंध — बिना प्रतिरोध के समझौते से बचें



# Collegium clears judge's transfer

The decision to move Justice Yashwant Varma from Delhi HC to Allahabad HC comes as inquiry into allegations of 'burnt currency' is set to commence; the judge is likely to be excluded from judicial work in the new post on the request of CJI

**GS Paper II:**  
**K. Judiciary**  
NEW DELHI

**T**he Supreme Court Collegium on Monday recommended the government to transfer Justice Yashwant Varma from the Delhi High Court to Allahabad even as a three-member committee of judges is scheduled to commence, in a day or two, a deeper fact-finding inquiry into allegations of "sacks of burnt currency" found in a gutted store-room on the grounds of his official residence on March 14.

The collegium, headed by Chief Justice of India (CJI) Sanjiv Khanna, said the resolution to repatriate Justice Varma to his parent High Court of Allahabad was taken after meetings held on Monday, and earlier on March 20.

The proposal to transfer Justice Varma was first mooted by the Supreme



**Under fire:** Police stand guard outside the residence of Delhi High Court judge Justice Yashwant Varma, in New Delhi on Sunday. PTI

Court Collegium on March 20 after viewing the video and photographs of what may be half-burnt money lying in the charred room.

Delhi High Court Chief Justice D.K. Upadhyaya had agreed with the Supreme Court Collegium's proposal to transfer Justice Varma on the evening of March 20 itself, saying the move would be in the "interest of better administration of justice".

The top court had said the proposal was "independent and free" of the ongoing in-house procedure. The probe would continue while the transfer was intended to establish a distance between judge and the High Court.

The Collegium resolution to transfer Justice Varma has come shortly after Chief Justice Upadhyaya submitted an enquiry report to the CJI on March 21

## Review verdicts by Justice Varma: Allahabad HC Bar

Amid the corruption row against Delhi High Court judge Justice Yashwant Varma, the Allahabad High Court Bar Association on Monday demanded that all the judgments delivered by him during his tenure as a judge be reviewed. » PAGE 4

containing his *prima facie* opinion that the allegations require a deeper probe.

The CJI had endorsed the opinion and constituted the inquiry committee of Punjab and Haryana High Court Chief Justice Sheel Nagu, Himachal Pradesh Chief Justice G.S. Sandhawalia and Karnataka High Court Judge, Justice Anu Sivaraman. This would be the second and a

more intensive stage of the probe.

The Supreme Court has already sent the three judges official letters tasking them with the inquiry. There is no time limit prescribed for the committee to complete the probe. The committee, once its task is completed, would submit a report to the CJI.

The Supreme Court, in its March 21 note, had pointed out that Justice Varma was a member of the Collegium of the Delhi High Court and its second seniormost judge. In the Allahabad High Court, he would be only ninth in seniority and not a member of its Collegium.

Meanwhile, Justice Varma was removed from judicial work on the request of the CJI.

**PETITION SEEKS FIR**

» PAGE 4

**EDITORIAL**

» PAGE 8

## Collegium clears judge's transfer

## कोलेजियम ने जज के तबादले को मंजूरी दी

The decision to move Justice Yashwant Varma from Delhi HC to Allahabad HC comes as an inquiry into allegations of 'burnt currency' is set to commence.

न्यायमूर्ति यशवंत वर्मा को दिल्ली हाई कोर्ट से इलाहाबाद हाई कोर्ट स्थानांतरित करने का निर्णय 'जली हुई मुद्रा' के आरोपों की जांच शुरू होने के बीच लिया गया।

- The judge is likely to be **excluded from judicial work** in the new post on the request of CJI.

सीजेआई के अनुरोध पर न्यायाधीश को नए पद पर न्यायिक कार्य से अलग रखा जाएगा।

- The **Supreme Court Collegium**, headed by CJI Sanjiv Khanna, recommended the transfer of Justice Varma on Monday.



सुप्रीम कोर्ट कोलेजियम, जिसकी अध्यक्षता सीजेआई संजीव खन्ना कर रहे हैं, ने सोमवार को न्यायमूर्ति वर्मा के तबादले की सिफारिश की।

- A three-member committee of judges is scheduled to commence an inquiry into allegations of 'sacks of burnt currency' found in a gutted storeroom at his official residence on March 14.

तीन सदस्यीय न्यायाधीश समिति 14 मार्च को उनके आधिकारिक आवास के जले हुए स्टोररूम में पाए गए 'जली हुई मुद्रा के बोरे' के आरोपों की जांच शुरू करेगी।

- The resolution to repatriate Justice Varma to his parent Allahabad High Court was taken after meetings held on March 20 and Monday.

\*\*न्यायमूर्ति वर्मा को उनके मूल इलाहाबाद हाई कोर्ट में स्थानांतरित करने का निर्णय 20 मार्च और सोमवार को हुई बैठकों के बाद लिया गया।

- The proposal to transfer Justice Varma was first mooted by the Supreme Court Collegium on March 20 after viewing video and photographs of half-burnt money in the charred room.

सुप्रीम कोर्ट कोलेजियम ने 20 मार्च को आधा जला हुआ पैसा और जले हुए कमरे के वीडियो और तस्वीरें देखने के बाद पहली बार न्यायमूर्ति वर्मा के स्थानांतरण का प्रस्ताव रखा।

- Delhi High Court Chief Justice D.K. Upadhyaya agreed with the Supreme Court Collegium's proposal to transfer Justice Varma on the evening of March 20, stating that it was in the interest of better administration of justice.

दिल्ली हाई कोर्ट के मुख्य न्यायाधीश डी.के. उपाध्याय ने 20 मार्च की शाम को सुप्रीम कोर्ट कोलेजियम के प्रस्ताव से सहमति जताई और इसे बेहतर न्याय प्रशासन के हित में बताया।

- The top court stated that the transfer was independent and free of the ongoing in-house procedure.

सर्वोच्च न्यायालय ने कहा कि यह स्थानांतरण चालू आंतरिक प्रक्रिया से स्वतंत्र है।

- The CJI endorsed the opinion and constituted an inquiry committee consisting of:

सीजेआई ने इस राय को स्वीकार किया और जांच समिति का गठन किया:

- Punjab & Haryana High Court Chief Justice Sheel Nagu  
पंजाब और हरियाणा हाई कोर्ट के मुख्य न्यायाधीश शील नागू
- Himachal Pradesh Chief Justice G.S. Sandhwalia  
हिमाचल प्रदेश हाई कोर्ट के मुख्य न्यायाधीश जी.एस. संधवालिया
- Karnataka High Court Judge Justice Anu Sivaraman  
कर्नाटक हाई कोर्ट की न्यायाधीश अन्नू शिवरामन

- This would be the second and a more intensive stage of the probe.

यह जांच का दूसरा और अधिक गहन चरण होगा।

- The Supreme Court has sent official letters to the three judges tasking them with the inquiry.

सुप्रीम कोर्ट ने तीनों न्यायाधीशों को जांच का कार्य सौंपने के लिए आधिकारिक पत्र भेजे हैं।

- There is no time limit prescribed for the committee to complete the probe.

समिति के लिए जांच पूरी करने की कोई समय सीमा निर्धारित नहीं की गई है।



- Once the inquiry is completed, the **committee will submit a report to the CJI.**  
जांच पूरी होने के बाद समिति सीजेआई को रिपोर्ट सौंपेगी।
- The **Supreme Court's March 21 note** mentioned that **Justice Varma was the second senior-most judge** in the **Delhi High Court Collegium.**  
सुप्रीम कोर्ट की 21 मार्च की टिप्पणी में कहा गया कि न्यायमूर्ति वर्मा दिल्ली हाई कोर्ट कोलेजियम के दूसरे वरिष्ठतम न्यायाधीश थे।
- In **Allahabad High Court**, he would be **ninth in seniority and not a Collegium member.**  
इलाहाबाद हाई कोर्ट में उनकी वरिष्ठता नौवीं होगी और वे कोलेजियम के सदस्य नहीं होंगे।
- Meanwhile, **Justice Varma was removed from judicial work** on the request of the **CJI.**  
इस बीच, सीजेआई के अनुरोध पर न्यायमूर्ति वर्मा को न्यायिक कार्य से हटा दिया गया।

## Will not apologise, but ready to cooperate with police and courts, says Kunal Kamra

**GS Paper II: Freedom of Speech**

MUMBAI

Stand-up comedian Kunal Kamra, who is in the eye of the storm over a joke he made on Maharashtra Deputy Chief Minister Eknath Shinde, has said that he doesn't fear "this mob" and won't apologise for his comments.

Mr. Kamra, in a statement issued late on Monday night, said that he is willing to cooperate "with the police and courts for any lawful action taken against me."

"To those who are busy leaking my number or calling me incessantly: I am sure you've realised by now that all unknown calls go to my voicemail, where you will be subjected to the very song that you hate. To the media faithfully reporting this circus: Remember



Shiv Sena workers vandalise the venue where comedian Kunal Kamra held a show, in Khar area of Mumbai. PTI

that press freedom in India ranks at 159. I will not apologise. What I said is exactly what Mr. Ajit Pawar (first Deputy CM) said about Mr. Eknath Shinde (second Deputy CM). I don't fear this mob and I will not be hiding under my bed, waiting for this to die down," he posted on X.

Mr. Kamra also hit back at Shiv Sena workers and leaders who marched into Habitat studio where he made the joke, and vandalised it.

"To the Mob That Decided That Habitat Should Not Stand: An entertainment venue is merely a platform. A space for all sorts of

shows. Habitat (or any other venue) is not responsible for my comedy, nor does it have any power or control over what I say or do. Neither does any political party. Attacking a venue for a comedian's words is as senseless as overturning a lorry carrying tomatoes because you didn't like the butter chicken you were served," he added.

### Not against law

Taking a jibe at politicians over their reactions, Mr. Kamra stated, "To the 'Political Leaders' Threatening to Teach Me a Lesson: Our right to freedom of speech and expression is not only to be used to fawn over the powerful and rich even though today's media would have us believe otherwise. Your inability to take a joke at the expense

of a powerful public figure does not change the nature of my right. As far as I know, it is not against the law to poke fun at our leaders and the circus that is our political system."

Mr. Kamra said he will co-operate with the police and the courts. "But will the law be fairly and equally deployed against those who have decided that vandalism is the appropriate response to being offended by a joke? And against the unelected members of the BMC (Brihanmumbai Municipal Corporation), who have arrived today at Habitat, without prior notice, and tore the place down with hammers? Perhaps for my next venue, I will opt for Elphinstone bridge, or any other structure in Mumbai that's in need of speedy demolition," he added.

**Will not apologise, but ready to cooperate with police and courts, says Kunal Kamra**



## माफ़ी नहीं मांगूंगा, लेकिन पुलिस और अदालतों के साथ सहयोग के लिए तैयार हूँ: कुणाल कामरा

- Stand-up comedian Kunal Kamra is facing backlash over a joke on Maharashtra Deputy CM Eknath Shinde but has stated that he won't apologise and doesn't fear the mob.

स्टैंड-अप कॉमेडियन कुणाल कामरा को महाराष्ट्र के उपमुख्यमंत्री एकनाथ शिंदे पर किए गए मजाक को लेकर आलोचना झेलनी पड़ रही है, लेकिन उन्होंने कहा कि वे माफ़ी नहीं मांगेंगे और भीड़ से नहीं डरते।

- In a statement issued on Monday night, Mr. Kamra said he is willing to cooperate with police and courts for any lawful action taken against him.  
सोमवार रात जारी बयान में, कामरा ने कहा कि वह कानूनी कार्रवाई के तहत पुलिस और अदालतों के साथ सहयोग करने के लिए तैयार हैं।
- Addressing those who are leaking his number and calling him repeatedly, he stated that all unknown calls go to voicemail where the callers are subjected to a song they dislike.  
जो लोग उनका नंबर लीक कर रहे हैं और लगातार कॉल कर रहे हैं, उनके लिए उन्होंने कहा कि सभी अनजान कॉल वॉइसमेल पर चली जाती हैं, जहां कॉलर्स को उनके नापसंद गाने सुनने पड़ते हैं।
- Criticizing the media, he pointed out that press freedom in India ranks 159, and reaffirmed that he will not apologise.  
मीडिया की आलोचना करते हुए उन्होंने कहा कि भारत में प्रेस स्वतंत्रता की रैंक 159 है और उन्होंने दोहराया कि वे माफ़ी नहीं मांगेंगे।
- Mr. Kamra noted that his statement was similar to what Ajit Pawar (First Deputy CM) had said about Eknath Shinde (Second Deputy CM).  
कामरा ने कहा कि उनका बयान अजीत पवार (पहले डिप्टी सीएम) द्वारा एकनाथ शिंदे (दूसरे डिप्टी सीएम) के बारे में दिए गए बयान जैसा ही था।
- He criticized Shiv Sena workers for vandalizing the Habitat studio where he performed.  
उन्होंने शिवसेना कार्यकर्ताओं की हैबिटेट स्टूडियो में तोड़फोड़ करने के लिए आलोचना की।
- Defending the entertainment venue, he stated that Habitat or any other venue is not responsible for a comedian's content.  
मनोरंजन स्थल का बचाव करते हुए उन्होंने कहा कि हैबिटेट या कोई अन्य मंच कॉमेडियन की सामग्री के लिए जिम्मेदार नहीं है।
- He compared attacking a venue for a comedian's joke to overturning a lorry carrying tomatoes because of bad butter chicken.



उन्होंने कहा कि किसी कॉमेडियन के चुटकुले के कारण किसी स्थल पर हमला करना वैसा ही है जैसे बटर चिकन खराब मिलने पर टमाटर से भरे ट्रक को पलटना।

- Taking a jibe at politicians, he remarked that freedom of speech is not just to praise the powerful and rich.

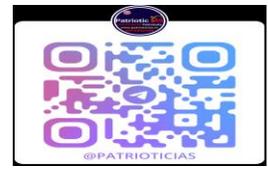
राजनीतिज्ञों पर तंज कसते हुए उन्होंने कहा कि अभिव्यक्ति की स्वतंत्रता केवल ताकतवर और अमीर लोगों की प्रशंसा के लिए नहीं है।

- He emphasized that mocking leaders or the political system is not illegal. उन्होंने जोर देकर कहा कि नेताओं या राजनीतिक व्यवस्था का मजाक बनाना अवैध नहीं है।
- While agreeing to cooperate with authorities, he questioned whether the law would be equally applied to those who vandalized the studio.

अधिकारियों के साथ सहयोग करने पर सहमति जताते हुए, उन्होंने पूछा कि क्या कानून उन लोगों पर समान रूप से लागू होगा जिन्होंने स्टूडियो में तोड़फोड़ की।

- Criticizing the BMC officials who demolished Habitat without notice, he sarcastically suggested performing at Elphinstone bridge, a structure needing demolition.

बीएमसी अधिकारियों की आलोचना करते हुए, जिन्होंने बिना पूर्व सूचना के हैबिटेट को ध्वस्त कर दिया, उन्होंने व्यंग्य करते हुए कहा कि वह अब एल्फिनस्टोन ब्रिज पर प्रदर्शन करेंगे, जो पहले से ही ध्वस्त होने की स्थिति में है।



# Finance Bill is a classic case of patchwork solutions: Tharoor

Speaking in Lok Sabha, he says southern States do not get their due share from Central revenue pool, terms GST in India most confusing, complex structure in world; BJP says Congress is used to opposing everything without looking at positives

**GS Paper II: Finance Bill**

**The Hindu Bureau**  
NEW DELHI

Initiating the debate on the Finance Bill in the Lok Sabha on Monday, Congress leader Shashi Tharoor said South Indian States had been the engines of growth and revenue but did not get their due share from the Central pool of revenue.

However, Bharatiya Janata Party MP Nishikant Dubey hit back, saying the Congress was used to opposing everything without looking at the positives.

Senior Opposition members, including the Congress's Deputy Leader in the House, Gaurav Gogoi, and senior member K.C. Venugopal, protested the fact that Minister of State for Finance Pankaj Choudhury was present instead of Union Finance Minister Nirmala Sitharaman when the House was taking up the discussion.

Calling the Finance Bill a "classic case of patchwork solutions", he said the government's financial management found itself in the middle of deep-rooted structural challenges.



**Back and forth:** Congress MP Shashi Tharoor speaking in the Lok Sabha during the Budget Session of Parliament on Monday. PTI

"The Finance Minister's Budget speech in this House reminded me of the garage mechanic who said I couldn't fix your brakes, so I made the horn louder but looking at the Finance Bill, she is now saying to taxpayers, I couldn't repair the roof but I brought you an umbrella," he said.

#### Higher share

Pitching for a higher share from the Central revenue pool, the Congress leader said, "And let me say, ma'am, that the five southern States – Andhra Pradesh, Tamil Nadu, Kerala,

Karnataka, and Telangana – are among India's strongest economic engines. They are paying taxes, they generate over a quarter of the country's direct taxes, they contribute 28.5% of GST, but when it comes to receiving their fair share, they get a mere 15% of the Centre's tax pool. How is this acceptable? How can States that fuel the nation's economy be expected to sustain their growth with such an inadequate return?"

The Congress leader said the goods and services tax (GST) in the country

was the "most confusing and complex GST structure in the world". "Instead of the good and simple tax we all wanted, India has multiple and confusing GST rates, including the highest GST rate in the world, at 28% but tax revenues are still at 18% of GDP," he said, adding that China has a 13% GST cap, but they collect 20% of the GDP.

He mentioned several economic challenges such as "soaring unemployment, economic inequality, stagnating exports, shrinking manufacturing sector, wealth as well as high net worth individuals leaving the country".

Mr. Dubey, who spoke next, said the Budget did not provide a magic solution to all problems. "It is a result of hard work aimed at helping the workers... it is Congress's agenda to oppose everything without looking at the positives. You need to answer what did you (Congress) do for the poor and salaried class."

The Jharkhand MP said the Indian economy had increased to \$4.5 trillion

from \$2 trillion in the past 10 years.

#### 'Tax terrorism'

Trinamool Congress MP Mahua Moitra alleged that the government was favouring crony capitalists at the expense of small businesses and workers.

She said the government had created special rules to benefit certain businessmen. "All tax rules are written for Vishwakarma's India, not Kubera's India. But when it comes to crony capitalists, there are special rules," she said.

She accused the government of engaging in "tax terrorism", stating that stock market investors, corporates and small business owners have all been victims.

Ms. Moitra said the official figures on the footfall at the recent Maha Kumbh were inflated.

Congress MP Hibi Eden flagged the GST on life-saving drugs. "There are thousands who suffer from spinal dystrophy. The cost of the medicine is exorbitant, then there is 5% GST on this. The government needs to scrap it," he said.

**Finance Bill is a classic case of patchwork solutions:**

**Tharoor**

**वित्त विधेयक पैचवर्क**

**समाधान का एक**

**क्लासिक मामला है:**

**थरूर**

**Congress leader Shashi Tharoor, initiating the Finance Bill debate in Lok Sabha on Monday, said that South Indian States drive growth and revenue but do not get their due share**

**from the Central revenue pool.**

**कांग्रेस नेता शशि थरूर ने सोमवार को लोकसभा में वित्त विधेयक की बहस शुरू करते हुए कहा कि दक्षिण भारतीय राज्य विकास और राजस्व के इंजन हैं, लेकिन उन्हें केंद्रीय राजस्व पूल से उनका उचित हिस्सा नहीं मिलता।**

- **BJP MP Nishikant Dubey** countered, saying that **Congress opposes everything without considering positive aspects.**

**भाजपा सांसद निशिकांत दुबे ने जवाब देते हुए कहा कि कांग्रेस हर चीज का विरोध करती है, बिना सकारात्मक पहलुओं पर विचार किए।**



- Senior Congress leaders Gaurav Gogoi and K.C. Venugopal protested the absence of Union Finance Minister Nirmala Sitharaman during the discussion.  
वरिष्ठ कांग्रेस नेता गौरव गोगोई और के.सी. वेणुगोपाल ने वित्त मंत्री निर्मला सीतारमण की अनुपस्थिति पर विरोध जताया।
- Tharoor called the Finance Bill a 'classic case of patchwork solutions', arguing that the government's financial management faces deep-rooted structural challenges.  
थरूर ने वित्त विधेयक को 'पैचवर्क समाधान का क्लासिक मामला' कहा, और सरकार की वित्तीय प्रबंधन प्रणाली को गहरे संरचनात्मक चुनौतियों से घिरा बताया।
- He compared the Finance Minister's approach to a garage mechanic, saying, "I couldn't fix your brakes, so I made the horn louder".  
उन्होंने वित्त मंत्री की नीति की तुलना एक गैराज मैकेनिक से की, और कहा, "मैं आपकी ब्रेक ठीक नहीं कर सका, इसलिए मैंने हॉर्न तेज़ कर दिया"।

## Higher Share for Southern States

### दक्षिणी राज्यों के लिए अधिक हिस्सा

- Tharoor demanded a higher share of revenue for five southern States—Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, and Telangana.  
थरूर ने पांच दक्षिणी राज्यों—आंध्र प्रदेश, तमिलनाडु, केरल, कर्नाटक और तेलंगाना के लिए अधिक राजस्व हिस्सेदारी की मांग की।
- He pointed out that **these States generate over 25% of India's direct taxes and contribute 28.5% of GST, yet receive only 15% of the Centre's tax pool.**  
उन्होंने बताया कि ये राज्य भारत के प्रत्यक्ष करों का 25% से अधिक उत्पन्न करते हैं और 28.5% जीएसटी योगदान देते हैं, फिर भी उन्हें केंद्र के कर पूल से केवल 15% ही मिलता है।

## GST Concerns

### जीएसटी से जुड़ी चिंताएं

- Tharoor termed GST in India as the 'most confusing and complex' system in the world.  
थरूर ने भारत में जीएसटी को 'दुनिया की सबसे जटिल और भ्रमित करने वाली प्रणाली' बताया।
- He criticized India's multiple GST rates, including the highest 28% slab, noting that China has a 13% cap but collects 20% of GDP in taxes.  
उन्होंने भारत की बहुस्तरीय जीएसटी दरों की आलोचना की, जिसमें 28% की उच्चतम दर शामिल है, और बताया कि चीन में 13% की सीमा है, लेकिन वह जीडीपी का 20% कर के रूप में एकत्र करता है।

## Economic Challenges

### आर्थिक चुनौतियां



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- He highlighted issues such as **soaring unemployment, economic inequality, stagnating exports, and shrinking manufacturing.**  
उन्होंने बढ़ती बेरोजगारी, आर्थिक असमानता, ठहरते निर्यात, और घटते विनिर्माण क्षेत्र जैसी समस्याओं को उजागर किया।

## BJP's Response

### भाजपा की प्रतिक्रिया

- Dubey responded that the Budget was a result of hard work aimed at benefiting workers, and Congress was only opposing without solutions.  
दुबे ने कहा कि बजट मेहनत का परिणाम है, जो श्रमिकों के लाभ के लिए तैयार किया गया है, और कांग्रेस केवल विरोध कर रही है, बिना समाधान दिए।
- He stated that India's economy had grown from \$2 trillion to \$4.5 trillion in 10 years.  
उन्होंने बताया कि भारत की अर्थव्यवस्था पिछले 10 वर्षों में \$2 ट्रिलियन से बढ़कर \$4.5 ट्रिलियन हो गई है।

## Tax Terrorism Allegations

### कर आतंकवाद के आरोप

- TMC MP Mahua Moitra accused the government of favoring crony capitalists at the expense of small businesses.  
टीएमसी सांसद महुआ मोइत्रा ने सरकार पर छोटे व्यवसायों की कीमत पर करीबी पूंजीपतियों का पक्ष लेने का आरोप लगाया।
- She claimed that the government had created **special tax rules benefiting select businessmen.**  
उन्होंने कहा कि सरकार ने विशिष्ट व्यापारियों के लिए विशेष कर नियम बनाए हैं।
- She accused the government of **'tax terrorism'**, arguing that **investors, corporates, and small business owners are victims.**  
उन्होंने सरकार पर 'कर आतंकवाद' का आरोप लगाया, और कहा कि निवेशक, कॉर्पोरेट और छोटे व्यापारी इसके शिकार हैं।

## Concerns Over GST on Medicines

### दवाओं पर जीएसटी को लेकर चिंता

- Congress MP Hibi Eden raised concerns over GST on life-saving drugs, particularly for spinal dystrophy patients.  
कांग्रेस सांसद हिबी ईडन ने जीवन रक्षक दवाओं पर जीएसटी को लेकर चिंता जताई, खासकर स्पाइनल डिस्ट्रॉफी के मरीजों के लिए।

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- He urged the government to **remove the 5% GST on expensive life-saving medicines.**

उन्होंने सरकार से महंगी जीवन रक्षक दवाओं पर 5% जीएसटी हटाने की मांग की।

## Finance Bill: A Comprehensive Explanation with Examples

### Definition:

A **Finance Bill** is a legislative proposal introduced in the Indian Parliament to give effect to the financial proposals of the government for the upcoming fiscal year. It includes amendments to existing tax laws, introduction of new taxes, and provisions for government expenditure to align with fiscal policies.

### Example:

The **Finance Bill, 2024** introduced provisions to reduce customs duty on gold and silver, modify income tax slabs, and impose new cesses for infrastructure development.

### Constitutional Provisions:

#### Article 110 - Money Bill

- A **Money Bill** strictly contains provisions related to taxation, borrowing, or expenditure from the **Consolidated Fund of India**.
- **Example:** The **Finance Bill, 2017** was classified as a **Money Bill** because it only contained provisions related to tax and expenditure.

#### Article 117 - Financial Bills

- **Financial Bills (Type I & II)** include provisions related to financial matters but may also contain other legislative elements.

### Types of Finance Bills:



## 1. Money Bill (Article 110)

- Contains only financial provisions related to taxation, borrowing, or government expenditure.
- Introduced only in the Lok Sabha.
- Example:  
The Finance Bill, 2019 proposed changes in income tax exemptions for the middle class and the introduction of Direct Tax Code.
- Procedure:
  - The Lok Sabha debates and votes on it.
  - The Rajya Sabha can only suggest amendments but cannot reject or amend it without Lok Sabha's approval.
  - After Presidential assent, it becomes a Finance Act.

## 2. Financial Bills (Type I) [Article 117(1)]

- Contains both financial and non-financial provisions.
- Introduced only in the Lok Sabha and requires the President's recommendation.
- The Rajya Sabha can reject or amend the bill, and if there's a disagreement, a joint sitting of both Houses is called.
- Example:  
The Finance Bill, 2021 introduced changes in taxation rules, but also included provisions to regulate cryptocurrency transactions under the Income Tax Act.

## 3. Financial Bills (Type II) [Article 117(3)]

- Contains provisions involving expenditure from the Consolidated Fund of India but does not include taxation provisions.
- Can be introduced in either Lok Sabha or Rajya Sabha.
- Example:  
The Finance Bill, 2016 contained provisions related to government expenditure on infrastructure projects, which required Presidential recommendation.

## Legislative Process of the Finance Bill:

### Step 1: Introduction in Lok Sabha

- Example: The Finance Bill, 2023 was introduced by Finance Minister Nirmala Sitharaman after presenting the Union Budget.



## Step 2: Consideration and Passing

- The **Lok Sabha debates and votes** on the bill.
- The **Rajya Sabha can only suggest amendments** (for Money Bills) but has **full rights to amend Financial Bills (Type I and II)**.
- **Example:**  
In **2020**, the Finance Bill **raised the tax audit limit** for businesses from ₹1 crore to ₹5 crore, encouraging digital transactions.

## Step 3: Presidential Assent

- After being passed by Parliament, the bill is sent to the **President for final approval**.
- Once approved, it **becomes a Finance Act**.
- **Example:**  
The **Finance Act, 2019** introduced a **corporate tax reduction** from **30% to 22%** to boost investments.

## Key Features of the Finance Bill:

### 1. Implementation of Fiscal Policies

- It enforces **government's budgetary decisions** on taxation and spending.
- **Example:**  
The **Finance Bill, 2022** introduced a **30% tax on cryptocurrency transactions**, reflecting the government's new policy on digital assets.

### 2. Annual Enactment



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- A new **Finance Bill** is introduced every year along with the Union Budget.
- **Example:**  
The **Finance Bill, 2024** proposed a **reduction in customs duty on electronics** to promote **Make in India**.

### 3. Amendments to Tax Laws

- Modifies **income tax rates, corporate tax rates, and indirect taxes**.
- **Example:**  
The **Finance Bill, 2021** removed tax exemptions on **Employee Provident Fund (EPF) contributions** above ₹2.5 lakh.

PATRIOTIC IAS



# India Navy announces maiden India-African exercise, **IOS Sagar**

**GS Paper II: Indian Ocean Region**

**Dinakar Peri**

NEW DELHI

Against the backdrop of massive inroads by China in Africa, the renewed threat of piracy and the continued threat from Houthi rebels to global shipping, the Indian Navy has announced initiatives for bolder cooperation with the continent and the Indian Ocean Region (IOR). This includes a large-scale multinational exercise titled "Africa India Key Maritime Engagement", or "AI-KEYME", scheduled to be held with 10 African countries.

Another cooperation initiative with Africa is the Indian Ocean Ship (IOS) Sagar under which the offshore patrol vessel *INS Sunayna* is set to be deployed to the Southwest IOR from April 5 to May 8 with a combined Indian crew and 44 personnel



Vice Admiral Tarun Sobti

from 9 African countries.

"IOS Sagar is an initiative towards continued cooperation with IOR nations. *INS Sunayna* is being deployed to the Southwest IOR with a combined crew of India and nine Friendly Foreign Countries (FFC) - Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, South Africa. The ship is planned to be deployed for over a month in April, and would be undertaking port calls at Dar-es-Salaam, Nacala, Port

Louis, Port Victoria and Male and Joint surveillance of Exclusive Economic Zones (EEZs) of Tanzania, Mozambique, Mauritius and Seychelles," Deputy Chief of Naval Staff Vice Admiral Tarun Sobti said, briefing the media.

With the announcement of **Mutual and Holistic Advancement for Security Across the Regions (MAHA-SAGAR)** by Prime Minister Narendra Modi during his recent visit to Mauritius, the maiden initiatives of **IOS Sagar** and **AIKEYME** are aimed at consolidating Indian Navy's stature as the 'Preferred Security Partner' and 'First Responder' in Indian Ocean Region, he said.

The personnel from FFCs would undergo a training capsule of two weeks at various naval professional schools at Kochi, including training at sea, and would be engaged in

wholeship activities, watch keeping and other events related to their respective branches/trade, according to the Navy. The participants of **IOS Sagar** are also set to witness harbour phase activities of Exercise **AIKEYME** at Dar-es-Salaam, Tanzania.

Over the past decade, the Indian Navy has been extensively collaborating with Indian Ocean littoral states on various initiatives such as joint naval exercises, coordinated patrols, information sharing, Humanitarian Assistance and Disaster Relief (HADR) efforts, capacity building and other diplomatic engagements. The maiden edition of the India-Africa multilateral exercise 'AIKEYME' is being co-hosted by the Indian Navy and Tanzania Peoples' Defence Force (TPDF) and will be conducted at/off Dar-es-Salaam, Tanzania.

**India Navy announces maiden India-African exercise, IOS Sagar**

**भारतीय नौसेना ने पहली भारत-अफ्रीका सैन्य अभ्यास IOS सागर की घोषणा की**

**Amidst China's increasing influence in Africa, rising piracy threats, and the Houthi rebels' threats to global shipping, the Indian Navy has announced new initiatives to enhance cooperation with Africa and the**



## Indian Ocean Region (IOR).

अफ्रीका में चीन के बढ़ते प्रभाव, समुद्री लूट के बढ़ते खतरों, और हौथी विद्रोहियों द्वारा वैश्विक शिपिंग पर खतरे के बीच, भारतीय नौसेना ने अफ्रीका और हिंद महासागर क्षेत्र (IOR) के साथ सहयोग बढ़ाने के लिए नई पहल की घोषणा की।

- A large-scale multinational exercise named “Africa India Key Maritime Engagement” (AIKEYME) will be conducted with 10 African countries.  
10 अफ्रीकी देशों के साथ “अफ्रीका इंडिया की मैरीटाइम एंगेजमेंट” (AIKEYME) नामक बहु-राष्ट्रीय सैन्य अभ्यास आयोजित किया जाएगा।
- Another key initiative, **Indian Ocean Ship (IOS) Sagar**, will involve the deployment of the **INS Sunayna to Southwest IOR from April 5 to May 8, with a combined crew of Indian and 44 personnel from 9 African countries.**  
एक और प्रमुख पहल, इंडियन ओशन शिप (IOS) सागर, के तहत INS सुनयना को 5 अप्रैल से 8 मई तक दक्षिण-पश्चिम हिंद महासागर क्षेत्र (IOR) में तैनात किया जाएगा, जिसमें भारत और 9 अफ्रीकी देशों के 44 कर्मियों की संयुक्त टीम होगी।

## Deployment and Training Details

### तैनाती और प्रशिक्षण विवरण

- **INS Sunayna will be deployed in the Southwest IOR with personnel from 9 Friendly Foreign Countries (FFC):**  
INS सुनयना को 9 मित्र देशों (FFC) के कर्मियों के साथ दक्षिण-पश्चिम हिंद महासागर क्षेत्र (IOR) में तैनात किया जाएगा:
  - **Comoros, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Sri Lanka, South Africa.**  
कोमोरोस, केन्या, मेडागास्कर, मालदीव, मॉरीशस, मोज़ाम्बिक, सेशेल्स, श्रीलंका, दक्षिण अफ्रीका।
- The ship will **conduct port calls at Dar-es-Salaam, Nacala, Port Louis, Port Victoria, and Male**, and engage in **joint surveillance of Exclusive Economic Zones (EEZs) of Tanzania, Mozambique, Mauritius, and Seychelles.**  
जहाज दार-एस-सलाम, नकाला, पोर्ट लुइस, पोर्ट विक्टोरिया, और माले में पोर्ट कॉल करेगा, और तंजानिया, मोज़ाम्बिक, मॉरीशस, और सेशेल्स के विशेष आर्थिक क्षेत्रों (EEZs) की संयुक्त निगरानी करेगा।
- The initiative aligns with **MAHASAGAR (Mutual and Holistic Advancement for Security Across the Regions)**, announced by **Prime Minister Narendra Modi** during his recent **visit to Mauritius.**  
यह पहल प्रधानमंत्री नरेंद्र मोदी द्वारा हाल ही में मॉरीशस यात्रा के दौरान घोषित MAHASAGAR (क्षेत्रों में सुरक्षा के लिए पारस्परिक और समग्र उन्नति) के अनुरूप है।



**TELEGRAM CHANNEL:** <https://t.me/patrioticIAS>

**YOUTUBE CHANNEL:** <https://www.youtube.com/@PatrioticIAS>

**CONTACT: 9971932488**



## Training and Collaboration

### प्रशिक्षण और सहयोग

- Personnel from participating countries will undergo a **two-week training** at naval professional schools in Kochi, including **training at sea** and **various naval activities**.  
भाग लेने वाले देशों के कर्मी कोच्चि में नौसैनिक व्यावसायिक स्कूलों में दो सप्ताह का प्रशिक्षण प्राप्त करेंगे, जिसमें समुद्र में प्रशिक्षण और विभिन्न नौसैनिक गतिविधियां शामिल हैं।
- Participants of **IOS Sagar** will also witness **harbour phase activities of Exercise AIKEYME** at **Dar-es-Salaam, Tanzania**.  
IOS सागर के प्रतिभागी तंजानिया के दार-एस-सलाम में आयोजित अभ्यास AIKEYME के हार्बर चरण की गतिविधियों को भी देखेंगे।

## Strengthening Maritime Security

### समुद्री सुरक्षा को सुदृढ़ करना

- Over the past decade, the **Indian Navy** has extensively collaborated with **Indian Ocean littoral states** on **joint naval exercises, coordinated patrols, intelligence sharing, humanitarian assistance, and disaster relief (HADR)**.  
पिछले एक दशक में, भारतीय नौसेना ने हिंद महासागर क्षेत्र के देशों के साथ संयुक्त नौसैनिक अभ्यास, समन्वित गश्ती, खुफिया साझेदारी, मानवीय सहायता और आपदा राहत (HADR) पर व्यापक सहयोग किया है।
- The maiden edition of AIKEYME is **co-hosted by the Indian Navy and the Tanzania Peoples' Defence Force (TPDF)** and will take place **off the coast of Dar-es-Salaam, Tanzania**.  
AIKEYME का पहला संस्करण भारतीय नौसेना और तंजानिया पीपुल्स डिफेंस फोर्स (TPDF) द्वारा सह-मेजबानी किया जा रहा है और तंजानिया के दार-एस-सलाम तट पर आयोजित होगा।



## China ties — beware conciliation without deterrence

GS Paper II:  
India-China

**P**olitical winds seem to be shifting, with India adopting a more conciliatory crouch towards China. In a podcast released in mid-March, Prime Minister Narendra Modi made his warmest comments about China in years, saying “only through dialogue can we build a stable, cooperative relationship”, which is “essential for global stability and prosperity”. Chinese officials lapped it up.

This has not come out of nowhere. India-China relations have been slowly recovering since they ruptured in 2020, when China launched multiple incursions across the Line of Actual Control, into Ladakh, and a skirmish killed 20 Indian soldiers. Military talks haltingly disengaged forces from many sites on the border. Despite a diplomatic freeze, bilateral trade grew to set new records. And less than six months ago, in October last year, India and China made a surprising deal to disengage their troops from the last two incursion sites. The crisis was nominally resolved, and the two countries were on the path toward normalisation.

### On India's stance

It is not yet clear if Mr. Modi's comments were simply a new tone, or if they presage a substantive policy shift. New Delhi itself has probably not decided, and may just be keeping its options open. It may be returning to the more conciliatory approach of the earlier days of the Modi government, when New Delhi hoped to find a mutually-productive relationship, holding summits with China's President Xi Jinping to find areas of policy alignment. At the same time, the India-China rivalry is structural and abiding. Just days after Mr. Modi's podcast appearance, India's Chief of Defence Staff, General Anil Chauhan, met with senior commanders from India's Quad partners, Australia, Japan, and the United States. India's grand strategy has always prioritised national economic development; from that perspective, India would be prudent to defuse military confrontations with its largest trading partner.

Indeed, China boasts an economy more than four times larger than India's. So, as India's



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When it comes to China ties, India must note that a stabilisation policy also requires wielding a sharp sword

External Affairs Minister S. Jaishankar has said bluntly, it is “common sense” for India to seek a stable and even profitable relationship with its giant neighbour.

### The three body problem

New Delhi does not, however, make policy in a vacuum. The Modi government has doubtless been examining the new Trump administration closely, and recent signals from Washington suggest an ambiguous policy stance. Mr. Trump has followed through on his threat to impose tariffs on Beijing, but his toughness on trade does not seem to extend to defence policy. He wily suggested that the United States and China (along with Russia) should slash defence spending in half. His nominee for the top policymaking job at the Pentagon, Elbridge Colby, demanded that frontline allies such as Japan – as well as Taiwan – should radically increase military spending and assume more responsibility for their own defence.

Apart from China, Mr. Trump has shown a predilection for orchestrating grand bargains with other great powers. His peace process for Ukraine involves accommodating Russian strategic interests, while delivering lavish commercial profits to the U.S. Mr. Trump has thus shown a willingness to suddenly reverse decades of policy, ceding a sphere of influence to America's erstwhile rival, Russia, for the sake of forging a 19th century-style compact among great powers. There is no logical impediment to Mr. Trump seeking a similar compact with America's other great power rival, China – trading away American strategic influence for mercantilist gain and an illusory peace.

More pointedly, Mr. Trump all but ceased support to Ukraine – even cutting off intelligence warnings of Russian missile attacks against civilians – to coerce Kyiv into submitting to a deal. America's European allies instantly lost faith in its decades-old security guarantees. Such wanton pressure tactics could not have escaped New Delhi's attention. India does not rely on American protection, but as former Indian Defence Secretary Girdhar Aramane admitted, it has come to expect U.S. assistance, especially

intelligence, in managing the Chinese threat on the border. Now, doubts over American support in a crisis, and even the slight possibility of a deal that strengthens China's position, add more reasons for India to stabilise its relationship with its powerful neighbour.

### Sharpen the sword

With a new tone, and possibly a new conciliatory policy, some in New Delhi may be tempted to conclude that India can ease off on investing in military capabilities, or deepening military cooperation with partners. In fact the opposite is true. India's military preparations have been anaemic even despite the urgency imposed by the Ladakh crisis. Defence spending, as a share of the national budget and as a share of GDP, has steadily declined over the past decade.

The risk of a stabilisation policy is that it gives New Delhi an excuse to keep putting off overdue investments in modernisation or organisational reforms. That would play right in to Beijing's hands. For India to have military options in the future, it must invest in military power today. Military capabilities take inordinate time to field – as recent news stories have reiterated again and again, building submarines and developing fighter aircraft take years, if not decades.

In the interim, the Indian military should continue to pursue operational cooperation with its partners, regardless of Washington's unpredictability or New Delhi's tactical shifts in tone. Exercises in the field and on the high seas build interoperability and Indian capability. Further coordination of operations and plans can build Indian capability even more, without binding New Delhi or any of its partners to any particular policy.

Ultimately, the purpose of military power is to deter, and, if necessary, defeat aggression. Indian policymakers can expect more Chinese aggression in the future – just as they have endured for decades in the past, including after Mr. Modi's own summits with Mr. Xi. If India wants stability, it must accompany its conciliatory tone with the material capacity to deter aggression. Otherwise, stability risks turning into submission.

## China Ties — Beware Conciliation Without Deterrence

### चीन से संबंध — बिना प्रतिरोध के समझौते से बचें

Political winds seem to be shifting, with India adopting a more conciliatory stance towards China.

राजनीतिक परिस्थितियां बदलती दिख रही हैं, जहां भारत चीन के प्रति अधिक

समझौतावादी रुख अपना रहा है।

- In a mid-March podcast, Prime Minister Narendra Modi made his warmest comments about China in years, stating that “only through dialogue can we build a stable, cooperative relationship”, which is “essential for global stability and prosperity”.



मार्च के मध्य में एक पॉडकास्ट में, प्रधानमंत्री नरेंद्र मोदी ने कई वर्षों में चीन को लेकर सबसे सौहार्दपूर्ण बयान दिया, जिसमें उन्होंने कहा कि "सिर्फ संवाद के माध्यम से ही हम एक स्थिर और सहयोगी संबंध बना सकते हैं", जो "वैश्विक स्थिरता और समृद्धि के लिए आवश्यक है"।

- Chinese officials welcomed these remarks enthusiastically.  
चीनी अधिकारियों ने इन टिप्पणियों को उत्साहपूर्वक स्वीकार किया।

## India-China Relations Since 2020

### 2020 के बाद भारत-चीन संबंध

- India-China relations have been slowly recovering since their rupture in 2020, when China launched multiple incursions across the Line of Actual Control (LAC) into Ladakh, resulting in a skirmish that killed 20 Indian soldiers.  
2020 में तनाव के बाद से भारत-चीन संबंध धीरे-धीरे सुधर रहे हैं, जब चीन ने वास्तविक नियंत्रण रेखा (LAC) के पार लद्दाख में कई घुसपैठ कीं, जिससे एक झड़प में 20 भारतीय सैनिक शहीद हो गए।
- Military talks have gradually disengaged forces from several border sites, even as bilateral trade has continued to grow to record levels.  
सैन्य वार्ता के माध्यम से कई सीमा बिंदुओं से सेनाओं को पीछे हटाया गया, जबकि द्विपक्षीय व्यापार नए रिकॉर्ड स्तर पर बढ़ता रहा।
- In October 2023, India and China made a surprising deal to disengage troops from the last two incursion sites, nominally resolving the crisis and putting relations on a path toward normalisation.  
अक्टूबर 2023 में, भारत और चीन ने एक अप्रत्याशित समझौता किया, जिसके तहत अंतिम दो घुसपैठ स्थलों से सैनिकों को पीछे हटाने पर सहमति बनी, जिससे संकट औपचारिक रूप से हल हो गया और संबंध सामान्य होने की राह पर आ गए।

## India's Stance on China

### भारत का चीन पर रुख

- It is unclear whether Mr. Modi's comments indicate a policy shift or merely a change in tone.  
यह स्पष्ट नहीं है कि श्री मोदी की टिप्पणियां किसी नीतिगत बदलाव का संकेत हैं या केवल सुर में परिवर्तन।
- New Delhi may be keeping its options open, possibly returning to the conciliatory approach of the early Modi government years, when India held summits with Chinese President Xi Jinping to find policy alignment.  
नई दिल्ली शायद अपने विकल्प खुले रख रही है, और संभवतः मोदी सरकार के शुरुआती वर्षों की समझौतावादी नीति की ओर लौट रही है, जब भारत ने चीनी राष्ट्रपति शी जिनपिंग के साथ नीति समन्वय के लिए शिखर सम्मेलन आयोजित किए थे।



- However, the India-China rivalry remains structural and ongoing.  
हालांकि, भारत-चीन प्रतिद्वंद्विता संरचनात्मक और सतत बनी हुई है।
- Just days after Mr. Modi's podcast, India's Chief of Defence Staff, General Anil Chauhan, met with senior commanders from India's Quad partners—Australia, Japan, and the United States.  
श्री मोदी के पॉडकास्ट के कुछ दिनों बाद ही, भारत के रक्षा प्रमुख जनरल अनिल चौहान ने क्वाड देशों (ऑस्ट्रेलिया, जापान और अमेरिका) के वरिष्ठ कमांडरों से मुलाकात की।

## Economic Considerations

### आर्थिक दृष्टिकोण

- **India's grand strategy prioritises national economic development, which makes it prudent to defuse military confrontations with its largest trading partner, China.**  
भारत की प्रमुख रणनीति राष्ट्रीय आर्थिक विकास को प्राथमिकता देती है, जिससे सबसे बड़े व्यापारिक साझेदार चीन के साथ सैन्य टकराव को कम करना समझदारी होगी।
- **China's economy is more than four times larger than India's, making it strategically beneficial for India to maintain a stable and profitable relationship.**  
चीन की अर्थव्यवस्था भारत से चार गुना बड़ी है, जिससे भारत के लिए स्थिर और लाभदायक संबंध बनाए रखना रणनीतिक रूप से फायदेमंद हो सकता है।
- **External Affairs Minister S. Jaishankar has stated that it is "common sense" for India to seek a stable relationship with China.**  
विदेश मंत्री एस. जयशंकर ने कहा है कि भारत के लिए चीन के साथ स्थिर संबंध रखना "सामान्य बुद्धि" की बात है।

## The Three-Body Problem

### तीन-शक्ति समस्या

- **New Delhi does not make policy in a vacuum. The Modi government is closely examining the new Trump administration, as recent signals from Washington suggest an ambiguous policy stance.**  
नई दिल्ली नीतियां बिना संदर्भ के नहीं बनाती। मोदी सरकार नए ट्रंप प्रशासन का बारीकी से अध्ययन कर रही है, क्योंकि वॉशिंगटन से हाल के संकेत अस्पष्ट नीति रुख दर्शाते हैं।
- **Mr. Trump has imposed tariffs on Beijing but has not shown the same toughness in defence policy.**  
श्री ट्रंप ने बीजिंग पर शुल्क लगाए हैं, लेकिन रक्षा नीति में वैसी कठोरता नहीं दिखाई।
- **Trump suggested that the U.S., China, and Russia should cut defence spending by half, while his nominee for the top Pentagon post, Elbridge Colby, urged frontline allies like Japan and Taiwan to increase military spending.**  
ट्रंप ने सुझाव दिया कि अमेरिका, चीन और रूस को अपने रक्षा खर्च को आधा करना चाहिए, जबकि



पेंटागन के शीर्ष पद के लिए उनके नामित एल्लिज कोलबी ने जापान और ताइवान जैसे सहयोगियों से सैन्य खर्च बढ़ाने का आग्रह किया।

## Trump's Grand Bargains

### ट्रंप की भव्य सौदेबाजी

- Apart from China, Trump has sought grand bargains with other powers, such as accommodating Russian strategic interests in Ukraine while securing economic profits for the U.S.  
चीन के अलावा, ट्रंप ने अन्य शक्तियों के साथ बड़े समझौते किए हैं, जैसे कि यूक्रेन में रूसी रणनीतिक हितों को समायोजित करना, जबकि अमेरिका के लिए आर्थिक लाभ सुनिश्चित करना।
- Trump has reversed decades of U.S. foreign policy, ceding influence to Russia in exchange for economic benefits.  
ट्रंप ने अमेरिका की दशकों पुरानी विदेश नीति को पलट दिया, जिससे रूस को प्रभाव क्षेत्र सौंपकर आर्थिक लाभ हासिल किए।
- Trump's sudden shift in policy has raised concerns in New Delhi, as India has come to expect U.S. intelligence assistance in countering China.  
ट्रंप की अचानक नीति में बदलाव ने नई दिल्ली में चिंता बढ़ा दी है, क्योंकि भारत चीन के खिलाफ अमेरिकी खुफिया सहायता की उम्मीद करता रहा है।
- America's European allies have lost faith in U.S. security guarantees after Trump cut intelligence support to Ukraine.  
ट्रंप द्वारा यूक्रेन के लिए खुफिया समर्थन में कटौती के बाद अमेरिका के यूरोपीय सहयोगियों का उसकी सुरक्षा गारंटी पर भरोसा डगमगा गया।

## Sharpen the Sword

### तलवार को तेज करें

- A conciliatory approach towards China should not lead India to neglect military investments or reduce cooperation with defence partners.  
चीन के प्रति समझौतावादी रुख अपनाने से भारत को सैन्य निवेश की अनदेखी नहीं करनी चाहिए, और न ही रक्षा सहयोगियों के साथ सहयोग कम करना चाहिए।
- India's defence spending as a share of GDP and the national budget has steadily declined over the past decade, despite the urgency of the Ladakh crisis.  
भारत का रक्षा खर्च, जीडीपी और राष्ट्रीय बजट के अनुपात में, पिछले एक दशक में लगातार घटा है, जबकि लद्दाख संकट के कारण रक्षा तैयारियों की तत्काल आवश्यकता थी।
- A stabilisation policy should not become an excuse to delay overdue military investments, as this would work in Beijing's favour.



स्थिरीकरण नीति को लंबित सैन्य निवेश में देरी करने का बहाना नहीं बनना चाहिए, क्योंकि यह बीजिंग के हित में होगा।

- **Building submarines and fighter aircraft takes years, if not decades, making early investments crucial for future military capabilities.**  
पनडुब्बियों और लड़ाकू विमानों के निर्माण में वर्षों, यहां तक कि दशकों का समय लग सकता है, जिससे भविष्य की सैन्य क्षमताओं के लिए त्वरित निवेश आवश्यक है।
- **India must continue operational cooperation with military partners, regardless of Washington's unpredictability or New Delhi's tactical shifts.**  
भारत को अपने सैन्य सहयोगियों के साथ संचालनात्मक सहयोग जारी रखना चाहिए, भले ही वॉशिंगटन की नीति अस्थिर हो या नई दिल्ली का रुख बदलता रहे।
- **Joint exercises on land and sea improve interoperability and strengthen India's defence capabilities.**  
भूमि और समुद्र पर संयुक्त अभ्यास पारस्परिक सहयोग को बढ़ाते हैं और भारत की रक्षा क्षमताओं को मजबूत करते हैं।
- **The purpose of military power is to deter and, if necessary, defeat aggression.**  
सैन्य शक्ति का उद्देश्य प्रतिरोध करना और आवश्यक होने पर आक्रमण को हराना है।
- **China has historically continued aggressive actions despite diplomatic engagements, so India must ensure deterrence alongside any conciliatory efforts.**  
चीन ने ऐतिहासिक रूप से कूटनीतिक वार्ताओं के बावजूद आक्रामक कदम उठाए हैं, इसलिए भारत को किसी भी समझौतावादी प्रयास के साथ-साथ प्रतिरोध सुनिश्चित करना चाहिए।
- **If India wants stability, it must build the material capacity to deter aggression, or else stability may turn into submission.**  
यदि भारत स्थिरता चाहता है, तो उसे आक्रमण को रोकने के लिए भौतिक क्षमता विकसित करनी होगी, अन्यथा स्थिरता आत्मसमर्पण में बदल सकती है।

## TOPICS COVERED (GS Paper III: Economy, S&T, Environment, DM, IS)

### 1. Sequencing of 10,000 TB genome samples completed

10,000 टीबी जीनोम नमूनों का अनुक्रमण पूरा हुआ

### 2. Anti-TB campaign will be expanded to all districts:

Nadda

टीबी विरोधी अभियान को सभी जिलों तक विस्तारित किया जाएगा:

नड्डा



**3. Glaciers Losing Ice at Record Levels Around the Globe:  
UN**

ग्लेशियरों की बर्फ रिकॉर्ड स्तर पर पिघल रही है: संयुक्त राष्ट्र

**4. Colossal Wastage That Is Food for Thought**

भोजन की भारी बर्बादी जो विचारणीय है

**5. The Need for a Localised Urban Agenda**

स्थानीयकृत शहरी एजेंडा की आवश्यकता

**6. What Are DNA Polymorphisms and How Do They  
Differentiate Between People?**

डीएनए पॉलीमॉर्फिज़्म क्या हैं और वे लोगों में अंतर कैसे करते हैं?

**7. Govt. Notifies Revisions to Investment, Turnover Criteria  
for MSMEs**

सरकार ने एमएसएमई के निवेश और कारोबार मानदंडों में संशोधन  
अधिसूचित किए

**8. Pvt. Capex Share Slid to Decadal Low of 33%**

निजी पूंजीगत व्यय का हिस्सा घटकर 33% के दशक के निचले स्तर पर  
पहुंचा

**9. Renewables and Natural Gas Surge Ahead of Oil and  
Coal**

नवीकरणीय ऊर्जा और प्राकृतिक गैस तेल और कोयले से आगे बढ़े



# Sequencing of 10,000 TB genome samples completed

'Dare2eraD TB' initiative aims at using genome sequencing to detect drug-resistant TB and capture unique features of the TB bacterium; all samples expected to be sequenced by October this year

## GS Paper III: S&T

**Jacob Koshy**  
NEW DELHI

**T**he Department of Biotechnology, under the Ministry of Science and Technology, has completed the genomic sequencing of a third, or 10,000 samples, of the target of 32,500 samples of *Mycobacterium tuberculosis* – the bacterium behind tuberculosis (TB) – in a bid to improve the understanding of drug-resistant TB and capture unique genomic features of the bacterium in India.

Of the sequenced samples, 7% are said to be resistant to a single drug. The preliminary numbers were reported at an event organised by the DBT on Monday to mark World TB Day.

The genome sequencing initiative, part of Data-Driven Research to Eradicate TB (Dare2eraD TB), an umbrella programme of the DBT, was launched in 2022 with a goal to sequence about 32,500 samples from across the country. It is tied to the Centre's broader mission to eliminate TB. Nine labs of the DBT, the Council of Scientific and Industrial Re-



**Fighting a disease:** A doctor offers flowers to a TB patient on World TB Day in Agartala on Monday. PTI

search (CSIR) and the Indian Council of Medical Research (ICMR) are involved in the programme as part of a consortium called Indian Tuberculosis Genomic Surveillance. Officials said they expected all the samples to be sequenced by October 2025.

Prime Minister Narendra Modi, in 2018, at the End TB Summit, claimed that India would "eradicate" tuberculosis in the country by 2025. This, he underlined, would be five years ahead of the World Health Organization's (WHO) target of 2030. India has the highest number of diagnosed TB cases and

therefore is critical to eliminating the millennia-old disease.

In WHO parlance, 'eradicating' a disease means bringing the number of cases close to zero. "Eliminating TB," the WHO says, means getting the number down to about one in a million. As per the latest estimates, India has 1,990 cases per million in 2022, down from 2,370 per million in 2015.

India accounts for about 28% of new TB cases worldwide. This again, refers to those who have been clinically confirmed to have TB, and those with 'latent' TB could be poten-

tially up to 3,000 per million, Dr. Soumya Swaminathan, former head of the Indian Council of Medical Research (ICMR) and advisor to the Health Ministry on tuberculosis, told *The Hindu* last August. Having a large pool of those asymptomatic with TB means they will continue to spread the disease.

### Major challenge

Another major challenge is the prevalence of drug-resistant TB.

Of the 10,000 samples sequenced as part of the DBT project, 7% were reportedly resistant to a single drug, according to a presentation made on Thursday by scientists at the National Institute of Immunology (NII).

"Better understanding of multi-drug resistant tuberculosis along with careful use of AI means you can make tests that will reduce the time taken to confirm TB from three weeks to one week," said Debasisa Mohanty, Director, NII.

In the dataset, most of the those with TB spanned 18-45 years of age. A significant number of them were diabetic and underweight.



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## Sequencing of 10,000 TB genome samples completed

### 10,000 टीबी जीनोम नमूनों का अनुक्रमण पूरा हुआ

**'Dare2eraD TB' initiative aims at using genome sequencing to detect drug-resistant TB and capture unique features of the TB bacterium.**

**'Dare2eraD TB' पहल का उद्देश्य दवा-प्रतिरोधी टीबी का पता लगाने और टीबी बैक्टीरिया की विशिष्ट विशेषताओं को समझने के लिए जीनोम अनुक्रमण का उपयोग करना है।**

- The Department of Biotechnology (DBT) under the Ministry of Science and Technology has completed sequencing of 10,000 samples, which is one-third of the target of 32,500 samples of **Mycobacterium tuberculosis**.  
विज्ञान और प्रौद्योगिकी मंत्रालय के तहत जैव प्रौद्योगिकी विभाग (DBT) ने 10,000 नमूनों का अनुक्रमण पूरा कर लिया है, जो 32,500 नमूनों के लक्ष्य का एक-तिहाई है।
- 7% of the sequenced samples were found to be resistant to a single drug.  
अनुक्रमित नमूनों में से 7% को एक ही दवा के प्रति प्रतिरोधी पाया गया।
- The initiative, part of Data-Driven Research to Eradicate TB (Dare2eraD TB), was launched in 2022 to sequence 32,500 samples from across India.  
यह पहल डेटा-ड्रिवन रिसर्च टू एराडिकेट टीबी (Dare2eraD TB) कार्यक्रम का हिस्सा है, जिसे 2022 में भारत भर से 32,500 नमूनों के अनुक्रमण के लिए शुरू किया गया था।
- Nine labs from DBT, CSIR, and ICMR are part of the Indian Tuberculosis Genomic Surveillance consortium.  
DBT, CSIR, और ICMR की नौ प्रयोगशालाएं भारतीय क्षय रोग जीनोमिक निगरानी संघ का हिस्सा हैं।
- Officials expect that all samples will be sequenced by October 2025.  
अधिकारियों का अनुमान है कि सभी नमूनों का अनुक्रमण अक्टूबर 2025 तक पूरा हो जाएगा।

## India's TB Eradication Mission

### भारत का टीबी उन्मूलन मिशन

- In 2018, at the End TB Summit, Prime Minister Narendra Modi announced that India would eradicate TB by 2025, five years ahead of the WHO's target of 2030.  
2018 में, एंड टीबी समिट में, प्रधानमंत्री नरेंद्र मोदी ने घोषणा की कि भारत 2025 तक टीबी को खत्म कर देगा, जो कि WHO के 2030 लक्ष्य से 5 वर्ष पहले है।
- India accounts for 28% of new TB cases worldwide.  
भारत दुनिया भर में 28% नए टीबी मामलों के लिए जिम्मेदार है।
- In 2022, India recorded 1,990 TB cases per million, down from 2,370 per million in 2015.

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2022 में, भारत में 10 लाख लोगों पर 1,990 टीबी मामले दर्ज किए गए, जो 2015 में 2,370 प्रति मिलियन थे।

## Major Challenge: Drug-Resistant TB

### मुख्य चुनौती: दवा-प्रतिरोधी टीबी

- **Drug-resistant TB** is a major challenge. **7% of the 10,000 sequenced samples** were resistant to a **single drug**.

दवा-प्रतिरोधी टीबी एक बड़ी चुनौती है। 10,000 अनुक्रमित नमूनों में से 7% को एकल दवा के प्रति प्रतिरोधी पाया गया।

- Scientists at the **National Institute of Immunology (NII)** highlighted that **better understanding of multi-drug resistant TB** along with **AI-based tests** can reduce TB confirmation time from **3 weeks to 1 week**.

नेशनल इंस्टीट्यूट ऑफ इम्यूनोलॉजी (NII) के वैज्ञानिकों ने बताया कि बहु-दवा प्रतिरोधी टीबी की बेहतर समझ और एआई आधारित परीक्षणों से टीबी की पुष्टि का समय 3 सप्ताह से घटाकर 1 सप्ताह किया जा सकता है।

- Most TB cases were found in **people aged 18-45 years**, with a **significant number being diabetic and underweight**.

अधिकांश टीबी मामले 18-45 वर्ष के लोगों में पाए गए, जिनमें से कई मधुमेह और कम वजन वाले थे।



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# Anti-TB campaign will be expanded to all districts: Nadda

**GS Paper III: S&T**  
**Bindu Shajan Perappadan**  
NEW DELHI

Under the 100-day TB-Mukt Bharat Abhiyaan, which started on December 7, 2024, 12.97 crore people were screened for tuberculosis (TB) with over 7.19 lakh TB patients notified across India. Approximately 2.85 lakh of them were asymptomatic, who might have otherwise gone undetected without the stratified screening strategy of the campaign, said Union Health Minister J. P. Nadda on Monday, while speaking at the World TB Day summit.

"TB treatment coverage in India has now increased from 59% to 85%. More than 5,000 MLAs and 10,000 gram panchayats participated in the campaign. We now plan to scale up the campaign nationwide to cover all districts in India because TB is not yet over," he said.

He said the Centre's TB elimination strategy is based on a "whole of the society" and "whole of the government" approach. Lauding the strategy for deploying cutting-edge technologies, including handheld X-ray units and upfront Nucleic Acid Amplification Testing (NAAT), the Minister said this inten-

**Under the campaign, nearly 2.85 lakh asymptomatic patients were notified across India**

sified use of technology helped to bring vital screening and diagnostic services to remote and underserved areas. The theme for this year's World TB Day summit is "Yes! We can end TB: commit, invest, deliver".

Under the campaign, over 13.46 lakh Nikshay Shivirs, or community screening and awareness camps, were organised, bringing essential TB services directly to the doorsteps of crores of people. During this time, over 1,05,181 new Nikshay Mitras have registered and distributed over 3,06,368 food baskets among TB patients and their family members. The Minister noted that there was enforced screening of the vulnerable populations, including asymptomatic individuals, household contacts of TB patients, those with a history of TB, undernourished individuals, and those with chronic comorbidities such as diabetes and HIV during the campaign.

**59% से बढ़कर 85% हो गया है।**

- More than **5,000 MLAs** and **10,000 gram panchayats** participated in the campaign.
- **5,000 से अधिक विधायक और 10,000 ग्राम पंचायतें** इस अभियान में शामिल हुईं।
- The campaign will now be **scaled up nationwide to cover all districts in India.** यह अभियान अब सभी जिलों में विस्तारित किया जाएगा।

**Anti-TB campaign will be expanded to all districts: Nadda**  
**टीबी विरोधी अभियान को सभी जिलों तक विस्तारित किया जाएगा: नड्डा**

**Under the 100-day TB-Mukt Bharat Abhiyaan, which started on December 7, 2024, 12.97 crore people were screened for tuberculosis (TB). Over 7.19 lakh TB patients were identified.**

**100-दिवसीय टीबी-मुक्त भारत अभियान, जो 7 दिसंबर 2024 को शुरू हुआ, के तहत 12.97 करोड़ लोगों की टीबी के लिए जांच की गई। इसमें से 7.19 लाख टीबी मरीजों की पहचान हुई।**

• Approximately **2.85 lakh** of these patients were **asymptomatic** and might have otherwise gone undetected without the campaign's **stratified screening strategy.**

लगभग **2.85 लाख मरीज बिना लक्षण वाले थे, जो इस अभियान की विशिष्ट जांच रणनीति के बिना पहचाने नहीं जा सकते थे।**

• **Union Health Minister J.P. Nadda,** speaking at the **World TB Day summit,** said that **TB treatment coverage** in India has increased from **59% to 85%.**

**केंद्रीय स्वास्थ्य मंत्री जे.पी. नड्डा ने विश्व टीबी दिवस शिखर सम्मेलन में कहा कि भारत में टीबी उपचार कवरेज**

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## Use of Advanced Technology

### उन्नत तकनीकों का उपयोग

- The Centre's TB elimination strategy follows a 'whole of society' and 'whole of government' approach.  
केंद्र की टीबी उन्मूलन रणनीति 'समाज की संपूर्ण भागीदारी' और 'सरकार की संपूर्ण भागीदारी' पर आधारित है।
- Cutting-edge technologies like **handheld X-ray units** and **Nucleic Acid Amplification Testing (NAAT)** were used to bring **screening and diagnostic services to remote and underserved areas**.  
हैंडहेल्ड एक्स-रे यूनिट्स और न्यूक्लिक एसिड एम्प्लीफिकेशन टेस्टिंग (NAAT) जैसी उन्नत तकनीकों का उपयोग दूरदराज और वंचित क्षेत्रों में स्क्रीनिंग और डायग्नोस्टिक सेवाएं प्रदान करने के लिए किया गया।
- The theme for this year's World TB Day summit was "Yes! We can end TB: commit, invest, deliver".  
इस वर्ष के विश्व टीबी दिवस शिखर सम्मेलन का विषय "हां! हम टीबी समाप्त कर सकते हैं: प्रतिबद्धता, निवेश, कार्यान्वयन" था।

## Nikshay Shivirs and Community Support

### निक्षय शिविर और सामुदायिक समर्थन

- Under the campaign, **over 13.46 lakh Nikshay Shivirs (community screening and awareness camps)** were held to provide **essential TB services** to crores of people.  
इस अभियान के तहत **13.46 लाख से अधिक निक्षय शिविर (सामुदायिक जांच और जागरूकता शिविर)** आयोजित किए गए, जिससे **करोड़ों लोगों तक आवश्यक टीबी सेवाएं पहुंचाई गईं**।
- **1,05,181 new Nikshay Mitras** registered and distributed **3,06,368 food baskets** to TB patients and their families.  
**1,05,181 नए निक्षय मित्रों** ने पंजीकरण कराया और **3,06,368 फूड बास्केट** टीबी मरीजों और उनके परिवारों को वितरित किए।
- Special attention was given to **vulnerable populations**, including **asymptomatic individuals, household contacts of TB patients, undernourished individuals, and those with chronic conditions like diabetes and HIV**.  
विशेष ध्यान बिना लक्षण वाले व्यक्तियों, टीबी मरीजों के परिवारजनों, कुपोषित व्यक्तियों और मधुमेह तथा एचआईवी जैसी पुरानी बीमारियों से ग्रसित लोगों पर दिया गया।



The Pastoruri glacier in Peru. It used to host ski competitions. Now it is a glacier in extinction, with the remaining ice field cordoned off because of the risk of ice fall. REUTERS

## Glaciers losing ice at record levels around the globe: UN

Reuters

GS Paper III: Environment

Glaciers around the globe are disappearing faster than ever, with the last three-year period seeing the largest glacial mass loss on record, according to a UNESCO report released on March 21.

The 9 trillion tonnes of ice lost from glaciers since 1975 are roughly equivalent to "an ice block the size of Germany with the thickness of 25 metres," Michael Zemp, director of the Switzerland-based World Glacier Monitoring Service, said during a press conference announcing the report at the UN headquarters in Geneva.

The dramatic ice loss is expected to accelerate as climate change, caused by the burning of fossil fuels, pushes global temperatures higher. This will likely exacerbate economic, environmental, and social problems across the world as sea levels rise and these key water sources dwindle.

Zemp said five of the last six years registered the largest losses, with glaciers losing 450 billion tonnes of mass in 2024 alone.

The accelerated loss has made mountain glaciers one of the largest contributors to sea level rise, putting millions at risk of devastating floods and damaging water routes that billions of people depend on for hydroelectric energy and agriculture.

Stefan Uhlenbrook, the director of water and cryosphere at the World Meteorological Organisation, said that about 275,000 glaciers remain globally which, along with the Antarctic and Greenland ice sheets, comprise about 70% of the world's freshwater.

**Glaciers lost 450 billion tonnes of mass in 2024 alone. The highly accelerated loss has made mountain glaciers one of the largest contributors to sea level rise, raising the risk of flooding**

About 1.1 billion people live in mountain communities, which suffer the most immediate impacts of glacier loss, due to the increasing risks with natural hazards and unreliable water sources. The remote locations and difficult terrains also make cheap fixes difficult to come by.

Rising temperatures are expected to worsen droughts in areas that rely on snowpack for freshwater, while increasing both the severity and frequency of hazards like avalanches, landslides, flash floods, and glacial lake outburst floods (GLOFs).

"Things in certain regions are happening actually much faster than we anticipated," Heidi Sevestre, glaciologist at the Arctic Monitoring and Assessment Program, said.

She noted a recent trip to the Rwenzori Mountains in Uganda and the Democratic Republic of the Congo in East Africa, where glaciers are now expected to disappear by 2030. Sevestre has worked with the region's indigenous Bakonzo communities who believe a deity called Kitasamba lives in the glaciers.

Glacial melt in East Africa has led to increased local conflicts over water, according to the new UNESCO report, and while the impact on a global scale is minimal, the trickle of melting glaciers around the world is having a compounding impact.

Between 2000 and 2023, melting mountain glaciers have caused 18 mm of global sea level rise, about 1 mm per year. Every millimeter can expose up to 300,000 people to annual flooding, according to the World Glacier Monitoring Service.

"Billions of people are connected to glaciers, whether they know it or not, and that will require billions of people to protect them," Sevestre said.

Service.

1975 से अब तक 9 ट्रिलियन टन बर्फ ग्लेशियरों से पिघल चुकी है, जो 25 मीटर मोटाई

**Glaciers Losing Ice at Record Levels Around the Globe: UN**

**ग्लेशियरों की बर्फ रिकॉर्ड स्तर पर पिघल रही है: संयुक्त राष्ट्र**

**Glaciers around the globe are disappearing faster than ever, with the last three-year period seeing the largest glacial mass loss on record, according to a UNESCO report released on March 21.**

**पूरी दुनिया में ग्लेशियर पहले से कहीं ज्यादा तेजी से गायब हो रहे हैं, पिछले तीन वर्षों में सबसे अधिक ग्लेशियर द्रव्यमान की हानि दर्ज की गई है, 21 मार्च को जारी यूनेस्को रिपोर्ट के अनुसार।**

• **9 trillion tonnes of ice lost from glaciers since 1975 is roughly equivalent to an ice block the size of Germany with a thickness of 25 metres, said Michael Zemp, director of the World Glacier Monitoring**



वाले जर्मनी के आकार के बर्फ के ब्लॉक के बराबर है, विश्व ग्लेशियर निगरानी सेवा के निदेशक माइकल जेम्प ने कहा।

- The dramatic ice loss is expected to **accelerate due to climate change**, caused by the **burning of fossil fuels**, pushing **global temperatures higher**.

यह तेजी से बर्फ का पिघलना जलवायु परिवर्तन के कारण और बढ़ सकता है, जो जीवाश्म ईंधन के जलने और वैश्विक तापमान बढ़ने की वजह से हो रहा है।

- **Five of the last six years** registered the **largest losses**, with glaciers losing **450 billion tonnes of mass in 2024 alone**.

पिछले छह वर्षों में से पांच में सबसे अधिक हानि दर्ज की गई, और सिर्फ 2024 में ही ग्लेशियरों ने 450 बिलियन टन द्रव्यमान खो दिया।

- **Mountain glaciers** have become one of the **largest contributors to sea level rise**, putting **millions at risk of devastating floods** and **damaging water routes used for hydroelectric energy and agriculture**.

पहाड़ी ग्लेशियर समुद्र के बढ़ते स्तर में सबसे बड़े योगदानकर्ताओं में से एक बन गए हैं, जिससे लाखों लोग विनाशकारी बाढ़ के खतरे में हैं और जलविद्युत ऊर्जा व कृषि के लिए आवश्यक जल मार्गों को नुकसान हो रहा है।

- **Stefan Uhlenbrook, director of water and cryosphere at the World Meteorological Organisation**, said that **about 275,000 glaciers remain globally**, which, along with the **Antarctic and Greenland ice sheets**, **comprise 70% of the world's freshwater**.

स्टेफन उहलेनब्रुक, विश्व मौसम विज्ञान संगठन के जल और क्रायोस्फीयर निदेशक, ने कहा कि दुनिया में लगभग 275,000 ग्लेशियर शेष हैं, जो अंटार्कटिका और ग्रीनलैंड की बर्फ की चादरों के साथ मिलकर दुनिया के 70% मीठे पानी का भंडार बनाते हैं।

- **About 1.1 billion people** living in **mountain communities** suffer the **most immediate impacts of glacier loss**, due to **natural hazards and unreliable water sources**.

लगभग 1.1 अरब लोग, जो पहाड़ी समुदायों में रहते हैं, ग्लेशियरों के पिघलने से सबसे अधिक प्रभावित होते हैं, क्योंकि प्राकृतिक आपदाओं और अस्थिर जल स्रोतों का खतरा बढ़ जाता है।

- Rising temperatures are expected to **worsen droughts** in areas that **rely on snowpack for freshwater**, while also **increasing avalanches, landslides, flash floods, and glacial lake outburst floods (GLOFs)**.

बढ़ते तापमान से उन क्षेत्रों में सूखे की स्थिति और खराब होने की संभावना है, जो मीठे पानी के लिए हिम आवरण पर निर्भर हैं, साथ ही हिमस्खलन, भूस्खलन, अचानक बाढ़ और ग्लेशियर झील विस्फोट बाढ़ (GLOF) की घटनाएं बढ़ सकती हैं।

- **Heidi Sevestre, a glaciologist at the Arctic Monitoring and Assessment Program**, said that **some regions are experiencing glacier loss much faster than expected**.

हीडी सेवेस्ट्रे, आर्कटिक मॉनिटरिंग और असेसमेंट प्रोग्राम की ग्लेशियोलॉजिस्ट, ने कहा कि कुछ क्षेत्रों में ग्लेशियरों का नुकसान अपेक्षा से कहीं अधिक तेजी से हो रहा है।

- During a trip to the **Rwenzori Mountains in Uganda and the Democratic Republic of the Congo**, it was **found that glaciers in the region are expected to disappear by 2030**.



युगांडा और डेमोक्रेटिक रिपब्लिक ऑफ कांगो के रुवेंजोरी पहाड़ों की यात्रा के दौरान, यह पाया गया कि इस क्षेत्र के ग्लेशियर 2030 तक पूरी तरह गायब हो सकते हैं।

- Glacial melt in East Africa has led to increased local conflicts over water, and while the global impact is minimal, the overall melting of glaciers worldwide is compounding the crisis.

पूर्वी अफ्रीका में ग्लेशियरों के पिघलने से स्थानीय जल संघर्ष बढ़ रहे हैं, और हालांकि वैश्विक प्रभाव सीमित है, लेकिन दुनिया भर में ग्लेशियरों के पिघलने से संकट और गहरा रहा है।

- Between 2000 and 2023, melting mountain glaciers have caused 18 mm of global sea level rise, about 1 mm per year.

2000 से 2023 के बीच, पहाड़ी ग्लेशियरों के पिघलने से समुद्र का स्तर 18 मिमी बढ़ गया, जो हर साल लगभग 1 मिमी की दर से बढ़ रहा है।

- Every millimeter of sea level rise can expose up to 300,000 people to annual flooding, according to the World Glacier Monitoring Service.

समुद्र के स्तर में हर 1 मिमी की वृद्धि 300,000 लोगों को वार्षिक बाढ़ के खतरे में डाल सकती है, विश्व ग्लेशियर निगरानी सेवा के अनुसार।

- "Billions of people are connected to glaciers, whether they know it or not, and that will require billions of people to protect them," Sevestre said.

"अरबों लोग ग्लेशियरों से जुड़े हुए हैं, चाहे वे इसे जानते हों या नहीं, और इन्हें बचाने के लिए अरबों लोगों की जरूरत होगी," सेवेस्ट्रे ने कहा।



## Colossal wastage that is food for thought

GS Paper III: Environment

The United Nations Environment Programme's Food Waste Index Report (FWIR) 2024 reveals that in 2022, the world wasted 1.05 billion tonnes of food, equating to nearly 20% of all food available to consumers. Alarmingly, India ranks among the top contributors to this global issue. This is an issue that demands our immediate attention. This issue transcends mere resource mismanagement, representing a profound moral and environmental failure.

### Wastage versus loss

Food wastage, as defined by FWIR 2024, includes edible and inedible parts discarded from the food supply chain, from manufacturing and retail to restaurants and households. This differs from food loss, which occurs earlier in the supply chain due to issues such as poor storage, transport and handling. The report highlights India's position as one of the highest food-wasting nations, second only to China. While the per capita household food waste in India (55 kilograms annually) is lower than in some other countries such as the United States (73 kg), India's large population means that this still represents an immense volume of wasted food. This wastage exacerbates climate change, causes economic loss and represents a major form of social injustice.

Food worth a trillion dollars is wasted globally every year – a figure that becomes even more disturbing when one considers that 783 million people are facing hunger. This crisis is particularly serious in India, where an estimated 78 million tonnes of food are discarded each year, even as over 20 crore Indians go to bed hungry. As one of the world's largest food producers, India faces a complex challenge: abundant production alongside persistent food insecurity. This stems from inefficiencies throughout the food supply chain, from farm to consumer. Household waste is driven by over-purchasing (buying more groceries than needed), improper meal planning (not planning meals ahead of time and then having ingredients go bad), limited storage (small refrigerators or lack of cool, dry pantries) and cultural habits of excess food



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Governments, businesses and individuals must collaborate to develop an efficient food management system that fosters responsible consumption

preparation (cooking large portions for celebrations or guests). In urban areas, retail markets struggle with poor refrigeration and product short shelf life. Approximately 61% of global food waste occurs at the household level, highlighting the importance of consumer education and better food management practices to address this crisis.

### Measuring the environmental impact

The environmental cost of food waste is immense. Food production is resource-intensive, requiring huge amounts of land, water and energy. When food is wasted, so are these precious resources. In India, food waste accounts for 10%-12% of total municipal waste, contributing significantly to methane emissions from landfills (methane is a potent greenhouse gas produced when organic matter decomposes without oxygen).

The UN Climate Change (2024) reports that food loss and waste generate 8%-10% of annual greenhouse gas emissions globally. If food waste was in the form of a country, it would be the third-largest emitter of greenhouse gases after China and the U.S. Household-level activities, including food waste, excessive energy consumption and improper waste disposal (not recycling or composting), significantly increase the carbon footprint. Minimising greenhouse gas emissions at the household level, through actions such as reducing food waste, improving energy efficiency and adopting sustainable diets (eating more plant-based foods and less meat), are crucial.

The social injustice of food waste in India is undeniable. Despite being a major food producer, India faces significant challenges in food accessibility and affordability. Widespread wastage prevents food from reaching those who need it most; hindering progress toward Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger) and SDG 12.3 (reduce food waste at retail and consumer levels). Climate change further intensifies food insecurity in India.

Rising temperatures, erratic monsoons and

weather shocks (droughts, floods and landslides) disrupt crop yields and weaken supply chains. Food waste exacerbates this by increasing the demand for limited resources.

### Actions that need to be taken

Addressing this crisis requires a multi-pronged approach encompassing both individual actions and systemic reforms. At the household level, individuals can reduce waste through smart meal planning and shopping (creating and sticking to shopping lists), efficient food storage (using airtight containers and storing food at the right temperatures), creative use of leftovers (turning leftover vegetables into soup), composting (turning kitchen scraps into vermicompost) and donating surplus food (to local food banks or charities). Systemically, the government must invest in building more cold storage and transportation infrastructure. Businesses should adopt sustainable practices, such as redistributing unsold food. Educational institutions can raise awareness about responsible consumption. Policymakers should subsidise innovative solutions such as food redistribution networks (apps that connect surplus food with those in need) and improved cold storage (providing subsidies for farmers to invest in refrigeration). Initiatives such as India's "Save Food Share Food" programme demonstrates the potential of large-scale redistribution efforts.

India stands at a critical juncture. Addressing food waste is essential for tackling carbon footprint, ensuring food security and reducing social inequality. Governments, businesses and individuals must collaborate to develop an efficient food management system that minimises waste, optimises resources and fosters responsible consumption. The solution is not simply increasing food production but valuing and conserving what is already available. By making conscious food choices, reducing waste at every level and advocating sustainable food systems, we can move toward a future where food is preserved, resources are optimised and no one goes hungry.

## Colossal Wastage That Is Food for Thought

### भोजन की भारी बर्बादी जो विचारणीय है

The United Nations Environment Programme's Food Waste Index Report (FWIR) 2024 reveals that in 2022, the world wasted 1.05 billion tonnes of food, equating to nearly 20% of all food available to consumers.

संयुक्त राष्ट्र पर्यावरण कार्यक्रम की फूड वेस्ट इंडेक्स रिपोर्ट (FWIR) 2024 के अनुसार, 2022 में दुनिया में 1.05 बिलियन टन भोजन बर्बाद हुआ, जो उपभोक्ताओं के लिए उपलब्ध कुल भोजन का लगभग 20% है।

- India ranks among the top contributors to global food waste, making this issue a matter of urgent concern.



भारत वैश्विक खाद्य बर्बादी में शीर्ष योगदानकर्ताओं में शामिल है, जिससे यह मुद्दा तत्काल ध्यान देने योग्य बन जाता है।

- This problem goes beyond **resource mismanagement**; it represents a **moral and environmental failure**.

यह समस्या केवल संसाधन प्रबंधन की विफलता नहीं है, बल्कि यह नैतिक और पर्यावरणीय विफलता भी है।

## Wastage Versus Loss

### बर्बादी बनाम नुकसान

- **Food wastage**, as defined by **FWIR 2024**, includes both **edible and inedible parts discarded from the food supply chain, from manufacturing and retail to restaurants and households**.

FWIR 2024 के अनुसार खाद्य बर्बादी में खाद्य आपूर्ति श्रृंखला में निर्माण, खुदरा, रेस्तरां और घरों से फेंके गए खाद्य पदार्थों के खाद्य और अखाद्य भाग शामिल होते हैं।

- **Food loss**, on the other hand, occurs earlier in the supply chain due to **poor storage, transport, and handling**.

खाद्य नुकसान आपूर्ति श्रृंखला के पहले चरण में होता है, जो खराब भंडारण, परिवहन और हैंडलिंग के कारण होता है।

- **India is the second highest food-wasting nation, behind China**.

भारत खाद्य बर्बादी में दुनिया में दूसरा सबसे बड़ा देश है, जो चीन के बाद आता है।

- **The per capita household food waste in India is 55 kg annually, lower than the United States (73 kg), but India's large population means massive total wastage**.

भारत में प्रति व्यक्ति वार्षिक खाद्य बर्बादी 55 किलोग्राम है, जो संयुक्त राज्य अमेरिका (73 किलोग्राम) से कम है, लेकिन भारत की विशाल जनसंख्या इसे कुल मिलाकर बहुत अधिक बना देती है।

- This wastage **exacerbates climate change, causes economic loss, and is a major social injustice**.

यह बर्बादी जलवायु परिवर्तन को तेज करती है, आर्थिक नुकसान पहुंचाती है, और एक बड़ा सामाजिक अन्याय है।

## The Scale of the Problem

### समस्या की व्यापकता

- **Food worth a trillion dollars is wasted globally every year, while 783 million people face hunger**.

हर साल वैश्विक स्तर पर एक ट्रिलियन डॉलर का भोजन बर्बाद होता है, जबकि 78.3 करोड़ लोग भूख का सामना कर रहे हैं।

- **In India, an estimated 78 million tonnes of food are discarded each year, even as over 20 crore Indians go to bed hungry**.



भारत में हर साल अनुमानित 78 मिलियन टन भोजन फेंक दिया जाता है, जबकि 20 करोड़ से अधिक भारतीय भूखे सोते हैं।

- As one of the world's largest food producers, India faces a paradox of abundant production and persistent food insecurity.  
दुनिया के सबसे बड़े खाद्य उत्पादकों में से एक होने के बावजूद, भारत में अधिक उत्पादन और लगातार खाद्य असुरक्षा की समस्या बनी हुई है।

## Causes of Food Waste

### खाद्य बर्बादी के कारण

- Household waste is caused by over-purchasing, improper meal planning, limited storage, and cultural habits of excess food preparation.  
घरेलू खाद्य बर्बादी का कारण अधिक खरीददारी, गलत भोजन योजना, सीमित भंडारण, और अतिरिक्त भोजन पकाने की सांस्कृतिक आदतें हैं।
- Urban retail markets face challenges like poor refrigeration and short shelf life of products.  
शहरी खुदरा बाजारों में खराब रेफ्रिजरेशन और उत्पादों की छोटी शेल्फ लाइफ जैसी समस्याएं हैं।
- 61% of global food waste happens at the household level, making consumer education and better food management crucial.  
वैश्विक खाद्य बर्बादी का 61% घरेलू स्तर पर होता है, जिससे उपभोक्ता शिक्षा और बेहतर खाद्य प्रबंधन आवश्यक बन जाता है।

## Measuring the Environmental Impact

### पर्यावरणीय प्रभाव का मापन

- The environmental cost of food waste is immense, as food production requires large amounts of land, water, and energy.  
खाद्य बर्बादी की पर्यावरणीय लागत बहुत अधिक है, क्योंकि खाद्य उत्पादन के लिए बड़ी मात्रा में भूमि, जल और ऊर्जा की आवश्यकता होती है।
- In India, food waste accounts for 10%-12% of total municipal waste, significantly contributing to methane emissions from landfills.  
भारत में, खाद्य बर्बादी कुल नगरपालिका कचरे का 10%-12% होती है, जिससे लैंडफिल से मीथेन उत्सर्जन में उल्लेखनीय वृद्धि होती है।
- Methane is a potent greenhouse gas that forms when organic matter decomposes without oxygen.  
मीथेन एक शक्तिशाली ग्रीनहाउस गैस है, जो कार्बनिक पदार्थ के बिना ऑक्सीजन के सड़ने से बनती है।
- According to UN Climate Change (2024), food loss and waste contribute 8%-10% of annual global greenhouse gas emissions.



संयुक्त राष्ट्र जलवायु परिवर्तन (2024) के अनुसार, खाद्य नुकसान और बर्बादी वैश्विक ग्रीनहाउस गैस उत्सर्जन का 8%-10% योगदान देती है।

- If food waste were a country, it would be the **third-largest greenhouse gas emitter after China and the U.S.**

यदि खाद्य बर्बादी एक देश होती, तो यह चीन और अमेरिका के बाद तीसरा सबसे बड़ा ग्रीनहाउस गैस उत्सर्जक होता।

- **Household-level activities, such as food waste, excessive energy consumption, and improper waste disposal, increase carbon footprint.**

घरेलू स्तर की गतिविधियां, जैसे खाद्य बर्बादी, अत्यधिक ऊर्जा खपत, और अनुचित कचरा निपटान, कार्बन फुटप्रिंट को बढ़ाते हैं।

- **Reducing food waste, improving energy efficiency, and adopting sustainable diets can significantly reduce household emissions.**

खाद्य बर्बादी को कम करना, ऊर्जा दक्षता में सुधार करना और स्थायी आहार अपनाना घरेलू उत्सर्जन को महत्वपूर्ण रूप से कम कर सकता है।

## Food Waste and Social Injustice

### खाद्य बर्बादी और सामाजिक अन्याय

- **India, despite being a major food producer, struggles with food accessibility and affordability.**

भारत, एक प्रमुख खाद्य उत्पादक होने के बावजूद, खाद्य उपलब्धता और वहन क्षमता की समस्या से जूझ रहा है।

- **Widespread wastage prevents food from reaching those who need it most, affecting Sustainable Development Goals (SDGs), particularly SDG 2 (Zero Hunger) and SDG 12.3 (Reduce food waste at retail and consumer levels).**

व्यापक बर्बादी के कारण भोजन उन लोगों तक नहीं पहुंच पाता जिन्हें इसकी सबसे अधिक आवश्यकता है, जिससे सतत विकास लक्ष्यों (SDGs), विशेष रूप से SDG 2 (शून्य भूख) और SDG 12.3 (खुदरा और उपभोक्ता स्तर पर खाद्य बर्बादी को कम करना) प्रभावित होते हैं।

- **Climate change worsens food insecurity in India, as rising temperatures, erratic monsoons, and extreme weather events disrupt crop yields.**

जलवायु परिवर्तन भारत में खाद्य असुरक्षा को बढ़ाता है, क्योंकि बढ़ते तापमान, अनियमित मानसून और अत्यधिक मौसम की घटनाएं फसल उत्पादन को बाधित करती हैं।

## Actions That Need to Be Taken

### उठाए जाने वाले कदम

- Addressing this crisis requires **both individual actions and systemic reforms.** इस संकट को हल करने के लिए व्यक्तिगत प्रयासों और प्रणालीगत सुधारों दोनों की आवश्यकता है।



- Households can reduce food waste by smart meal planning, proper storage, creative use of leftovers, composting, and donating surplus food.  
घर में खाद्य बर्बादी को कम किया जा सकता है समझदारी से भोजन की योजना बनाकर, सही भंडारण करके, बचे हुए भोजन का रचनात्मक उपयोग करके, खाद बनाकर और अतिरिक्त भोजन दान करके।
- Governments should invest in cold storage and transportation infrastructure to improve food distribution.  
सरकार को कोल्ड स्टोरेज और परिवहन अवसंरचना में निवेश करना चाहिए ताकि खाद्य वितरण में सुधार हो सके।
- Businesses should adopt sustainable practices, such as redistributing unsold food.  
व्यवसायों को स्थायी प्रथाएं अपनानी चाहिए, जैसे कि बिक्री न हो पाने वाले भोजन को पुनर्वितरित करना।
- Educational institutions can raise awareness about responsible consumption and food conservation.  
शैक्षणिक संस्थान जिम्मेदार उपभोग और भोजन संरक्षण के बारे में जागरूकता बढ़ा सकते हैं।
- Policymakers should subsidise food redistribution networks and improved cold storage solutions.  
नीति निर्माताओं को खाद्य पुनर्वितरण नेटवर्क और उन्नत कोल्ड स्टोरेज समाधानों पर सब्सिडी देनी चाहिए।
- India's "Save Food Share Food" programme demonstrates the potential for large-scale redistribution efforts.  
भारत का "Save Food Share Food" कार्यक्रम बड़े पैमाने पर खाद्य पुनर्वितरण प्रयासों की संभावनाओं को दर्शाता है।
- Tackling food waste is crucial for reducing carbon footprint, ensuring food security, and minimising social inequality.  
खाद्य बर्बादी को कम करना कार्बन फुटप्रिंट घटाने, खाद्य सुरक्षा सुनिश्चित करने और सामाजिक असमानता को कम करने के लिए आवश्यक है।
- Governments, businesses, and individuals must collaborate to build an efficient food management system.  
सरकारों, व्यवसायों और व्यक्तियों को मिलकर एक कुशल खाद्य प्रबंधन प्रणाली विकसित करनी चाहिए।
- The goal should not just be increasing food production, but also valuing and conserving existing resources.  
लक्ष्य केवल खाद्य उत्पादन बढ़ाना नहीं होना चाहिए, बल्कि मौजूदा संसाधनों को महत्व देना और संरक्षित करना भी होना चाहिए।
- By making conscious food choices, reducing waste, and promoting sustainable food systems, we can ensure a future where food is preserved, resources are optimised, and no one goes hungry.  
सचेत खाद्य विकल्प अपनाकर, बर्बादी को कम करके और स्थायी खाद्य प्रणालियों को बढ़ावा देकर, हम



ऐसा भविष्य सुनिश्चित कर सकते हैं जहां भोजन संरक्षित किया जाए, संसाधनों का सही उपयोग हो और कोई भी भूखा न रहे।

# The need for a localised urban agenda

Can centrally sponsored schemes and centrally run urban missions give localised solution to cities? Does the central control over finances bode well for the growth of cities? Can a top-down approach work? Is decentralisation of funds necessary?

GS Paper III: Urban Development

## EXPLAINER

Tikender Singh Panwar  
Hitesh Vaidya

### The story so far:

India is on the cusp of a profound urban metamorphosis. In the forthcoming decades, India is anticipated to boast the most significant urban population globally. However, India's urban future is shaped by blueprints drawn far from the streets where people live.

### What has been India's urban journey?

The urban evolution was set in motion in the post-90s era when India embraced a liberalisation policy. Successive Union governments have played a pivotal role in steering India's urbanisation through a series of missions, from the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) to the five urban flagship missions. This journey underscores the crucial role of the Union Government in sculpting India's urban fabric.

### What role does the Centre play?

As 'urban development' is a State subject, how much of a role should the Centre have to shape the urbanisation process has always triggered many questions. Many housing schemes such as the Indira Awas Yojana, the Rajiv Awas Yojana, and now the Pradhan Mantri Awas Yojana (PMAY) as well as welfare schemes for essential utilities starting from the Basic Services for the Urban Poor (BSUP) during the UPA regime, to the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and the Swachh Bharat Mission (SBM), have all been strong catalysts in triggering the urbanisation process in Indian cities.

In the mobility sector, centrally run urban missions supported cities in planning their city mobility plans. During the National Democratic Alliance (NDA) regime, the Union government focused on metro rail projects, which consumed almost 30% of the total Union budget. However, these missions often impose a prescriptive, top-down approach, prioritising spatial distribution, financial modalities, and administrative procedures over local needs. This leaves States and cities limited flexibility to customise and prioritise operational mechanisms within diverse contexts.

### Why is the Centre promoting a top down approach when it comes to finances?

There are many reasons, with one of the major ones being that cities were treated as the "engines of growth", leading urbanisation. Another plausible reason is that successive Union governments have seen cities as potential hubs with which they never wanted to part. It could also be the recognition that infrastructure is a 'crucial enabler of growth' for raising India's competitiveness and achieving the target of a \$5 trillion economy by 2025. Hence, even though the budgetary transfers were bracketed in centrally sponsored and Central sector schemes, they influenced urban trajectory. However, cities need targeted investments to accelerate economic growth. This includes building skilling centres, trade hubs, and innovation spaces; prioritising infrastructure that directly impacts economic indicators, not just livability.

Successive Union finance commissions, while transferring funds have put conditionalities to shape and design the urbanisation process at the sub-national



Localise solutions: A labourer pulls a cable in front of two office buildings in Gujarat International Finance Tec-City (GIFT) at Gandhinagar, in 2015. REUTERS

level. For example, the conditionalities levied on city governments to enhance property tax and make it commensurate to the rise in the State's GDP were suggested by the 15th Finance Commission. Likewise, instead of recommending grants directly to the city governments and letting them take a call according to their priorities, the Commission added conditions to the grants.

### What could be the more effective alternative?

Urban development is a State subject, and while the Central government can 'nudge' and 'guide' substantially, State and local governments play significant roles in shaping the sector.

India is urbanising differently in different States, and even in various regions within States. The current labour migration is from the northern States to the ones in the south, and hence southern States now have a different demographic pattern. In States like Kerala and Karnataka, it is the rural-urban continuum that is dominating – the Kerala Chief Minister termed the State as a 'single city', for one doesn't know where the boundary of the city ends and the village panchayat starts.

Initially driven by industry and migration, Gujarat's urbanisation is also quite different from that of the rest of the country. In many regions of the State, the core is dominated by the rich while the poor are pushed to the peripheries. However, in some other areas, even the wealthy are moving to the peripheries as the core has gotten too crowded or polluted. Here, they travel to the city core for business or work, but prefer staying in the peripheries, similar to some U.S. cities in the 70s and 80s.

There are such regional aberrations everywhere. Take the example of housing. Not all cities require the

construction of houses. There might be ample social housing; and thus, the PMAY does not bring much traction. Likewise, in some cities, water and essential sanitation services might be better than other cities, and such cities may not want investments in these utilities. In contrast, others who lack such amenities may require them more. Therefore, the universalisation of sanitation, as the provisions of the SBM are determined from the top, is meaningless. In some clustered towns, there may be more need for a decentralised mechanism, whereas for others, one would need a centralised system. The moot point is that 'one size doesn't fit all'. The devolution process must be rethought and devised more scientifically in such a scenario. Instead of creating an island of 'developments', it would be more prudent to devise ways the devolutionary exercise triggers needs/demand-based help.

The total Union Budget should be devolved so that around 70% goes as direct transfers to the States and through State finance commissions to city governments. The other, 30%, can be decided by the Union government, which can decide on national priorities, like climate-resilient infrastructure. However, due to the top-down approach, State governments are mirroring the Centre budget lines without making creative investments to tap their unique identities and contextualities.

This direct transfer of money can be categorised into broad sections: mobility, sanitation, housing, water, waste, and so on. The cities should be asked to prioritise their plans and, in this process, identify the most pressing space in which they require money. Such an exercise can be quickly done with the help of the State governments and through other knowledge agencies. It will also help devise a better, more scientific way of utilising the central devolutionary grant.

The people and the city could decide, and universal mission guidelines would not influence it.

These exercises can also avoid what happened under the smart cities mission in many cities – wherein the money remained either unutilised or in the pressing eagerness to submit what they call the 'utilisation certificate', lousy infrastructure was created which had no demand from the people whatsoever.

### Why is it important?

National governments should focus on national and regional issues and international policy, not local ones.

In a democracy like India, national institutions are geographically distant bureaucracies that tend to be insulated from the public and disconnected from community service delivery problems. And that is precisely why a shift is required in the financial devolutionary process. This fits with the fact that plurality is the essence of Indianness.

Unless this forms part of the larger vision, any incremental fixes to making a city liveable will lead to further influx causing infrastructural collapse and deterioration in the quality of living. Centrally driven missions cannot connect the government to the lives of citizen communities in a positive way – it becomes difficult for citizens to accept the central authority of the government to protect their property, resolve conflicts and collect taxes. City governments can provide this tangible link. A fundamental shift in the design of urban missions, redefining the mandate, roles, and responsibilities of actors at Central, State, and local levels, is mandatory for transformation in the new age.

Tikender Singh Panwar is the former deputy mayor of Shimla and Hitesh Vaidya is the former director of NIUA. Both are currently members of the Kerala Urban Commission.

## THE GIST

As 'urban development' is a State subject, how much of a role should the Centre have to shape the urbanisation process has always triggered many questions.

The total Union Budget should be devolved so that around 70% goes as direct transfers to the States and through State finance commissions to city governments.

In a democracy like India, national institutions are geographically distant bureaucracies that tend to be insulated from the public and disconnected from community service delivery problems.



## The Need for a Localised Urban Agenda

### स्थानीयकृत शहरी एजेंडा की आवश्यकता

Can centrally sponsored schemes and centrally run urban missions provide localised solutions to cities?

क्या केंद्र द्वारा प्रायोजित योजनाएं और केंद्र द्वारा संचालित शहरी मिशन शहरों के लिए स्थानीय समाधान प्रदान कर सकते हैं?

- Does central control over finances support or hinder urban growth?  
क्या वित्त पर केंद्रीय नियंत्रण शहरी विकास के लिए अनुकूल है या बाधा डालता है?
- Is a top-down approach effective, or is decentralisation of funds necessary?  
क्या ऊपर से नीचे का दृष्टिकोण प्रभावी है, या वित्तीय विकेंद्रीकरण आवश्यक है?

## India's Urban Journey

### भारत की शहरी यात्रा

- India is on the verge of a major urban transformation and is expected to have the world's largest urban population in the coming decades.  
भारत एक बड़े शहरी परिवर्तन के कगार पर है और आगामी दशकों में दुनिया की सबसे बड़ी शहरी जनसंख्या होने की संभावना है।
- However, India's urban future is largely shaped by policies created far from the cities themselves.  
हालांकि, भारत का शहरी भविष्य उन नीतियों से प्रभावित हो रहा है जो वास्तविक शहरों से दूर बनाई जा रही हैं।
- Urbanisation in India gained momentum post-1990s, following the adoption of liberalisation policies.  
भारत में शहरीकरण 1990 के बाद तेजी से बढ़ा, जब उदारीकरण की नीतियां अपनाई गईं।
- Successive Union governments have played a major role in shaping urbanisation through missions like JNNURM, AMRUT, and Smart Cities Mission.  
विभिन्न केंद्र सरकारों ने जेएनएनयूआरएम, अमृत, और स्मार्ट सिटी मिशन जैसी योजनाओं के माध्यम से शहरीकरण को आकार देने में महत्वपूर्ण भूमिका निभाई है।

## The Role of the Centre in Urban Development

### शहरी विकास में केंद्र की भूमिका



- **Urban development is a State subject**, raising the question of how much **influence the Centre should have**.  
शहरी विकास एक राज्य विषय है, जिससे यह प्रश्न उठता है कि केंद्र को कितना हस्तक्षेप करना चाहिए।
- Several **housing and welfare schemes**—like **Indira Awas Yojana, Rajiv Awas Yojana, PMAY, and Swachh Bharat Mission (SBM)**—have significantly influenced urbanisation.  
कई आवास और कल्याण योजनाएं, जैसे इंदिरा आवास योजना, राजीव आवास योजना, पीएमएवाई, और स्वच्छ भारत मिशन (SBM), ने शहरीकरण को प्रभावित किया है।
- In the **mobility sector, centrally run urban missions** helped cities **plan city mobility projects**, including **metro rail expansion** (which accounted for **30% of the total Union budget**).  
गतिशीलता क्षेत्र में, केंद्र सरकार द्वारा संचालित शहरी मिशनों ने शहरों को मोबिलिटी योजनाएं बनाने में मदद की, जिसमें मेट्रो रेल विस्तार भी शामिल है (जो कुल केंद्रीय बजट का 30% था)।
- However, these missions **often impose a rigid, top-down approach**, limiting **state and city-level flexibility**.  
हालांकि, ये मिशन अक्सर सख्त, ऊपर से नीचे तक की नीति लागू करते हैं, जिससे राज्यों और शहरों की लचीलापन कम हो जाता है।

## Why Does the Centre Control Urban Finances?

### केंद्र शहरी वित्त को क्यों नियंत्रित करता है?

- **Cities are treated as engines of economic growth**, making them a priority for central funding.  
शहरों को आर्थिक विकास के इंजन के रूप में देखा जाता है, जिससे वे केंद्रीय वित्तपोषण के लिए प्राथमिकता बन जाते हैं।
- Successive **Union governments view cities as critical hubs** that they do not want to lose control over.  
लगातार केंद्र सरकारें शहरों को महत्वपूर्ण केंद्र मानती हैं, जिन्हें वे नियंत्रण से बाहर नहीं करना चाहतीं।
- Infrastructure is seen as a **key enabler of economic growth**, crucial for achieving **India's \$5 trillion economy target by 2025**.  
अवसंरचना को आर्थिक विकास के प्रमुख घटक के रूप में देखा जाता है, जो 2025 तक भारत की \$5 ट्रिलियन अर्थव्यवस्था के लक्ष्य को प्राप्त करने के लिए आवश्यक है।
- **Finance Commissions influence urban growth** by placing **conditions on fund transfers**.  
वित्त आयोग शहरी विकास को प्रभावित करता है, क्योंकि यह निधि हस्तांतरण पर शर्तें लगाता है।
- For example, the **15th Finance Commission required cities to increase property taxes** in proportion to **State GDP growth**.  
उदाहरण के लिए, 15वें वित्त आयोग ने नगर निकायों को संपत्ति कर बढ़ाने की शर्त रखी, जिससे इसे राज्य के जीडीपी वृद्धि से जोड़ा गया।



- Instead of giving cities **direct financial grants**, the Centre **attaches conditions to fund allocation**.

नगर निकायों को प्रत्यक्ष वित्तीय अनुदान देने के बजाय, केंद्र निधि आवंटन पर शर्तें लागू करता है।

## Effective Alternatives for Urban Development

### शहरी विकास के लिए प्रभावी विकल्प

- **Urban development is a State subject**, and while the **Central government can guide and support**, **State and local governments play a crucial role**.  
शहरी विकास एक राज्य का विषय है, और जहां केंद्र सरकार मार्गदर्शन और समर्थन दे सकती है, वहीं राज्य और स्थानीय सरकारों की भूमिका महत्वपूर्ण होती है।
- **India's urbanisation varies across States and regions**. Labour migration from northern to southern States is creating **different demographic patterns**.  
भारत में शहरीकरण राज्यों और क्षेत्रों के अनुसार भिन्न होता है। उत्तर से दक्षिणी राज्यों में श्रमिक प्रवासन नए जनसांख्यिकीय पैटर्न बना रहा है।
- In **Kerala and Karnataka**, the **rural-urban continuum** dominates, blurring the boundary between cities and villages.  
केरल और कर्नाटक में, ग्रामीण-शहरी निरंतरता हावी है, जिससे शहरों और गांवों की सीमाएं धुंधली हो जाती हैं।
- **Gujarat's urbanisation is unique**, with the rich staying in core areas while the poor are pushed to the peripheries.  
गुजरात का शहरीकरण विशिष्ट है, जहां अमीर मुख्य क्षेत्रों में रहते हैं जबकि गरीबों को किनारे धकेला जाता है।
- **Housing needs vary across cities**—some cities already have ample social housing, making schemes like **PMAY less relevant**.  
आवास की आवश्यकताएं शहरों में अलग-अलग होती हैं—कुछ शहरों में पहले से ही पर्याप्त सामाजिक आवास उपलब्ध हैं, जिससे पीएमएवाई जैसी योजनाएं कम प्रभावी हो जाती हैं।
- **Universal sanitation schemes like SBM may not be necessary** in cities with **better sanitation infrastructure**, but are crucial for others.  
एसबीएम जैसी सार्वभौमिक स्वच्छता योजनाएं उन शहरों में आवश्यक नहीं हैं जहां स्वच्छता की स्थिति अच्छी है, लेकिन अन्य शहरों के लिए महत्वपूर्ण हैं।
- The key takeaway is that **"one size doesn't fit all"**; decentralisation should be more **scientific and need-based**.  
मुख्य बात यह है कि "एक ही समाधान सभी पर लागू नहीं होता"; विकेंद्रीकरण को अधिक वैज्ञानिक और आवश्यकतानुसार बनाया जाना चाहिए।

## A Better Financial Devolution Model

### बेहतर वित्तीय विकेंद्रीकरण मॉडल



- **70% of the Union Budget should go as direct transfers to States and city governments via State Finance Commissions.**  
70% केंद्रीय बजट को प्रत्यक्ष हस्तांतरण के रूप में राज्यों और शहर सरकारों को राज्य वित्त आयोगों के माध्यम से दिया जाना चाहिए।
- **30% of the budget should be reserved for national priorities, such as climate-resilient infrastructure.**  
30% बजट को राष्ट्रीय प्राथमिकताओं जैसे जलवायु सहनशील अवसंरचना के लिए सुरक्षित रखना चाहिए।
- **Currently, State governments mirror the Centre's budget lines, limiting innovative investments.**  
वर्तमान में, राज्य सरकारें केंद्र के बजट ढांचे की नकल करती हैं, जिससे नवाचार आधारित निवेश सीमित हो जाते हैं।
- **The direct transfer of funds should be divided into broad categories: mobility, sanitation, housing, water, and waste management.**  
निधियों का प्रत्यक्ष हस्तांतरण व्यापक श्रेणियों में विभाजित किया जाना चाहिए: गतिशीलता, स्वच्छता, आवास, जल और कचरा प्रबंधन।
- **Cities should prioritise their funding needs through State governments and expert agencies, rather than following a one-size-fits-all approach.**  
शहरों को अपने वित्तीय आवश्यकताओं को प्राथमिकता देनी चाहिए राज्य सरकारों और विशेषज्ञ एजेंसियों के माध्यम से, न कि एक ही समाधान सभी पर लागू करने के दृष्टिकोण से।
- **This would prevent misuse or underutilisation of funds, as seen in the Smart Cities Mission, where poor infrastructure was created just to meet fund utilisation deadlines.**  
इससे निधियों के दुरुपयोग या कम उपयोग को रोका जा सकता है, जैसा कि स्मार्ट सिटी मिशन में देखा गया, जहां केवल निधि उपयोग प्रमाणपत्र जमा करने के लिए खराब अवसंरचना बनाई गई।

## Why Is This Shift Important?

### यह बदलाव क्यों महत्वपूर्ण है?

- **National governments should focus on macroeconomic and international policies, leaving local issues to city governments.**  
राष्ट्रीय सरकारों को व्यापक आर्थिक और अंतरराष्ट्रीय नीतियों पर ध्यान देना चाहिए, और स्थानीय मुद्दों को नगर सरकारों पर छोड़ देना चाहिए।
- **Centrally controlled missions fail to address local needs, making citizens less connected with governance.**  
केंद्र द्वारा नियंत्रित मिशन स्थानीय आवश्यकताओं को पूरा करने में असफल रहते हैं, जिससे नागरिक सरकार से कम जुड़े रहते हैं।
- **City governments serve as a direct link between people and governance, ensuring better conflict resolution, tax collection, and service delivery.**



नगर सरकारें लोगों और शासन के बीच सीधा संबंध बनाती हैं, जिससे संगठित संघर्ष समाधान, कर संग्रह, और सेवा वितरण बेहतर होता है।

- A fundamental shift in urban mission design is needed, redefining the roles of Central, State, and local governments.

शहरी मिशनों के डिजाइन में एक मूलभूत बदलाव की आवश्यकता है, जिसमें केंद्र, राज्य और स्थानीय सरकारों की भूमिकाओं को पुनर्परिभाषित किया जाए।



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PF



# What are DNA polymorphisms and how do they differentiate between people?

DNA fingerprints can establish parent/child relationships and help identify individuals from their mortal remains at disaster sites. DNA fingerprints have also exonerated wrongly accused convicts. Scientists have extracted DNA, almost intact, from 65,000-year-old human remains

**GS Paper III: S&T**

**D.P. Kasbekar**

**J**ust like the government uses an Aadhaar number to uniquely identify an individual for social security purposes, a person's DNA fingerprint can be used for biological purposes. This is why DNA analysis is such a big deal. Today, it is most often (but not exclusively) used together with technologies like PCR, capillary electrophoresis, and fingerprinting.

## What is DNA?

Each of an individual's cells – in one's skin, blood, teeth, bone, etc. – contain 46 DNA molecules. One set of 23 is inherited via sperm from the father and the other 23 via the egg from the mother. Sperm and egg cells are exceptional because they have only one copy of the genome each, not two. These facts underpin the generation and use of DNA fingerprints to identify individuals and their relatives.

The DNA is packed inside chromosomes. For example, chromosome no. 3 contains 6.5% of the total DNA in each cell. The chromosome 3 from the father contains DNA that is largely similar to that derived from the mother. The few parts that are different are called polymorphisms.

DNA polymorphisms can be used to differentiate one person from another. They can also tell us whether a paternal chromosome no. 3 came from the father's mother or father, and likewise for a maternal chromosome no. 3. That is, polymorphisms make the tracing of

ancestry possible. DNA profiles are typically generated using polymorphisms in parts of the DNA called short tandem repeats (STRs).

## What are STRs?

DNA has two strands. Each strand is a sequence of four chemical bases: adenine (A), cytosine (C), guanine (G), and thymine (T). The strands are anti-parallel and complementary. 'Anti-parallel' means the strands run in opposite directions. 'Complementary' means the As and Cs of one strand bond with Ts and Gs on the other. When a cell divides and needs to make a copy of its DNA, it pulls the strands apart and makes a new complementary strand for each one: As on one strand get Cs on the other and Ts get Gs. Thus, the daughter DNA has the same sequence of bases. In rare cases, the cell will make a mistake and insert the wrong base. This is called a mutation. In general, mutations occur less than once per billion base-pairs per generation.

An STR is a short sequence of base-pairs on the DNA that is repeated some number of times, such as GATCGATCGATCGATC (on the complementary strand, this STR will have the sequence CTAGCTAGCTAGCTAG). STRs are often polymorphic. Unrelated individuals almost certainly have different numbers of repeat units in at least some STRs.

## How do we make copies of DNA?

Scientists need to make many copies of the DNA present in particular STRs to

make studying them easier. They use a laboratory procedure called Polymerase Chain Reaction (PCR) to make copies of a particular stretch of DNA (up to 5,000 base-pairs). Even if they have a very small amount of DNA to begin with, PCR can make millions of copies in a short span of time.

First, scientists extract some genetic material from tissue that contains the DNA of interest. They heat it to about 95° C for 25 seconds to split the strands apart. Second, they introduce multiple molecules into the sample. The first is the primer, a short single-stranded piece of DNA that binds to a single strand: As and Ts on the primer bind with Ts and As in the strand and Cs and Gs with the Gs and Cs. The sequence of bases on the primer is configured so that it binds to the portion of interest on the DNA. The temperature in this phase is lowered to around 60° C.

Next, another molecule called DNA polymerase enters the reaction. It holds the bound primer, like for grip, and synthesises the rest of it according to the complementary bases on the strand.

To help, scientists add more bases into the sample. If a polymerase called Taq polymerase is used, the temperature is held at around 72° C. In these three steps, called one cycle, a new copy of the DNA segment is ready. If there is only one starting copy and each cycle operates with 100% efficiency, making a million copies of the segment will take about 50 minutes. The device that performs these steps is called a thermocycler.

## What is a DNA fingerprint?

New copies of DNA can be made to move through a capillary under the influence of an electric field. The smaller ones move faster. This technique is called capillary electrophoresis. Multiple STRs can simultaneously be sized in the same test. The sizes of the various paternal/maternal variants of the different STRs are compiled in a table. This table is unique to each individual and is called their DNA fingerprint (only monozygotic twins have the same DNA fingerprints).

This fingerprint can be established using DNA from teeth, bones, blood (a drop is enough), spit, semen, skin cells, etc.

DNA fingerprints can establish parent/child relationships and help identify individuals from their mortal remains at disaster sites. DNA from blood stains, sweat, and spit from cloth or soil, retrieved from crime scenes, can be used to identify suspects. Experts also use them to identify or exclude potential donors during organ donation.

DNA is very stable. Scientists have extracted it almost intact from 65,000-year-old human remains preserved only by desiccation or cold. Many 'cold cases' have been solved by examining new profiles made from DNA extracted from crime scene materials in the archives. DNA fingerprints have also exonerated wrongly accused convicts.

*D.P. Kasbekar is a retired scientist. He is an INSA Honorary Scientist in the Centre for DNA Fingerprinting and Diagnostics, Hyderabad.*

## What Are DNA Polymorphisms and How Do They Differentiate Between People?

### डीएनए पॉलीमॉर्फिज़्म क्या हैं और वे लोगों में अंतर कैसे करते हैं?

DNA fingerprints can establish parent/child relationships and help identify individuals from their remains at disaster sites.

डीएनए फिंगरप्रिंट माता-पिता/बच्चे के संबंध स्थापित कर सकते हैं और आपदा स्थलों पर अवशेषों से व्यक्ति की पहचान करने में मदद कर सकते हैं।

- DNA fingerprints have also exonerated wrongly accused convicts. डीएनए फिंगरप्रिंट ने गलत तरीके से आरोपी ठहराए गए दोषियों को भी निर्दोष साबित किया है।
- Scientists have extracted almost intact DNA from 65,000-year-old human remains. वैज्ञानिकों ने 65,000 वर्ष पुराने मानव अवशेषों से लगभग पूरी तरह सुरक्षित डीएनए निकाला है।



## What Is DNA?

### डीएनए क्या है?

- Every cell in a person's body (skin, blood, teeth, bone, etc.) contains **46 DNA molecules**.  
\*\*व्यक्ति के शरीर की प्रत्येक कोशिका (त्वचा, रक्त, दांत, हड्डी आदि) में **46 डीएनए अणु** होते हैं।
- One set of **23 chromosomes is inherited from the father** and the other **23 from the mother**.  
\*\*एक सेट के **23 गुणसूत्र पिता से** और दूसरा **23 गुणसूत्र माता से** प्राप्त होते हैं।
- **Sperm and egg cells are exceptions as they have only one copy of the genome**, not two.  
\*\*शुक्राणु और अंडाणु कोशिकाएं अपवाद हैं, क्योंकि उनमें केवल एक जीनोम कॉपी होती है, दो नहीं।

## What Are DNA Polymorphisms?

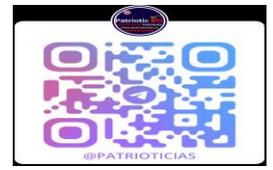
### डीएनए पॉलीमॉर्फिज़्म क्या हैं?

- DNA is **packed inside chromosomes**; for example, **chromosome 3 contains 6.5% of total DNA**.  
डीएनए गुणसूत्रों के अंदर पैक होता है; उदाहरण के लिए, गुणसूत्र 3 में कुल डीएनए का 6.5% होता है।
- A father's **chromosome 3 contains DNA largely similar to the mother's**, but **some differences exist**—these differences are called **polymorphisms**.  
पिता के गुणसूत्र 3 में डीएनए काफी हद तक माता से मेल खाता है, लेकिन कुछ भिन्नताएं होती हैं—इन्हें पॉलीमॉर्फिज़्म कहा जाता है।
- **DNA polymorphisms help differentiate individuals and trace ancestry**.  
डीएनए पॉलीमॉर्फिज़्म व्यक्तियों को अलग करने और वंशावली का पता लगाने में मदद करते हैं।
- **DNA profiles are generated using short tandem repeats (STRs)**.  
\*\*डीएनए प्रोफाइलिंग में **शॉर्ट टैंडेम रिपीट्स (STRs)** का उपयोग किया जाता है।

## What Are STRs?

### STRs क्या हैं?

- DNA consists of **two anti-parallel and complementary strands**, made up of **four bases: adenine (A), cytosine (C), guanine (G), and thymine (T)**.  
\*\*डीएनए में दो विपरीत दिशाओं में चलने वाले पूरक स्ट्रैंड्स होते हैं, जो चार बेस से बने होते हैं: एडेनिन (A), साइटोसिन (C), ग्वानिन (G), और थाइमिन (T)।
- 'Anti-parallel' means the strands run in opposite directions.  
'एंटी-पैरेलल' का अर्थ है कि डीएनए स्ट्रैंड्स विपरीत दिशाओं में चलते हैं।
- 'Complementary' means **A pairs with T and C pairs with G**.  
'पूरक' का अर्थ है कि A, T से और C, G से जुड़ता है।



- When a cell divides, it **replicates DNA** by pulling apart strands and creating complementary copies.  
जब कोशिका विभाजित होती है, तो यह डीएनए को दो भागों में विभाजित कर उसकी पूरक कॉपी बनाती है।
- **Mutations occur when an incorrect base is inserted**; they happen **less than once per billion base pairs per generation**.  
म्यूटेशन तब होता है जब गलत बेस जुड़ जाता है; यह हर पीढ़ी में प्रति अरब बेस-पेयर्स से भी कम होता है।
- **STRs are short sequences of DNA bases that repeat multiple times** (e.g., GATCGATCGATCGATC).  
STRs डीएनए बेस के छोटे अनुक्रम होते हैं जो कई बार दोहराए जाते हैं (उदाहरण: GATCGATCGATCGATC)।
- **Unrelated individuals usually have different STR repeat counts**, making STRs useful for DNA profiling.  
असंबंधित व्यक्तियों में आमतौर पर अलग-अलग STR दोहराव की संख्या होती है, जिससे STRs डीएनए प्रोफाइलिंग के लिए उपयोगी होते हैं।

## How Do We Make Copies of DNA?

### हम डीएनए की प्रतियां कैसे बनाते हैं?

- Scientists use **Polymerase Chain Reaction (PCR)** to make **many copies of DNA in specific STR regions**.  
वैज्ञानिक पॉलीमरेज़ चेन रिएक्शन (PCR) का उपयोग विशिष्ट STR क्षेत्रों में डीएनए की कई प्रतियां बनाने के लिए करते हैं।
- PCR can amplify DNA even if **only a very small amount is available**, producing **millions of copies in a short time**.  
यदि डीएनए की बहुत कम मात्रा भी उपलब्ध हो, तो पीसीआर उसे अल्प समय में लाखों प्रतियों में बदल सकता है।
- **First step:** Scientists **extract genetic material** and heat it to **95°C for 25 seconds**, which **separates the DNA strands**.  
पहला चरण: वैज्ञानिक आनुवंशिक सामग्री निकालते हैं और इसे 95°C पर 25 सेकंड तक गर्म करते हैं, जिससे डीएनए स्टैंड्स अलग हो जाते हैं।
- **Second step:** A **primer**, a short DNA sequence, is introduced, which binds to **specific DNA regions** at 60°C.  
दूसरा चरण: एक प्राइमर, जो एक छोटा डीएनए अनुक्रम होता है, को जोड़ा जाता है, जो विशिष्ट डीएनए क्षेत्रों से जुड़ता है और तापमान 60°C तक कम किया जाता है।
- **Third step:** **DNA polymerase enzyme** synthesises the new DNA strand by **adding complementary bases**.  
तीसरा चरण: डीएनए पॉलीमरेज़ एंजाइम नई डीएनए स्टैंड को पूरक बेस जोड़कर संश्लेषित करता है।



- **Taq polymerase** is used at **72°C**, ensuring efficient DNA replication.  
Taq पॉलीमरेज़ का उपयोग 72°C पर किया जाता है, जिससे डीएनए की कुशल प्रतिकृति सुनिश्चित होती है।
- These steps form **one PCR cycle**, and repeating the cycle **millions of times** can produce **millions of copies within 50 minutes**.  
ये चरण एक पीसीआर चक्र बनाते हैं, और इस चक्र को कई बार दोहराने से 50 मिनट में लाखों प्रतियां बन सकती हैं।
- A **thermocycler** is the device that performs these steps.  
थर्मोसाइकलर वह उपकरण है जो इन चरणों को पूरा करता है।

### What Is a DNA Fingerprint?

#### डीएनए फिंगरप्रिंट क्या है?

- DNA copies are **separated using capillary electrophoresis**, where **smaller fragments move faster under an electric field**.  
डीएनए प्रतियों को कैपिलरी इलेक्ट्रोफोरेसिस द्वारा अलग किया जाता है, जहां छोटे खंड विद्युत क्षेत्र में तेजी से आगे बढ़ते हैं।
- Multiple **STRs can be sized in a single test**, and their **paternal/maternal variants** are compiled in a table, which is **unique to each person**.  
एक ही परीक्षण में कई STRs को आकार में मापा जा सकता है, और उनके पैतृक/मातृक रूपों को एक सारणी में संकलित किया जाता है, जो हर व्यक्ति के लिए अद्वितीय होता है।
- **Only monozygotic twins have identical DNA fingerprints**.  
केवल समान जुड़वां (मोनोजाइगोटिक) व्यक्तियों के डीएनए फिंगरप्रिंट समान होते हैं।
- DNA can be extracted from **teeth, bones, blood (a single drop), spit, semen, skin cells, etc..**  
डीएनए को दांत, हड्डी, रक्त (एक बूंद), लार, वीर्य, त्वचा कोशिकाओं आदि से निकाला जा सकता है।
- **Uses of DNA fingerprinting:**  
डीएनए फिंगरप्रिंटिंग के उपयोग:
  - **Establish parent/child relationships.**  
माता-पिता/बच्चे के संबंध स्थापित करना।
  - **Identify disaster site victims.**  
आपदा स्थलों पर पीड़ितों की पहचान करना।
  - **Solve criminal cases by analyzing blood stains, sweat, and spit from crime scenes.**  
अपराध स्थलों से रक्त धब्बे, पसीना और लार की जांच कर अपराध मामलों को हल करना।
  - **Identify or exclude potential donors in organ transplants.**  
अंग प्रत्यारोपण में संभावित दाताओं की पहचान या अस्वीकृति करना।
- **DNA is highly stable**—scientists have extracted nearly intact DNA from **65,000-year-old human remains**.



डीएनए अत्यधिक स्थिर होता है—वैज्ञानिकों ने 65,000 वर्ष पुराने मानव अवशेषों से लगभग पूर्ण डीएनए निकाला है।

- **Cold cases** have been solved using archived DNA evidence from crime scenes. पुराने अनसुलझे मामलों को अपराध स्थलों से संग्रहीत डीएनए प्रमाण के माध्यम से हल किया गया है।
- **DNA fingerprinting** has also exonerated wrongfully convicted individuals. डीएनए फिंगरप्रिंटिंग ने गलत तरीके से दोषी ठहराए गए व्यक्तियों को निर्दोष साबित किया है।

# Govt. notifies revisions to investment, turnover criteria for MSMEs

**GS Paper III:  
Industries**

**Press Trust of India  
NEW DELHI**

The government has notified significant revisions to the turnover and investment criteria for classifying MSMEs, which will be coming into effect from April 1.

Micro, Small, and Medium Enterprises (MSMEs) with investments up to ₹2.5 crore will now be classified as micro-enterprises, up from the previous threshold of ₹1 crore.

The turnover limit has also been revised from ₹5 crore to ₹10 crore.

Units with investments



MSMEs with investments up to ₹125 crore will be classified as medium enterprises.

up to ₹25 crore will be classified as small enterprises, from the earlier ₹10 crore. The turnover limit for such

enterprises has been doubled from ₹50 crore to ₹100 crore.

MSMEs with investments up to ₹125 crore will now be classified as medium enterprises, from the earlier limit of ₹50 crore. For medium enterprises, the turnover limit has been doubled to ₹500 crore.

During her Budget speech, Union Finance Minister Nirmala Sitharaman had announced new classification criteria for MSMEs, with investment and turnover limits for the classifications proposed to be increased to 2.5 times and two times, respectively.

## Govt. Notifies Revisions to Investment, Turnover Criteria for MSMEs

सरकार ने

एमएसएमई के निवेश और कारोबार मानदंडों में संशोधन

अधिसूचित किए

The government has notified significant revisions to the turnover and investment criteria for classifying MSMEs, effective

from April 1.

सरकार ने एमएसएमई के वर्गीकरण के लिए निवेश और कारोबार मानदंडों में महत्वपूर्ण संशोधन अधिसूचित किए हैं, जो 1 अप्रैल से प्रभावी होंगे।

- **Micro-enterprises:** The investment limit has been increased from ₹1 crore to ₹2.5 crore.

सूक्ष्म उद्यम: निवेश सीमा ₹1 करोड़ से बढ़ाकर ₹2.5 करोड़ कर दी गई है।



**TELEGRAM CHANNEL:** <https://t.me/patrioticIAS>

**YOUTUBE CHANNEL:** <https://www.youtube.com/@PatrioticIAS>

**CONTACT: 9971932488**



- The turnover limit has also been revised from ₹5 crore to ₹10 crore.  
कारोबार सीमा ₹5 करोड़ से बढ़ाकर ₹10 करोड़ कर दी गई है।
- **Small enterprises:** The investment limit has been raised from ₹10 crore to ₹25 crore.  
लघु उद्यम: निवेश सीमा ₹10 करोड़ से बढ़ाकर ₹25 करोड़ कर दी गई है।
- The turnover limit for small enterprises has been doubled from ₹50 crore to ₹100 crore.  
लघु उद्यमों के लिए कारोबार सीमा ₹50 करोड़ से बढ़ाकर ₹100 करोड़ कर दी गई है।
- **Medium enterprises:** The investment limit has been increased from ₹50 crore to ₹125 crore.  
मध्यम उद्यम: निवेश सीमा ₹50 करोड़ से बढ़ाकर ₹125 करोड़ कर दी गई है।
- The turnover limit for medium enterprises has also been doubled to ₹500 crore.  
मध्यम उद्यमों के लिए कारोबार सीमा ₹500 करोड़ कर दी गई है।
- **During her Budget speech, Union Finance Minister Nirmala Sitharaman announced these new classification criteria.**  
अपने बजट भाषण के दौरान, केंद्रीय वित्त मंत्री निर्मला सीतारमण ने इन नए वर्गीकरण मानदंडों की घोषणा की।
- The investment and turnover limits have been increased by 2.5 times and two times, respectively.  
निवेश और कारोबार सीमा क्रमशः 2.5 गुना और दो गुना बढ़ाई गई है।



# 'Pvt. capex share slid to decadal low of 33%'

**GS Paper III:  
Investment**

MUMBAI

Domestic rating agency ICRA on Monday said private capital expenditure's share in the overall investments in the economy dipped to a decadal low of 33% in FY24.

Among the private companies, it was the unlisted players which were subdued in investments as compared with the listed entities, as per a report.

It can be noted for the last few years, the government has been driving investments, leading to concerns in some quarters over the private sector's absence and its impact on overall economic activity.

The private sector has instead focused on deploying excess cash on reduc-



**No baggage:** The private sector is focused on deploying excess cash on reducing loan burden rather than investing in new facilities.

ing loan burden rather than investing in new facilities, choosing to run at high capacity utilisation.

#### **Weak demand**

"Weak domestic consumption, especially urban, muted export demand, and the influx of cheap

Chinese imports in some sectors, among other factors, restricted the capacity expansion plans of Indian corporates," the agency's chief rating officer K. Ravichandran said.

Illustrating the importance of investments in the economy, the agency said

Gross Fixed Capital Formation (GFCF), encompassing the gross addition to fixed assets and intangibles, constitutes about 30% of India's nominal GDP, making it second-largest component after private final consumption expenditure.

#### **Slowing GFCF**

The GFCF has been slowing down since FY23, largely due to the slowdown in the private sector's activity, the agency said, adding government capex and household investments in real estate have helped it.

The listed corporates increased their capex spending by 28% in FY23 and 12% in FY24, but the unlisted entities experienced a contraction in FY24, dragging overall private capex growth, the agency said.

The cash generation of corporates has consistently improved, post the COVID shock, with the ratio of cash flow from operations vis-a-vis capex increasing to 1.6 times in FY2024 from an average of 1.3 times from FY2014 to FY2020.

#### **Cut in gearing**

This has also led to a steady reduction in gearing levels to 0.9 times in FY2024 from 1.1 times in FY2014, it said.

"Deleveraged corporate balance sheets, together with improving cash flows from operations, point towards favourable conditions for an upturn in the private capex cycle," Mr. Ravichandran said, adding RBI's rate cuts, and income tax relief in the budget could help the process.

## **Pvt. Capex Share Slid to Decadal Low of 33%**

**निजी पूंजीगत व्यय का हिस्सा घटकर 33% के दशक के निचले स्तर पर पहुंचा**

**ICRA reported that private capital expenditure's (capex) share in overall investments declined to a decadal low of 33% in FY24.**

**\*\*ICRA ने बताया कि समग्र निवेश में निजी पूंजीगत व्यय (कैपेक्स) का हिस्सा घटकर FY24 में 33% के दशक के निचले स्तर पर आ गया।**

- Among private companies, **unlisted entities showed weaker investment activity** compared to listed firms.
  - **\*\*निजी कंपनियों में, असूचीबद्ध संस्थाओं का निवेश सूचीबद्ध कंपनियों की तुलना में कमजोर रहा।**
  - **The government has been leading investments** in recent years, raising concerns over the private sector's low participation.
- हाल के वर्षों में सरकार ने निवेश का नेतृत्व किया है, जिससे निजी क्षेत्र की कम भागीदारी को लेकर चिंताएँ बढ़ गई हैं।

## **Factors Behind Weak Private Investment**

**निजी निवेश में गिरावट के कारण**



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- Private companies are focusing on reducing debt rather than investing in new projects.  
निजी कंपनियां नए प्रोजेक्ट में निवेश करने के बजाय ऋण कम करने पर ध्यान दे रही हैं।
- Weak domestic consumption, low export demand, and influx of cheap Chinese imports have affected private capex.  
कमजोर घरेलू खपत, निर्यात मांग में गिरावट, और सस्ते चीनी आयात में वृद्धि ने निजी पूंजीगत व्यय को प्रभावित किया है।

## Importance of Investments in Economy

### अर्थव्यवस्था में निवेश का महत्व

- **Gross Fixed Capital Formation (GFCF)**, which includes investments in fixed assets and intangibles, accounts for about 30% of India's nominal GDP.  
सकल स्थिर पूंजी निर्माण (GFCF), जिसमें अचल संपत्तियों और अमूर्त संपत्तियों में निवेश शामिल है, भारत के नाममात्र जीडीपी का लगभग 30% है।
- GFCF has been slowing down since FY23, mainly due to low private sector activity.  
FY23 से GFCF की वृद्धि धीमी हो गई है, जिसका मुख्य कारण निजी क्षेत्र की कम गतिविधि है।
- Government capital expenditure and household real estate investments have partially supported overall investments.  
\*\*सरकारी पूंजीगत व्यय और घरेलू रियल एस्टेट निवेश ने कुल निवेश को आंशिक रूप से समर्थन दिया है।

## Performance of Listed vs. Unlisted Corporates

### सूचीबद्ध बनाम असूचीबद्ध कंपनियों का प्रदर्शन

- Listed companies increased capex by 28% in FY23 and 12% in FY24.  
\*\*सूचीबद्ध कंपनियों ने FY23 में 28% और FY24 में 12% कैपेक्स वृद्धि दर्ज की।
- Unlisted companies saw a decline in capex in FY24, dragging down overall private investment growth.  
FY24 में असूचीबद्ध कंपनियों के पूंजीगत व्यय में गिरावट आई, जिससे कुल निजी निवेश वृद्धि प्रभावित हुई।

## Financial Health of Corporates

### कॉर्पोरेट क्षेत्र की वित्तीय स्थिति

- Post-COVID, corporate cash generation has improved, with the cash flow-to-capex ratio rising to 1.6 times in FY24 (from 1.3 times in FY14-FY20).  
COVID के बाद, कॉर्पोरेट नकदी प्रवाह में सुधार हुआ है, और FY24 में केश फ्लो-टू-कैपेक्स अनुपात 1.6 गुना हो गया (जो FY14-FY20 में 1.3 गुना था)।



- Gearing levels declined steadily, from 1.1 times in FY14 to 0.9 times in FY24. ऋण अनुपात (गियरिंग) में लगातार गिरावट आई, जो FY14 में 1.1 गुना से घटकर FY24 में 0.9 गुना हो गया।
- Lower debt and improved cash flows create a favorable environment for a revival in private capex. कम ऋण और बेहतर नकदी प्रवाह निजी पूंजीगत व्यय को पुनर्जीवित करने के लिए अनुकूल परिस्थितियाँ बनाते हैं।
- RBI rate cuts and tax relief in the budget could further support private investment growth. RBI की ब्याज दरों में कटौती और बजट में कर राहत निजी निवेश वृद्धि को और बढ़ावा दे सकती है।

## Renewables and natural gas surge ahead of oil and coal

GS Paper III: Energy

Clyde Russell  
LAUNCESTON

There is something positive for every type of energy in the International Energy Agency's latest global review, but the loudest cheers will be from renewables and natural gas.

The world's energy demand grew at 2.2% in 2024, a pace described as "faster than average" by the IEA in its Global Energy Review, released on Monday. The acceleration was led by emerging economies, which accounted for over 80% of the growth, while the leading sector was electricity, which grew by 4.3% in 2024, or nearly double the annual average of the past decade.

The IEA report showed renewable power capacity

rose by about 700 gigawatts (GW) in 2024, setting an annual record for the 22nd consecutive year. Along with an increase in nuclear energy it resulted in 80% of the rise in global electricity coming from low-emission sources.

Two broad themes emerge from the IEA's review. The first is that renewable energy is the driving force in new electricity capacity. The second is that emerging economies, and especially those in Asia, will determine what energy sources see the most growth, and the most decline, in coming years.

Global electricity generation rose by 1,200 terawatt hours (TWh) in 2024, an increase of 4%, with solar climbing by about 480 TWh and wind up by 180



Quiet trend: Renewables are expanding into growing markets far quicker than fossil fuels. REUTERS

TWh, the IEA said.

Hydropower also rose by 190 TWh, but the IEA said this was largely due to wet weather in several major markets.

China, the world's second-largest economy, again dominated renewable capacity additions, accounting for two-thirds of the global total of renewa-

bles connected to the grid, with 340 GW of solar and 80 GW of wind.

It's perhaps ironic that China and India are also the lynchpins of global coal

demand, with China getting about 60% of its electricity from the fuel and India nearly three-quarters.

Coal demand increased by a modest 1% in 2024 to a record high, with China consuming 40% more coal than the rest of the world. Coal's share of the global electricity mix dropped to 35% in 2024, the lowest figure since the IEA was founded in 1974.

While coal remains a significant source of energy, its use is increasingly limited to China, India, some Southeast Asia countries and to some nations in Africa, such as South Africa. This concentration doesn't bode well for the global seaborne market, as the main coal consumers are also now the major producers of the fuel, and

all favour domestic sources.

**Gas lessons**  
In addition to renewables, the other big winner in 2024 was natural gas, with the IEA saying demand reached an all-time high, rising 2.7% in 2024 to reach 115 billion cubic metres, rebounding from the 1% growth rate between 2019 and 2023.

Once again, the main driver was Asia, with demand in China from heat-waves and the switch to liquefied natural gas (LNG) trucks fuelling growth.

But within the positive story, there is a note of caution, with the IEA noting that China's growth rate of more than 7% in 2024 was built around the first part of the year, and demand

turned negative in the last two months of the year.

This was largely due to higher spot LNG prices toward the end of the year that curbed China's appetite for the fuel.

The lesson here is that countries in Asia are keen to use more LNG but they will only do so if the price is competitive, meaning LNG producers must choose between volume growth or strong prices.

Proponents of fossil fuels will point out that the IEA report shows that their demand is still growing. But that ignores the main trend, which is renewables are expanding far quicker and also increasing penetration in the world's fast-growing regions.

(The author is a columnist for Reuters)

## Renewables and Natural Gas Surge Ahead of Oil and Coal

नवीकरणीय ऊर्जा और प्राकृतिक गैस तेल और कोयले से आगे बढ़े

The International Energy Agency's (IEA) Global Energy Review 2024 highlights a positive outlook for all energy types, but renewables and natural gas saw the most significant growth.

अंतरराष्ट्रीय ऊर्जा एजेंसी (IEA) की वैश्विक ऊर्जा समीक्षा 2024 में सभी ऊर्जा स्रोतों के लिए सकारात्मक रुझान दिखाया गया है, लेकिन नवीकरणीय ऊर्जा और प्राकृतिक गैस की वृद्धि सबसे अधिक रही।

- Global energy demand grew by 2.2% in 2024, driven mainly by emerging economies, which accounted for 80% of the growth. वैश्विक ऊर्जा मांग 2024 में 2.2% बढ़ी, जिसमें 80% वृद्धि उभरती अर्थव्यवस्थाओं द्वारा संचालित थी।



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- Electricity demand rose by 4.3% in 2024, almost double the annual average of the past decade.  
2024 में बिजली की मांग 4.3% बढ़ी, जो पिछले दशक के वार्षिक औसत का लगभग दोगुना है।

## Record Growth in Renewable Energy

### नवीकरणीय ऊर्जा में रिकॉर्ड वृद्धि

- Renewable power capacity increased by 700 gigawatts (GW) in 2024, marking the 22nd consecutive year of record growth.  
2024 में नवीकरणीय ऊर्जा क्षमता 700 गीगावाट (GW) बढ़ी, जो लगातार 22वें वर्ष का रिकॉर्ड है।
- 80% of the increase in global electricity came from low-emission sources, including renewables and nuclear energy.  
वैश्विक बिजली वृद्धि का 80% हिस्सा नवीकरणीय और परमाणु ऊर्जा सहित कम-उत्सर्जन स्रोतों से आया।
- Solar power grew by 480 terawatt hours (TWh), while wind power increased by 180 TWh in 2024.  
2024 में सौर ऊर्जा 480 टेरावाट घंटे (TWh) बढ़ी, जबकि पवन ऊर्जा 180 TWh बढ़ी।
- Hydropower increased by 190 TWh, mainly due to wet weather conditions in major markets.  
जलविद्युत 190 TWh बढ़ी, जो मुख्य रूप से प्रमुख बाजारों में अधिक वर्षा के कारण हुई।

## China and India's Role in Energy Demand

### ऊर्जा मांग में चीन और भारत की भूमिका

- China accounted for two-thirds of global renewable capacity additions, with 340 GW of solar and 80 GW of wind power added in 2024.  
चीन ने वैश्विक नवीकरणीय ऊर्जा क्षमता वृद्धि में दो-तिहाई योगदान दिया, जिसमें 340 GW सौर और 80 GW पवन ऊर्जा जोड़ी गई।
- Despite renewable growth, China and India remain major coal consumers, with China relying on coal for 60% of its electricity and India for nearly 75%.  
नवीकरणीय ऊर्जा वृद्धि के बावजूद, चीन और भारत कोयले के प्रमुख उपभोक्ता बने हुए हैं, जहां चीन की 60% और भारत की लगभग 75% बिजली कोयले से आती है।
- Global coal demand increased by 1% in 2024, reaching a record high, but its share in electricity generation dropped to 35%, the lowest since 1974.  
वैश्विक कोयला मांग 2024 में 1% बढ़कर रिकॉर्ड स्तर पर पहुंच गई, लेकिन बिजली उत्पादन में इसकी हिस्सेदारी घटकर 35% रह गई, जो 1974 के बाद से सबसे कम है।

## Natural Gas on the Rise

### प्राकृतिक गैस की बढ़ती मांग



- Natural gas demand grew by 2.7% in 2024, reaching 115 billion cubic metres, the highest-ever recorded level.  
2024 में प्राकृतिक गैस की मांग 2.7% बढ़कर 115 बिलियन क्यूबिक मीटर तक पहुंच गई, जो अब तक का सबसे उच्चतम स्तर है।
- Asia, particularly China, drove natural gas demand, with LNG truck usage and heatwaves boosting consumption.  
एशिया, विशेष रूप से चीन, प्राकृतिक गैस की मांग को बढ़ा रहा है, जहां LNG ट्रकों के उपयोग और लू के कारण खपत बढ़ी।
- However, China's LNG demand turned negative in the last two months of 2024, due to higher LNG spot prices.  
हालांकि, 2024 के अंतिम दो महीनों में चीन की LNG मांग नकारात्मक हो गई, क्योंकि LNG की स्पॉट कीमतें बढ़ गईं।

## Key Takeaways

### मुख्य निष्कर्ष

- Fossil fuel demand is still growing, but renewables are expanding at a much faster rate.  
जीवाश्म ईंधन की मांग अभी भी बढ़ रही है, लेकिन नवीकरणीय ऊर्जा कहीं अधिक तेजी से बढ़ रही है।
- Asia is shaping global energy trends, influencing the rise of renewables and natural gas, as well as the decline of coal.  
एशिया वैश्विक ऊर्जा प्रवृत्तियों को आकार दे रहा है, जिससे नवीकरणीय ऊर्जा और प्राकृतिक गैस की वृद्धि और कोयले की गिरावट प्रभावित हो रही है।
- LNG producers need to balance price and volume, as higher prices can curb demand in price-sensitive markets.  
LNG उत्पादकों को कीमत और मात्रा में संतुलन बनाने की आवश्यकता है, क्योंकि उच्च कीमतें संवेदनशील बाजारों में मांग को प्रभावित कर सकती हैं।

## TOPICS COVERED (GS Paper IV and Essay)

### 1. SEBI to Form Panel to Review Conflict of Interest Provisions

संघर्ष हित प्रावधानों की समीक्षा के लिए सेबी पैनल गठित करेगा

### 2. New French Probe Seeks 'Forgotten' Victims of Paedophile Surgeon



**फ्रांस में नए जांच अभियान का उद्देश्य 'भूले-बिसरे' पीड़ितों की पहचान करना**

# SEBI to form panel to review conflict of interest provisions

**SEBI to Form Panel to Review Conflict of Interest Provisions**

People within and outside need to know things are fine with the regulator, says chairman Pandey, on the decision to form a committee to look into conflict of interest of its board members

**GS Paper IV: Ethics**

**Lalatendu Mishra**  
**Ashokamithran T.**  
MUMBAI

**I**n the back of conflict of interest allegations levelled against the regulator in the recent past, the Securities and Exchange Board of India (SEBI), in its board meeting on Monday, decided to constitute a high-level committee (HLC) to undertake a comprehensive review of the provisions relating to conflict of interest, disclosures pertaining to property, investment and liabilities, and related matters in respect of SEBI members and officials of the board.

“The HLC will comprise eminent persons and experts with relevant background and experience in constitutional/statutory/regulatory bodies, government/public sector/private

## Damage control

The high-level committee will comprise eminent persons and experts with relevant background and experience

- Names of the members will be announced shortly
- Committee is expected to submit its recommendations within 3 months of its constitution
- Board will not look at implementing revised code of conduct retrospectively



sector and academia,” SEBI Chairman Tuhin Kanta Pandey said after the board meeting.

The names of the committee members will be announced shortly and within three months from the date of its constitution, the HLC is expected to submit the recommendations, which would be placed before the board for consideration.

“The objective of the

HLC is to comprehensively review and make recommendations for enhancing the existing framework for managing conflict of interest, disclosure and related matters towards ensuring the high standards of transparency, accountability and ethical conduct of members and officials of the board,” Mr. Pandey said.

Answering queries on the timing of the decision

to constitute a committee, he said, “There is a certain trust that needs to be built and people in both our organisation and outside need to be clear that things are fine. There is no tendency to hide. We don’t want to do that. But we need to have a framework.”

He added that disclosure would not be possible in the non-existence of a framework. Mr. Pandey further said that the board would not be looking at implementing the revised code of conduct retrospectively. Reiterating that accountability was important in a democracy, he said the code of conduct framework was about the nuances of responsibility.

He added that there was a need to balance privacy of officers with the transparency that would come from disclosures.

**संघर्ष हित प्रावधानों की समीक्षा के लिए सेबी पैनल गठित करेगा**

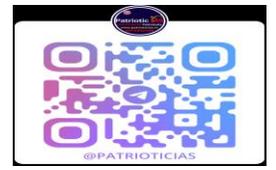
**Amid allegations of conflict of interest against SEBI, the Securities and Exchange Board of India (SEBI) decided in its Monday board meeting to constitute a high-level committee**

(HLC).

सेबी पर हितों के टकराव के आरोपों के बीच, भारतीय प्रतिभूति और विनिमय बोर्ड

(SEBI) ने सोमवार की बोर्ड बैठक में एक उच्च स्तरीय समिति (HLC) गठित करने का निर्णय लिया।

- The HLC will review provisions related to conflict of interest, disclosures on property, investments, and liabilities concerning SEBI members and board officials.



HLC सेबी सदस्यों और बोर्ड अधिकारियों से संबंधित हितों के टकराव, संपत्ति, निवेश और देनदारियों के प्रकटीकरण से जुड़े प्रावधानों की समीक्षा करेगा।

- SEBI Chairman Tuhin Kanta Pandey stated that the committee would include eminent experts from constitutional, statutory, regulatory bodies, government, public and private sectors, and academia.

सेबी के अध्यक्ष तुहिन कांत पांडे ने कहा कि समिति में संवैधानिक, वैधानिक, नियामक निकायों, सरकार, सार्वजनिक और निजी क्षेत्र तथा शिक्षाविदों के विशेषज्ञ शामिल होंगे।

- The names of the committee members will be announced soon, and the HLC is expected to submit recommendations within three months.

समिति के सदस्यों के नाम जल्द घोषित किए जाएंगे, और HLC को तीन महीनों के भीतर सिफारिशें प्रस्तुत करने की उम्मीद है।

- The recommendations will be placed before the SEBI board for consideration. सिफारिशों को सेबी बोर्ड के समक्ष विचार के लिए प्रस्तुत किया जाएगा।

## Objective of the HLC

### HLC का उद्देश्य

- The HLC aims to review and enhance the existing framework for managing conflict of interest, disclosure norms, and ethical conduct of board members and officials. HLC का उद्देश्य मौजूदा ढांचे की समीक्षा करना और हितों के टकराव, प्रकटीकरण मानदंडों और बोर्ड सदस्यों व अधिकारियों के नैतिक आचरण के लिए इसे मजबूत करना है।
- Transparency, accountability, and ethical conduct are the key focus areas. पारदर्शिता, जवाबदेही और नैतिक आचरण प्रमुख ध्यान केंद्रित क्षेत्र हैं।

## SEBI Chairman's Statement

### सेबी अध्यक्ष का बयान

- Tuhin Kanta Pandey emphasized that building trust within and outside the organization was crucial.

तुहिन कांत पांडे ने जोर देकर कहा कि संगठन के भीतर और बाहर विश्वास बनाना आवश्यक है।

- He stated, "There is no tendency to hide. We don't want to do that. But we need a framework."

उन्होंने कहा, "छिपाने की कोई प्रवृत्ति नहीं है। हम ऐसा नहीं करना चाहते। लेकिन हमें एक ढांचे की जरूरत है।"

- Disclosures cannot happen without a proper framework, which is why this initiative is being taken.

बिना उचित ढांचे के प्रकटीकरण संभव नहीं है, इसलिए यह पहल की जा रही है।

- The board will not implement the revised code of conduct retrospectively. बोर्ड संशोधित आचार संहिता को पूर्वव्यापी रूप से लागू नहीं करेगा।



- **Accountability is important in a democracy, and the new framework will clarify the responsibilities of SEBI officials.**  
लोकतंत्र में जवाबदेही महत्वपूर्ण है, और नया ढांचा सेबी अधिकारियों की जिम्मेदारियों को स्पष्ट करेगा।
- **There is a need to balance officer privacy with transparency that comes from disclosures.**  
अधिकारियों की गोपनीयता और प्रकटीकरण से मिलने वाली पारदर्शिता के बीच संतुलन बनाए रखने की आवश्यकता है।

## New French probe seeks ‘forgotten’ victims of paedophile surgeon

**GS Paper IV: Ethics**

**Essay**

VANNES

A French paedophile has admitted to sexually abusing 299 patients during his career as a surgeon, but now investigators are hoping to identify additional victims after it emerged dozens more may have been overlooked.

Joel Le Scouarnec, 74, has been in court since last month accused of 111 rapes and 189 sexual assaults at a dozen hospitals in western France, in one of the country's largest child sex abuse cases.

On Thursday he admitted to all charges, his lawyer Maxime Tessier said, but the trial is to continue until June.

The former doctor is already in prison after being sentenced in December



Prison officers escort ex-surgeon Joel Le Scouarnec from a vehicle, during his trial, in France on February 25. REUTERS

2020 to 15 years for raping and sexually assaulting four children, including two of his nieces.

The surgeon practised for decades until his retirement despite a 2005 sentence for owning sexually abusive images of children.

After he retired in 2017, a six-year-old girl accused him of rape and police

found hundreds of written accounts of abuse stored in files on his computer.

Police have identified and spoken to 332 victims mentioned in these files, including several for whom the statute of limitations has expired.

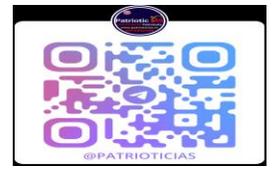
But they never got in touch with several other potential victims, includ-

ing some the convicted ex-surgeon listed himself, according to several documents, a journalist, a judge, an investigator and a lawyer.

In another example, Le Scouarnec during the trial admitted to abusing his own granddaughter, a case mentioned in his notes but that investigators did not look into.

The new probe is to focus on “victims who might not have been identified or whose cases recently came to light,” the prosecutor’s office in the city of Rennes said.

Journalist Hugo Lemo-nier said he had found around 30 victims who had been “forgotten” by the mammoth investigation into Le Scouarnec while researching a book on his case.



## New French Probe Seeks 'Forgotten' Victims of Paedophile Surgeon

फ्रांस में नए जांच अभियान का उद्देश्य 'भूले-बिसरे' पीड़ितों की पहचान करना

A French paedophile surgeon, Joel Le Scouarnec, 74, has admitted to sexually abusing 299 patients.

फ्रांसीसी बाल यौन अपराधी सर्जन, जोएल ले स्कूआर्ने, 74, ने 299 मरीजों के यौन शोषण की बात स्वीकार की।

- Investigators believe many more victims may have been overlooked, prompting a new probe.

जांचकर्ताओं का मानना है कि कई और पीड़ितों को नजरअंदाज किया गया हो सकता है, जिससे नई जांच शुरू की गई।

### Ongoing Trial and Charges

#### चालू मुकदमा और आरोप

- Le Scouarnec is currently facing trial for 111 rapes and 189 sexual assaults across 12 hospitals in western France.  
ले स्कूआर्ने पर वर्तमान में मुकदमा चल रहा है, जिसमें 12 पश्चिमी फ्रांसीसी अस्पतालों में 111 बलात्कार और 189 यौन हमलों के आरोप हैं।
- He admitted to all charges on Thursday, but his trial will continue until June.  
उन्होंने गुरुवार को सभी आरोप स्वीकार कर लिए, लेकिन उनका मुकदमा जून तक जारी रहेगा।
- He was previously sentenced to 15 years in 2020 for raping and sexually assaulting four children, including two nieces.  
\*\*उन्हें पहले 2020 में चार बच्चों, जिनमें उनकी दो भतीजियां भी शामिल थीं, के साथ बलात्कार और यौन शोषण के लिए 15 साल की सजा दी गई थी।

### Past Convictions and Discovery of Abuse

#### पिछली सजाएं और दुर्व्यवहार की खोज

- Despite a 2005 conviction for possessing child abuse images, he continued practicing as a surgeon for decades.  
2005 में बाल यौन शोषण से संबंधित चित्र रखने के लिए दोषी ठहराए जाने के बावजूद, वह दशकों तक सर्जन के रूप में काम करता रहा।
- After his retirement in 2017, a six-year-old girl accused him of rape, leading police to find hundreds of written records of abuse on his computer.



2017 में सेवानिवृत्ति के बाद, एक छह वर्षीय लड़की ने उन पर बलात्कार का आरोप लगाया, जिससे पुलिस ने उनके कंप्यूटर पर दुर्व्यवहार के सैकड़ों लिखित रिकॉर्ड पाए।

- Police have identified 332 victims, but some cases were ignored due to the statute of limitations.

पुलिस ने 332 पीड़ितों की पहचान की है, लेकिन कुछ मामलों को कानूनी सीमा समाप्त होने के कारण अनदेखा कर दिया गया।

## New Investigation

### नई जांच

- The new probe aims to focus on victims who were not identified or whose cases recently surfaced.

नई जांच का उद्देश्य उन पीड़ितों पर ध्यान केंद्रित करना है, जिन्हें पहचान नहीं किया गया था या जिनके मामले हाल ही में सामने आए हैं।

- Investigators failed to contact several potential victims, including some mentioned in Le Scouarnec's own records.

जांचकर्ताओं ने कई संभावित पीड़ितों से संपर्क नहीं किया, जिनमें कुछ ले स्कूआर्ने के स्वयं के रिकॉर्ड में सूचीबद्ध थे।

- During the trial, Le Scouarnec admitted to abusing his own granddaughter, a case that was never investigated.

\*\*मुकदमे के दौरान, ले स्कूआर्ने ने अपनी पोती के यौन शोषण की बात स्वीकार की, लेकिन यह मामला कभी जांच के दायरे में नहीं आया।

- Journalist Hugo Lemonier found around 30 victims who were forgotten by the initial investigation.

पत्रकार ह्यूगो लेमोनीयर ने लगभग 30 पीड़ितों की पहचान की, जिन्हें प्रारंभिक जांच में अनदेखा कर दिया गया था।