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# PATRIOTIC IAS

## DAILY CURRENT AFFAIRS

### THE HINDU NEWSPAPER

# 04 MAY 2026

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PCS Special:	04 May
04Ma	Azhikode award for activist, writer अझीकोड पुरस्कार सामाजिक कार्यकर्ता और लेखक को
04Ma	Andaman sets two Guinness World Records in two days अंडमान ने दो दिनों में दो गिनीज वर्ल्ड रिकॉर्ड बनाए
04Ma	QUIZ



Medha Patkar, left, and Perumal Murugan.

## Azhikode award for activist, writer

PCS

The Hindu Bureau  
CHENNAI

Social activist Medha Patkar and Tamil writer Perumal Murugan have been selected for the Sukumar Azhikode Birth Centenary National Award, according to a release from the Sukumar Azhikode Trust.

The award recognises their exceptional contributions to society and literature and includes a cash prize of ₹50,000 along with a citation. Ms. Patkar is being honoured for her

lifelong commitment to social activism, particularly her work advocating for the rights of displaced communities.

Mr. Murugan is recognised for his significant impact on Indian literature and his bold exploration of complex social issues.

The selection committee was headed by K.T. Thomas, and comprised M.N. Karasseri, Ravi Dece, and Paul Manalil.

The award will be presented to the winners at Kannur on May 12.

social issues.

पेरुमल मुरुगन को भारतीय साहित्य पर उनके महत्वपूर्ण प्रभाव और जटिल सामाजिक मुद्दों पर उनके साहसिक लेखन के लिए पहचाना गया है।

PCS

## Andaman sets two Guinness World Records in two days

The Andaman and Nicobar Islands on Sunday created another Guinness World Record with the formation of the tallest human stack underwater at Swaraj Dweep, formerly known as Havelock Island, officials said. Fourteen people, including Lt. Gov. D.K. Joshi, took part in forming the 22.3-metre-long stack, and they stayed under water for three minutes. The feat comes a day after the Union Territory administration unfurled the world's largest underwater national flag, measuring approximately 60 by 40 metres, near the same island. Officials said the back-to-back achievements are part of a larger initiative to showcase the islands as a premier global diving destination, highlighting their pristine marine ecosystem and advanced diving capabilities.

Gov. D.K. Joshi took part in forming the **22.3-metre-long stack**, and they stayed under water for **three minutes**.

14 लोगों, जिनमें उप-राज्यपाल डी.के. जोशी शामिल थे, ने 22.3 मीटर लंबा स्टैक बनाने में भाग लिया और वे तीन मिनट तक पानी के नीचे रहे।

- The feat comes a day after the Union

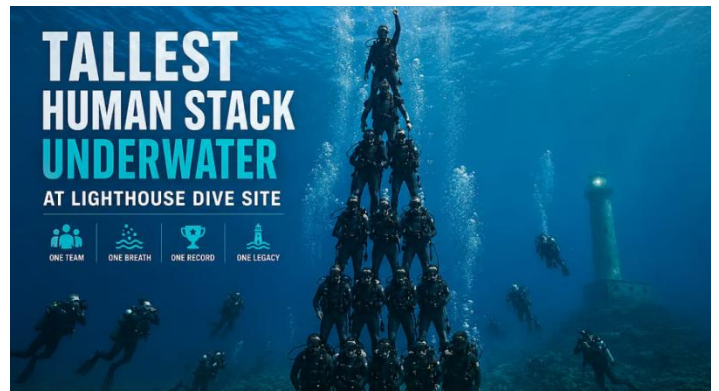
## 04Ma. Andaman sets two Guinness World Records in two days

अंडमान ने दो दिनों में दो गिनीज वर्ल्ड रिकॉर्ड बनाए

The **Andaman and Nicobar Islands** on Sunday created another **Guinness World Record** with the formation of the **tallest human stack underwater** at **Swaraj Dweep**, formerly known as **Havelock Island**, officials said.

अंडमान और निकोबार द्वीप समूह ने रविवार को गिनीज वर्ल्ड रिकॉर्ड बनाया, जिसमें **स्वराज द्वीप (पूर्व में हैवलॉक द्वीप)** पर **पानी के नीचे सबसे ऊंचा मानव स्टैक** बनाया गया।

- Fourteen people, including Lt.





**Territory administration** unfurled the **world's largest underwater national flag**, measuring approximately **60 by 40 metres**, near the same island.

यह उपलब्धि एक दिन बाद आई जब केंद्र शासित प्रदेश प्रशासन ने उसी द्वीप के पास लगभग 60x40 मीटर का दुनिया का सबसे बड़ा पानी के नीचे राष्ट्रीय ध्वज फहराया।

- Officials said the back-to-back achievements are part of a larger initiative to showcase the islands as a **premier global diving destination**, highlighting their **pristine marine ecosystem** and **advanced diving capabilities**.

अधिकारियों ने कहा कि ये लगातार उपलब्धियां द्वीपों को वैश्विक स्तर के प्रमुख डाइविंग गंतव्य के रूप में प्रस्तुत करने की एक बड़ी पहल का हिस्सा हैं, जो उनके स्वच्छ समुद्री पारिस्थितिकी तंत्र और उन्नत डाइविंग क्षमताओं को दर्शाती हैं।

**Questions and Answers to the previous day's daily quiz:**

- International Workers' Day is observed on May 1 in more than 80 countries, but not officially in X. Name X (a country). **Ans: USA**
  - International Workers' Day commemorates the \_\_\_\_\_ affair. On May 4, 1886, a peaceful rally for the eight-hour workday in Chicago turned violent after someone threw dynamite at the police. The name of the incident refers to the square where the incident occurred; the incident is also considered the climax of the Great American Uprising. Fill in the blank. **Ans: Haymarket**
  - The Y adopted the date of May 1 in 1889 as International Workers' Day to honour the events of Q2. Name Y. **Ans: Second International**
  - India celebrates its first May Day in 1923 in P (a city) thanks to the efforts of labour leader Q. Name P and Q. **Ans: Chennai, M. Singaravelu**
  - In February 1956, Nikita Khrushchev delivered a famous speech in which he denounced Joseph Stalin's excesses, behind closed doors. What was the title of Khrushchev's speech? **Ans: 'On the Cult of Personality and Its Consequences'**
- Visual: Name this activist and Gandhian who helped found the Self-Employed Women's Association (SEWA). **Ans: Ela Bhatt**
- Early Birds: Arun Kumar Singh | Dil Bahadur Airee | Arpit Kullu | Naveen Kumar B. L. | Varghese Joseph

**04Ma. QUIZ: INTERNATIONAL WORKERS' DAY (MAY 1)**

- International Workers' Day (May 1)** is globally associated with the **labour movement** and commemorates the **Haymarket Affair (1886)** in Chicago, which demanded an **eight-hour workday**.
- Despite this origin in the **United States**, the country does not officially observe May 1 as **Labour Day**.
- Instead, the U.S. celebrates **Labour Day on the first Monday of September**, a decision taken in 1894 to distance labour celebrations from socialist and anarchist movements linked to **May Day**.
- The **Haymarket Affair (1886)** in Chicago is commemorated on **International Workers' Day**.
- The **Second International**, an organisation of socialist and labour parties formed in 1889 in Paris, officially adopted **May 1** as **International Workers' Day**.
- Today it is observed in over 80 countries as a day promoting workers' rights and social justice.
- India's first **May Day celebration** was held in **1923** in Chennai under the leadership of **M. Singaravelu**, a prominent **labour activist** and **freedom fighter**.
- He organised the event through the **Labour Kisan Party of Hindustan** and introduced the **use of the red flag** in India's labour movement.
- The **speech marked the beginning of de-Stalinisation**, significantly altering Soviet policies and influencing global communist movements

<b>GS Paper 1: History</b>	<b>04 May 2026</b>
<b>TOPICS COVERED</b>	
<b>04Ma</b>	

Breaking the ice



Paving the way? Army personnel clearing snow on Sunday at Gurdwara Sri Hemkund Sahib in Chamoli district of Uttarakhand, ahead of its opening. The Hemkund Sahib yatra begins on May 23. (PI)

Paving the way: Army personnel clearing snow on Sunday at **Gurdwara Sri Hemkund Sahib** in Chamoli district of Uttarakhand, ahead of its opening. The **Hemkund Sahib yatra** begins on May 23.

**GURDWARA SRI HEMKUND SAHIB**

- **Gurdwara Sri Hemkund Sahib** is one of the **highest Gurudwaras in the world**, located in the **Chamoli district of Uttarakhand**.
- It is **situated at an altitude of about 4,329 meters (14,200 feet)** above sea level.
- The **shrine is dedicated to Guru Gobind Singh Ji, the 10th Sikh Guru**, and holds immense religious and historical significance.
- Hemkund Sahib is located in the **Garhwal Himalayas**, near the famous **Valley of Flowers National Park**, a UNESCO World Heritage Site.
- It is surrounded by **seven snow-capped mountain peaks**, which are collectively referred to as **Sapta Shringa** in Sikh texts.
- The religious importance of Hemkund Sahib is derived from the autobiographical work **Bachitra Natak**, attributed to **Guru Gobind Singh Ji**.
- In this text, the Guru describes a place called **"Hemkunt Parbat Sapt Sring"**, where he meditated in a previous life.

Festive fervour: Artistes of Yakshavarna Kala Samithi, which is based in Pavanje in Karnataka, promote the **traditional folk theatre form of Yakshagana** by taking part in a procession of Sri Maha Ganapathi Temple in Mangaluru on Sunday.

## YAKSHAGANA

- **Yakshagana** is a **traditional stage performance and semi-classical dance-drama** form of India.
- It is **primarily practiced in the coastal and Malnad regions of Karnataka**, especially in **Tulunadu**.
- The core regions include **Dakshina Kannada, Udupi, Uttara Kannada, Shivamogga (Shimoga), and parts of Chikkamagaluru**, along with **Kasaragod district of Kerala**.
- **Yakshagana combines dance, music, dialogue, elaborate costumes, make-up, and theatrical techniques** into a unique performance tradition.
- It is considered a **living folk theatre tradition** that integrates elements of classical and folk culture.



Festive fervour: Artistes of Yakshavarna Kala Samithi, which is based in Pavanje in Karnataka, promote the traditional folk theatre form of Yakshagana by taking part in a procession of Sri Maha Ganapathi Temple in Mangaluru on Sunday. H.S. MALANATH

## Historical Evolution

- Yakshagana is believed to have **evolved between the 15th and 17th centuries CE**, during the period of the **Bhakti Movement**.
- **Early Yakshagana compositions are known as Prasangas**, which are narrative texts used for performance.

## Major Styles of Yakshagana

### Thenku Thittu (Southern Style)

- Practiced in **Dakshina Kannada and Kasaragod regions**.
- Known for **graceful movements, expressive dance, and fluid body gestures**.



- Costumes are relatively **lighter and more flexible**.
- Emphasis is on **dance and aesthetic expression**.

### Badaga Thittu (Northern Style)

- Practiced in **Udupi, Uttara Kannada, and northern regions**.
- Characterized by **strong facial expressions and elaborate headgear (Kirita)**.
- Costumes are more **grand and structured**.
- Emphasis is on **dialogue delivery and dramatic effect**.

### Duration and Timing

- Yakshagana is traditionally **performed overnight, starting from dusk to dawn**.
- This reflects its origin as a **community ritual and cultural gathering**.

### Key Components

- **Himmela (Background Musicians)**
  - Includes singers and instrumentalists
  - Instruments include **Chende (drum), Maddale, Harmonium, and Tala (cymbals)**
- **Mummela (Actors and Dancers)**
  - Perform characters from epics
  - Engage in **improvised dialogue (called "Vachana")**
- **Bhagavata (Lead Singer and Narrator)**
  - Central figure who **narrates the story and controls the performance flow**

### Themes and Stories

- Yakshagana performances are based on **Indian epics and Puranic traditions**.
- Major sources include:
  - **Ramayana**
  - **Mahabharata**
  - **Bhagavata Purana**
- Some stories are also drawn from **Jain traditions and regional folklore**.
- The narratives focus on **moral values, dharma, heroism, and devotion**.

GS Paper 1: Society		04 May 2026
<b>TOPICS COVERED</b>		
04Ma	<b>Soren writes to President, PM seeking 'Sarna' religious code provision for tribals in Census</b> सोरेन ने राष्ट्रपति, प्रधानमंत्री को पत्र लिखकर जनगणना में 'सरना' धार्मिक कोड की मांग की	
04Ma	<b>Doctors decide</b> डॉक्टर निर्णय लें	



## Soren writes to President, PM seeking 'Sarna' religious code provision for tribals in Census

GS I: Society  
Press Trust of India  
RANCHI

Jharkhand Chief Minister Hemant Soren on Sunday wrote to President Droupadi Murmu and Prime Minister Narendra Modi seeking a provision for the 'Sarna' religion in the Census 2027. He underscored that a Sarna religious code is necessary to identify tribals as distinct from followers of other religions to protect their constitutional rights.

Despite the absence of a dedicated Sarna category



Jharkhand CM Hemant Soren

in the 2011 Census, about 50 lakh people across 21 States had identified themselves as Sarna in the religion column, Mr. Soren stated in the letters to the President and the PM.

He emphasised the im-

portance of accurate and "fact-based" data collection for effective policymaking and balanced development. The Chief Minister noted that Jharkhand is fully cooperating with the Census process and highlighted the significance of the exercise, which was originally scheduled for 2021 but postponed due to unforeseen circumstances.

### 'Distinct traditions'

Mr. Soren pointed out that the Sarna faith, followed by a large section of tribal

communities, has distinct traditions, including nature worship, village deities, and unique rituals.

He argued that proper recognition of the Sarna religion in Census data would help ensure more targeted welfare policies for tribal communities.

The Chief Minister also raised concerns that introducing new classification categories could complicate Census operations, but stressed that the long-term benefits of accurate socioreligious data outweigh potential challenges.

## 04Ma. Soren writes to President, PM seeking 'Sarna' religious code provision for tribals in Census

सोरेन ने राष्ट्रपति, प्रधानमंत्री को पत्र लिखकर जनगणना में 'सरना'

धार्मिक कोड की मांग की

- He underscored that a **Sarna religious code is necessary to identify tribals as distinct from followers of**

other religions to protect their constitutional rights.

उन्होंने जोर दिया कि सरना धार्मिक कोड जरूरी है ताकि आदिवासियों को अन्य धर्मों के अनुयायियों से अलग पहचान मिल सके और उनके संवैधानिक अधिकारों की रक्षा हो सके।

- Despite the absence of a dedicated **Sarna category** in the **2011 Census**, about **50 lakh people across 21 States** had identified themselves as Sarna in the religion column, Mr. Soren stated in the letters to the President and the PM.

2011 की जनगणना में अलग सरना श्रेणी न होने के बावजूद, लगभग 50 लाख लोगों ने 21 राज्यों में धर्म के कॉलम में खुद को सरना बताया था, यह बात श्री सोरेन ने राष्ट्रपति और प्रधानमंत्री को लिखे पत्रों में कही।

- He emphasised the importance of accurate and "**fact-based**" data collection for effective **policymaking** and balanced **development**.

उन्होंने प्रभावी नीति निर्माण और संतुलित विकास के लिए सटीक और "तथ्य-आधारित" डेटा संग्रह के महत्व पर जोर दिया।

- Mr. Soren pointed out that the **Sarna faith**, followed by a large section of **tribal communities**, has distinct traditions, including **nature worship**, **village deities**, and unique **rituals**.

श्री सोरेन ने बताया कि सरना धर्म, जिसे बड़ी संख्या में आदिवासी समुदाय मानते हैं, की अपनी अलग परंपराएं हैं, जिनमें प्रकृति पूजा, ग्राम देवता और विशिष्ट अनुष्ठान शामिल हैं।

- He argued that **proper recognition of the Sarna religion in Census data** would help ensure more targeted **welfare policies** for tribal communities.

उन्होंने तर्क दिया कि जनगणना डेटा में सरना धर्म की उचित पहचान से आदिवासी समुदायों के लिए अधिक लक्षित कल्याणकारी नीतियां सुनिश्चित की जा सकेंगी।

- The Chief Minister also **raised concerns** that introducing new classification categories could **complicate Census operations**, but stressed that the long-term benefits of accurate **socio-religious data** outweigh potential challenges.

मुख्यमंत्री ने यह चिंता भी जताई कि नई श्रेणियां जोड़ने से जनगणना कार्य जटिल हो सकता है, लेकिन उन्होंने जोर दिया कि सटीक सामाजिक-धार्मिक डेटा के दीर्घकालिक लाभ संभावित चुनौतियों से अधिक हैं।

### 'Sarna' Religious Code

- The **Sarna religious code** refers to a **distinct religious identity demanded by several Adivasi (tribal) communities** in India.
- It is primarily associated with tribes of **Jharkhand, Odisha, Chhattisgarh, West Bengal, and parts of Assam and Bihar**.
- The term "**Sarna**" means **sacred grove**, which is central





to the spiritual life of these communities.

- Sarna religion is part of the indigenous tribal belief systems, often referred to as nature worship or animism.
- It has existed for centuries before the arrival of organized religions in India.
- The belief system revolves around worship of nature, forests, ancestors, and village deities.
- Sacred groves called “Sarna Sthal” or “Jaher Than” serve as community religious spaces.
- The religion has no formal scriptures, codified doctrines, or centralized religious authority.

#### Core Beliefs and Practices

- Sarna followers believe in nature as sacred, including trees, hills, rivers, and animals.
- They worship Dharti Aaba (Earth God) and other natural forces.
- Community rituals are performed by a priest known as Pahan.
- Festivals such as Sarhul, Karma, and Sohrai are integral to Sarna religious practices.

GS I: Society

## Doctors decide

Decisions to go for abortion must be guided by sound medical advice

With freedom comes great responsibility; decisions made as a consequence of any freedom must be informed by reasonable awareness of the fall out. In seeming vesting reproductive autonomy with the woman, the Supreme Court might have edged out the essential role of a clinical review of the situation. The Court asked the Union government to amend the abortion law to remove the time limit on medical termination of unwanted pregnancies in the case of minor rape victims. The Bench of the Chief Justice of India, Surya Kant, and Justice Joymalya Bagchi made the observation while refusing to entertain a petition against an earlier Court decision allowing a 15-year-old survivor of rape to terminate the pregnancy during the 30th week. In the original judgment on the case, which was on curative appeal, the judges remarked that the right of the minor child to continue a pregnancy that is illegitimate must be considered, to safeguard a woman's right to reproductive autonomy. The Bench of Justices B.V. Nagarathna and Ujjal Bhuyan had noted that the minor had shown a clear and consistent unwillingness to continue the pregnancy. The Court cannot compel any woman, much less a minor, to complete her pregnancy if she otherwise did not intend to do so, they said. They also indicated that if the legal routes were closed, women might take the dangerous path to quacks, risking life. However, counsel for the All India Institute of Medical Sciences stoutly opposed the termination, and the curative petition; leveraging the same safety consideration. Terminating the pregnancy at an advanced stage – 30 weeks – would be inimical to the health of the teenage mother. Currently, Indian law allows for the termination of pregnancy up to 24 weeks of gestation.

The entire argument hinges on gestational age, which, as an indicator of how far along the pregnancy is, is crucial to deciding whether an abortion would be safe. Most countries that have legalised abortion restrict the period of safe abortion to 24 weeks of gestation, primarily because of the negative implications for the life and health of the mother, after that. But, central to legal abortion is a medical assessment of risks. Will a child or her parents alone, with lay knowledge, be able to make a studied assessment of such risk? While the minor expresses her desire to be rid of a forced pregnancy, it is the role of her parents and the system to provide her with safe options, within the permissible period. Making an uninformed decision at this stage could be counterproductive, if it compromises on her health or life, while allowing the right to bodily autonomy.

## 04Ma. Doctors decide

### डॉक्टर निर्णय लें

- The Court asked the Union government to amend the abortion law to remove the time limit on medical termination of unwanted pregnancies in the case of minor rape victims.

न्यायालय ने केंद्र सरकार से कहा कि वह गर्भपात कानून में संशोधन करे ताकि नाबालिग बलात्कार पीड़ितों के मामलों में अवांछित गर्भावस्था के चिकित्सीय समापन की समय सीमा हटाई जा सके।

- The Bench of the Chief Justice of India, Surya Kant, and Justice Joymalya Bagchi made the observation while refusing to entertain a petition against an earlier Court decision allowing a 15-year-old survivor of rape to terminate the pregnancy during the 30th week.

भारत के मुख्य न्यायाधीश, सूर्यकांत, और न्यायमूर्ति जॉयमाल्या बागची की पीठ ने यह टिप्पणी उस समय की जब उन्होंने एक पूर्व न्यायालय के निर्णय के खिलाफ याचिका स्वीकार करने से इनकार कर दिया, जिसमें एक 15 वर्षीय बलात्कार पीड़िता को 30वें सप्ताह में गर्भ समाप्त करने की अनुमति दी गई थी।

- In the original judgment on the case, which was on curative appeal, the judges remarked that the right of the minor child to continue a pregnancy that is illegitimate must be considered, to safeguard a woman's right to reproductive autonomy.

मामले के मूल निर्णय में, जो क्यूरेटिव अपील पर था, न्यायाधीशों ने कहा कि नाबालिग बच्चे के उस गर्भ को जारी रखने के अधिकार पर विचार किया जाना चाहिए जो अवैध है, ताकि महिला के प्रजनन स्वायत्तता के अधिकार की रक्षा हो सके।

- They also indicated that if the legal routes were closed, women might take the dangerous path to quacks, risking life.

उन्होंने यह भी संकेत दिया कि यदि कानूनी मार्ग बंद हो जाएँ, तो महिलाएँ झोलाछाप चिकित्सकों के पास जाने जैसे खतरनाक रास्ते अपना सकती हैं, जिससे जीवन को जोखिम हो सकता है।

- Currently, Indian law allows for the termination of pregnancy up to 24 weeks of gestation.

वर्तमान में, भारतीय कानून 24 सप्ताह की गर्भावस्था तक गर्भसमापन की अनुमति देता है।



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- The entire argument hinges on **gestational age**, which, as an indicator of how far along the pregnancy is, is crucial to deciding whether an **abortion** would be safe.  
पूरा तर्क **गर्भकालीन आयु** पर निर्भर करता है, जो गर्भावस्था की प्रगति का संकेतक होने के नाते यह तय करने में महत्वपूर्ण है कि **गर्भपात** सुरक्षित होगा या नहीं।
- Most countries that have legalised **abortion** restrict the period of safe abortion to **24 weeks of gestation**, primarily because of the negative implications for the **life and health of the mother**, after that.  
अधिकांश देशों में, जहाँ **गर्भपात** वैध है, सुरक्षित गर्भपात की अवधि को **24 सप्ताह की गर्भावस्था** तक सीमित किया गया है, मुख्यतः इसके बाद **माँ के जीवन और स्वास्थ्य** पर पड़ने वाले नकारात्मक प्रभावों के कारण।
- But, central to legal abortion is a **medical assessment of risks**.  
लेकिन, वैध गर्भपात का मूल आधार **जोखिमों का चिकित्सीय मूल्यांकन** है।

<b>GS Paper 1: Geography</b>	<b>04 May 2026</b>
<b>TOPICS COVERED</b>	
<b>04Ma</b>	<b>Nepal expresses concern to India, China on Kailash yatra over Lipulekh Pass</b> <b>नेपाल ने लिपुलेख दर्रे से कैलाश यात्रा पर भारत और चीन से चिंता जताई</b>

# Nepal expresses concern to India, China on Kailash yatra over Lipulekh Pass

GS I: Geography

**Kallol Bhattacharjee**  
NEW DELHI

Foreign Secretary Vikram Misri's upcoming visit to Nepal came under a shadow on Sunday with Nepal expressing "concerns" to both India and China over the next season of Kailash Manasarovar Yatra through the Kalapani-Limpiyadhura-Lipulekh region. It reiterated that the region is part of Nepal's sovereign territory.

In response to Kathmandu's remarks, the Ministry of External Affairs (MEA) said that Nepal's claims on the Lipulekh Pass are not based on "historical facts".

The Ministry had announced on April 30 the next round of Kailash Yatra would take place in coordination with the Government of the People's Republic of China in June-August.

Earlier, Mr. Misri's plans to visit Kathmandu were in focus because of uncer-

tainties in securing a meeting with the new Prime Minister, Balendra Shah, who has refused to meet foreign envoys as he has been following a restrictive diplomatic protocol since taking charge in March.

In an announcement, Nepal's Ministry of Foreign Affairs (MoFA) said, "The Government of Nepal is completely clear and steadfast in the fact that Limpiyadhura, Lipulekh and Kalapani east of the Mahakali river are integral parts of Nepal since the Treaty of Sugauli of 1816."

Responding to the Nepali remarks, Randhir Jaiswal, official spokesperson of the Ministry of External Affairs, said late on Sunday, "...such claims are neither justified nor based on historical facts and evidence."

"Lipulekh Pass has been a long-standing route for the Kailash Manasarovar Yatra since 1954 and the pilgrimage through this

route has been going on for decades. This is not a new development".

"India remains open to a constructive interaction with Nepal on all issues in the bilateral relationship, including on resolving agreed outstanding boundary issues through dialogue and diplomacy," Mr. Jaiswal posted on X in response to media queries on claims made by Kathmandu.

The development comes at a time when Indian and Nepali diplomats have been in consultation over the past three months about the way forward to further bilateral ties and accordingly, Mr. Misri's visit to Kathmandu was being planned.

Adhering to existing diplomatic practices, Mr. Misri had met the then-Prime Minister K.P. Sharma Oli in August 2025, just days before he was ousted in a youth-led uprising on September 8.

## 04Ma. Nepal expresses concern to India, China on Kailash yatra over Lipulekh Pass

नेपाल ने लिपुलेख दर्रे से कैलाश यात्रा पर भारत और चीन से चिंता जताई

• **Foreign Secretary Vikram Misri's** upcoming visit to **Nepal** came under a shadow on Sunday with Nepal expressing "**concerns**" to both **India and China** over the next season of **Kailash Manasarovar Yatra** through the **Kalapani-Limpiyadhura-Lipulekh region**.

**विदेश सचिव विक्रम मिस्री** की नेपाल यात्रा पर रविवार को असर पड़ा जब नेपाल ने **भारत और चीन** दोनों के सामने "**चिंता**" जताई कि अगला **कैलाश मानसरोवर यात्रा** सत्र **कालापानी-लिम्पियाधुरा-लिपुलेख क्षेत्र** से होगा।

• In response to Kathmandu's remarks, the **Ministry of External Affairs (MEA)** said that **Nepal's claims on the Lipulekh Pass** are not based on "**historical facts**".

**विदेश मंत्रालय (MEA)** ने काठमांडू के बयान पर प्रतिक्रिया देते हुए कहा कि **लिपुलेख दर्रे** पर नेपाल के दावे "**ऐतिहासिक तथ्यों**" पर आधारित नहीं हैं।



- The Ministry had announced on April 30 the next round of **Kailash Yatra** would take place in coordination with the **Government of the People's Republic of China** in **June-August**.  
मंत्रालय ने 30 अप्रैल को घोषणा की थी कि अगला **कैलाश यात्रा** सत्र **जून-अगस्त** में **चीन सरकार** के साथ समन्वय में आयोजित होगा।
- In an announcement, Nepal's **Ministry of Foreign Affairs (MoFA)** said, "The **Government of Nepal is completely clear and steadfast in the fact that **Limpiyadhura, Lipulek and Kalapani** east of the **Mahakali river** are integral parts of Nepal since the **Treaty of Sugauli of 1816.**"  
नेपाल के **विदेश मंत्रालय (MoFA)** ने कहा, "नेपाल सरकार इस बात पर पूरी तरह स्पष्ट और दृढ़ है कि **लिम्पियाधुरा, लिपुलेख और कालापानी**, जो **महाकाली नदी** के पूर्व में हैं, **1816 की सुगौली संधि** के बाद से नेपाल के अभिन्न हिस्से हैं।"**
- "**Lipulekh Pass** has been a long-standing route for the **Kailash Manasarovar Yatra** since **1954** and the pilgrimage through this route has been going on for decades.  
"लिपुलेख दर्रा **1954** से **कैलाश मानसरोवर यात्रा** का एक पुराना मार्ग रहा है और इस मार्ग से यात्रा दशकों से जारी है।
- "**India remains open to a constructive interaction with Nepal** on all issues in the bilateral relationship, including on resolving agreed outstanding **boundary issues** through dialogue and diplomacy," Mr. Jaiswal posted on **X** in response to media queries on claims made by **Kathmandu**.  
"भारत नेपाल के साथ सभी द्विपक्षीय मुद्दों पर रचनात्मक बातचीत के लिए खुला है, जिसमें सहमति से लंबित **सीमा विवादों** को संवाद और कूटनीति के माध्यम से सुलझाना भी शामिल है," श्री जायसवाल ने **X** पर **काठमांडू** के दावों पर प्रतिक्रिया देते हुए कहा।

## Territorial Disputes Between India and Nepal

- India and Nepal share a long **open international border of about 1,850 km**, which is one of the most unique borders in the world due to **free movement of people and goods**.
- Nepal shares its boundary with five Indian states namely **Uttarakhand, Uttar Pradesh, Bihar, West Bengal, and Sikkim**.
- Nearly **98% of the boundary is well demarcated**, but certain areas remain disputed due to **historical treaties, river course changes, and differing interpretations of geography**.
  - The two major disputed regions are **Kalapani (western sector)** and **Susta (eastern sector)**.

## Treaty of Sugauli (1816)

- The **Treaty of Sugauli (1816)** was signed between the **East India Company and the Kingdom of Nepal** after the **Anglo-Nepalese War**.
- It defined the boundary between India and Nepal.
- According to the treaty, the **River Kali (Mahakali)** was declared as the **western boundary of Nepal**.
- However, the treaty did **not clearly define the exact origin of the Kali River**, which later became the root cause of the **Kalapani dispute**.



## Kalapani Dispute

- Kalapani is a **triangular region of about 35 square kilometers** located at the **India-Nepal-China tri-junction**.
- It lies in the **Pithoragarh district of Uttarakhand (India)** and is claimed by Nepal as part of its **Darchula district**.
- The region is situated at a high altitude of around **20,000 feet**, close to the **Lipu Lekh Pass**, which is an important route to **Kailash Mansarovar**.

### Core Issue of Dispute

- The dispute arises due to **different interpretations of the origin of the River Kali (Mahakali)**.
- **India's Position** states that the Kali River originates near **Lipu Lekh Pass**.
- **Nepal's Position** claims that the river originates from **Limpiyadhura**, which lies northwest of Lipu Lekh.
- Based on this interpretation, Nepal claims a larger territory including **Kalapani, Lipulekh, and Limpiyadhura**.

### Strategic Importance of Kalapani

- Kalapani is of high **strategic significance for India** due to its proximity to the **Line of Actual Control (LAC) with China**.
- It serves as a **military observation point**, especially since the **1962 India-China War**.
- The area is currently **administered by India** and guarded by the **Indo-Tibetan Border Police (ITBP)**.
- It is also an important route for the **Kailash Mansarovar Yatra**, enhancing its religious and geopolitical importance.

### Recent Developments (2019–2026)

- In **2019**, India released a new political map after the **reorganization of Jammu and Kashmir**, which included Kalapani within Indian territory.
- This triggered strong reactions in Nepal.
- In **2020**, Nepal issued a **new official map** through a **constitutional amendment**, incorporating **Kalapani, Lipulekh, and Limpiyadhura** within its borders.
- Although the ground situation remained unchanged, this led to **strained diplomatic relations**.
- Diplomatic dialogue mechanisms such as the **Joint Commission and Foreign Secretary-level talks** continue to address the issue.

## Susta Dispute

- The **Susta region** lies along the **Gandak River (called Narayani in Nepal)** near the **India-Nepal border in Bihar**.



- It is considered part of **Champaran district of Bihar** but is claimed by Nepal.

## Core Issue of Dispute

- The dispute is caused by the **changing course of the Gandak River**, which serves as a natural boundary.
- At the time of the **Treaty of Sugauli (1816)**, Susta was located on the **right bank of the river**, placing it within Nepal.
- Over time, due to **river shifting (fluvial geomorphology)**, the river changed its course.
- As a result, Susta is now located on the **left bank**, bringing it under Indian control.

<b>GS Paper II: Polity</b>		<b>04 May 2026</b>
<b>TOPICS COVERED</b>		
<b>04Ma</b>	<b>Parties set for verdict; EC vows transparency</b> पार्टियां फैसले के लिए तैयार; EC पारदर्शिता का वादा करता है	
<b>04Ma</b>	<b>Tackling takedowns</b> टेकडाउन से निपटना	

# Parties set for verdict; EC vows transparency

Votes for five bitterly contested Assembly polls and seven bye-elections to be counted today

In Assam, Congress-led front hopes to prevent BJP-led NDA coalition from scoring a hat-trick

Today's verdict will reveal to what extent T.N.'s political landscape is disrupted by Vijay's TVK

**GS II: Polity**  
The Hindu Bureau  
NEW DELHI

The Election Commission on Sunday said it would uphold the "highest standards of transparency, security and efficiency" when votes polled in the elections to the Assemblies of Assam, Kerala, Tamil Nadu, West Bengal, and Puducherry and the bypolls in seven Assembly constituencies in five States are counted on Monday.

For West Bengal, the EC had deployed 165 additional counting observers and 77 police observers to conduct "a secure, peaceful, intimidation-free, and transparent environment". Exuding confidence, the political parties and fronts are watching the counting preparations closely.

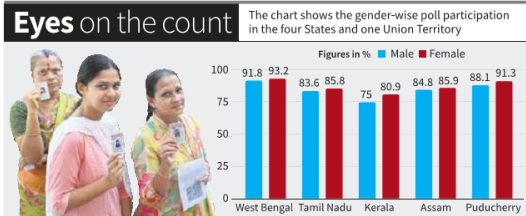
In Assam, the Congress-led front of six parties

hopes to shed the Opposition tag by preventing the BJP-led National Democratic Alliance (NDA) from scoring a hat-trick of wins.

Both the alliances are confident about bagging at least 64 seats, the majority mark in the 126-member Assembly. While the Chief Minister Himanta Biswa Sarma-helmed BJP has predicted close to 100 seats for the NDA, the Gaurav Gogoi-steered Congress is confident of a similar number for the Asom Sommlito Morcha to return to power after 10 years.

With just hours left for the counting of votes polled in the April 9 election, Kerala's voter turnout was updated provisionally to 79.7% on Sunday as election officials factored in the 20,028 postal ballots of service voters polled till May 1.

The leadership of all three fronts were confident about the results.



With exit polls hinting at a United Democratic Front (UDF) comeback, the Congress-led Opposition is already in a celebratory mood. Meanwhile, CPI(M) State secretary M.V. Govindan was confident that the Left Democratic Front (LDF) would return for a straight third term. The BJP-led National Democratic Alliance (NDA) is pinning its hopes on a handful of constituencies, such as Nedom, where it had fielded

its State president, Rajeev Chandrasekhar.

In West Bengal, after a bitter contest, the votes polled in 293 Assembly constituencies will be counted on Monday, while that of Falta Assembly seat in South 24 Parganas will be counted on May 21 after repolling on account of electoral malpractices.

The Trinamool Congress led by Chief Minister Mamata Banerjee is seeking to return to power for

the fourth consecutive term, while the BJP, the principal Opposition party, is trying to defeat the Trinamool over the promise of "paribartan [change]".

The Communist Party of India (Marxist)-led Left Front, which had administered the State for 34 years till 2011, had allied with the Indian Secular Front and contested the Assembly polls. The Congress also fielded candidates in all

the 294 seats, after a gap of 15 years.

**All eyes on TVK**

A record number of 4,87,98,833 voters, constituting 85.1% of the electorate in Tamil Nadu, will reveal to what extent the political landscape of the State, dominated for nearly half-a-century by the DMK and its offshoot AIADMK, is disrupted by Kollywood superstar C. Joseph Vijay's Tamilaga Vettri Kazhagam (TVK) in its debut Assembly election.

Also in test will be the performance of the Naam Tamilar Katchi (NTK), a recognised State political party, headed by film director Seeman, who has fielded candidates in all 234 constituencies, giving nearly 50% representation to women and one transperson.

The ruling DMK steered by Chief Minister M.K. Sta-

lin is seeking to set a record by retaining power, a feat last achieved by the party in 1971.

In Puducherry, the fate of 294 candidates, including AINRC founder and Chief Minister N. Rangasamy, who were in fray to elect the 16th Assembly, will be known on Monday as election officials gear up for counting of votes in centres spread across all the four regions of the Union Territory.

Also, the results of the bye-elections to Umreth in Gujarat, Bagalkot and Davanagere South in Karnataka, Rahrui and Baramati in Nagaland and Dharmanganar in Tripura will be announced on Monday. (With inputs from Tamil Nadu, Puducherry, Assam, Kerala and West Bengal)

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## 04Ma. Parties set for verdict; EC vows transparency

पार्टियां फैसले के लिए तैयार; EC पारदर्शिता का वादा करता है

- For West Bengal, the EC had deployed 165 additional counting observers to assist counting observers and 77 police observers to conduct "a secure, peaceful, intimidation-free, and transparent environment".



पश्चिम बंगाल के लिए, EC ने 165 अतिरिक्त काउंटिंग ऑब्जर्वर और 77 पुलिस ऑब्जर्वर तैनात किए ताकि सुरक्षित, शांतिपूर्ण, भयमुक्त और पारदर्शी माहौल सुनिश्चित किया जा सके।

- In West Bengal, after a bitter contest, the votes polled in 293 Assembly constituencies will be counted on Monday, while that of **Falta Assembly seat in South 24 Parganas will be counted on May 21 after repolling on account of electoral malpractices.**

GS II: Polity

## Tackling takedowns

Online censorship is a threat to the fundamental right to free expression

**T**he Union government's enthusiastic misuse of its spurious powers to censor lawful speech online is an alarming and exponentially growing threat to India's democracy. With amendments to the IT Rules, 2021 – which are themselves on shaky constitutional ground – the government has successfully pressured Meta and X to take down content within three-hour timelines that leave little time to push back, lest they lose “safe harbour” protections and be dragged into court or, worse, have their employees face personal criminal liability. Under the cover of fighting AI-generated content, all speech is being subjected to a despotic regime where the state can silence speech at will, destroying the promise of the Internet, which has emerged as an important alternative voice to express everyday concerns. Visceral, hard-hitting expressions of independent voices are an integral part of a society led by free ideals and representative democracy. Weaponising Sections 69A and 79(3)(b) of the IT Act, 2000 to take down such content, and accounts wholesale, distorts the public conversation in a way that benefits the ruling party, with scant regard for the freedoms of audiences and the livelihoods of creators. Often, entire accounts of the Opposition are deleted. Since this infrastructure of censorship has been built brick by brick without any moral compunctions on the path down which they lead, takedowns of independent media outlets and critical commentators have grown. Some have been reversed, at the cost of revealing their identity. The government continues to enjoy these powers under a veil of secrecy, publishing no meaningful data on how its hold on online discourse has tightened.

By opening up the so-called Sahyog portal to police officials around the country, requests under Section 79(3)(b) have been supercharged as a censorial rubber stamp that the IT Act simply does not give them. The clear Supreme Court precedent outlining what “actual knowledge” of illegality online constitutes for takedown orders has been reduced to a mockery. The Karnataka High Court has even brushed aside binding Court precedent under *Shreya Singhal vs Union of India*, even as the government has not dared to formalise the powers that it is exercising by passing a law in Parliament. Social media platforms have failed miserably in acting as a check in this ongoing rampage for power over online speech and have instead chosen the peace of mind that comes with automatically processing takedown notices. X continues to resist the Sahyog portal, but faces pressure from proceedings in the Karnataka and Delhi High Courts. The political elite must ponder the consequences of its campaign against online speech. Opposition-ruled States have quickly leapt to leverage the Sahyog portal's powers. A future government run by today's Opposition will likely play by the same sordid rules.

पश्चिम बंगाल में कड़े मुकाबले के बाद 293 सीटों के वोट सोमवार को गिने जाएंगे, जबकि फाल्टा सीट (दक्षिण 24 परगना) के वोट 21 मई को दोबारा मतदान के बाद गिने जाएंगे।

- Also in test will be the performance of the **Naam Tamilar Katchi (NTK)**, a recognised State political party, headed by film director Seeman, who has fielded candidates in all 234 constituencies, giving nearly 50% representation to women and one transperson.

साथ ही नाम तमिलर काची (NTK) का प्रदर्शन भी परीक्षा में है, जिसके प्रमुख सीमान हैं, जिन्होंने 234 सीटों पर उम्मीदवार उतारे, जिनमें लगभग 50% महिलाएं और एक ट्रांसजेंडर शामिल हैं।

- The ruling DMK steered by Chief Minister M.K. Stalin is seeking to set a record by retaining power, a feat last achieved by the party in 1971.

मुख्यमंत्री एम.के. स्टालिन के नेतृत्व वाली DMK सत्ता बरकरार रखकर रिकॉर्ड बनाना चाहती है, जो उसने आखिरी बार 1971 में किया था।

- Also, the results of the byelections to Umreth in Gujarat, Bagalkot and Davanagere South in Karnataka, Rahuri and Baramati in Maharashtra, Koridang in Nagaland and Dharmanagar in Tripura will be announced on Monday.

साथ ही गुजरात (उमरेठ), कर्नाटक (बागलकोट, दावणगेरे साउथ), महाराष्ट्र (राहुरी, बारामती), नागालैंड (कोरिडांग) और त्रिपुरा (धर्मनगर) के उपचुनावों के नतीजे भी सोमवार को घोषित किए जाएंगे।

## 04Ma. Tackling takedowns

### टेकडाउन से निपटना

- With amendments to the **IT Rules, 2021** — which are themselves on **shaky constitutional ground** — the government has successfully pressured **Meta** and **X** to take down content within **three-hour timelines** that leave little time to push back, lest they lose “**safe harbour**” protections and be dragged into court or, worse, have their employees face **personal criminal liability**.

आईटी नियम, 2021 में संशोधनों के साथ — जो स्वयं संवैधानिक रूप से संदिग्ध आधार पर खड़े हैं — सरकार ने Meta और X पर तीन घंटे की समयसीमा के भीतर सामग्री हटाने का दबाव डाला है, जिससे विरोध करने का बहुत कम समय मिलता है, अन्यथा वे “सेफ हार्बर” सुरक्षा खो सकते हैं और अदालत में घसीटे जा सकते हैं या इससे भी



बुरा, उनके कर्मचारियों को व्यक्तिगत आपराधिक दायित्व का सामना करना पड़ सकता है।

- Under the cover of **fighting AI-generated content**, all **speech** is being subjected to a **despotic regime** where the state can **silence speech at will**, destroying the promise of the **Internet**, which has emerged as an important **alternative voice** to express everyday concerns.

AI-जनित सामग्री से लड़ने के नाम पर, सभी अभिव्यक्ति को एक निरंकुश व्यवस्था के अधीन किया जा रहा है, जहाँ राज्य मनमाने ढंग से अभिव्यक्ति को दबा सकता है, जिससे इंटरनेट का वह वादा नष्ट हो रहा है, जो दैनिक चिंताओं को व्यक्त करने के लिए एक महत्वपूर्ण वैकल्पिक आवाज के रूप में उभरा था।

- **Visceral, hard-hitting expressions of independent voices** are an integral part of a society led by **free ideals** and **representative democracy**.

स्वतंत्र आवाजों की भावनात्मक और प्रभावशाली अभिव्यक्तियाँ स्वतंत्र आदर्शों और प्रतिनिधिक लोकतंत्र द्वारा संचालित समाज का एक अभिन्न हिस्सा हैं।

- **Weaponising Sections 69A and 79(3)(b) of the IT Act, 2000** to take down such content, and accounts wholesale, distorts the **public conversation** in a way that benefits the **ruling party**, with scant regard for the freedoms of **audiences** and the livelihoods of **creators**.

आईटी अधिनियम, 2000 की धारा 69A और 79(3)(b) का उपयोग कर ऐसी सामग्री और खातों को हटाना सार्वजनिक संवाद को इस प्रकार विकृत करता है कि यह सत्तारूढ़ दल के पक्ष में जाता है, जबकि दर्शकों की स्वतंत्रता और निर्माताओं की आजीविका की अनदेखी होती है।

- Since this infrastructure of  **censorship** has been built brick by brick without any **moral compunctions** on the path down which they lead, takedowns of **independent media outlets** and **critical commentators** have grown.

चूंकि सेंसरशिप का यह ढांचा बिना किसी नैतिक संकोच के धीरे-धीरे बनाया गया है, इसलिए स्वतंत्र मीडिया संस्थानों और आलोचनात्मक टिप्पणीकारों को हटाने की घटनाएँ बढ़ गई हैं।

- By opening up the so-called **Sahyog portal to police officials** around the country, requests under **Section 79(3)(b)** have been supercharged as a **censorial rubber stamp** that the **IT Act** simply does not give them.

देशभर के पुलिस अधिकारियों के लिए तथाकथित सहयोग पोर्टल खोलकर, धारा 79(3)(b) के तहत अनुरोधों को एक सेंसरशिप के औपचारिक अनुमोदन में बदल दिया गया है, जबकि आईटी अधिनियम उन्हें यह अधिकार नहीं देता।

GS Paper II: Governance		04 May 2026
TOPICS COVERED		
04Ma	UPSC to convene panel on May 11 for shortlisting DGP candidates for Tamil Nadu तमिलनाडु के लिए DGP उम्मीदवारों की शॉर्टलिस्टिंग हेतु UPSC 11 मई को पैनल बुलाएगा	
04Ma	AICTE's Internship Portal sees 4.7 cr. student registrations in over 4 years एआईसीटीई का इंटरनशिप पोर्टल 4 वर्षों में 4.7 करोड़ छात्र पंजीकरण देखता है	
04Ma	AI and a gathering storm of unchecked power एआई और अनियंत्रित शक्ति का उभरता हुआ तूफान	
04Ma	A countdown to International Day of Yoga अंतर्राष्ट्रीय योग दिवस की उलटी गिनती	



# UPSC to convene panel on May 11 for shortlisting DGP candidates for Tamil Nadu

GS II: Governance

S. Vijay Kumar  
CHENNAI

The Union Public Service Commission (UPSC) has convened the Empanelment Committee Meeting (ECM) in Delhi on May 11 to shortlist the names of three qualifying officers fit for appointment as Director-General of Police/Head of the Police Force (DGP/HoPF) of the Tamil Nadu Police.

The next DGP/HoPF, expected to be appointed by the newly elected government in the second week of this month, would have a minimum tenure of two years irrespective of the date of superannuation as per the Supreme Court guidelines in the Prakash Singh case. The Chief Secretary and Home Secretary would represent Tamil Nadu in the ECM which was deferred on two earlier occasions.

On February 12, the Supreme Court directed the State government and the UPSC to complete the process of appointing a regular DGP/HoPF within three weeks.



The next DGP/HoPF is expected to be appointed by the newly elected government in the second week of this month.

Soon after the ECM, a panel comprising the names of three DGP-rank officers would be communicated to the State government for choosing one officer to the top post. Among the officers in the DGP rank (Level 16 Scale of Pay), Seema Agarwal belonging to the 1990 batch tops the list. However, she is due to retire from service next month. Though the minimum residual service for an officer to be in the zone of consideration is six months or more from the date of occurrence of vacancy of the post of DGP/HoPF, which is August 30, 2025, in this case, the Su-

preme Court had in a subsequent order said the extended term beyond the date of superannuation should be a reasonable period.

"We say so as it has been brought to our notice that some of the States have adopted a practice to appoint the DGP on the last date of retirement as a consequence of which the person continues for two years after his/her date of superannuation. Such a practice will not be in conformity with the spirit of the direction," the order said, adding that the UPSC should empanel, as far as possible, officers who got clear two years of service.

Apart from Ms. Agarwal, others in contention include Rajeev Kumar, the present DGP/HoPF Sandeep Rai Rathore, who was appointed by the Election Commission of India (EC) and already in the apex scale (Level 17 pay matrix), K. Vanni Perumal, Mahesh Kumar Aggarwal, and G. Venkatraman (who held the post of DGP in-charge till he was shifted by the EC).

## 04Ma. UPSC to convene panel on May 11 for shortlisting DGP candidates for Tamil Nadu

तमिलनाडु के लिए DGP उम्मीदवारों की शॉर्टलिस्टिंग हेतु UPSC 11 मई को पैनल बुलाएगा

• The **Union Public Service Commission (UPSC)** has convened the **Empanelment Committee Meeting (ECM)** in Delhi on May 11 to shortlist the names of three qualifying officers fit for appointment as **Director-General of Police/Head of the Police Force (DGP/HoPF)** of the Tamil Nadu Police.

संघ लोक सेवा आयोग (UPSC) ने 11 मई को दिल्ली में एम्पैनलमेंट कमेटी मीटिंग (ECM) बुलाई है ताकि तमिलनाडु पुलिस के पुलिस महानिदेशक/पुलिस बल प्रमुख (DGP/HoPF) के रूप में नियुक्ति के लिए तीन योग्य अधिकारियों के नाम शॉर्टलिस्ट किए जा सकें।

• The next **DGP/HoPF**, expected to be appointed by the newly elected government in the second week of this month, would have a minimum tenure of two years irrespective of the date of superannuation as per the **Supreme Court guidelines in the Prakash Singh case**.

अगले DGP/HoPF, जिनकी नियुक्ति इस महीने के दूसरे सप्ताह में नई सरकार द्वारा होने की उम्मीद है, को प्रकाश सिंह मामले में सुप्रीम कोर्ट के दिशानिर्देशों के अनुसार सेवानिवृत्ति की तारीख के बावजूद कम से कम दो साल का कार्यकाल मिलेगा।

- The **Chief Secretary and Home Secretary** would represent Tamil Nadu in the ECM which was deferred on two earlier occasions.

मुख्य सचिव और गृह सचिव ECM में तमिलनाडु का प्रतिनिधित्व करेंगे, जिसे पहले दो बार स्थगित किया गया था।

- On February 12, the **Supreme Court** directed the State government and the UPSC to complete the process of appointing a regular **DGP/HoPF** within three weeks.

12 फरवरी को सुप्रीम कोर्ट ने राज्य सरकार और UPSC को नियमित DGP/HoPF की नियुक्ति की प्रक्रिया तीन सप्ताह के भीतर पूरी करने का निर्देश दिया था।

- Among the officers in the **DGP rank (Level 16 Scale of Pay)**, **Seema Agarwal** belonging to the 1990 batch tops the list.

DGP रैंक (लेवल 16 वेतनमान) के अधिकारियों में सीमा अग्रवाल (1990 बैच) सूची में शीर्ष पर हैं।

- However, she is due to retire from service next month.

हालांकि, वह अगले महीने सेवा से सेवानिवृत्त होने वाली हैं।

- Though the **minimum residual service for an officer to be in the zone of consideration is six months or more from the date of occurrence of vacancy of the post of DGP/HoPF**, which is August 30, 2025, in this case, the **Supreme Court** had in a subsequent order said the extended term beyond the date of superannuation should be a reasonable period.

हालांकि किसी अधिकारी के विचार क्षेत्र में आने के लिए न्यूनतम शेष सेवा छह महीने या अधिक होनी चाहिए,



जो 30 अगस्त 2025 से लागू होती है, लेकिन इस मामले में सुप्रीम कोर्ट ने कहा कि सेवानिवृत्ति के बाद बढ़ाई गई अवधि उचित समय होनी चाहिए।

- “We say so as it has been brought to our notice that some of the States have adopted a practice to appoint the DGP on the last date of retirement as a consequence of which the person continues for two years after his/her date of superannuation.  
“हम ऐसा इसलिए कह रहे हैं क्योंकि हमारे संज्ञान में आया है कि कुछ राज्यों ने सेवानिवृत्ति के अंतिम दिन DGP नियुक्त करने की प्रथा अपनाई है, जिससे व्यक्ति सेवानिवृत्ति के बाद दो साल तक पद पर बना रहता है।
- Such a practice will not be in conformity with the spirit of the direction,” the order said, adding that the UPSC should empanel, as far as possible, officers who got clear two years of service. ऐसी प्रथा निर्देश की भावना के अनुरूप नहीं होगी,” आदेश में कहा गया, और जोड़ा गया कि UPSC को जहां

## AICTE's Internship Portal sees 4.7 cr. student registrations in over 4 years

GS II: Governance: Education

**Maitri Porecha**  
NEW DELHI

The National Internship Portal run by the Ministry of Education's All India Council of Technical Education (AICTE) has recorded over 4.7 crore student registrations in four-and-a-half years, AICTE's Chief Coordinating Officer (CCO) Buddha Chandrasekhar said.

Mr. Chandrasekhar told *The Hindu* that of the over 4.7 crore registered students, AICTE had been able to verify the credentials of over 2.9 crore. “We have a vetting process in place to ensure those students who have registered for internships are attached to a college or an academic institution,” he said.

Over 79.57 lakh intern-

तक संभव हो, पूरे दो साल की सेवा वाले अधिकारियों को पैनल में शामिल करना चाहिए।



The scheme is aimed at bridging the gap between theory and workplace reality.

ship opportunities have been offered by the portal, and more than 32.78 lakh students have completed their internships, official AICTE data say. “We have tied up with 81,483 companies and signed formal MoUs with 12,077 colleges,” Mr. Chandrasekhar added.

Asked if these internships were converting into employment, Mr. Chandrasekhar said that while AICTE offers internships, employment does not come under its purview. “We make students employable, but giving employment is not under our purview. We did start asking students if internships translated into jobs; however, we note that once the internship is over, students' contact with the college is drastically reduced. So, we have limited data on the students' employability trajectory. We are trying to collect that data,” the CCO said.

The initiative, operating under the National Educational Alliance for Technology and the National Educational Technology Forum, has bridged the

gap between academic theory and workplace reality, said the official.

“AICTE is running the portal as per the mandate of National Education Policy (NEP), 2020, building a 360-degree loop where industry feedback is taken in for curriculum design,” Mr. Chandrasekhar said.

“As a result, we are attempting to turn students from job-seekers into innovators.”

According to him, AICTE data revealed a shift in India's skilling landscape, with the portal expanding to students in rural and semi-urban areas who previously lacked access to Tier-1 corporate exposure. The platform has integrated employers ranging from global tech companies to government institutions.

### 04Ma. AICTE's Internship Portal sees 4.7 cr. student registrations in over 4 years

एआईसीटीई का इंटरनशिप पोर्टल 4 वर्षों में 4.7 करोड़ छात्र पंजीकरण देखता है

- AICTE's Internship Portal sees 4.7 cr. student registrations in over 4 years. एआईसीटीई का इंटरनशिप पोर्टल 4 वर्षों में 4.7 करोड़ छात्र पंजीकरण देखता है।
- The National Internship Portal run by the Ministry of Education's All India Council of Technical Education (AICTE) has recorded over 4.7 crore student registrations in four-and-a-half years, AICTE's Chief Coordinating Officer (CCO) Buddha Chandrasekhar said.



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

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

CONTACT: 9971932488



शिक्षा मंत्रालय के अखिल भारतीय तकनीकी शिक्षा परिषद (AICTE) द्वारा संचालित नेशनल इंटरनशिप पोर्टल ने साढ़े चार वर्षों में 4.7 करोड़ से अधिक छात्र पंजीकरण दर्ज किए हैं, यह जानकारी एआईसीटीई के मुख्य समन्वय अधिकारी (CCO) बुद्ध चंद्रशेखर ने दी।

- Mr. Chandrasekhar told The Hindu that of the over 4.7 crore registered students, AICTE had been able to verify the credentials of over 2.9 crore.  
श्री चंद्रशेखर ने द हिंदू को बताया कि 4.7 करोड़ से अधिक पंजीकृत छात्रों में से एआईसीटीई 2.9 करोड़ से अधिक के प्रमाणपत्रों का सत्यापन करने में सक्षम रहा है।
- Over 79.57 lakh internship opportunities have been offered by the portal, and more than 32.78 lakh students have completed their internships, official AICTE data say.  
आधिकारिक एआईसीटीई आंकड़ों के अनुसार, पोर्टल द्वारा 79.57 लाख से अधिक इंटरनशिप अवसर प्रदान किए गए हैं, और 32.78 लाख से अधिक छात्रों ने अपनी इंटरनशिप पूरी की है।
- The initiative, operating under the National Educational Alliance for Technology and the National Educational Technology Forum, has bridged the gap between academic theory and workplace reality, said the official.  
अधिकारी ने कहा कि यह पहल, जो नेशनल एजुकेशनल एलायंस फॉर टेक्नोलॉजी और नेशनल एजुकेशनल टेक्नोलॉजी फोरम के तहत संचालित होती है, ने शैक्षणिक सिद्धांत और कार्यस्थल की वास्तविकता के बीच की खाई को पाट दिया है।
- "AICTE is running the portal as per the mandate of National Education Policy (NEP), 2020, building a 360-degree loop where industry feedback is taken in for curriculum design," Mr. Chandrasekhar said.  
श्री चंद्रशेखर ने कहा, "एआईसीटीई इस पोर्टल को राष्ट्रीय शिक्षा नीति (NEP), 2020 के निर्देशानुसार चला रहा है, जिसमें पाठ्यक्रम डिजाइन के लिए उद्योग की प्रतिक्रिया को शामिल करते हुए 360-डिग्री प्रणाली बनाई जा रही है।"



# AI and a gathering storm of unchecked power

GS II: Governance

**I**n April 19, the American tech-giant Palantir tweeted a 22-point summary of its CEO Alexander C. Karp's book, *The Technological Republic* (co-authored with Nicholas Zamiska). In it, the company decries corporate inclusivity, the equality of cultures, and, more worryingly, the limits of soft power. "The ability of free and democratic societies to prevail requires something more than moral appeal," it says. "It requires hard power, and hard power in this century will be built on software." Palantir then proceeds to point out that the question is no long whether Artificial Intelligence (AI) will be used to build weapons, but who it will build them for and for what purpose.

It is difficult to read Palantir's programme and not feel a foreboding sense of anxiety about where AI is taking us. It has after all crept into every stream of life, often with devastating consequences. With every passing day, it is evident that these companies will shape how people interact with each other, how the economies of the world develop, and even how nations wage wars.

Indeed, Palantir's tweet is no corporate dogma. Among the more striking influences of AI in recent times is the news of its use in the United States' attacks in Iran. Reports have shown us that the company's AI-powered defence platform, the Maven Smart System, had a substantial role to play in selecting the targets, including the primary school in Minab, Iran, where American forces killed between 175 and 180 people, most of them girls between the ages of seven and 12.

## What is eerily disquieting

The speculative dystopias from a few years ago are now with us in the present. No doubt, we have reached this moment due to an accretion of choices that we have made over many years. But so eerily disquieting is the lack of regulation over its use and growth that AI's potential appears to concern even the savants of today's technological world, Sam Altman of OpenAI among them, more than it does the state.

In a 13-page document released on its website, titled "Industrial Policy for the Intelligence Age: Ideas to Keep People First", OpenAI claims that the technology it is building is coming at a pace far faster than society is prepared to handle. The paper argues that in normal times, markets can work on their own and competition can lead to better living standards and expanded opportunity.

"But the magnitude of the changes we expect and the potential risks we foresee demand even more," it says. "We are entering a new phase of economic and social organization that will fundamentally reshape work, knowledge, and production. It requires not just incremental policy responses but ambitious policy ideas for tomorrow."



**Subrith Parthasarathy**

Advocate practising in the Madras High Court

To that end, governments, according to Open AI, should implement common sense regulation, which, far from entrenching incumbents, would "help protect children, mitigate national security risks, and encourage innovation".

But the absence of regulation could not be more glaring. Open AI's rival, Anthropic, which operates Claude, has a resident philosopher and ethicist, Amanda Askell, supposedly doing the job for it. Ms. Askell has written up what is now described as "Claude's Constitution" – known to the corporation's employees as the "soul doc". It purports to provide the large language model (LLM) a set of moral precepts.

In this case, it seeks to ensure that Claude is "broadly safe", "broadly ethical", "compliant with Anthropic's guidelines", and "genuinely helpful".

For example, the safety standards it prescribes demands that Claude should never, among other things, provide uplift to those seeking to create biological, chemical, nuclear, or radiological weapons with the potential for mass casualties; provide uplift to attacks on critical infrastructure; engage in an attempt to kill the vast majority of humanity as a whole; and generate child sexual abuse material.

But, ultimately, these efforts must be viewed with the greatest scepticism. They are the LLMs' way of telling us to thank them for keeping the world a safe place. Even if we treat them at face value, consider what happens when Claude chooses to override its constitution? Or if one of Anthropic's competitors, say, Palantir, feels no urge to control how its LLMs grow?

## From warfare to surveillance

Consider Anthropic's latest model, Claude Mythos, which has already raised a raft of ethical concerns over its hacking skills, outperforming humans. Thus far, the company has not released the new version to the public, because of the serious threats it poses to cybersecurity. In Palantir's case, not only has its manifesto and its use in recent warfare been alarming, but so too has its role in America's surveillance efforts. The corporation has reportedly built software that the U.S. Immigration and Customs Enforcement (ICE) uses to profile and track individuals. While some may argue that the software's surveillance efforts have been used to enhance public good in the past – notably in contact tracing efforts in some countries during the COVID-19 pandemic – it has increasingly become a tool for brazen surveillance in breach of civil liberties.

Palantir's software is also in use across States in the U.S. where predictive policing has become the norm. Multiple investigations have shown the problems inherent in the technology's use – its profiling is racially charged and biased and based on information that is collated with unabashed disregard for privacy.

Beyond issues of surveillance, privacy and

warfare, there are other concerns too. These include the impact that AI has had and will continue to have on jobs, on our climate, and on our creativity, will, and endeavour, ultimately, impinging on what it means to be a human being. There are also worries over how LLMs are trained on man-made writing, by using novels, poems and essays as data points. Whether this constitutes fair use of copyright remains a point of contention.

But the idea that these corporations are to be trusted to do the right thing shifts the burden of public accountability otherwise fundamental to constitutional democracies onto private entities. By any account, this portends dangerous consequences.

Across the world there appears to be a sense not too distinct from how we have reacted to the various arrangements of affairs in the neo-liberal world order, that "there is no alternative", a maxim once made famous by Margaret Thatcher. This allowed Thatcher, as the writer Cory Doctorow has argued, to "paint her ideological choices as historical inevitabilities".

## The rest of the world must react

But there are alternatives. That the U.S. and the West are unwilling to regulate AI must not mean that the rest of the world should stay silent. Thus far, India has adopted a relatively soft regulatory regime. Its Governance Guidelines, released in November 2025, recognises many of the problems characteristic to the technology, but stops short of recommending legislative intervention.

The cue is in what Brazil's President Luiz Inácio Lula da Silva said at the AI Impact Summit held in February 2026 in New Delhi. Big tech needs regulation, with the "imperative of safeguarding human rights in the digital sphere, promoting information integrity, and protecting our countries' creative industries".

As he correctly recognised, the companies' business model depends on exploitation of personal data and the erosion of privacy. To that end, allowing technological expansion to go unchecked would only deepen inequalities and concentrate power in a few nations and corporations.

At a time like this, when international law is flailing, to be cheery about global cooperation may seem desperate. But frameworks exist, the European Union's Artificial Intelligence Act, Brazil's proposals, and even India's own guidelines, among them. What we must do is compel our leaders to show the political will to make these binding and multilateral.

The problem is that most of us have not so much as started asking ourselves what a just future with AI would look like. Instead, we seem to have accepted that there is no alternative. In the process, we have all fallen into the Thatcherite trap.

Corporate control of AI raises urgent questions about power, accountability and a weakening of democratic safeguards

## 04Ma. AI and a gathering storm of unchecked power

### एआई और अनियंत्रित शक्ति का उभरता हुआ तूफान

#### AI, power, and global order / एआई, शक्ति और वैश्विक व्यवस्था

- "It requires **hard power**, and **hard power in this century will be built on software.**"  
"इसके लिए **हार्ड पावर** की आवश्यकता है, और इस शताब्दी में **हार्ड पावर** का निर्माण **सॉफ्टवेयर** पर आधारित होगा।"
- Reports have shown us that the **company's AI-powered defence platform, the Maven Smart System, had a substantial role to play in selecting the targets, including the primary school in Minab, Iran, where American forces killed between 175 and 180 people, most of them girls between the ages of seven and 12.**

रिपोर्टों से पता चला है कि कंपनी के **AI-संचालित रक्षा प्लेटफॉर्म, Maven Smart System**, ने **लक्ष्यों के चयन** में महत्वपूर्ण भूमिका निभाई, जिसमें **ईरान के मिनाब का एक प्राथमिक विद्यालय** भी शामिल था, जहाँ अमेरिकी बलों ने **175 से 180 लोगों** को मार दिया, जिनमें अधिकांश **7 से 12 वर्ष की लड़कियाँ** थीं।



- “We are entering a new phase of **economic and social organization** that will fundamentally reshape **work, knowledge, and production**.  
“हम आर्थिक और सामाजिक संगठन के एक नए चरण में प्रवेश कर रहे हैं, जो कार्य, ज्ञान, और उत्पादन को मौलिक रूप से बदल देगा।
- To that end, **governments**, according to **OpenAI**, should implement **common sense regulation**, which, far from entrenching incumbents, would “help protect **children**, mitigate **national security risks**, and encourage **innovation**”.  
इस उद्देश्य से, **OpenAI** के अनुसार, **सरकारों** को **व्यावहारिक नियमन** लागू करना चाहिए, जो वर्तमान संस्थाओं को मजबूत करने के बजाय **बच्चों की सुरक्षा, राष्ट्रीय सुरक्षा जोखिमों को कम करने, और नवाचार को प्रोत्साहित करने में सहायक** होगा।
- **Open AI's rival, Anthropic**, which operates **Claude**, has a resident **philosopher and ethicist, Amanda Askill**, supposedly doing the job for it.  
**OpenAI की प्रतिद्वंद्वी Anthropic**, जो **Claude** संचालित करती है, के पास एक स्थायी **दार्शनिक और नैतिक विशेषज्ञ, Amanda Askill**, हैं, जो कथित रूप से यह कार्य कर रही हैं।
- For example, the **safety standards** it prescribes demands that **Claude should never**, among other things, provide **uplift** to those seeking to create **biological, chemical, nuclear, or radiological weapons with the potential for mass casualties**; provide uplift to **attacks on critical infrastructure**; engage in an attempt to **kill the vast majority of humanity** as whole; and generate **child sexual abuse material**.  
उदाहरण के लिए, इसके द्वारा निर्धारित **सुरक्षा मानक** यह मांग करते हैं कि **Claude** कभी भी उन लोगों को सहायता न दे जो **जैविक, रासायनिक, परमाणु, या रेडियोलॉजिकल हथियारों** का निर्माण करना चाहते हैं, जिनसे **बड़े पैमाने पर हताहत** हो सकते हैं; **महत्वपूर्ण अवसंरचना पर हमलों** में सहायता न करे; **संपूर्ण मानवता के अधिकांश को मारने** के प्रयास में शामिल न हो; और **बाल यौन शोषण सामग्री** उत्पन्न न करे।
- Consider **Anthropic's latest model, Claude Mythos**, which has already raised a raft of **ethical concerns** over its **hacking skills**, outperforming **humans**.  
**Anthropic के नवीनतम मॉडल, Claude Mythos**, पर विचार करें, जिसने अपनी **हैकिंग क्षमताओं** के कारण, जो **मानवों से भी बेहतर** हैं, **कई नैतिक चिंताएँ** उत्पन्न की हैं।
- **Thus far, the company has not released the new version to the public, because of the serious threats it poses to cybersecurity**.  
अब तक, कंपनी ने इस नए संस्करण को **सार्वजनिक नहीं** किया है, क्योंकि यह **साइबर सुरक्षा** के लिए गंभीर खतरे उत्पन्न करता है।
- There are also worries over how **LLMs** are trained on **man-made writing**, by using **novels, poems and essays** as data points.  
यह चिंता भी है कि **LLMs** को **मानव-निर्मित लेखन** पर कैसे प्रशिक्षित किया जाता है, जिसमें **उपन्यास, कविताएँ, और निबंध** डेटा के रूप में उपयोग किए जाते हैं।
- Whether this constitutes **fair use of copyright** remains a point of **contention**.  
क्या यह **कॉपीराइट के उचित उपयोग** के अंतर्गत आता है, यह अभी भी **विवाद** का विषय बना हुआ है।
- But the idea that these **corporations** are to be trusted to do the **right thing** shifts the burden of **public accountability** otherwise fundamental to **constitutional democracies** onto **private entities**.  
लेकिन यह विचार कि इन **कंपनियों** पर **सही कार्य करने** के लिए भरोसा किया जाए, **सार्वजनिक उत्तरदायित्व** का वह भार, जो **संवैधानिक लोकतंत्रों** का मूल है, **निजी संस्थाओं** पर स्थानांतरित कर देता है।



# A countdown to International Day of Yoga

## GS II: Governance

At a time when the world is navigating conflict, uncertainty, and rising psychological strain, the idea of peace demands renewed attention. Traditionally approached through diplomacy and policy, peace is often framed as an external goal, negotiated across borders and institutions. Yet, despite these efforts, societies remain increasingly unsettled, suggesting that peace cannot be secured externally alone. It must also be cultivated within. Yoga facilitates this journey.

The global community recognised this potential when the United Nations General Assembly (UNGA) adopted a resolution in 2014, leading to the declaration of June 21 as the International Day of Yoga. The proposal itself was visionary, first articulated by Prime Minister Narendra Modi during his address to the 69th Session of the UNGA, where he described yoga as an invaluable gift of India's ancient tradition – one that embodies the unity of mind and body, thought and action. The first observance in 2015, under the theme “Yoga for Harmony and Peace,” reflected a shared aspiration to build more balanced and cohesive societies. This vision was further reinforced in 2018 with the theme “Yoga for Peace,” underlining the role of Yoga as a unifying force in an increasingly fragmented world.

Importantly, this emphasis has not been confined to individual years. Across successive International Day of Yoga observances, the ideas of balance, interconnectedness, and collective well-being have remained central. These themes are not merely symbolic – they represent a sustained global effort to position yoga as a practice that connects individuals across cultures, geographies, and ideologies, reinforcing peace as a shared and participatory process.

This growing global recognition was further strengthened in 2016, when yoga was inscribed on UNESCO's Representative List of



**Prataprao Jadhav**

Union Minister of State (IC) for Ayush and Minister of State for Health and Family Welfare

the Intangible Cultural Heritage of Humanity. While deeply rooted in India's civilisational ethos, Yoga today belongs to the world. Its universality lies in its simplicity – it requires no elaborate access, and transcends cultural boundaries.

It is in this spirit that the Morarji Desai National Institute of Yoga, Ministry of Ayush, Government of India organised the ‘Yoga Mahotsav 2026’ on May 2, at the Kanha Shanti Vanam.

### Bridging the gap

Yoga offers a way to bridge the gap between inner imbalance and external discord by strengthening the individual's capacity for awareness, balance, and restraint. Rooted in India's traditional knowledge systems, Yoga is not merely a physical routine but a discipline that harmonises the body, mind, and breath.

Through this integration, it enables individuals to respond to situations with clarity rather than impulse.

This distinction is critical. Much of the conflict witnessed today, whether in personal interactions or public discourse, does not arise solely from deep divisions but from the inability to regulate response. Yoga, through practices such as breath control and meditation, develops precisely this capacity. It creates space between stimulus and reaction – where reflection replaces reaction, and understanding tempers instinct. It is through this shift in individual behaviour that Yoga begins to shape peace at a broader, societal level. In a world reacting faster than it reflects, Yoga restores the discipline of pause.

In this context, Yoga has also emerged as one of India's most significant instruments of soft power. Unlike conventional forms of influence that rely on assertion, yoga operates through participation and shared experience. It creates moments of collective stillness in an otherwise fragmented world, fostering trust,

mutual respect, and a sense of global unity – values that are essential for lasting peace.

The relevance of Yoga becomes even more pronounced in the present global landscape. Rapid urbanisation, digital overstimulation, and shifting social dynamics have contributed to rising stress levels, shrinking attention spans, and increasingly reactive forms of communication. In such conditions, the absence of inner equilibrium often translates into external friction. Yoga addresses this challenge at its root. By encouraging mindfulness and emotional regulation, it equips individuals with the ability to manage stress and respond thoughtfully. When adopted widely, this shift in behaviour has the potential to influence collective outcomes, strengthening social cohesion and fostering more resilient communities.

The Ministry of Ayush has been committed to advancing this vision by integrating Yoga into public health, education, and community initiatives. The objective is not periodic participation, but sustained behavioural transformation that supports both individual well-being and societal harmony. Events like the ‘Yoga Mahotsav 2026’ are not merely commemorative – they are catalytic, bringing people together in a shared experience of awareness, balance, and collective intent. Peace, ultimately, is not a singular milestone but a continuous process, shaped by how individuals think, act, and engage with one another. Yoga, in its depth and universality, offers a practical means to nurture this process.

As the world moves toward the International Day of Yoga 2026, the message is both simple and profound: lasting peace will not be negotiated only across tables, but also cultivated within individuals. Yoga, in this sense, is not merely a practice – it is a quiet, enduring architecture of peace.

By encouraging mindfulness and emotional regulation, Yoga equips individuals with the ability to manage stress and respond thoughtfully



## 04Ma. A countdown to International Day of Yoga अंतर्राष्ट्रीय योग दिवस की उलटी गिनती

- The global community recognised this potential when the **United Nations General Assembly (UNGA)** adopted a **resolution in 2014**, leading to the declaration of **June 21** as the **International Day of Yoga**.  
वैश्विक समुदाय ने इस क्षमता को तब पहचाना जब संयुक्त राष्ट्र महासभा (UNGA) ने 2014 में एक प्रस्ताव पारित किया, जिसके परिणामस्वरूप 21 जून को अंतर्राष्ट्रीय योग दिवस घोषित किया गया।
- This growing **global recognition** was further strengthened in **2016**, when yoga was inscribed on **UNESCO's Representative List of the Intangible Cultural Heritage of Humanity**.  
यह बढ़ती हुई वैश्विक मान्यता 2016 में और सुदृढ़ हुई, जब योग को यूनेस्को की मानवता की अमूर्त सांस्कृतिक विरासत की प्रतिनिधि सूची में शामिल किया गया।
- In this context, **Yoga** has also emerged as one of **India's** most significant instruments of **soft power**.  
इस संदर्भ में, योग भारत के सबसे महत्वपूर्ण सॉफ्ट पावर साधनों में से एक के रूप में उभरा है।

GS Paper II: International Relations		04 May 2026
<b>TOPICS COVERED</b>		
04Ma	India sends Army team to Cambodia for joint exercise भारत ने संयुक्त अभ्यास के लिए कंबोडिया में सेना की टीम भेजी	
04Ma	Govt. on major diplomatic outreach in May सरकार मई में बड़े कूटनीतिक संपर्क अभियान पर	
04Ma	Rationalising Iran's nuclear capability	
04Ma	ईरान की परमाणु क्षमता का औचित्य निर्धारण	
04Ma	Israel approves fighter jet deal with the U.S. to boost aerial superiority इज़राइल ने हवाई श्रेष्ठता बढ़ाने के लिए अमेरिका के साथ लड़ाकू विमान सौदे को मंजूरी दी	
04Ma	Khalistan extremists declared a 'national security threat' by Canada कनाडा द्वारा खालिस्तानी उग्रवादियों को 'राष्ट्रीय सुरक्षा खतरा' घोषित किया गया	



# India sends Army team to Cambodia for joint exercise

GS II: IR

The Hindu Bureau

NEW DELHI

The Indian Army has dispatched a 120-member contingent for the second edition of the **India-Cambodia Joint Military Exercise CINBAX-II 2026**, scheduled from May 4 to 17 in Kampong Speu Province, Cambodia. The exercise will take place at the **Royal Cambodian Air Force Training Centre**.

According to the Defence Ministry, the exercise, conducted under the framework of the UN Charter's Chapter VII mandate, will focus on company-level joint operations in a sub-conventional environment.

The Indian contingent, primarily drawn from a battalion of the Maratha Light Infantry Regiment, will train alongside 160 personnel from the Royal Cambodian Army, it added. It also said the exercise will centre on counter-terrorism operations aligned with real-world UN peacekeeping scenarios.



The Indian contingent is mainly from a battalion of the Maratha Light Infantry Regiment. ANI

CINBAX-II aims to boost interoperability, coordination, and operational synergy between the two forces. It will also serve as a platform to exchange best practices and share operational experiences, particularly in semi-urban combat environments.

The exercise underscores the growing defence ties between India and Cambodia and is expected to deepen bilateral relations while enhancing joint capabilities to address regional and global security challenges.

## 04Ma. India sends Army team to Cambodia for joint exercise

भारत ने संयुक्त अभ्यास के लिए कंबोडिया में सेना की टीम भेजी

The **Indian Army** has dispatched a **120-member contingent** for the second edition of the **India-Cambodia Joint Military Exercise CINBAX-II 2026**, scheduled from **May 4 to 17** in **Kampong Speu Province, Cambodia**.

भारतीय सेना ने 120 सदस्यीय दल को भारत-कंबोडिया संयुक्त सैन्य अभ्यास CINBAX-II 2026 के दूसरे संस्करण के लिए भेजा है, जो 4 से 17 मई तक कंबोडिया के कम्पोंग स्प्यू प्रांत में आयोजित होगा।

The exercise will take place at the **Royal Cambodian Air Force Training Centre**.

यह अभ्यास **राँयल कंबोडियन एयर फोर्स ट्रेनिंग सेंटर** में आयोजित किया जाएगा।

According to the **Defence Ministry**, the exercise, conducted under the framework of the **UN Charter's Chapter VII mandate**, will focus on **company-level joint operations** in a **sub-conventional environment**.

रक्षा मंत्रालय के अनुसार, यह अभ्यास संयुक्त राष्ट्र चार्टर के अध्याय VII के तहत आयोजित किया जा रहा है और इसका ध्यान कंपनी स्तर के संयुक्त अभियानों पर होगा, जो गैर-पारंपरिक वातावरण में किए जाएंगे।

The **Indian contingent**, primarily drawn from a battalion of the **Maratha Light Infantry Regiment**, will train alongside **160 personnel** from the **Royal Cambodian Army**, it added.

भारतीय दल, जो मुख्य रूप से मराठा लाइट इन्फैंट्री रेजिमेंट की एक बटालियन से लिया गया है, **राँयल कंबोडियन आर्मी** के **160 सैनिकों** के साथ प्रशिक्षण करेगा।

- It also said the exercise will centre on **counter-terrorism operations** aligned with real-world **UN peacekeeping scenarios**.

इसमें यह भी कहा गया कि यह अभ्यास आतंकवाद-रोधी अभियानों पर केंद्रित होगा, जो वास्तविक संयुक्त राष्ट्र शांति मिशनों के अनुरूप हैं।

- CINBAX-II** aims to boost **interoperability, coordination, and operational synergy** between the two forces.

**CINBAX-II** का उद्देश्य दोनों सेनाओं के बीच इंटरऑपरेबिलिटी, समन्वय और संचालनात्मक तालमेल को बढ़ाना है।



# Rationalising Iran's nuclear capability

How does the NPT regulate nuclear programmes? Why is uncertainty about nuclear intent a problem? Why does Iran say its nuclear programme is peaceful? Why has the international community sanctioned the country? Can Iran's stance on nuclear weapons change?

EXPLAINER

EXPLAINER

Yasudexan Mukumth

**The story so far:**  
Under pressure from U.S. President Donald Trump to abandon its nuclear programme, Iran has "vowed" to protect its nuclear stockpile. At the same time, former supreme leader Ayatollah Ali Khamenei disapproved of the use of nuclear weapons on religious grounds. How does Iran reconcile the two positions?

**What does the NPT allow and restrict?**

The Treaty on the Non-Proliferation of Nuclear Weapons – NPT for short – discourages countries from developing nuclear weapons, but does not prevent them from developing the ability to make these weapons. This is ostensibly because some of the same technologies and processes are necessary in a civilian nuclear programme, such as generating nuclear power and making nuclear isotopes for medical use. But the NPT does not turn a blind eye altogether: it expects the civilian programme to include some safeguards that resist the ability to develop from becoming the possession of a nuclear weapon. Examples of such safeguards include closely monitoring the use of technologies like uranium enrichment and plutonium reprocessing.

This said, even these safeguards are focused on diversion, which is only one of the two pieces of the gap between ability and possession, the other being capability. That is, a country can have the capability to develop a nuclear weapon, but the NPT's safeguards have been designed to deter the diversion of that capability to military uses. Countries interested in helping tame the spread of nuclear weapons have enforced this fuzzy barrier using export controls and diplomacy, including sanctions. The International Atomic Energy Agency (IAEA) contributes as an independent watchdog that performs intrusive inspections.

**Why is not knowing a country's nuclear intent a problem?**

This is one way the world has kept itself from downsliding into nuclear catastrophe. It is a fragile setup because the regulatory regime decision focusing on weaponisation rather than capability has created important downsides. Perhaps foremost among them is the threshold state: a country that learns about and builds everything required to make a nuclear weapon but stops just short of building one. This country may also strategise its breakout – the rapid sequence of events from enriching weapons-grade fissile material to deploying a nuclear warhead. This way, the country does not draw sanctions, but the moment its policy changes, it can "breakout" quickly. North Korea was once an example of a threshold state – and now so is Iran.

Not knowing whether a country will actually build nuclear weapons, especially since it has the ability to do so, is also bad for the non-proliferation regime for a few reasons. When a country breaks out, the regime will be forced to respond very close to weaponisation, which may warrant drastic measures, which does not bode well to limit escalation. Second, a non-nuclear-capable country has to guess whether another country – perhaps a neighbour – intends to build nuclear



A child holds an Iranian flag through the window of a vehicle in northern Tehran, Iran, on May 1. AP

weapons. Figuring it out requires judgment, diplomacy, and acting in good faith, all of which are powerful but hard to enforce using external pressure. It also muddles international waters. For example, South Korea does not view Japan with suspicion but it may not extend the same courtesy to, say, Argentina.

Another consequence is the nuclear cascade: if Country A is a threshold state and is not on good terms with its neighbours, the neighbouring countries may find it necessary to arm themselves with nuclear weapons in case Country A decides to break out. This is why the world has clusters of nuclear-capable states: South Asia, West Asia, North America, and Eastern Europe.

**How close is Iran to a nuclear weapon?**

Iran joined the NPT in 1970 but has recently expressed doubts about its participation. It is also a threshold state with a breakout time widely understood to be in the order of a few weeks. It is also thought to possess around 500 kg of uranium enriched to 60%. According to *The New York Times*, in fact, Iran possesses 11 tonnes of uranium overall enriched anywhere from 2% to 60%. Nuclear power reactors require uranium enriched to significantly under 20%. Weapons-grade uranium requires 90%. The way enrichment works, the road from 60% to 90% is much shorter than getting to 60%. In other words, Iran is for all practical purposes a nuclear-capable state – yet it is not known to have developed a nuclear weapon.

Ayatollah Ali Khamenei spoke against using nuclear weapons, calling them "haram". Many have claimed that he issued a fatwa – a ruling based on Islamic law – against the nuclear bomb. Tehran has held that its stockpile and nuclear infrastructure are "peaceful" and

intended for civilian use. This is technically possible because uranium enriched to 20% or more can be transformed in a process called downblending to a lower enrichment and used for civilian purposes. The NPT also treats the use of nuclear technologies for scientific progress as every country's "inalienable right".

Iran's claims to that end were also politically credible as it abided by the 2015 Joint Comprehensive Plan of Action (JCPOA), a.k.a. the Iran deal, until Mr. Trump unilaterally exited it in 2018. In effect, Mr. Trump sought to back Iran into a corner, which backfired after Tehran took licence from Israel's aggression across West Asia to resume higher enrichment.

Despite the Joe Biden administration's attempts to restore parts of the deal, Iran progressively scaled back its commitments under the JCPOA. In Islamic jurisprudence, Iran has a valorous duty to defend its homeland against "Zionist" aggression – which includes defending its enrichment sites and, by appealing to its right to scientific progress, its nuclear stockpile as well.

**Why are the regulatory options limited?**

These reasons alone have not convinced the international community, however, much of which agrees Iran is a threshold state. The UN Security Council, the U.S., and the European Union have sanctioned Iran pre-2015 over Tehran's failure to declare uranium particles the IAEA found at three undeclared sites and the related past uranium processing activities, as required by its safeguards agreement with the IAEA.

Today, Iran's stockpile and the extent and sophistication of its nuclear infrastructure are believed to mean its breakout time could be short – yet the non-proliferation regime has limited

courses of action because Tehran is technically toying the line.

The U.S. and Israel have nonetheless repeatedly gone to war against Iran because they are nervous and want to eliminate even its status as a threshold state. This includes the ongoing conflict as well as the Twelve-Day War last year, and attempts over the years to assassinate Iranian nuclear scientists and mount covert attacks, such as the Stuxnet virus in the late 2000s.

**How did the Iran-Iraq war shape Iran's stance?**

In fact, the fatwa is also not necessarily binding, thanks to a policy called *Maslahat-e-Nizam*, meaning "expediency of the system". Specifically, in Shia Islam, a fatwa is not necessarily eternal but can be a ruling based on existing circumstances. If those circumstances change, so can the decision. Since the threats to Iran from Israel and the U.S. have been deemed existential of late – a point the U.S. has been happy to parrot as part of its brinkmanship – the Supreme Leader, currently Mojtaba Khamenei, could supersede his predecessor's diktat.

In the post-revolution era, Iran's leadership has been opposed to nuclear weapons on religious or ethical grounds because of the country's experiences during and after the Iran-Iraq war (1980-1988). In the early and mid-1980s, Iraq deployed chemical weapons against Iranian soldiers as well as civilians, killing tens of thousands. The Ayatollah Ruhollah Khomeini famously resisted retaliating in kind, appealing to his religion forbidding indiscriminate killing and securing a moral victory for his regime.

But Tehran revived its interest in the nuclear programme after officials argued that the international community, including the UN, had however failed to respond adequately to Iraq's use of chemical weapons.

THE GIST

Iran is a "threshold state", it has the capability to develop nuclear weapons and a short breakout time, but has not moved to possession.

The NPT allows civilian nuclear programmes but seeks to prevent diversion to military use, creating a gap between ability and weaponisation.

Iran maintains its programme is "peaceful" and within its rights, even as sanctions, uncertainty, and limited options define the global response.

## 04Ma. Rationalising Iran's nuclear capability

### ईरान की परमाणु क्षमता का औचित्य निर्धारण

#### Iran's nuclear dilemma / ईरान की परमाणु दुविधा

- Under pressure from U.S. President Donald Trump to abandon its nuclear programme, Iran has "vowed" to protect its nuclear stockpile.

अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प के दबाव में अपने परमाणु कार्यक्रम को छोड़ने के लिए, ईरान ने अपने परमाणु भंडार की रक्षा करने की "कसम" खाई है।

- At the same time, former supreme leader Ayatollah Ali Khamenei disapproved of the use of nuclear weapons on religious grounds.



साथ ही, पूर्व सर्वोच्च नेता अयातुल्ला अली खामेनेई ने धार्मिक आधारों पर परमाणु हथियारों के उपयोग का विरोध किया।

- How does Iran reconcile the two positions?  
ईरान इन दोनों स्थितियों को कैसे संतुलित करता है?

What does the NPT allow and restrict? / एनपीटी क्या अनुमति देता है और क्या प्रतिबंधित करता है?

- The **Treaty on the Non-Proliferation of Nuclear Weapons (NPT)** discourages countries from developing **nuclear weapons**, but does not prevent them from developing the **ability** to make these weapons.  
परमाणु हथियारों के अप्रसार संधि (NPT) देशों को परमाणु हथियारों के विकास से हतोत्साहित करती है, लेकिन उन्हें इन हथियारों को बनाने की क्षमता विकसित करने से नहीं रोकती।
- This is ostensibly because some of the same **technologies** and **processes** are necessary in a **civilian nuclear programme**, such as generating **nuclear power** and making **nuclear isotopes** for **medical use**.  
ऐसा इसलिए है क्योंकि कुछ समान प्रौद्योगिकियाँ और प्रक्रियाएँ एक नागरिक परमाणु कार्यक्रम में आवश्यक होती हैं, जैसे परमाणु ऊर्जा उत्पन्न करना और चिकित्सीय उपयोग के लिए परमाणु समस्थानिक बनाना।
- But the **NPT** does not turn a blind eye altogether: it expects the **civilian programme** to include some **safeguards** that resist the ability to develop from becoming the possession of a **nuclear weapon**.  
लेकिन **NPT** पूरी तरह से अनदेखी नहीं करता: यह अपेक्षा करता है कि नागरिक कार्यक्रम में कुछ सुरक्षा उपाय शामिल हों, जो इस क्षमता को परमाणु हथियार के स्वामित्व में बदलने से रोकें।
- Examples of such **safeguards** include closely monitoring the use of technologies like **uranium enrichment** and **plutonium reprocessing**.  
ऐसे सुरक्षा उपायों के उदाहरणों में यूरेनियम संवर्धन और प्लूटोनियम पुनर्प्रसंस्करण जैसी तकनीकों के उपयोग की कड़ी निगरानी शामिल है।
- This said, even these **safeguards** are focused on **diversion**, which is only one of the two pieces of the gap between **ability** and **possession**, the other being **capability**.  
फिर भी, ये सुरक्षा उपाय केवल विचलन (diversion) पर केंद्रित हैं, जो क्षमता और स्वामित्व के बीच के अंतर का केवल एक हिस्सा है, दूसरा हिस्सा योग्यता (capability) है।
- That is, a country can have the **capability** to develop a **nuclear weapon**, but the **NPT's safeguards** have been designed to deter the diversion of that capability to **military uses**.  
अर्थात्, कोई देश परमाणु हथियार विकसित करने की योग्यता रख सकता है, लेकिन **NPT** के सुरक्षा उपाय इस योग्यता को सैन्य उपयोग की ओर मोड़ने से रोकने के लिए बनाए गए हैं।
- **Countries interested in helping tame the spread of nuclear weapons** have enforced this **fuzzy barrier** using **export controls** and **diplomacy**, including **sanctions**.  
जो देश परमाणु हथियारों के प्रसार को नियंत्रित करना चाहते हैं, उन्होंने इस अस्पष्ट सीमा को निर्यात नियंत्रण, कूटनीति, और प्रतिबंधों के माध्यम से लागू किया है।
- The **International Atomic Energy Agency (IAEA)** contributes as an independent **watchdog** that performs **intrusive inspections**.  
अंतर्राष्ट्रीय परमाणु ऊर्जा एजेंसी (IAEA) एक स्वतंत्र निगरानी संस्था के रूप में कार्य करती है, जो गहन निरीक्षण करती है।

Why is not knowing a country's nuclear intent a problem? / किसी देश की परमाणु मंशा न जानना समस्या क्यों है?

- This is one way the world has kept itself from downsliding into **nuclear catastrophe**.  
यह एक तरीका है जिससे विश्व ने स्वयं को परमाणु आपदा में गिरने से बचाया है।



- It is a fragile setup because the **regulatory regime** decision focusing on **weaponisation** rather than **capability** has created important **downsides**.  
यह एक नाजुक व्यवस्था है क्योंकि **नियामक व्यवस्था** का ध्यान **क्षमता** के बजाय **हथियारीकरण** पर केंद्रित होने से कई महत्वपूर्ण **कमियाँ** उत्पन्न हुई हैं।
- Perhaps foremost among them is the **threshold state**: a country that learns about and builds everything required to make a **nuclear weapon** but stops just short of building one.  
इनमें सबसे प्रमुख है **सीमांत राज्य (threshold state)**: ऐसा देश जो **परमाणु हथियार** बनाने के लिए आवश्यक सभी चीजें सीखता और विकसित करता है, लेकिन उसे बनाने से ठीक पहले रुक जाता है।
- This country may also strategise its **breakout** — the rapid sequence of events from enriching **weapons-grade fissile material** to deploying a **nuclear warhead**.  
यह देश अपने **ब्रेकआउट** की रणनीति भी बना सकता है — अर्थात् **हथियार-स्तरीय विखंडनीय सामग्री** को समृद्ध करने से लेकर **परमाणु वारहेड** तैनात करने तक की तेज प्रक्रिया।
- This way, the country does not draw **sanctions**, but the moment its policy changes, it can 'breakout' quickly.  
इस प्रकार, देश पर **प्रतिबंध** नहीं लगते, लेकिन जैसे ही उसकी नीति बदलती है, वह शीघ्र ही 'ब्रेकआउट' कर सकता है।
- **North Korea was once an example of a threshold state — and now so is Iran.**  
**उत्तर कोरिया** कभी एक **सीमांत राज्य** का उदाहरण था — और अब **ईरान** भी उसी श्रेणी में आता है।
- Not knowing whether a country will actually build **nuclear weapons**, especially since it has the **ability** to do so, is also bad for the **non-proliferation regime** for a few reasons.  
यह न जानना कि कोई देश वास्तव में **परमाणु हथियार** बनाएगा या नहीं, विशेषकर जब उसके पास ऐसा करने की **क्षमता** है, कई कारणों से **अप्रसार व्यवस्था** के लिए भी हानिकारक है।
- When a country **breaks out**, the regime will be forced to respond very close to **weaponisation**, which may warrant **drastic measures**, which does not bode well to limit **escalation**.  
जब कोई देश **ब्रेकआउट** करता है, तो व्यवस्था को **हथियारीकरण** के बहुत करीब प्रतिक्रिया देनी पड़ती है, जिससे **कठोर कदम** उठाने पड़ सकते हैं, जो **तनाव बढ़ने** को सीमित करने के लिए अनुकूल नहीं है।
- Second, a **non-nuclear-capable country** has to guess whether another country — perhaps a **neighbour** — intends to build **nuclear weapons**.  
दूसरा, एक **गैर-परमाणु-सक्षम देश** को यह अनुमान लगाना पड़ता है कि कोई अन्य देश — संभवतः उसका **पड़ोसी** — **परमाणु हथियार** बनाने का इरादा रखता है या नहीं।
- Figuring it out requires **judgment**, **diplomacy**, and acting in **good faith**, all of which are powerful but hard to enforce using **external pressure**.  
इसे समझने के लिए **निर्णय क्षमता**, **कूटनीति**, और **सद्भावना** से कार्य करना आवश्यक है, जो शक्तिशाली तो हैं, लेकिन **बाहरी दबाव** से लागू करना कठिन है।
- It also **muddies international waters**.  
यह **अंतर्राष्ट्रीय स्थिति** को **जटिल** भी बनाता है।
- For example, **South Korea** does not view **Japan** with suspicion but it may not extend the same courtesy to, say, **Argentina**.  
उदाहरण के लिए, **दक्षिण कोरिया** **जापान** को संदेह की दृष्टि से नहीं देखता, लेकिन संभवतः वही दृष्टिकोण **अर्जेंटीना** के प्रति नहीं अपनाता।
- Another consequence is the **nuclear cascade**: if Country A is a **threshold state** and is not on good terms with its **neighbours**, the neighbouring countries may find it necessary to arm themselves with **nuclear weapons** in case Country A decides to **break out**.  
एक अन्य परिणाम **परमाणु श्रृंखला प्रतिक्रिया (nuclear cascade)** है: यदि देश A एक **सीमांत राज्य** है और अपने **पड़ोसियों** के साथ अच्छे संबंधों में नहीं है, तो पड़ोसी देश स्वयं को **परमाणु हथियारों** से लैस करना आवश्यक समझ सकते हैं, यदि देश A **ब्रेकआउट** करने का निर्णय लेता है।
- This is why the world has clusters of **nuclear-capable states**: **South Asia, West Asia, North America, and Eastern Europe**.



इसी कारण विश्व में परमाणु-सक्षम राज्यों के समूह हैं: दक्षिण एशिया, पश्चिम एशिया, उत्तरी अमेरिका, और पूर्वी यूरोप।

How close is Iran to a nuclear weapon? / ईरान परमाणु हथियार के कितने करीब है?

- **Iran joined the NPT in 1970** but has recently expressed doubts about its participation. ईरान ने 1970 में NPT में शामिल हुआ था, लेकिन हाल ही में उसने अपनी भागीदारी पर संदेह व्यक्त किया है।
- It is also a **threshold state** with a **breakout time** widely understood to be in the order of a few **weeks**. यह एक सीमांत राज्य भी है, जिसका ब्रेकआउट समय सामान्यतः कुछ सप्ताहों के आसपास माना जाता है।
- **It is also thought to possess around 500 kg of uranium enriched to 60%**. यह भी माना जाता है कि इसके पास लगभग 60% तक संवर्धित 500 किलोग्राम यूरेनियम है।
- According to **The New York Times**, in fact, **Iran possesses 11 tonnes of uranium overall enriched anywhere from 2% to 60%**. **The New York Times** के अनुसार, वास्तव में ईरान के पास कुल मिलाकर 11 टन यूरेनियम है, जो 2% से 60% तक संवर्धित है।
- **Nuclear power reactors require uranium enriched to significantly under 20%**. परमाणु ऊर्जा रिएक्टरों के लिए 20% से काफी कम संवर्धित यूरेनियम की आवश्यकता होती है।
- **Weapons-grade uranium requires 90%**. हथियार-स्तरीय यूरेनियम के लिए 90% संवर्धन आवश्यक होता है।
- **The way enrichment works, the road from 60% to 90% is much shorter than getting to 60%**. संवर्धन प्रक्रिया के अनुसार, 60% से 90% तक पहुंचना, 60% तक पहुंचने की तुलना में बहुत कम समय लेता है।
- In other words, **Iran is for all practical purposes a nuclear-capable state — yet it is not known to have developed a nuclear weapon**. अर्थात, व्यावहारिक रूप से ईरान एक परमाणु-सक्षम राज्य है — फिर भी यह ज्ञात नहीं है कि उसने कोई परमाणु हथियार विकसित किया है।
- **Ayatollah Ali Khamenei** spoke against using **nuclear weapons**, calling them ‘**haram**’. अयातुल्ला अली खामेनेई ने परमाणु हथियारों के उपयोग का विरोध किया और उन्हें ‘हराम’ बताया।
- Many have claimed that he issued a **fatwa** — a ruling based on **Islamic law** — against the **nuclear bomb**. कई लोगों का दावा है कि उन्होंने फतवा — जो इस्लामी कानून पर आधारित निर्णय है — परमाणु बम के खिलाफ जारी किया।
- **Tehran has held that its stockpile and nuclear infrastructure are “peaceful” and intended for civilian use**. तेहरान ने कहा है कि उसका भंडार और परमाणु अवसंरचना “शांतिपूर्ण” है और नागरिक उपयोग के लिए है।
- **This is technically possible because uranium enriched to 20% or more can be transformed in a process called downblending to a lower enrichment and used for civilian purposes**. यह तकनीकी रूप से संभव है क्योंकि 20% या अधिक संवर्धित यूरेनियम को डाउनब्लेंडिंग प्रक्रिया के माध्यम से कम संवर्धन में परिवर्तित कर नागरिक उद्देश्यों के लिए उपयोग किया जा सकता है।
- **The NPT also treats the use of nuclear technologies for scientific progress as every country’s “inalienable right”**. **NPT वैज्ञानिक प्रगति के लिए परमाणु प्रौद्योगिकियों के उपयोग को प्रत्येक देश का “अविच्छिन्न अधिकार” मानता है।**
- Iran’s claims to that end were also **politically credible** as it abided by the **2015 Joint Comprehensive Plan of Action (JCPOA)**, a.k.a. the **Iran deal**, until Mr. Donald Trump unilaterally exited it in **2018**. इस संदर्भ में ईरान के दावे राजनीतिक रूप से विश्वसनीय थे क्योंकि उसने 2015 के संयुक्त व्यापक कार्य



योजना (JCPOA), जिसे ईरान समझौता भी कहा जाता है, का पालन किया था, जब तक कि डोनाल्ड ट्रम्प ने 2018 में इससे एकतरफा बाहर निकलने का निर्णय नहीं लिया।

- In effect, Mr. Trump sought to back Iran into a corner, which backfired after Tehran took licence from Israel's aggression across West Asia to resume higher enrichment. वास्तव में, श्री ट्रम्प ने ईरान को एक कोने में धकेलने का प्रयास किया, जो उल्टा पड़ा, जब तेहरान ने पश्चिम एशिया में इज़राइल के आक्रामक रुख का हवाला देकर उच्च संवर्धन फिर से शुरू कर दिया।
- Despite the Joe Biden administration's attempts to restore parts of the deal, Iran progressively scaled back its commitments under the JCPOA. जो बाइडेन प्रशासन के समझौते के कुछ हिस्सों को पुनः स्थापित करने के प्रयासों के बावजूद, ईरान ने धीरे-धीरे JCPOA के तहत अपने प्रतिबद्धताओं को कम कर दिया।
- In Islamic jurisprudence, Iran has a valorous duty to defend its homeland against "Zionist aggression" — which includes defending its enrichment sites and, by appealing to its right to scientific progress, its nuclear stockpile as well. इस्लामी न्यायशास्त्र में, ईरान के पास "ज़ायनिस्ट आक्रमण" के विरुद्ध अपने देश की रक्षा करने का वीर कर्तव्य है — जिसमें उसके संवर्धन स्थलों की रक्षा करना और वैज्ञानिक प्रगति के अधिकार का हवाला देकर अपने परमाणु भंडार की रक्षा करना भी शामिल है।

Why are the regulatory options limited? / नियामक विकल्प सीमित क्यों हैं?

- These reasons alone have not convinced the international community, however, much of which agrees Iran is a threshold state. हालांकि, ये कारण मात्र अंतर्राष्ट्रीय समुदाय को संतुष्ट नहीं कर पाए हैं, जिसमें से अधिकांश सहमत हैं कि ईरान एक सीमांत राज्य है।
- The UN Security Council, the U.S., and the European Union have sanctioned Iran pre-2015 over Tehran's failure to declare uranium particles the IAEA found at three undeclared sites and the related past uranium processing activities, as required by its safeguards agreement with the IAEA. संयुक्त राष्ट्र सुरक्षा परिषद, अमेरिका, और यूरोपीय संघ ने 2015 से पहले ईरान पर प्रतिबंध लगाए, क्योंकि तेहरान ने उन यूरेनियम कणों की घोषणा नहीं की थी जो IAEA को तीन अघोषित स्थलों पर मिले थे, और इससे संबंधित पूर्व यूरेनियम प्रसंस्करण गतिविधियों का भी खुलासा नहीं किया था, जैसा कि IAEA के साथ उसके सुरक्षा समझौते में आवश्यक था।
- Today, Iran's stockpile and the extent and sophistication of its nuclear infrastructure are believed to mean its breakout time could be short — yet the non-proliferation regime has limited courses of action because Tehran is technically toeing the line. आज, ईरान का भंडार और उसके परमाणु अवसंरचना की व्यापकता और परिष्कृतता यह संकेत देती है कि उसका ब्रेकआउट समय कम हो सकता है — फिर भी अप्रसार व्यवस्था के पास सीमित विकल्प हैं क्योंकि तेहरान तकनीकी रूप से नियमों का पालन कर रहा है।
- The U.S. and Israel have nonetheless repeatedly gone to war against Iran because they are nervous and want to eliminate even its status as a threshold state. फिर भी, अमेरिका और इज़राइल ने बार-बार ईरान के विरुद्ध युद्ध किया है क्योंकि वे चिंतित हैं और उसके सीमांत राज्य के दर्जे को भी समाप्त करना चाहते हैं।
- This includes the ongoing conflict as well as the Twelve-Day War last year, and attempts over the years to assassinate Iranian nuclear scientists and mount covert attacks, such as the Stuxnet virus in the late 2000s. इसमें वर्तमान संघर्ष, पिछले वर्ष का बारह-दिवसीय युद्ध, और वर्षों से ईरानी परमाणु वैज्ञानिकों की हत्या के प्रयास, तथा गुप्त हमले, जैसे 2000 के दशक के अंत में Stuxnet वायरस, शामिल हैं।



How did the Iran-Iraq war shape Iran's stance? / ईरान-इराक युद्ध ने ईरान की नीति को कैसे प्रभावित किया?

- In fact, the **fatwa** is also not necessarily **binding**, thanks to a policy called **Maslahat-e-Nizam**, meaning '**expediency of the system**'.  
वास्तव में, **फतवा** आवश्यक रूप से **बाध्यकारी** नहीं होता, क्योंकि एक नीति **मसलहत-ए-निज़ाम** है, जिसका अर्थ है '**प्रणाली की आवश्यकता**'।
- Specifically, in **Shia Islam**, a **fatwa** is not necessarily **eternal** but can be a ruling based on **existing circumstances**.  
विशेष रूप से, **शिया इस्लाम** में, **फतवा** आवश्यक रूप से **स्थायी** नहीं होता, बल्कि यह **वर्तमान परिस्थितियों** पर आधारित निर्णय हो सकता है।
- If those **circumstances change**, so can the **decision**.  
यदि वे **परिस्थितियाँ बदलती हैं**, तो **निर्णय** भी बदल सकता है।
- Since the threats to **Iran** from **Israel** and the **U.S.** have been deemed **existential** of late — a point the **U.S.** has been happy to parrot as part of its **brinkmanship** — the **Supreme Leader**, currently **Mojtaba Khamenei**, could supersede his predecessor's **diktat**.  
चूंकि हाल के समय में **ईरान** को **इज़राइल** और **अमेरिका** से मिलने वाले खतरे को **अस्तित्वगत** माना गया है — जिसे **अमेरिका** ने भी अपनी **दबाव नीति** के तहत दोहराया है — इसलिए **वर्तमान सर्वोच्च नेता मोजतबा खामेनेई** अपने पूर्ववर्ती के **निर्देश** को बदल सकते हैं।
- In the **post-revolution era**, **Iran's leadership** has been opposed to **nuclear weapons** on **religious or ethical grounds** because of the country's experiences during and after the **Iran-Iraq war (1980-1988)**.  
क्रांति के बाद के दौर में, **ईरान का नेतृत्व परमाणु हथियारों का धार्मिक और नैतिक आधारों पर विरोध करता रहा है**, क्योंकि **ईरान-इराक युद्ध (1980-1988)** के दौरान और बाद के अनुभवों ने इसे प्रभावित किया।
- In the early and mid-1980s, **Iraq** deployed **chemical weapons** against **Iranian soldiers** as well as **civilians**, killing **tens of thousands**.  
1980 के दशक की शुरुआत और मध्य में, **इराक ने ईरानी सैनिकों और नागरिकों के विरुद्ध रासायनिक हथियारों का उपयोग किया**, जिससे **दसियों हजार लोगों की मृत्यु हुई**।
- The **Ayatollah Ruhollah Khomeini** famously resisted retaliating in kind, appealing to his **religion** forbidding **indiscriminate killing** and securing a **moral victory** for his regime.  
**अयातुल्ला रुहोल्लाह खोमैनी** ने प्रसिद्ध रूप से **समान प्रतिक्रिया देने से परहेज किया**, अपने **धर्म** का हवाला देते हुए **अंधाधुंध हत्या** को प्रतिबंधित बताया और अपने शासन के लिए एक **नैतिक विजय** सुनिश्चित की।
- But **Tehran** revived its interest in the **nuclear programme** after officials argued that the **international community**, including the **UN**, had however failed to respond adequately to **Iraq's use of chemical weapons**.  
लेकिन बाद में **तेहरान** ने **परमाणु कार्यक्रम** में अपनी रुचि पुनः बढ़ाई, जब अधिकारियों ने तर्क दिया कि **अंतर्राष्ट्रीय समुदाय**, जिसमें **संयुक्त राष्ट्र** भी शामिल है, **इराक द्वारा रासायनिक हथियारों के उपयोग पर पर्याप्त प्रतिक्रिया देने में विफल रहा था**।

Israel approves fighter jet deal with the U.S. to boost aerial superiority



Israel on Sunday approved a multi-billion-dollar deal to acquire two combat squadrons of F-35 stealth fighter jets and F-15IA warplanes from the U.S., with Prime Minister Benjamin Netanyahu saying it would "reinforce" its air superiority. Israel's air force played a key role in the war in Gaza and in the ongoing conflict with Iran. AFP

**04Ma. Israel approves fighter jet deal with the U.S. to boost aerial superiority**

**इज़राइल ने हवाई श्रेष्ठता बढ़ाने के लिए अमेरिका के साथ लड़ाकू विमान सौदे को मंजूरी दी**

- Israel on Sunday approved a **multi-billion-dollar deal to acquire two combat squadrons of F-35 stealth fighter jets and F-15IA warplanes** from the U.S., with Prime Minister **Benjamin Netanyahu** saying it would "reinforce" its air superiority.



इज़राइल ने रविवार को अमेरिका से F-35 स्टेल्थ फाइटर जेट्स और F-15IA युद्धक विमान के दो लड़ाकू स्क्वाड्रन खरीदने के लिए बहु-अरब डॉलर के सौदे को मंजूरी दी, जिसमें प्रधानमंत्री बेंजामिन नेतन्याहू ने कहा कि यह उसकी हवाई श्रेष्ठता को "मजबूत" करेगा।

## Khalistan extremists declared a 'national security threat' by Canada



AFP

GS II: IR

Canada has declared Khalistani extremists a "national security threat", adding that the group uses institutions to promote its "violent extremist agenda" in the country. The report comes a year after the 40th anniversary of the bombing of Air India Flight 182, whose suspects were members of Khalistani extremist groups. PTI

- The report comes a year after the 40th anniversary of the bombing of Air India Flight 182, whose suspects were members of Khalistani extremist groups. यह रिपोर्ट एयर इंडिया फ्लाइट 182 बम विस्फोट की 40वीं वर्षगांठ के एक साल बाद आई है, जिसके संदिग्ध खालिस्तानी उग्रवादी समूहों के सदस्य थे।

## 04Ma. Khalistan extremists declared a 'national security threat' by Canada कनाडा द्वारा खालिस्तानी उग्रवादियों को 'राष्ट्रीय सुरक्षा खतरा' घोषित किया गया

- Khalistan extremists declared a 'national security threat' by Canada. कनाडा द्वारा खालिस्तानी उग्रवादियों को 'राष्ट्रीय सुरक्षा खतरा' घोषित किया गया।
- Canada has declared Khalistani extremists a "national security threat", adding that the group uses institutions to promote its violent extremist agenda in the country. कनाडा ने खालिस्तानी उग्रवादियों को "राष्ट्रीय सुरक्षा खतरा" घोषित किया है, यह कहते हुए कि यह समूह देश में अपने हिंसक उग्रवादी एजेंडा को बढ़ावा देने के लिए संस्थानों का उपयोग करता है।

GS Paper III: Economy		04 May 2026
TOPICS COVERED		
04Ma	Keeping India's carbon money at home भारत के कार्बन धन को देश के भीतर बनाए रखना	
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## Keeping India's carbon money at home

GS III: Economy, Environment

On January 1, 2026, the European Union (EU)'s Carbon Border Adjustment Mechanism (CBAM) came into effect, and is fully in force. Europe calls it fairness: European producers pay a carbon price, so imports should too. On paper, it sounds equitable; in practice, the door to fair competition is only half-open for India.

European steel, aluminium and cement producers enjoy large decarbonisation subsidies and subsidised public finance. They also continue receiving free allowances under the EU Emissions Trading System, which will be phased out gradually from 2026 to 2034, lowering their effective carbon costs even as CBAM phases in. Indian exporters, by contrast, face the full weight of CBAM charges without equivalent state support.

This tilt sits uneasily with the spirit of the General Agreement on Tariffs and Trade (GATT) Article III, which bars deploying internal charges to shield domestic producers from fair competition.

### What the deeper issue is about

The new India-EU Free Trade Agreement (FTA), whose negotiations concluded on January 27, 2026, provides no exemption from CBAM for India. The EU held firm: no country gets country-specific flexibility. The FTA's Annex on Carbon Border Measures (Annex 14-A) does, however, establish a formal technical dialogue on CBAM implementation – including how any effective carbon price paid in India can be taken into account at the EU border, and a most-favoured-nation commitment that any flexibility extended to other countries will automatically extend to India. That narrow opening matters enormously.

The deeper issue is climate justice and sovereignty. CBAM shifts part of Europe's



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When Europe sets carbon rules, India must not remain the price taker

decarbonisation burden onto developing-country exporters while keeping the resulting revenue in European hands. A country that cannot shape the carbon price on its exports, or direct the associated revenues, risks becoming a rule-taker rather than a rule-maker in the green transition.

India is not starting from zero. The Carbon Credit Trading Scheme (CCTS), notified in 2023, establishes a domestic carbon price through tradable certificates, and will, over time, cover key industrial sectors including steel. Under CBAM Regulation Article 9, European importers may deduct embedded emissions that have already borne a carbon price in the country of origin. That is the legal hook for recognising India's carbon price as an offset to CBAM. The principle, and the legal mechanism, are sound.

Crediting CCTS under Article 9 is both legally defensible and environmentally coherent. CCTS is a compliance-grade market: installations must hold carbon credits against measured emissions, carrying a rupee-denominated value per tonne. Crediting that effective price against CBAM obligations – subject to robust monitoring, transparent exchange-rate conversion, and guarantees that no export rebates neutralise the burden – would prevent double-pricing while preserving CBAM's stated aim of levelling the playing field.

### As a counter adjustment

India's next move should be a counter adjustment: an India Border Adjustment Mechanism (IBAM). Rather than accepting CBAM as an inescapable external levy, India could impose its own carbon-based charge on CBAM-covered exports, collected at the point of export. But IBAM must not be rushed or announced unilaterally. It should be developed only through Annex 14-A, so that its design is clearly recognised in advance as a "carbon price

paid in the country of origin" for purposes of CBAM Article 9. If India sequences this carefully – using Annex 14-A to lock in how CCTS payments and any IBAM charges will be credited – Indian exporters need not face any higher overall carbon cost than CBAM alone would impose. What they would otherwise pay implicitly as a levy retained in Europe, they would instead pay explicitly through domestic obligations, fully offset at the EU border. The net carbon burden on exporters would be capped at the CBAM level in any event.

### Make IBAM a constructive offer

The crucial difference is where the money goes. IBAM revenues would stay in India. Every rupee raised should be ring-fenced in a dedicated, transparently governed fund restricted to verifiable green projects: modernising blast furnaces, expanding low-carbon electricity, scaling hydrogen and scrap-based steelmaking, supporting affected workers – all subject to strict measurable, reportable and verifiable standards, independently audited and publicly disclosed.

Seen this way, IBAM is not a spoiler but a constructive offer. If the EU is serious that CBAM is about preventing carbon leakage rather than protecting revenue, it should recognise credible Indian carbon pricing under Article 9 and treat those payments as genuine offsets. European consumers would still see a carbon-priced product. Indian producers would face no higher net carbon cost.

Most importantly, India would keep its carbon revenues and use them to finance a green transition designed, at least in part, on its own terms.

India should "IBAM the CBAM" – treating FTA Annex 14-A and CBAM's Article 9 not as footnotes, but as levers to keep carbon money at home while engaging seriously with a carbon-priced world.

## 04Ma. Keeping India's carbon money at home

### भारत के कार्बन धन को देश के भीतर बनाए रखना

- On January 1, 2026, the **European Union (EU)'s Carbon Border Adjustment Mechanism (CBAM)** came into effect, and is fully in force.  
1 जनवरी 2026 को, यूरोपीय संघ (EU) का कार्बन सीमा समायोजन तंत्र (CBAM) लागू हुआ और पूर्ण रूप से प्रभावी हो गया।
- Europe calls it **fairness**: **European producers** pay a **carbon price**, so imports should too. यूरोप इसे **न्यायसंगतता** कहता है: **यूरोपीय उत्पादक कार्बन मूल्य चुकाते हैं**, इसलिए आयातकों को भी चुकाना चाहिए।
- On paper, it sounds **equitable**; **in practice, the door to fair competition is only half-open for India**.  
कागज पर यह **न्यायपूर्ण** प्रतीत होता है; लेकिन व्यवहार में **भारत के लिए निष्पक्ष प्रतिस्पर्धा का द्वार केवल आंशिक रूप से खुला है**।
- European steel, aluminium and cement producers enjoy large decarbonisation subsidies and subsidised public finance**.  
**यूरोपीय इस्पात, एल्युमिनियम, और सीमेंट उत्पादक बड़े डीकार्बोनाइजेशन सब्सिडी और रियायती सार्वजनिक वित्त का लाभ उठाते हैं**।
- They also continue receiving free allowances under the EU Emissions Trading System, which will be phased out gradually from 2026 to 2034, lowering their effective carbon costs even as CBAM phases in**.  
वे **EU उत्सर्जन व्यापार प्रणाली के तहत मुफ्त भत्ते भी प्राप्त करते रहते हैं**, जिन्हें **2026 से 2034 के बीच धीरे-धीरे समाप्त किया जाएगा**, जिससे उनके **प्रभावी कार्बन लागत कम हो जाती है**, जबकि **CBAM लागू होता जाता है**।



- **Indian exporters**, by contrast, face the full weight of **CBAM charges** without equivalent **state support**.

इसके विपरीत, **भारतीय निर्यातक** बिना समान **सरकारी समर्थन** के **CBAM शुल्कों** का पूरा भार वहन करते हैं।

- This tilt sits uneasily with the spirit of the **General Agreement on Tariffs and Trade (GATT) Article III**, which bars deploying **internal charges** to shield **domestic producers** from **fair competition**.

यह असंतुलन **शुल्क और व्यापार पर सामान्य समझौते (GATT) के अनुच्छेद III** की भावना के विपरीत है, जो **घरेलू उत्पादकों** को **निष्पक्ष प्रतिस्पर्धा** से बचाने के लिए **आंतरिक शुल्कों** के उपयोग को प्रतिबंधित करता है।

### What the deeper issue is about / गहरे मुद्दे का सार

- The new **India-EU Free Trade Agreement (FTA)**, whose negotiations concluded on **January 27, 2026**, provides no exemption from **CBAM** for **India**.

नया **भारत-यूरोपीय संघ मुक्त व्यापार समझौता (FTA)**, जिसकी वार्ता **27 जनवरी 2026** को समाप्त हुई, **भारत** को **CBAM** से कोई छूट प्रदान नहीं करता।

- The **EU held firm: no country gets country-specific flexibility**.

यूरोपीय संघ अपने रुख पर अडिग रहा: किसी भी देश को **देश-विशिष्ट लचीलापन** नहीं मिलेगा।

- The **FTA's Annex on Carbon Border Measures (Annex 14-A)** does, however, establish a **formal technical dialogue on CBAM implementation** — including how any **active carbon price paid in India** can be taken into account at the **EU border**, and a **most-favoured-nation commitment** that any flexibility extended to other countries will **automatically extend to India**.

हालांकि, **FTA का कार्बन सीमा उपायों पर परिशिष्ट (Annex 14-A) CBAM के कार्यान्वयन पर एक औपचारिक तकनीकी संवाद** स्थापित करता है — जिसमें यह शामिल है कि **भारत** में चुकाया गया कोई भी **प्रभावी कार्बन मूल्य** **EU सीमा पर कैसे माना जाएगा**, और एक **सर्वाधिक वरीय राष्ट्र प्रतिबद्धता** कि अन्य देशों को दी गई कोई भी **लचीलापन स्वतः भारत को भी प्राप्त होगा**।

- That narrow opening matters enormously. यह सीमित अवसर अत्यंत महत्वपूर्ण है।
- The deeper issue is **climate justice** and **sovereignty**.

गहरा मुद्दा **जलवायु न्याय और संप्रभुता** से संबंधित है।

- **CBAM shifts part of Europe's decarbonisation burden onto developing-country exporters** while keeping the resulting **revenue** in European hands.

**CBAM यूरोप के डीकार्बोनाइजेशन बोझ** का एक हिस्सा **विकासशील देशों के निर्यातकों** पर स्थानांतरित करता है, जबकि **उत्पन्न राजस्व यूरोप के पास ही रहता है**।

- A country that cannot shape the **carbon price** on its exports, or direct the associated **revenues**, risks becoming a **rule-taker** rather than a **rule-maker** in the **green transition**.

कोई देश जो अपने निर्यात पर **कार्बन मूल्य निर्धारित नहीं कर सकता** या उससे संबंधित **राजस्व** को नियंत्रित नहीं कर सकता, वह **हरित परिवर्तन में नियम-निर्माता के बजाय नियम-पालक बनने का जोखिम उठाता है**।

- **India** is not starting from zero.

**भारत** शून्य से शुरुआत नहीं कर रहा है।

- The **Carbon Credit Trading Scheme (CCTS)**, notified in **2023**, establishes a **domestic carbon price through tradable certificates**, and will, over time, cover key **industrial sectors** including **steel**.

**कार्बन क्रेडिट ट्रेडिंग योजना (CCTS)**, जिसे **2023** में अधिसूचित किया गया, **व्यापार योग्य प्रमाणपत्रों के माध्यम से एक घरेलू कार्बन मूल्य** स्थापित करती है और समय के साथ **इस्पात सहित प्रमुख औद्योगिक क्षेत्रों** को कवर करेगी।

- Under **CBAM Regulation Article 9**, **European importers** may deduct **embedded emissions** that have already borne a **carbon price** in the country of origin.



CBAM विनियमन अनुच्छेद 9 के तहत, यूरोपीय आयातक उन निहित उत्सर्जनों को घटा सकते हैं जिन पर मूल देश में पहले ही कार्बन मूल्य लगाया जा चुका है।

- That is the **legal hook** for recognising India's carbon price as an **o• set to CBAM**. यह CBAM के विरुद्ध भारत के कार्बन मूल्य को समायोजन के रूप में मान्यता देने का कानूनी आधार है।
- The principle, and the **legal mechanism**, are sound. यह सिद्धांत और कानूनी तंत्र दोनों ही उचित हैं।
- **Crediting CCTS under Article 9 is both legally defensible and environmentally coherent.** अनुच्छेद 9 के तहत CCTS को मान्यता देना कानूनी रूप से उचित और पर्यावरणीय रूप से सुसंगत है।
- **CCTS is a compliance-grade market: installations must hold carbon credits against measured emissions, carrying a rupee-denominated value per tonne.** CCTS एक अनुपालन-स्तरीय बाजार है: इकाइयों को मापे गए उत्सर्जनों के विरुद्ध कार्बन क्रेडिट रखना होता है, जिनका प्रति टन रुपये में मूल्य निर्धारित होता है।
- Crediting that **effective price** against **CBAM obligations** — subject to robust **monitoring**, transparent **exchange-rate conversion**, and guarantees that no **export rebates** neutralise the burden — would prevent **double-pricing** while preserving **CBAM's stated aim** of levelling the **playing • eld**. उस प्रभावी मूल्य को CBAM दायित्वों के विरुद्ध मान्यता देना — मजबूत निगरानी, पारदर्शी विनिमय दर रूपांतरण, और यह सुनिश्चित करने के साथ कि कोई निर्यात प्रोत्साहन इस बोझ को समाप्त न करे — दोहरी मूल्य निर्धारण को रोकते हुए CBAM के घोषित उद्देश्य अर्थात् समान प्रतिस्पर्धा बनाए रखने में सहायक होगा।

As a counter adjustment / प्रतिकूल समायोजन के रूप में

- India's next move should be a **counter adjustment: an India Border Adjustment Mechanism (IBAM)**. भारत का अगला कदम एक प्रतिकूल समायोजन होना चाहिए: एक भारत सीमा समायोजन तंत्र (IBAM)।
- Rather than accepting **CBAM** as an inescapable **external levy**, **India could impose its own carbon-based charge on CBAM-covered exports, collected at the point of export.** CBAM को एक अपरिहार्य बाहरी कर के रूप में स्वीकार करने के बजाय, भारत CBAM-आवृत निर्यातों पर अपना कार्बन-आधारित शुल्क लगा सकता है, जिसे निर्यात बिंदु पर एकत्र किया जाएगा।
- But **IBAM** must not be rushed or announced **unilaterally**. लेकिन **IBAM** को जल्दबाजी में या एकतरफा घोषित नहीं किया जाना चाहिए।
- It should be developed only through **Annex 14-A**, so that its design is clearly recognised in advance as a **"carbon price paid in the country of origin"** for purposes of **CBAM Article 9**. इसे केवल परिशिष्ट 14-A के माध्यम से विकसित किया जाना चाहिए, ताकि इसका स्वरूप पहले से ही **CBAM अनुच्छेद 9** के तहत "मूल देश में चुकाया गया कार्बन मूल्य" के रूप में मान्यता प्राप्त हो सके।
- If India sequences this carefully — using **Annex 14-A** to lock in how **CCTS payments and any IBAM charges** will be credited — Indian exporters need not face any higher overall **carbon cost** than **CBAM** alone would impose. यदि भारत इसे सावधानीपूर्वक क्रमबद्ध करता है — परिशिष्ट 14-A का उपयोग करके यह सुनिश्चित करता है कि **CCTS भुगतान** और किसी भी **IBAM शुल्क** को कैसे समायोजित किया जाएगा — तो भारतीय निर्यातकों को **CBAM** के अकेले प्रभाव से अधिक कुल कार्बन लागत का सामना नहीं करना पड़ेगा।
- What they would otherwise pay implicitly as a levy retained in **Europe**, they would instead pay explicitly through **domestic obligations**, fully offset at the **EU border**. जो वे अन्यथा यूरोप में बनाए रखे गए कर के रूप में अप्रत्यक्ष रूप से चुकाते, उसे वे अब घरेलू दायित्वों के माध्यम से स्पष्ट रूप से चुकाएँगे, जो **EU सीमा** पर पूरी तरह समायोजित हो जाएगा।
- The net **carbon burden** on exporters would be capped at the **CBAM level** in any event. निर्यातकों पर कुल कार्बन बोझ किसी भी स्थिति में **CBAM स्तर** तक सीमित रहेगा।



## Make IBAM a constructive one / IBAM को एक रचनात्मक प्रस्ताव बनाना

- The crucial difference is where the **money goes**.  
महत्वपूर्ण अंतर यह है कि **धन कहाँ जाता है**।
- **IBAM revenues would stay in India.**  
**IBAM से प्राप्त राजस्व भारत में ही रहेगा।**
- **Every rupee raised should be ring-fenced in a dedicated, transparently governed fund restricted to verifiable green projects: modernising blast furnaces, expanding low-carbon electricity, scaling hydrogen and scrap-based steelmaking, supporting affected workers** — all subject to strict **measurable, reportable and verifiable standards**, independently audited and publicly disclosed.  
प्राप्त प्रत्येक **रुपया** एक समर्पित, पारदर्शी रूप से संचालित कोष में सुरक्षित रखा जाना चाहिए, जो केवल **सत्यापनीय हरित परियोजनाओं** के लिए सीमित हो: **ब्लास्ट फर्नेस** का आधुनिकीकरण, **कम-कार्बन बिजली** का विस्तार, **हाइड्रोजन** और **स्क्रैप-आधारित इस्पात उत्पादन** को बढ़ाना, **प्रभावित श्रमिकों** का समर्थन — यह सब **सख्त मापनीय, रिपोर्ट योग्य और सत्यापन योग्य मानकों** के अधीन, स्वतंत्र रूप से ऑडिट और सार्वजनिक रूप से प्रकट किया जाए।
- Seen this way, **IBAM** is not a spoiler but a **constructive one**.  
इस प्रकार देखने पर, **IBAM** बाधक नहीं बल्कि एक **रचनात्मक प्रस्ताव** है।
- **If the EU is serious that CBAM is about preventing carbon leakage rather than protecting revenue, it should recognise credible Indian carbon pricing under Article 9 and treat those payments as genuine offsets.**  
यदि **EU** वास्तव में मानता है कि **CBAM** का उद्देश्य **कार्बन रिसाव** को रोकना है, न कि **राजस्व संरक्षण**, तो उसे **अनुच्छेद 9** के तहत विश्वसनीय **भारतीय कार्बन मूल्य निर्धारण** को मान्यता देनी चाहिए और उन भुगतानों को वास्तविक समायोजन के रूप में स्वीकार करना चाहिए।
- **European consumers would still see a carbon-priced product.**  
**यूरोपीय उपभोक्ता** अभी भी एक **कार्बन-निर्धारित उत्पाद** देखेंगे।
- **Indian producers would face no higher net carbon cost.**  
**भारतीय उत्पादकों** को कोई अतिरिक्त कुल **कार्बन लागत** नहीं झेलनी पड़ेगी।
- Most importantly, **India** would keep its **carbon revenues** and use them to finance a **green transition** designed, at least in part, on its own terms.  
सबसे महत्वपूर्ण बात यह है कि **भारत** अपने **कार्बन राजस्व** को बनाए रखेगा और उनका उपयोग एक **हरित परिवर्तन** को वित्तपोषित करने में करेगा, जिसे कम से कम आंशिक रूप से अपनी शर्तों पर डिजाइन किया गया हो।
- India should **"IBAM the CBAM"** — treating **FTA Annex 14-A** and **CBAM's Article 9** not as footnotes, but as **levers to keep carbon money at home** while engaging seriously with a **carbon-priced world**.  
भारत को **"IBAM के माध्यम से CBAM का प्रत्युत्तर"** देना चाहिए — **FTA परिशिष्ट 14-A** और **CBAM के अनुच्छेद 9** को केवल फुटनोट नहीं, बल्कि ऐसे **उपकरण** के रूप में देखना चाहिए जो **कार्बन धन को देश में बनाए रखने** के साथ-साथ **कार्बन-आधारित विश्व** में गंभीर भागीदारी सुनिश्चित करें।



# Why does EU want Google to open up Android to AI rivals?

The European Commission has unveiled draft measures requiring Google to open the Android ecosystem to rival AI services, focusing on interoperability and third-party access; it found Google favours its own AI, while Google warns the move could affect privacy, security, and costs

GS III: Economy

Sahana Venugopal

The story so far:

In April 27, the European Commission unveiled draft measures as part of its requirement for Google to open its Android ecosystem to AI rivals. These measures cover features such as third-party "wake words," custom long-press rules, wider access to app data, context-based intelligence, and AI-powered task completion, with the regulator aiming for Android interconnections to allow even Google's competitors to provide AI services to users via the Android ecosystem. The EU regulator's proposed rules could have far-reaching implications for both Google and Android users worldwide.

**What are the European Commission's proposals for Google?**

While Google was deemed to be lagging behind OpenAI and Microsoft in terms of its Generative AI releases, the search giant caught up last year and infused its widely used products – ranging from its search engine and smartphones to personal email and workplace suite – with AI, exposing billions to its latest tech.

Under the current system, the European Commission observed that Google was favouring its own AI offerings (namely Gemini) on Android devices, while third parties (such as competing AI service providers) did not enjoy comparable levels of access to Android's capabilities when serving customers.

The Commission is particularly focused on "interoperability," or how smooth it is for non-Google services to work with the

Android ecosystem. The regulator's proposed measures explored what such free-of-charge access could look like and what new features users could receive as a result.

First and foremost, the regulator wants Google-parent Alphabet to allow third parties to be invoked by Google's long-press home (LPH)/long-press navigation handle (LPNH) feature. It would also allow these rivals to access Google Search via Circle to Search.

Another measure was that Alphabet would allow third-party app developers/users to create a custom always-on "wake word" for their app and support such integrations, instead of offering "Hey Google" as the default option for hands-free assistance.

Alphabet was also asked to support interoperability with the feature linked to centralised access to apps' data stored on-device, to allow "efficient cross-app data access, search and retrieval".

A key Google Android feature is the ability to surface helpful information, such as flight details, calendars, etc., with much of this due to Gemini. The European Commission's draft measures direct Alphabet to allow other services to carry out these tasks for users, as well as access features including context-aware intelligence, background execution, on-device model implementation, system integration, screen automation, and more.

In simpler words, rival AI services should be able to interact with apps on users' Android devices and "effectively" carry out tasks such as sending emails, ordering food, and sharing photos – via the app the user chooses, instead of the

one Google favours. However, these measures are not finalised. The European Commission may replace or alter some measures if Alphabet provides good cause for an exemption. The regulator has also invited "all citizens, companies and organisations" to share their feedback and contribute to the consultation until May 13. A final decision is set to be adopted by July 27. Google will have to further support and document these technical implementations in detail, as well as submit reports.

**What was Google's response to the EU regulator?**

Google's Senior Competition Counsel, Clare Kelly, was against the move and shared concerns about security and affordability for users.

"This unwarranted intervention would strip away that autonomy, mandate access to sensitive hardware and device permissions; unnecessarily driving up costs while undermining critical privacy and security protections for European users," Kelly was quoted as stating in an email, per Reuters.

Google has also criticised the DMA more widely. In a September blog post, Google's Oliver Bethell, Senior Director, Competition, wrote that the DMA's aim was more fairness but that it was "causing significant and unintended harm" to European users and many small businesses. The post claimed that the DMA was focused on the commercial interests of intermediary sites connecting businesses and customers, instead of allowing customers and businesses to connect directly via Google.

Furthermore, Bethell claimed that the

DMA forced Google to remove "legitimate safeguards" protecting Android users from scams and malicious links.

**Why does this issue matter?**

As Big Tech giants race to develop new AI tools and market them to users through their search engines (in the case of Google/Microsoft) or messaging apps (in the case of Instagram/WhatsApp), regulators are concerned that these companies may cut off access to rivals who have competing AI products. This, in turn, would hurt fair competition.

For example, both OpenAI's ChatGPT and Microsoft's Copilot announced last year that they would be leaving WhatsApp after Meta changed platform usage policies that affected how AI chatbots could access the WhatsApp backend. In December, the European Commission opened a formal antitrust investigation into Meta over the policy change.

In scenarios like these, customers could be forced to rely on the default AI product offered by the platform or device they are using, instead of freely choosing the one they want. On the other hand, tech companies have opposed opening up their hardware and software ecosystems to rivals, claiming that such permissions reduce security or pass on increased costs to users.

The enforcement actions taken by the European Commission in Google's case could also influence the business outlook of other Big Tech companies designated as gatekeepers under the DMA. Furthermore, these proceedings have the power to influence how Indian courts and competition regulators handle such antitrust questions at home.

## 04Ma. Why does the EU want Google to open up Android to AI rivals?

यूरोपीय संघ Google को Android को AI प्रतिस्पर्धियों के लिए खोलने के लिए क्यों कहना चाहता है?

- The **European Commission** has unveiled **draft measures** requiring **Google** to open the **Android ecosystem to rival AI services**, focusing on **interoperability** and **third-party access**; it found **Google** favours its own **AI**, while **Google** warns the move could affect **privacy, security, and costs**

यूरोपीय आयोग ने ऐसे मसौदा उपाय प्रस्तुत किए हैं जो Google को Android पारिस्थितिकी तंत्र को प्रतिस्पर्धी AI सेवाओं के लिए खोलने के लिए बाध्य करते हैं, जिनका ध्यान परस्पर संचालन क्षमता और तृतीय-पक्ष पहुंच पर है; इसमें पाया गया कि Google अपने स्वयं के AI को प्राथमिकता देता है, जबकि Google चेतावनी देता है कि यह कदम गोपनीयता, सुरक्षा, और लागत को प्रभावित कर सकता है

EU proposals on Android and AI interoperability / एंड्रॉइड और एआई अंतःक्रियाशीलता पर यूरोपीय संघ के प्रस्ताव

- On **April 27**, the **European Commission** unveiled draft measures as part of its **requirement for Google to open its Android ecosystem to AI rivals**.  
27 अप्रैल को, यूरोपीय आयोग ने Google को अपने एंड्रॉइड पारिस्थितिकी तंत्र को एआई प्रतिस्पर्धियों के लिए खोलने की आवश्यकता के तहत मसौदा उपाय प्रस्तुत किए।
- These measures cover features such as **third-party "wake words," custom long-press rules, wider access to app data, context-based intelligence, and AI-powered task completion,**



with the regulator aiming for **Android interconnections** to allow even Google's competitors to provide **AI services** to users via the **Android ecosystem**.

ये उपाय तीसरे पक्ष के “वेक वर्ड्स,” अनुकूलित लॉन्ग-प्रेस नियम, ऐप डेटा तक व्यापक पहुँच, संदर्भ-आधारित बुद्धिमत्ता, और एआई-संचालित कार्य निष्पादन जैसी सुविधाओं को कवर करते हैं, जिनका उद्देश्य एंड्रॉइड कनेक्टिविटी के माध्यम से Google के प्रतिस्पर्धियों को भी उपयोगकर्ताओं को एआई सेवाएँ प्रदान करने की अनुमति देना है।

- The **EU regulator's proposed rules** could have far-reaching implications for both **Google and Android users worldwide**.

यूरोपीय नियामक के प्रस्तावित नियमों का Google और विश्वभर के एंड्रॉइड उपयोगकर्ताओं पर व्यापक प्रभाव पड़ सकता है।

**What are the European Commission's proposals for Google? / Google के लिए यूरोपीय आयोग के प्रस्ताव क्या हैं?**

- While **Google** was deemed to be lagging behind **OpenAI** and **Microsoft** in terms of its **Generative AI** releases, the search giant caught up last year and infused its widely used products — ranging from its **search engine** and **smartphones** to **personal email** and **workplace suite** — with **AI**, exposing billions to its latest tech.

हालाँकि **Google** को अपने जनरेटिव एआई उत्पादों में **OpenAI** और **Microsoft** से पीछे माना गया था, लेकिन पिछले वर्ष उसने तेजी से प्रगति की और अपने सर्च इंजन, स्मार्टफोन, व्यक्तिगत ईमेल, और कार्यस्थल सूट जैसे व्यापक रूप से उपयोग किए जाने वाले उत्पादों में एआई को शामिल किया, जिससे अरबों उपयोगकर्ताओं को इसकी नवीनतम तकनीक का लाभ मिला।

- Under the current system, the **European Commission** observed that **Google** was favouring its own **AI offerings** (namely **Gemini**) on **Android devices**, while third parties (such as competing **AI service providers**) did not enjoy comparable levels of access to Android's capabilities when serving customers.

वर्तमान प्रणाली के तहत, यूरोपीय आयोग ने पाया कि **Google** अपने एआई उत्पादों (विशेष रूप से **Gemini**) को एंड्रॉइड उपकरणों पर प्राथमिकता दे रहा था, जबकि तीसरे पक्ष (जैसे प्रतिस्पर्धी एआई सेवा प्रदाता) को ग्राहकों को सेवा प्रदान करते समय एंड्रॉइड की क्षमताओं तक समान स्तर की पहुँच नहीं मिल रही थी।

- The **Commission** is particularly focused on “**interoperability**,” or how smooth it is for non-Google services to work with the **Android ecosystem**.

आयोग विशेष रूप से “अंतःक्रियाशीलता (**interoperability**)” पर ध्यान केंद्रित कर रहा है, अर्थात् गैर-Google सेवाओं के लिए एंड्रॉइड पारिस्थितिकी तंत्र के साथ काम करना कितना सहज है।

- The regulator's proposed measures explored what such **free-of-charge access** could look like and what new features users could receive as a result.

नियामक के प्रस्तावित उपायों ने यह जांच की कि इस प्रकार की निःशुल्क पहुँच कैसी हो सकती है और इसके परिणामस्वरूप उपयोगकर्ताओं को कौन-सी नई सुविधाएँ मिल सकती हैं।

- First and foremost, the regulator wants **Google-parent Alphabet** to allow third parties to be invoked by Google's **long-press home (LPH)/long-press navigation handle (LPNH)** feature.

सबसे पहले, नियामक चाहता है कि **Google** की मूल कंपनी **Alphabet** तीसरे पक्ष को Google के लॉन्ग-प्रेस होम (**LPH**)/लॉन्ग-प्रेस नेविगेशन हैंडल (**LPNH**) फीचर के माध्यम से सक्रिय होने की अनुमति दे।

- It would also allow these rivals to access **Google Search** via **Circle to Search**.

यह प्रतिस्पर्धियों को **Circle to Search** के माध्यम से **Google Search** तक पहुँचने की अनुमति भी देगा।

- Another measure was that **Alphabet** would allow third-party **app developers/users** to create a custom always-on “**wake word**” for their app and support such integrations, instead of offering “**Hey Google**” as the default option for **hands-free assistance**.

एक अन्य उपाय यह था कि **Alphabet** तीसरे पक्ष के ऐप डेवलपर्स/उपयोगकर्ताओं को अपने ऐप के लिए एक



कस्टम हमेशा सक्रिय 'वेक वर्ड' बनाने और ऐसे एकीकरण का समर्थन करने की अनुमति देगा, बजाय "Hey Google" को हैंड्स-फ्री सहायता के लिए डिफॉल्ट विकल्प के रूप में रखने के।

- **Alphabet** was also asked to support **interoperability** with the feature linked to centralised access to apps' data stored on-device, to allow "**efficient cross-app data access, search and retrieval**".

**Alphabet** से यह भी कहा गया कि वह उपकरण पर संग्रहीत ऐप डेटा तक केंद्रीकृत पहुँच से जुड़े फीचर के साथ अंतःक्रियाशीलता का समर्थन करे, ताकि "प्रभावी क्रॉस-ऐप डेटा पहुँच, खोज और पुनर्प्राप्ति" संभव हो सके।

- A key **Google Android feature** is the ability to surface helpful information, such as **flight details, calendars**, etc., with much of this due to **Gemini**.

एक प्रमुख **Google Android फीचर** उपयोगी जानकारी जैसे **उड़ान विवरण, कैलेंडर** आदि प्रदर्शित करने की क्षमता है, जिसका अधिकांश भाग **Gemini** के कारण संभव है।

- The **European Commission's draft measures** direct **Alphabet** to allow other services to carry out these tasks for users, as well as access features including **context-aware intelligence, background execution, on-device model implementation, system integration, screen automation**, and more.

**यूरोपीय आयोग के मसौदा उपाय Alphabet** को निर्देश देते हैं कि वह अन्य सेवाओं को उपयोगकर्ताओं के लिए ये कार्य करने की अनुमति दे, साथ ही **संदर्भ-संवेदनशील बुद्धिमत्ता, पृष्ठभूमि निष्पादन, ऑन-डिवाइस मॉडल कार्यान्वयन, सिस्टम एकीकरण, स्क्रीन स्वचालन** आदि सुविधाओं तक पहुँच प्रदान करे।

- In simpler words, rival **AI services** should be able to interact with apps on users' **Android devices** and "effectively" carry out tasks such as **sending emails, ordering food, and sharing photos** — via the app the user chooses, instead of the one **Google** favours.

सरल शब्दों में, प्रतिस्पर्धी **एआई सेवाएँ** उपयोगकर्ताओं के **एंड्रॉइड उपकरणों** पर ऐप्स के साथ संवाद कर सकें और "प्रभावी रूप से" **ईमेल भेजने, खाना ऑर्डर करने, और फोटो साझा करने** जैसे कार्य कर सकें — उस ऐप के माध्यम से जिसे उपयोगकर्ता चुनता है, न कि जिसे **Google** प्राथमिकता देता है।

- However, these **measures** are not • nalised.  
हालांकि, ये **उपाय** अभी अंतिम रूप में नहीं हैं।
- The **European Commission** may replace or alter some measures if **Alphabet** provides good cause for an **exemption**.

**यूरोपीय आयोग** कुछ उपायों को बदल या संशोधित कर सकता है यदि **Alphabet** किसी **छूट** के लिए उचित कारण प्रस्तुत करता है।

- The regulator has also invited "all **citizens, companies and organisations**" to share their **feedback** and contribute to the **consultation** until **May 13**.

नियामक ने "सभी **नागरिकों, कंपनियों और संगठनों**" को **प्रतिक्रिया** देने और **परामर्श प्रक्रिया** में **13 मई** तक योगदान करने के लिए आमंत्रित किया है।

- A final decision is set to be adopted by **July 27**.

एक अंतिम निर्णय **27 जुलाई** तक अपनाया जाएगा।

- **Google** will have to further support and document these **technical implementations** in detail, as well as submit **reports**.

**Google** को इन **तकनीकी कार्यान्वयनों** का विस्तृत समर्थन और दस्तावेजीकरण करना होगा तथा **रिपोर्ट** भी प्रस्तुत करनी होंगी।

**What was Google's response to the EU regulator? / यूरोपीय नियामक के प्रति Google की प्रतिक्रिया क्या थी?**

- **Google's Senior Competition Counsel, Clare Kelly**, was against the move and shared concerns about **security** and **stability** for users.

**Google** की वरिष्ठ प्रतिस्पर्धा सलाहकार **क्लेयर केली** इस कदम के खिलाफ थीं और उन्होंने उपयोगकर्ताओं के लिए **सुरक्षा और सुलभता** को लेकर चिंता व्यक्त की।



- “This unwarranted **intervention** would strip away that **autonomy**, mandate access to **sensitive hardware** and **device permissions**; unnecessarily driving up **costs** while undermining critical **privacy** and **security protections** for European users,” Kelly was quoted as stating in an email, per Reuters.  
“यह अनावश्यक **हस्तक्षेप** उस **स्वायत्तता** को समाप्त कर देगा, **संवेदनशील हार्डवेयर** और **डिवाइस अनुमतियों** तक अनिवार्य पहुँच देगा; जिससे **लागत** बढ़ेगी और यूरोपीय उपयोगकर्ताओं की महत्वपूर्ण **गोपनीयता** और **सुरक्षा संरक्षण** कमजोर होंगे,” केली ने ईमेल में कहा, जैसा कि रॉयटर्स ने उद्धृत किया।
- **Google** has also criticised the **DMA** more widely.  
**Google** ने व्यापक रूप से **DMA** की भी आलोचना की है।
- In a **September blog post**, Google’s **Oliver Bethell**, Senior Director, Competition, wrote that the **DMA’s aim was more fairness** but that it was “causing significant and unintended **harm**” to European users and many **small businesses**.  
एक **सितंबर ब्लॉग पोस्ट** में, Google के **ओलिवर बेथेल**, वरिष्ठ निदेशक (प्रतिस्पर्धा), ने लिखा कि **DMA** का उद्देश्य अधिक **न्यायसंगतता** था, लेकिन यह यूरोपीय उपयोगकर्ताओं और कई **छोटे व्यवसायों** को “महत्वपूर्ण और अनपेक्षित **नुकसान**” पहुँचा रहा है।
- The post claimed that the **DMA** was focused on the **commercial interests of intermediary sites** connecting businesses and customers, instead of allowing customers and businesses to connect directly via **Google**.  
पोस्ट में दावा किया गया कि **DMA** उन **मध्यस्थ साइटों** के **व्यावसायिक हितों** पर केंद्रित है जो व्यवसायों और ग्राहकों को जोड़ती हैं, बजाय इसके कि ग्राहक और व्यवसाय सीधे **Google** के माध्यम से जुड़ सकें।
- Furthermore, Bethell claimed that the **DMA forced Google to remove “legitimate safeguards” protecting Android users from scams and malicious links**.  
इसके अलावा, बेथेल ने दावा किया कि **DMA** ने Google को **एंड्रॉइड उपयोगकर्ताओं** को **धोखाधड़ी** और **हानिकारक लिंक** से बचाने वाले “**वैध सुरक्षा उपायों**” को हटाने के लिए मजबूर किया।

### Why does this issue matter? / यह मुद्दा क्यों महत्वपूर्ण है?

- As **Big Tech giants** race to develop new **AI tools** and market them to users through their **search engines** (in the case of Google/Microsoft) or **messaging apps** (in the case of Instagram/WhatsApp), regulators are concerned that these companies may cut off access to **rivals who have competing AI products**.  
जैसे-जैसे **बिग टेक कंपनियाँ** नए **एआई उपकरण** विकसित करने और उन्हें अपने **सर्च इंजन** (Google/Microsoft) या **मैसेजिंग ऐप्स** (Instagram/WhatsApp) के माध्यम से बाजार में लाने की दौड़ में हैं, नियामकों को चिंता है कि ये कंपनियाँ प्रतिस्पर्धी **एआई उत्पाद** रखने वाले **प्रतिद्वंद्वियों** की पहुँच सीमित कर सकती हैं।
- This, in turn, would hurt **fair competition**.  
यह बदले में **निष्पक्ष प्रतिस्पर्धा** को नुकसान पहुँचाएगा।
- For example, both **OpenAI’s ChatGPT** and **Microsoft’s Copilot** announced last year that they would be leaving **WhatsApp** after **Meta** changed platform usage policies that affected how **AI chatbots** could access the **WhatsApp backend**.  
उदाहरण के लिए, **OpenAI का ChatGPT** और **Microsoft का Copilot** दोनों ने पिछले वर्ष घोषणा की कि वे **WhatsApp** छोड़ देंगे, जब **Meta** ने प्लेटफॉर्म उपयोग नीतियों में बदलाव किया जिससे **एआई चैटबॉट्स** की बैकएंड तक पहुँच प्रभावित हुई।
- In **December**, the **European Commission** opened a formal **antitrust investigation** into **Meta** over the policy change.  
**दिसंबर** में, **यूरोपीय आयोग** ने इस नीति परिवर्तन को लेकर **Meta** के खिलाफ औपचारिक **प्रतिस्पर्धा-विरोधी जांच** शुरू की।
- In scenarios like these, customers could be forced to rely on the **default AI product** offered by the platform or device they are using, instead of freely choosing the one they want.



ऐसी परिस्थितियों में, उपयोगकर्ताओं को अपनी पसंद के बजाय प्लेटफॉर्म या डिवाइस द्वारा प्रदान किए गए डिफॉल्ट एआई उत्पाद पर निर्भर होना पड़ सकता है।

- On the other hand, tech companies have opposed opening up their hardware and software ecosystems to rivals, claiming that such permissions reduce security or pass on increased costs to users.

दूसरी ओर, तकनीकी कंपनियों ने अपने हार्डवेयर और सॉफ्टवेयर पारिस्थितिकी तंत्र को प्रतिस्पर्धियों के लिए खोलने का विरोध किया है, यह कहते हुए कि इससे सुरक्षा कम होती है या उपयोगकर्ताओं पर अतिरिक्त लागत का बोझ पड़ता है।

- The enforcement actions taken by the European Commission in Google's case could also influence the business outlook of other Big Tech companies designated as gatekeepers under the DMA.

Google के मामले में यूरोपीय आयोग द्वारा किए गए प्रवर्तन कार्य DMA के तहत गेटकीपर के रूप में नामित अन्य बड़ी तकनीकी कंपनियों के व्यावसायिक दृष्टिकोण को भी प्रभावित कर सकते हैं।

- Furthermore, these proceedings have the power to influence how Indian courts and competition regulators handle such antitrust questions at home.

इसके अलावा, ये कार्यवाही यह भी प्रभावित कर सकती है कि भारतीय न्यायालय और प्रतिस्पर्धा नियामक देश में ऐसे प्रतिस्पर्धा-विरोधी मामलों को कैसे संभालते हैं।

GS Paper III: Science and Technology		04 May 2026
TOPICS COVERED		
04Ma	Mission Drishti, world's first OptoSAR satellite, launched	मिशन दृष्टि, दुनिया का पहला OptoSAR उपग्रह, लॉन्च
04Ma	Govt. issues guidelines on childhood diabetes care	सरकार ने बचपन में मधुमेह देखभाल पर दिशा-निर्देश जारी किए
04Ma	How dual-use satellites are blurring the lines of modern space war	द्वि-उपयोगी उपग्रह आधुनिक अंतरिक्ष युद्ध की सीमाओं को कैसे धुंधला कर रहे हैं



### Mission Drishti, world's first OptoSAR satellite, launched

Mission Drishti, the world's first OptoSAR satellite developed by the Bengaluru-based space start-up GalaxEye has been successfully launched on Sunday aboard a Falcon 9 by SpaceX from Vandenberg, California. Weighing 190 kilograms, it is India's largest privately developed earth observation satellite. "It is the first satellite globally to integrate Electro-Optical (EO) and Synthetic Aperture Radar (SAR) sensors into a single operational platform, enabling all-weather, day-and-night imaging capabilities. This approach addresses long-standing limitations of conventional systems and enables more reliable and consistent data acquisition across diverse environmental conditions," GalaxEye said.

### 04Ma. Mission Drishti, world's first OptoSAR satellite, launched

मिशन दृष्टि, दुनिया का पहला OptoSAR उपग्रह, लॉन्च

- Mission Drishti, the world's first OptoSAR satellite developed by the Bengaluru-based space start-up GalaxEye has been successfully launched on Sunday aboard a Falcon 9 by SpaceX from Vandenberg, California.

मिशन दृष्टि, दुनिया का पहला OptoSAR उपग्रह, जिसे बेंगलुरु स्थित स्पेस स्टार्टअप GalaxEye ने विकसित किया है, रविवार को कैलिफोर्निया के वैंडेनबर्ग से SpaceX के Falcon 9 के जरिए सफलतापूर्वक लॉन्च किया गया।

- Weighing 190 kilograms, it is India's largest privately developed earth observation satellite.

190 किलोग्राम वजनी यह भारत का सबसे बड़ा निजी रूप से विकसित पृथ्वी अवलोकन उपग्रह है।

- "It is the first satellite globally to integrate Electro-Optical (EO) and Synthetic Aperture Radar (SAR) sensors into a single operational platform, enabling all-weather, day-and-night imaging capabilities.

"यह दुनिया का पहला उपग्रह है जो Electro-Optical (EO) और Synthetic



Aperture Radar (SAR) सेंसर को एक ही प्लेटफॉर्म में जोड़ता है, जिससे हर मौसम, दिन और रात में इमेजिंग क्षमता संभव होती है।

## Govt. issues guidelines on childhood diabetes care

New framework provides for universal screening, district-level diagnosis and free lifelong care, including insulin, regular monitoring, and emergency response under public health system

GS III: S&T  
Bindu Shajan Perappadan  
NEW DELHI

Integrating childhood diabetes care into the public health system, the Union Health Ministry has, for the first time, introduced a structured and standardised national framework for the screening, diagnosis, treatment and long-term management of diabetes in children.

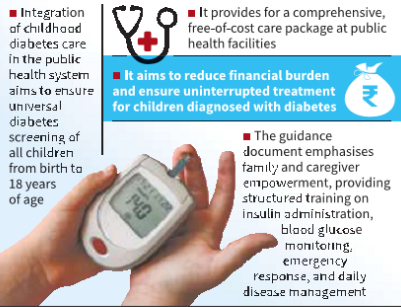
Releasing the *Guidance Document on Diabetes Mellitus in Children* recently, the Ministry said this aims to ensure universal diabetes screening of all children in India from birth to 18 years of age.

"Suspected cases will undergo immediate blood glucose testing, followed by timely referral to district-level health facilities for confirmatory diagnosis and treatment," a senior Health Ministry official said.

He added that a key feature of the framework is the provision of a comprehensive, free-of-cost care package at public health facilities. This includes screening, diagnostic services, lifelong insulin therapy, monitoring devices such as glucometers and test strips, and regular follow-up care. The approach is designed to reduce fi-

### Early intervention

The Union Health Ministry has introduced a structured and standardised national framework for the screening, diagnosis, treatment, and long-term management of diabetes in children



financial burden and ensure uninterrupted treatment for children diagnosed with diabetes.

### Integrated care

While the initiative positions India among a select group of countries that have integrated childhood diabetes care into the public health system, the document also introduces an integrated continuum of care, linking community-level screening with district hospital-based management and advanced care at medical colleges.

"This convergence ensures that no child is lost in

the system and that care continues seamlessly from detection to long-term follow-up," the Health Ministry noted in a release issued on Sunday.

According to the World Health Organization, diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycaemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious dam-

age to many of the body's systems, especially the nerves and blood vessels.

### "4Ts" framework

The initiative seeks to support early detection and promote the "4Ts" awareness framework – Toilet, Thirsty, Tired, and Thinner – enabling parents, teachers and caregivers to recognise early warning signs of Type 1 diabetes.

In addition to clinical protocols, the document emphasises family and caregiver empowerment, providing structured training on insulin administration, blood glucose monitoring, emergency response and daily disease management. It also outlines evidence-based treatment guidelines, regular monitoring schedules, and protocols for preventing complications.

The initiative is expected to deliver public health benefits, including reduced mortality due to early detection, prevention of complications, and improved quality of life for affected children. Over the long term, it will contribute to lowering health-care costs and strengthening health system capacity for managing non-communicable diseases among children.

## 04Ma. Govt. issues guidelines on childhood diabetes care

सरकार ने बचपन में मधुमेह देखभाल पर दिशा-निर्देश जारी किए

• The new framework provides for **universal screening, district-level diagnosis and free lifelong care, including insulin, regular monitoring, and emergency response under the public health system.**

नया ढांचा सार्वभौमिक स्क्रीनिंग, जिला-स्तरीय निदान और मुफ्त आजीवन देखभाल प्रदान करता है, जिसमें इंसुलिन, नियमित निगरानी और आपातकालीन प्रतिक्रिया शामिल हैं, जो सार्वजनिक स्वास्थ्य प्रणाली के तहत उपलब्ध होगी।

• Releasing the **Guidance Document on Diabetes Mellitus in Children** recently, the Ministry said this **aims to ensure universal diabetes screening of all children in India from birth to 18 years of age.**

हाल ही में बच्चों में मधुमेह पर मार्गदर्शन दस्तावेज़ जारी करते हुए मंत्रालय ने कहा कि इसका उद्देश्य भारत में जन्म से 18 वर्ष तक के सभी बच्चों की सार्वभौमिक मधुमेह जांच सुनिश्चित करना है।

- He added that a key feature of the framework is the provision of a comprehensive, **free-of-cost care package at public health facilities.**

उन्होंने कहा कि इस ढांचे की प्रमुख विशेषता मुफ्त व्यापक देखभाल पैकेज का सार्वजनिक स्वास्थ्य केंद्रों पर उपलब्ध होना है।

- This includes screening, diagnostic services, **lifelong insulin therapy**, monitoring devices such as **glucometers and test strips**, and regular follow-up care.

इसमें स्क्रीनिंग, निदान सेवाएं, आजीवन इंसुलिन थेरेपी, ग्लूकोमीटर और टेस्ट स्ट्रिप्स जैसे निगरानी उपकरण, और नियमित फॉलो-अप देखभाल शामिल है।

- The approach is designed to reduce **financial burden** and ensure **uninterrupted treatment for children diagnosed with diabetes.**

यह तरीका आर्थिक बोझ कम करने और मधुमेह से पीड़ित बच्चों के लिए निरंतर उपचार सुनिश्चित करने के लिए बनाया गया है।



## Integrated care

### एकीकृत देखभाल

- According to the **World Health Organization**, diabetes is a **chronic disease** that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces.  
विश्व स्वास्थ्य संगठन के अनुसार, मधुमेह एक दीर्घकालिक रोग है जो तब होता है जब अग्न्याशय पर्याप्त इंसुलिन नहीं बनाता या शरीर उस इंसुलिन का प्रभावी उपयोग नहीं कर पाता।
- Insulin is a **hormone** that regulates **blood sugar**.  
इंसुलिन एक हार्मोन है जो रक्त शर्करा को नियंत्रित करता है।
- **Hyperglycaemia**, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the **nerves and blood vessels**.  
हाइपरग्लाइसीमिया (उच्च रक्त शर्करा) अनियंत्रित मधुमेह का सामान्य प्रभाव है और समय के साथ शरीर के कई तंत्रों, विशेषकर तंत्रिकाओं और रक्त वाहिकाओं, को गंभीर नुकसान पहुंचाता है।
- **"4Ts" framework**  
**"4Ts" ढांचा**
- The initiative seeks to support **early detection** and promote the **"4Ts" awareness framework — Toilet, Thirsty, Tired, and Thinner** — enabling parents, teachers and caregivers to recognise early warning signs of **Type 1 diabetes**.  
यह पहल प्रारंभिक पहचान को बढ़ावा देने और **"4Ts" जागरूकता ढांचे — टॉयलेट, प्यास, थकान और वजन कम होना** — को प्रोत्साहित करती है, जिससे माता-पिता, शिक्षक और देखभालकर्ता टाइप 1 मधुमेह के शुरुआती लक्षण पहचान सकें।
- In addition to clinical protocols, the document emphasises **family and caregiver empowerment**, providing structured training on **insulin administration, blood glucose monitoring, emergency response and daily disease management**.  
क्लिनिकल प्रोटोकॉल के अलावा, दस्तावेज़ परिवार और देखभालकर्ताओं के सशक्तिकरण पर जोर देता है, जिसमें इंसुलिन देने, रक्त शर्करा निगरानी, आपातकालीन प्रतिक्रिया और दैनिक प्रबंधन पर प्रशिक्षण शामिल है।



# How dual-use satellites are blurring the lines of modern space war

The Outer Space Treaty of 1967 and international humanitarian law require warring parties to differentiate between civilian objects and military targets; however, modern satellites are dual-use by default as civilian GPS networks, broadband constellations routinely support intelligence gathering and drone targeting

GSAT

Shrawani Shagun

When we imagine space warfare, we picture shattered satellites and orbital debris. The reality is quieter but also more dangerous. The markers of modern orbital conflict are signal loss, deliberate misdirection, and sudden system failures.

In the initial hours of Russia's invasion of Ukraine in 2022, a cyber-attack crippled Viasat's KA-SAT network, severing vital communications across Europe. GPS spoofing incidents have similarly misled civilian aircraft and maritime vessels, luring ships into hazardous shoals or corrupting flight computers to trigger false terrain alerts effectively weaponising a platform's own safety logic against its operators.

The next conflict in space will begin with silence, with jammed signals, altered coordinates, and compromised systems. Space is today critical infrastructure and vulnerabilities related to space are often tantamount vulnerabilities in human society.

This vulnerability is built into the architecture of space systems. Interference leaves no physical trace yet it can be devastating. It operates using three tools: jamming (or blocking signals), spoofing (sending false data), and ground station hacking (taking control of satellite systems).

As a result, no physical destruction is needed to paralyse an adversary – which is an important shift in the way conflict plays out in orbit. As financial, energy, and communication networks depend on satellites, such intrusions can also trigger cascading failures on the earth.

## Legal blindspot

This change exposes a deeper legal problem. As the Prussian military theorist Carl von Clausewitz observed, war is defined by its effects. If cyber operations can disable satellites that support power grids, financial systems or emergency communications, their consequences are indistinguishable from a physical strike. However, the United Nations Charter does not clearly address cyber operations within its Article 2(4) prohibition on the "use of force".

A functional, effects-based test is therefore essential to interpret "use of force" in the orbital domain. As of 2026, several states have moved to the position that a cyber operation does not require physical 'smoke and fire' to violate Article 2(4). Instead, if a digital intrusion functionally disables a satellite, effectively bricking it, the strategic and economic consequences are identical to a kinetic strike. In this context, loss of functionality is the new shattered glass.

However, it also comes with a challenge, called the attribution gap. Under the International Law Commission framework on state responsibility, legal



Conflict in orbit no longer requires satellites to be physically destroyed in order to paralyse an adversary. IMAGE CREATED WITH CHATGPT

liability is contingent on identifying the perpetrator with high evidentiary certainty. In the digital domain, operations routed through proxy networks and spoofed identities create a layer of strategic anonymity that complicates traditional deterrence.

This is less a technical flaw and more a structural tension: as long as evidentiary standards are based on visible, physical proof, the invisible nature of cyber-disruption will continue to offer a significant strategic advantage to aggressors. In other words, existing international law recognises force by its consequences – yet it remains in a reactive posture as both the act and the actor remain obscured.

## Collapse of civilian-military divide

The legal protections designed to safeguard non-combatants are deteriorating in the face of modern technology. The Outer Space Treaty and international humanitarian law rely heavily on the principle of distinction, requiring warring parties to differentiate between civilian objects and military targets.

However, modern satellites are dual-use by default. Civilian GPS networks, commercial broadband constellations, and financial timestamping systems now routinely support intelligence gathering and drone targeting. Because militaries piggyback on commercial infrastructure, these assets often lose their protected civilian status under international humanitarian law.

That said, in practice, the 'civilian satellite' is becoming a legal fiction. When commercial constellations provide 'space

**States must move from advisory norms to enforceable 'secure-by-design' standards, clarify when cyber operations in space constitute a use of force, and strengthen cooperative attribution mechanisms. Without this, ambiguity will continue to favour the attacker**

as a service' for military kill-chains – also known as the Starlink Precedent – they dissolve the distinction entirely. In this environment, an entire network can become a legitimate grey-zone target, even if it simultaneously serves schools or hospitals.

Former British army officer and author Emile Simpson has distinguished between traditional Clausewitzian war and contemporary conflict: the former seeks a definitive military decision while the latter functions as a direct instrument of political communication aimed at fragmented audiences.

In space, cyber operations enable ambiguous, deniable attacks that are designed to shape perceptions of state power rather than to secure territorial gains. Because they avoid the debris and visibility of kinetic strikes, they incentivise constant, low-level disruption. This creates a persistent state of friction that never crosses the threshold of war but continuously undermines the political legitimacy of the targeted state.

For India, the 2026 CERT-In/SIA-India Guidelines institutionalised a "secure-by-design" doctrine for space systems. They embed cybersecurity into

every stage of the satellite lifecycle, from design and launch to in-orbit operations and decommissioning. They also identify threats such as signal jamming, spoofing, and unauthorised command access, and recommend layered safeguards across space, ground, and communication segments. However, an enforcement gap remains: India is expanding its presence in orbit faster than it is building the ability to detect and trace cyberattacks in real time.

## Objective of disruption

The response cannot remain reactive. States must move from advisory norms to enforceable "secure-by-design" standards, clarify when cyber operations in space constitute a use of force, and strengthen cooperative attribution mechanisms. Without this, ambiguity will continue to favour the attacker. In a digital battlefield, if an attacker cannot be identified within minutes, they cannot be deterred at all.

For the Global South, this digital battlefield poses the unique threat of orbital dependency. When the digital backbones of developing economies are hosted on third-party commercial constellations, a silent strike can blind a military and, more importantly, effectively paralyse a state's ability to govern, disenfranchising a nation in a single digital stroke.

In this new era, the objective is no longer to destroy a satellite but to disrupt the society that depends on it.

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## THE GIST

▼ The markers of modern orbital conflict are signal loss, deliberate misdirection, and sudden system failures

▼ As financial, energy, and communication networks depend on satellites, such intrusions can also trigger cascading failures on the earth

▼ This change exposes a deeper legal problem. The United Nations Charter does not clearly address cyber operations within its Article 2(4) prohibition on the 'use of force'

## 04Ma. How dual-use satellites are blurring the lines of modern space war

द्वि-उपयोगी उपग्रह आधुनिक अंतरिक्ष युद्ध की सीमाओं को कैसे धुंधला कर रहे हैं

- The **Outer Space Treaty of 1967** and **international humanitarian law** require warring parties to **differentiate** between **civilian objects** and **military targets**; however, **modern satellites are dual-use by default as civilian GPS networks, broadband constellations routinely support intelligence gathering and drone targeting.**



1967 की बाह्य अंतरिक्ष संधि और अंतर्राष्ट्रीय मानवीय कानून युद्धरत पक्षों से भेद करने की अपेक्षा करते हैं कि वे नागरिक वस्तुओं और सैन्य लक्ष्यों के बीच अंतर करें; हालांकि, आधुनिक उपग्रह स्वतः द्वि-उपयोगी होते हैं क्योंकि नागरिक GPS नेटवर्क, ब्रॉडबैंड तारामंडल नियमित रूप से खुफिया जानकारी एकत्र करने और ड्रोन लक्ष्य निर्धारण का समर्थन करते हैं।

## Space warfare / अंतरिक्ष युद्ध

- When we imagine **space warfare**, we picture **shattered satellites** and **orbital debris**. जब हम अंतरिक्ष युद्ध की कल्पना करते हैं, तो हम टूटे हुए उपग्रहों और कक्षीय मलबे की तस्वीर देखते हैं।
- The **reality** is quieter but also more **dangerous**. वास्तविकता अधिक शांत है, परंतु साथ ही अधिक खतरनाक भी है।
- The markers of **modern orbital conflict** are **signal loss, deliberate misdirection, and sudden system failures**. आधुनिक कक्षीय संघर्ष के संकेत हैं सिग्नल का नुकसान, जानबूझकर गलत दिशा देना, और अचानक प्रणाली विफलताएँ।
- **In the initial hours of Russia's invasion of Ukraine in 2022, a cyber-attack crippled Viasat's KA-SAT network, severing vital communications across Europe**. 2022 में यूक्रेन पर रूस के आक्रमण के शुरुआती घंटों में, एक साइबर हमला ने Viasat के KA-SAT नेटवर्क को निष्क्रिय कर दिया, जिससे पूरे यूरोप में महत्वपूर्ण संचार बाधित हो गया।
- **GPS spoofing incidents** have similarly misled **civilian aircraft** and **maritime vessels**, luring ships into **hazardous shoals** or corrupting **flight computers** to trigger **false terrain alerts**, effectively weaponising a platform's own **safety logic** against its operators. इसी प्रकार, GPS स्फूफिंग की घटनाओं ने नागरिक विमानों और समुद्री जहाजों को गुमराह किया है, जहाजों को खतरनाक उथले क्षेत्रों में ले जाकर या फ्लाइट कंप्यूटर को भ्रष्ट कर झूठे भू-भाग अलर्ट उत्पन्न कर, प्लेटफॉर्म की अपनी सुरक्षा प्रणाली को उसके संचालकों के विरुद्ध हथियार बना दिया है।
- The **next conflict in space** will begin with **silence, with jammed signals, altered coordinates, and compromised systems**. अंतरिक्ष में अगला संघर्ष मौन के साथ शुरू होगा, जिसमें जैम किए गए सिग्नल, बदले हुए निर्देशांक, और समझौता किए गए सिस्टम होंगे।
- **Space is today critical infrastructure** and vulnerabilities related to space are often tantamount vulnerabilities in **human society**. आज अंतरिक्ष एक महत्वपूर्ण बुनियादी ढांचा है और इससे जुड़ी कमजोरियाँ अक्सर मानव समाज की कमजोरियों के समान होती हैं।
- This **vulnerability** is built into the **architecture of space systems**. यह कमजोरी अंतरिक्ष प्रणालियों की संरचना में ही निहित है।
- **Interference** leaves no **physical trace** yet it can be **devastating**. यह हस्तक्षेप कोई भौतिक निशान नहीं छोड़ता, फिर भी यह विनाशकारी हो सकता है।
- It operates using three tools: **jamming** (or **blocking signals**), **spoofing** (sending **false data**), and **ground station hacking** (taking control of **satellite systems**). यह तीन उपकरणों के माध्यम से कार्य करता है: जैमिंग (सिग्नल अवरुद्ध करना), स्फूफिंग (गलत डेटा भेजना), और ग्राउंड स्टेशन हैकिंग (उपग्रह प्रणालियों पर नियंत्रण प्राप्त करना)।
- As a result, no **physical destruction** is needed to **paralyse an adversary** — which is an important shift in the way **conflict plays out in orbit**. इसके परिणामस्वरूप, किसी प्रतिद्वंद्वी को निष्क्रिय करने के लिए भौतिक विनाश की आवश्यकता नहीं होती — जो कक्षा में संघर्ष के स्वरूप में एक महत्वपूर्ण परिवर्तन है।
- As **financial, energy, and communication networks** depend on **satellites**, such **intrusions** can also trigger **cascading failures** on the earth.



चूंकि वित्तीय, ऊर्जा, और संचार नेटवर्क उपग्रहों पर निर्भर हैं, ऐसे हस्तक्षेप पृथ्वी पर श्रृंखलाबद्ध विफलताओं को भी उत्पन्न कर सकते हैं।

### Legal blindspot / कानूनी अंध बिंदु

- This **change** exposes a deeper **legal problem**.  
यह परिवर्तन एक गहरे कानूनी समस्या को उजागर करता है।
- As the **Prussian military theorist Carl von Clausewitz** observed, **war is defined by its effects**.  
जैसा कि प्रशियन सैन्य सिद्धांतकार Carl von Clausewitz ने कहा, युद्ध को उसके प्रभावों से परिभाषित किया जाता है।
- **If cyber operations can disable satellites that support power grids, financial systems or emergency communications, their consequences are indistinguishable from a physical strike**.  
यदि साइबर ऑपरेशन उन उपग्रहों को निष्क्रिय कर सकते हैं जो बिजली ग्रिड, वित्तीय प्रणाली, या आपातकालीन संचार का समर्थन करते हैं, तो उनके परिणाम भौतिक हमले से अलग नहीं होते।
- However, the **United Nations Charter** does not clearly address **cyber operations within its Article 2(4) prohibition on the "use of force"**.  
हालांकि, संयुक्त राष्ट्र चार्टर अपने अनुच्छेद 2(4) में "बल के उपयोग" के प्रतिबंध के अंतर्गत साइबर ऑपरेशनों को स्पष्ट रूप से संबोधित नहीं करता है।
- A **functional, effects-based test** is therefore essential to interpret "use of force" in the **orbital domain**.  
अतः कक्षीय क्षेत्र में "बल के उपयोग" की व्याख्या के लिए एक प्रभाव-आधारित परीक्षण आवश्यक है।
- As of **2026**, several **states** have moved to the position that a **cyber operation does not require physical 'smoke and fire' to violate Article 2(4)**.  
2026 तक, कई देशों ने यह मान लिया है कि किसी साइबर ऑपरेशन को अनुच्छेद 2(4) का उल्लंघन करने के लिए भौतिक 'धुआं और आग' की आवश्यकता नहीं है।
- **Instead, if a digital intrusion functionally disables a satellite, effectively bricking it, the strategic and economic consequences are identical to a kinetic strike**.  
इसके बजाय, यदि कोई डिजिटल हस्तक्षेप किसी उपग्रह को कार्यात्मक रूप से निष्क्रिय कर देता है, तो उसके रणनीतिक और आर्थिक परिणाम एक भौतिक हमले के समान होते हैं।
- In this context, **loss of functionality** is the new **shattered glass**.  
इस संदर्भ में, कार्यात्मकता का नुकसान ही नया टूटा हुआ कांच है।
- However, it also comes with a challenge, called the **attribution gap**.  
हालांकि, इसके साथ एक चुनौती भी आती है, जिसे एट्रिब्यूशन गैप कहा जाता है।
- Under the **International Law Commission framework on state responsibility, legal liability** is contingent on identifying the **perpetrator with high evidentiary certainty**.  
अंतर्राष्ट्रीय विधि आयोग के राज्य उत्तरदायित्व ढांचे के तहत, कानूनी दायित्व इस बात पर निर्भर करता है कि अपराधी की पहचान उच्च साक्ष्यात्मक निश्चितता के साथ की जाए।
- **In the digital domain, operations routed through proxy networks and spoofed identities create a layer of strategic anonymity that complicates traditional deterrence**.  
डिजिटल क्षेत्र में, प्रॉक्सी नेटवर्क और स्पूफ़ड पहचान के माध्यम से संचालित गतिविधियाँ रणनीतिक गुमनामी की एक परत उत्पन्न करती हैं, जो पारंपरिक निरोधक तंत्र को जटिल बना देती हैं।
- This is less a **technical flaw** and more a **structural tension**: as long as **evidentiary standards** are based on **visible, physical proof**, the **invisible nature of cyber-disruption** will continue to offer a **significant strategic advantage** to aggressors.  
यह कम एक तकनीकी दोष और अधिक एक संरचनात्मक तनाव है: जब तक साक्ष्य मानक दृश्यमान, भौतिक



प्रमाण पर आधारित रहेंगे, तब तक साइबर-विघटन की अदृश्य प्रकृति आक्रामकों को महत्वपूर्ण रणनीतिक लाभ प्रदान करती रहेगी।

- In other words, existing **international law** recognises **force by its consequences** — yet it remains in a **reactive posture** as both the **act** and the **actor** remain obscured. दूसरे शब्दों में, वर्तमान अंतर्राष्ट्रीय कानून बल को उसके परिणामों से पहचानता है — फिर भी यह एक प्रतिक्रियात्मक स्थिति में बना रहता है क्योंकि कृत्य और कर्ता दोनों ही अस्पष्ट रहते हैं।

### Collapse of civilian-military divide / नागरिक-सैन्य विभाजन का पतन

- The **legal protections** designed to safeguard **non-combatants** are deteriorating in the face of **modern technology**.  
गैर-युद्धरत व्यक्तियों की सुरक्षा के लिए बनाए गए कानूनी संरक्षण आधुनिक प्रौद्योगिकी के सामने कमजोर होते जा रहे हैं।
- The **Outer Space Treaty** and **international humanitarian law** rely heavily on the **principle of distinction**, requiring warring parties to differentiate between **civilian objects** and **military targets**.  
आउटर स्पेस संधि और अंतर्राष्ट्रीय मानवीय कानून भेद के सिद्धांत पर अत्यधिक निर्भर करते हैं, जो युद्धरत पक्षों को नागरिक वस्तुओं और सैन्य लक्ष्यों के बीच अंतर करने की आवश्यकता होती है।
- However, modern **satellites** are **dual-use** by default.  
हालांकि, आधुनिक उपग्रह स्वाभाविक रूप से द्वि-उपयोगी होते हैं।
- **Civilian GPS networks, commercial broadband constellations, and financial timestamping systems** now routinely support **intelligence gathering** and **drone targeting**.  
नागरिक GPS नेटवर्क, वाणिज्यिक ब्रॉडबैंड नक्षत्र, और वित्तीय टाइमस्टैम्पिंग सिस्टम अब नियमित रूप से खुफिया जानकारी संग्रह और ड्रोन लक्ष्य निर्धारण का समर्थन करते हैं।
- **Because militaries piggyback on commercial infrastructure, these assets often lose their protected civilian status under international humanitarian law.**  
क्योंकि सैन्य बल वाणिज्यिक अवसंरचना पर निर्भर रहते हैं, ये संसाधन अक्सर अंतर्राष्ट्रीय मानवीय कानून के तहत अपनी संरक्षित नागरिक स्थिति खो देते हैं।
- That said, in practice, the '**civilian satellite**' is becoming a **legal fiction**.  
फिर भी, व्यवहार में 'नागरिक उपग्रह' एक कानूनी कल्पना बनता जा रहा है।
- **When commercial constellations provide 'space as a service' for military kill-chains — also known as the Starlink Precedent — they dissolve the distinction entirely.**  
जब वाणिज्यिक नक्षत्र सैन्य किल-चेन के लिए 'स्पेस ऐज़ अ सर्विस' प्रदान करते हैं — जिसे स्टारलिनक मिसाल भी कहा जाता है — तब वे भेद को पूरी तरह समाप्त कर देते हैं।
- In this environment, an entire **network** can become a legitimate **grey-zone target**, even if it simultaneously serves **schools** or **hospitals**.  
इस वातावरण में, एक पूरा नेटवर्क एक वैध ग्रे-ज़ोन लक्ष्य बन सकता है, भले ही वह एक साथ स्कूलों या अस्पतालों की सेवा करता हो।
- Former **British army officer** and author **Emile Simpson** has distinguished between **traditional Clausewitzian war** and **contemporary conflict**: the former seeks a **definitive military decision** while the latter functions as a **direct instrument of political communication** aimed at **fragmented audiences**.  
पूर्व ब्रिटिश सेना अधिकारी और लेखक **Emile Simpson** ने पारंपरिक क्लॉज़विट्ज़ियन युद्ध और आधुनिक संघर्ष के बीच अंतर किया है: पहला निर्णायक सैन्य परिणाम चाहता है जबकि दूसरा राजनीतिक संचार का प्रत्यक्ष साधन बनकर विखंडित दर्शकों को लक्षित करता है।
- **In space, cyber operations** enable **ambiguous, deniable attacks** that are designed to shape **perceptions of state power** rather than to secure **territorial gains**.



अंतरिक्ष में, साइबर ऑपरेशन अस्पष्ट और अस्वीकार्य हमलों को सक्षम बनाते हैं, जो क्षेत्रीय लाभ प्राप्त करने के बजाय राज्य शक्ति की धारणाओं को प्रभावित करने के लिए बनाए जाते हैं।

- Because they avoid the **debris** and **visibility** of **kinetic strikes**, they incentivise constant, **low-level disruption**.

क्योंकि वे भौतिक हमलों के मलबे और दृश्यता से बचते हैं, वे निरंतर निम्न-स्तरीय विघटन को प्रोत्साहित करते हैं।

- This creates a persistent state of **friction** that never crosses the **threshold of war** but continuously undermines the **political legitimacy** of the targeted state.

यह घर्षण की एक स्थायी स्थिति उत्पन्न करता है जो कभी युद्ध की सीमा को पार नहीं करती, परंतु लक्षित राज्य की राजनीतिक वैधता को निरंतर कमजोर करती रहती है।

- For India, the **2026 CERT-In/SIA-India Guidelines** institutionalised a “**secure-by-design**” doctrine for **space systems**.

भारत के लिए, 2026 CERT-In/SIA-India दिशानिर्देशों ने अंतरिक्ष प्रणालियों के लिए “डिज़ाइन द्वारा सुरक्षित” सिद्धांत को संस्थागत बनाया।

- They embed **cybersecurity** into every stage of the **satellite lifecycle**, from **design** and **launch** to **in-orbit operations** and **decommissioning**.

वे साइबर सुरक्षा को उपग्रह जीवनचक्र के हर चरण में सम्मिलित करते हैं, जिसमें डिज़ाइन, लॉन्च, कक्षा संचालन, और निष्क्रियकरण शामिल हैं।

- They also identify **threats** such as **signal jamming**, **spoofing**, and **unauthorised command access**, and recommend **layered safeguards** across **space**, **ground**, and **communication segments**.

वे सिग्नल जैमिंग, स्पूर्फिंग, और अनधिकृत कमांड एक्सेस जैसे खतरों की पहचान करते हैं, और अंतरिक्ष, भूमि, और संचार क्षेत्रों में स्तरीय सुरक्षा उपायों की सिफारिश करते हैं।

- However, an **enforcement gap** remains: **India** is expanding its presence in **orbit** faster than it is building the ability to **detect** and **trace cyberattacks** in **real time**.

हालांकि, एक कार्यान्वयन अंतर बना हुआ है: भारत कक्षा में अपनी उपस्थिति को तेजी से बढ़ा रहा है, लेकिन साइबर हमलों का वास्तविक समय में पता लगाने और उनका पता लगाने की क्षमता उतनी तेजी से विकसित नहीं हो रही है।

### Objective of disruption / विघटन का उद्देश्य

- The response cannot remain **reactive**.  
प्रतिक्रिया केवल प्रतिक्रियात्मक नहीं रह सकती।
- States must move from **advisory norms** to enforceable “**secure-by-design**” standards, clarify when **cyber operations in space** constitute a **use of force**, and strengthen **cooperative attribution mechanisms**.

राज्यों को सलाहकारी मानकों से आगे बढ़कर लागू करने योग्य “डिज़ाइन द्वारा सुरक्षित” मानकों की ओर बढ़ना चाहिए, यह स्पष्ट करना चाहिए कि कब अंतरिक्ष में साइबर ऑपरेशन बल के उपयोग के अंतर्गत आते हैं, और सहकारी एट्रिब्यूशन तंत्र को मजबूत करना चाहिए।

- Without this, **ambiguity** will continue to favour the **attacker**.  
इसके बिना, अस्पष्टता हमेशा हमलावर के पक्ष में रहेगी।
- In a **digital battlefield**, if an **attacker** cannot be identified within **minutes**, they cannot be **deterred** at all.

एक डिजिटल युद्धक्षेत्र में, यदि हमलावर को मिनटों के भीतर पहचाना नहीं जा सकता, तो उसे बिल्कुल भी निरुद्ध नहीं किया जा सकता।

- For the **Global South**, this **digital battlefield** poses the unique threat of **orbital dependency**.

वैश्विक दक्षिण के लिए, यह डिजिटल युद्धक्षेत्र कक्षीय निर्भरता का एक अनूठा खतरा प्रस्तुत करता है।



- When the **digital backbones** of **developing economies** are hosted on **third-party commercial constellations**, a **silent strike** can blind a **military** and, more importantly, effectively paralyse a **state's ability to govern**, disenfranchising a nation in a single **digital stroke**.  
जब **विकासशील अर्थव्यवस्थाओं** की **डिजिटल रीढ़** **तृतीय-पक्ष वाणिज्यिक नक्षत्रों** पर निर्भर होती है, तो एक **मौन हमला** किसी **सैन्य बल** को अंधा कर सकता है और, अधिक महत्वपूर्ण रूप से, किसी **राज्य की शासन क्षमता** को प्रभावी रूप से निष्क्रिय कर सकता है, जिससे एक ही **डिजिटल आघात** में राष्ट्र को वंचित किया जा सकता है।
- In this new era, the **objective** is no longer to **destroy a satellite** but to **disrupt the society** that depends on it.  
इस नए युग में, **उद्देश्य** अब **उपग्रह को नष्ट करना नहीं**, बल्कि उस पर निर्भर **समाज को बाधित करना** है।

<b>GS Paper III: Environment</b>		<b>04 May 2026</b>
<b>TOPICS COVERED</b>		
<b>04Ma</b>	<b>Sustainable mining: oxymoron?</b> सतत खनन: क्या यह विरोधाभास है?	
<b>04Ma</b>	<b>Gujarat port is taming invasive plant species at pilot bio-methanol unit</b> गुजरात बंदरगाह पायलट बायो-मेथनॉल इकाई में आक्रामक पौध प्रजातियों को नियंत्रित कर रहा है	



Samples of coral collected from the **Abrolhos National Marine Park in Brazil** on April 23, 2026. The Abrolhos reefs are the most biodiverse coral ecosystem in the South Atlantic. Their biodiversity has dropped by around 15% over 18 years due to marine heatwaves, a new study has found.

GS III: Environment  
Samples of coral collected from the Abrolhos National Marine Park in Brazil on April 23, 2026. The Abrolhos reefs are the most biodiverse coral ecosystem in the South Atlantic. Their biodiversity has dropped by around 15% over 18 years due to marine heatwaves, a new study has found. REUTERS

## Sustainable mining: oxymoron?

GS III: Environment  
सतत खनन: क्या यह विरोधाभास है?

**H**umans are trying to build a low-carbon future. Ironically, this future won't be possible without mining today. This is because wind turbines, solar panels, and electric batteries all require lithium, cobalt, copper, and rare-earth elements.

Mining doesn't leave the earth intact. Instead, it extracts finite, non-renewable resources. The processes of mining also often pollute the environment, permanently change landscapes, and destroy biodiversity. So in a commonsensical way, mining is not sustainable. No amount of money or technologies can bring back, say, a pristine rainforest.

However, some people, including the UN and the International Energy Agency, have floated an idea called 'weak sustainability' with regards to mining. They argue that mines can be 'sustainable' if the extracted resources create greater value, like human capital — like education and infrastructure — that outlasts the mine. They have also said that green technologies of the future make mining inescapable today.

There is a related concept called 'sustainable mining'. The minerals we



Mining is not sustainable in a commonsensical reading of the word. ABDUL BASIT/UNSPLASH

remove from the ground don't grow back. But once we start using them, we need to recycle them almost indefinitely. The problem is that the current recycling rate for critical minerals is at best 5%.

Industries have also adopted a framework called 'responsible mining', where the focus is on using green hydrogen as fuel for trucks, solar and wind power for mining equipment, and seeking the permission of local communities to operate and sharing profits with them, among others.

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### 04Ma. Sustainable mining: oxymoron?

सतत खनन: क्या यह विरोधाभास है?

Low-carbon future and mining / निम्न-कार्बन भविष्य और खनन

- Humans are trying to build a **low-carbon future**.  
मनुष्य एक **निम्न-कार्बन भविष्य** का निर्माण करने का प्रयास कर रहे हैं।
- Ironically, this **future** won't be possible without **mining** today.  
विडंबना यह है कि यह **भविष्य** आज के **खनन** के बिना संभव नहीं होगा।



- This is because **wind turbines, solar panels, and electric batteries** all require **lithium, cobalt, copper, and rare-earth elements**.  
ऐसा इसलिए है क्योंकि पवन टर्बाइन, सौर पैनल, और विद्युत बैटरियाँ सभी को लिथियम, कोबाल्ट, तांबा, और दुर्लभ-पृथ्वी तत्वों की आवश्यकता होती है।

### Mining impact / खनन का प्रभाव

- **Mining** doesn't leave the **earth intact**.  
खनन पृथ्वी को **अखंड** नहीं छोड़ता।
- Instead, it extracts **finite, non-renewable resources**.  
इसके बजाय, यह **सीमित, अक्षय न होने वाले संसाधनों** का दोहन करता है।
- **The processes of mining** also often **pollute the environment, permanently change landscapes, and destroy biodiversity**.  
खनन प्रक्रियाएँ अक्सर पर्यावरण को प्रदूषित करती हैं, स्थायी रूप से परिदृश्य को बदल देती हैं, और जैव विविधता को नष्ट करती हैं।
- So in a **commonsensical way**, mining is not **sustainable**.  
इस प्रकार, सामान्य समझ के अनुसार, **खनन सतत** नहीं है।
- No amount of **money** or **technologies** can bring back, say, a **pristine rainforest**.  
किसी भी मात्रा में **धन** या **प्रौद्योगिकी** एक **अक्षुण्ण वर्षावन** को वापस नहीं ला सकती।

### Weak sustainability / कमजोर सततता

- However, some people, including the **UN** and the **International Energy Agency**, have floated an idea called **'weak sustainability'** with regards to **mining**.  
हालांकि, कुछ लोग, जिनमें **संयुक्त राष्ट्र** और **अंतर्राष्ट्रीय ऊर्जा एजेंसी** शामिल हैं, ने **खनन** के संदर्भ में **'कमजोर सततता'** की अवधारणा प्रस्तुत की है।
- **They argue that mines** can be **'sustainable'** if the extracted resources create greater **value, like human capital — like education and infrastructure — that outlasts the mine**.  
वे तर्क देते हैं कि **खदानें** **'सतत'** हो सकती हैं यदि निकाले गए संसाधन अधिक **मूल्य** उत्पन्न करें, जैसे **मानव पूंजी** — जैसे **शिक्षा और अवसंरचना** — जो खदान के बाद भी बनी रहे।
- **They have also said that green technologies of the future make mining inescapable today**.  
उन्होंने यह भी कहा है कि भविष्य की **हरित प्रौद्योगिकियाँ** आज **खनन को अपरिहार्य** बना देती हैं।

### Sustainable mining / सतत खनन

- There is a related concept called **'sustainable mining'**.  
इससे संबंधित एक अवधारणा **'सतत खनन'** कहलाती है।
- The **minerals** we remove from the ground don't grow back.  
जो **खनिज** हम धरती से निकालते हैं, वे वापस नहीं उगते।
- **But once we start using them, we need to recycle them almost indefinitely**.  
लेकिन एक बार उपयोग शुरू करने के बाद, हमें उन्हें लगभग **अनिश्चितकाल तक पुनर्चक्रित** करना होता है।
- The **problem is that the current recycling rate for critical minerals is at best 5%**.  
समस्या यह है कि **महत्वपूर्ण खनिजों** के लिए वर्तमान **पुनर्चक्रण दर** अधिकतम **5%** है।

### Responsible mining / उत्तरदायी खनन

- Industries have also adopted a framework called **'responsible mining'**, where the focus is on using **green hydrogen** as fuel for trucks, **solar and wind power** for mining equipment, and seeking the **permission of local communities** to operate and sharing **profits** with them,



among others.

उद्योगों ने 'उत्तरदायी खनन' नामक एक ढांचा भी अपनाया है, जिसमें ट्रकों के लिए हरित हाइड्रोजन का उपयोग, खनन उपकरणों के लिए सौर और पवन ऊर्जा, तथा संचालन के लिए स्थानीय समुदायों की अनुमति लेना और उनके साथ लाभ साझा करना शामिल है।

## Gujarat port is taming invasive plant species at pilot bio-methanol unit

In the dry stretches around Kandla port in Gujarat, *Prosopis juliflora* has long been viewed as a nuisance; the invasive shrub spreads rapidly, degrades land and crowds out native vegetation; now, it is being recast as a resource for a bio-methanol project to convert waste biomass into clean fuel

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NEWS ANALYSIS

Avinash Nair

In the dry stretches around Kandla (or Deendayal) port in Gujarat, *Prosopis juliflora* — locally known as gando bawal — has long been viewed as a nuisance. The invasive shrub spreads rapidly, degrades land, and crowds out native vegetation. Now, it is being recast as a resource at the heart of a bio-methanol project at the port to convert waste biomass into clean fuel. The project is among several 'green' initiatives launched under the auspices of the Harit Sagar Guidelines (2023) and Maritime India Vision 2030 to achieve net-zero goals.

**March 2027 start**  
The pilot project, currently at the engineering stage and slated for commissioning by March 2027, is being developed as a technology demonstration unit at an estimated cost of about ₹100 crore. While modest in scale, its implications for clean energy, waste utilisation, and port-led sustainability are significant. "This is a biomass-to-methanol project. We are handling the biomass-to-syngas conversion, while Thermax Ltd. is taking care of the syngas-to-methanol synthesis," says Ankur Jain, Managing Director of An-



Enemy in green: *Prosopis juliflora* degrades land. (for representative purposes only)

Kar Scientific Energy Technology Ltd.

At full capacity, the plant will produce around 5 tonne of methanol per day, using 15-20 tonne of biomass. The primary feedstock will be *Prosopis juliflora*.

"We will work with the local people to collect this biomass," Jain explains. **How the process works**  
The transformation of a low-value biomass into a high-value liquid fuel involves a series of controlled thermochemical and catalytic reactions.

It begins with biomass gasification, a high-temperature process (typically 700-1,000 degrees C) carried out in a controlled, low-oxygen environment. Inside the gasifier, the bio-



Pilot unit will generate critical insights into feedstock logistics, process stability and integration in port ecosystem; bio-methanol may be blended with conventional fuels

mass passes through four distinct stages: drying, where moisture is removed; pyrolysis, where it breaks down into volatile gases and char; oxidation, which generates heat through partial combustion; and reduction, where carbon reacts to form carbon monoxide and hydrogen. The output is syngas — a combustible mixture that

retains the chemical value of the original biomass.

The raw syngas cannot be used directly. It undergoes conditioning to remove impurities such as particulates, tars, and sulphur compounds to protect downstream catalysts. Its composition is fine-tuned — especially the hydrogen-carbon monoxide ratio — through reactions like the water-gas shift, ensuring optimal conditions for methanol synthesis. The cleaned syngas is compressed and fed into a methanol synthesis reactor, where it passes over a copper-based catalyst at a temperature of 200-300 degrees C and pressure of 50-100 bar. Carbon oxides react with hydrogen to form methanol in an exothermic reaction. The un-

reacted gases are recycled into the system to improve efficiency. Finally, the product stream is cooled, allowing methanol to condense into liquid form. It is refined through distillation, removing water and trace impurities to produce fuel-grade methanol for industrial or maritime use. The process is both efficient and flexible. It can accommodate a variety of feedstocks, including agricultural residues such as peanut shells and sawdust. "There is enough and more supply," Jain says about feedstock availability.

**Greener ports**

For the port's operator, Deendayal Port Authority (DPA), the project is as much about learning as it is about production. The bio-methanol produced is expected to be blended with

conventional fuels to power tugs and other port service vessels. The pilot will generate critical insights on feedstock logistics, process stability, and integration in port ecosystems.

What makes the Kandla initiative particularly compelling is its circular approach. It tackles the problem of an invasive species, creates local livelihoods, produces cleaner fuel and even offers carbon sequestration benefits. By turning gando bawal into green methanol, the project demonstrates how local challenges can be reimagined as opportunities.

**Larger strategic play**  
Kandla's bio-methanol push is part of a larger strategy. DPA is simultaneously exploring a ₹3,500 crore e-methanol project of 1.5-2 lakh tonnes per annum capacity, as it seeks to position itself as a bunkering hub for low-carbon fuels on the busy shipping corridor between the ports of Rotterdam and Singapore by the end of the decade. With Singapore and Rotterdam already established as major bunkering hubs and collaborating on cleaner fuel adoption, Kandla is positioning itself as an additional supply node — aiming to cater to nearly 200 vessels running on methanol-based fuels along this corridor by 2030.

(The writer is with The Hindu businessline)

### 04Ma. Gujarat port is taming invasive plant species at pilot bio-methanol unit

गुजरात बंदरगाह पायलट बायो-मेथनॉल इकाई में आक्रामक पौध प्रजातियों को नियंत्रित कर रहा है

- Gujarat port is taming invasive plant species at pilot bio-methanol unit.  
गुजरात बंदरगाह पायलट बायो-मेथनॉल इकाई में आक्रामक पौध प्रजातियों को नियंत्रित कर रहा है।
- In the dry stretches around Kandla port in Gujarat, **Prosopis juliflora** has long been viewed as a nuisance; the **invasive shrub spreads rapidly, degrades land and crowds out native vegetation**; now, it is being recast as a resource for a bio-methanol project to convert waste biomass into clean fuel.  
गुजरात के कांडला बंदरगाह के आसपास के शुष्क क्षेत्रों में **प्रोसोपिस जूलिफ्लोरा** को लंबे समय से एक समस्या के रूप में देखा गया है; यह आक्रामक झाड़ी तेजी से फैलती है, भूमि को क्षतिग्रस्त करती है और स्थानीय वनस्पतियों को हटाती है; अब इसे अपशिष्ट बायोमास को **स्वच्छ ईंधन** में बदलने वाले बायो-मेथनॉल परियोजना के लिए एक संसाधन के रूप में पुनः परिभाषित किया जा रहा है।
- **In the dry stretches around Kandla (or Deendayal) port in Gujarat, Prosopis juliflora — locally known as gando bawal** — has long been viewed as a nuisance.  
गुजरात के कांडला (या **दीनदयाल**) बंदरगाह के आसपास के शुष्क क्षेत्रों में **प्रोसोपिस जूलिफ्लोरा** — जिसे स्थानीय रूप से **गांडो बावल** कहा जाता है — लंबे समय से एक समस्या माना जाता रहा है।



- The invasive shrub spreads rapidly, degrades land, and crowds out native vegetation.  
यह आक्रामक झाड़ी तेजी से फैलती है, भूमि को खराब करती है और स्थानीय वनस्पतियों को विस्थापित करती है।
- The project is among **several 'green' initiatives launched under the auspices of the Harit Sagar Guidelines (2023) and Maritime India Vision 2030 to achieve net-zero goals.**  
यह परियोजना हरित सागर दिशानिर्देश (2023) और मैरीटाइम इंडिया विजन 2030 के तहत शुरू की गई कई 'ग्रीन' पहलों में से एक है, जिसका उद्देश्य नेट-ज़ीरो लक्ष्यों को प्राप्त करना है।

## March 2027 start

### मार्च 2027 प्रारंभ

- The **pilot project, currently at the engineering stage and slated for commissioning by March 2027**, is being developed as a technology demonstration unit at an estimated cost of about ₹100 crore.  
यह पायलट परियोजना, जो वर्तमान में इंजीनियरिंग चरण में है और मार्च 2027 तक चालू होने की योजना है, लगभग ₹100 करोड़ की अनुमानित लागत पर एक **तकनीकी प्रदर्शन इकाई** के रूप में विकसित की जा रही है।
- **While modest in scale, its implications for clean energy, waste utilisation, and port-led sustainability are significant.**  
हालांकि इसका पैमाना छोटा है, लेकिन **स्वच्छ ऊर्जा**, अपशिष्ट उपयोग और बंदरगाह-आधारित स्थिरता के लिए इसके प्रभाव महत्वपूर्ण हैं।
- The transformation of a low-value biomass into a high-value liquid **fuel involves a series of controlled thermochemical and catalytic reactions.**  
कम मूल्य वाले बायोमास को उच्च मूल्य वाले तरल ईंधन में बदलने में नियंत्रित **थर्मोकैमिकल और उत्प्रेरक प्रतिक्रियाओं** की एक श्रृंखला शामिल होती है।
- **It begins with biomass gasification, a high-temperature process (typically 700–1,000 degrees C) carried out in a controlled, low-oxygen environment.**  
यह प्रक्रिया **बायोमास गैसीफिकेशन** से शुरू होती है, जो उच्च तापमान (आमतौर पर 700–1,000 डिग्री सेल्सियस) पर नियंत्रित कम-ऑक्सीजन वातावरण में की जाती है।
- **Inside the gasifier, the biomass passes through four distinct stages: drying, where moisture is removed; pyrolysis, where it breaks down into volatile gases and char; oxidation, which generates heat through partial combustion; and reduction, where carbon reacts to form carbon monoxide and hydrogen.**  
गैसीफायर के अंदर, बायोमास चार चरणों से गुजरता है: **सुखाना**, जहां नमी हटाई जाती है; **पायरोलिसिस**, जहां यह वाष्पशील गैसों और चार में टूटता है; **ऑक्सीकरण**, जो आंशिक दहन से ऊष्मा उत्पन्न करता है; और **रिडक्शन**, जहां कार्बन प्रतिक्रिया करके कार्बन मोनोऑक्साइड और हाइड्रोजन बनाता है।
- **The output is syngas — a combustible mixture that retains the chemical value of the original biomass.**  
इसका परिणाम **सिंथेसिस गैस (syngas)** होता है — एक ज्वलनशील मिश्रण जो मूल बायोमास के रासायनिक मूल्य को बनाए रखता है।
- **The raw syngas cannot be used directly.**  
कच्ची सिंथेसिस गैस का सीधे उपयोग नहीं किया जा सकता।
- **It undergoes conditioning to remove impurities such as particulates, tars, and sulphur compounds to protect downstream catalysts.**  
इसे **शुद्धिकरण प्रक्रिया** से गुजरना पड़ता है ताकि कण, टार और सल्फर यौगिक जैसी अशुद्धियों को हटाया जा सके और आगे के उत्प्रेरकों की रक्षा की जा सके।
- Its composition is fine-tuned — especially the hydrogen-carbon monoxide ratio — through reactions like the water-gas shift, ensuring optimal conditions for methanol synthesis.  
इसके संघटन को — विशेष रूप से **हाइड्रोजन-कार्बन मोनोऑक्साइड अनुपात** — वाटर-गैस शिफ्ट जैसी



प्रतिक्रियाओं द्वारा समायोजित किया जाता है ताकि मेथनॉल संश्लेषण के लिए सर्वोत्तम स्थितियां सुनिश्चित हों।

- The cleaned syngas is compressed and fed into a methanol synthesis reactor, where it passes over a copper-based catalyst at a temperature of 200–300 degrees C and pressure of 50–100 bar.  
शुद्ध की गई सिंथेसिस गैस को संपीड़ित करके **मेथनॉल संश्लेषण रिएक्टर** में भेजा जाता है, जहां यह 200–300 डिग्री सेल्सियस तापमान और 50–100 बार दबाव पर तांबा-आधारित उत्प्रेरक के ऊपर से गुजरती है।
- Carbon oxides react with hydrogen to form methanol in an exothermic reaction.  
कार्बन ऑक्साइड्स हाइड्रोजन के साथ प्रतिक्रिया करके **उष्माक्षेपी प्रतिक्रिया** में मेथनॉल बनाते हैं।
- Finally, the product stream is cooled, allowing methanol to condense into liquid form.  
अंत में, उत्पाद धारा को ठंडा किया जाता है जिससे मेथनॉल तरल रूप में संघनित हो जाता है।
- It is refined through distillation, removing water and trace impurities to produce fuel-grade methanol for industrial or maritime use.  
इसे **आसवन प्रक्रिया** द्वारा शुद्ध किया जाता है, जिससे पानी और सूक्ष्म अशुद्धियां हटाकर औद्योगिक या समुद्री उपयोग के लिए ईंधन-ग्रेड मेथनॉल बनाया जाता है।
- It can accommodate a variety of feedstocks, including agricultural residues such as peanut shells and sawdust.  
यह विभिन्न प्रकार के फीडस्टॉक को समायोजित कर सकती है, जिनमें मूंगफली के छिलके और आरा चूरा जैसे कृषि अवशेष शामिल हैं।
- “This will be much cheaper than e-methanol (electro-methanol, a synthetic fuel made from green hydrogen and captured carbon dioxide) but more expensive than conventional variants,” Jain says.  
जैन कहते हैं, “यह **ई-मेथनॉल** (ग्रीन हाइड्रोजन और कैप्चर किए गए कार्बन डाइऑक्साइड से बना सिंथेटिक ईंधन) से काफी सस्ता होगा, लेकिन पारंपरिक विकल्पों से महंगा होगा।”
- The cost is expected to fall once the process is scaled up and optimised.  
जैसे-जैसे प्रक्रिया का विस्तार और अनुकूलन होगा, लागत कम होने की उम्मीद है।

<b>GS Paper III: Internal Security</b>		<b>04 May 2026</b>
<b>TOPICS COVERED</b>		
<b>04Ma</b>	<b>Inland waterways can fortify supply chains</b> अंतर्देशीय जलमार्ग आपूर्ति श्रृंखलाओं को मजबूत कर सकते हैं	



## 'Inland waterways can fortify supply chains'



**Safe bet:** Inland waterways offer a relatively insulated channel for domestic cargo.

**GS III: Infrastructure**  
**T. E. Raja Simhan**

The growing role of inland waterways is strengthening India's logistics resilience, even as global supply chains face disruption from the ongoing West Asian conflict, V. Anantha Nageswaran, Chief Economic Advisor, said at a recent meeting of the Madras Chamber of Commerce and Industry in Chennai.

The country's expanding multimodal transport network – particularly inland water transport – is helping cushion the impact on domestic logistics, he says.

### Gratifying development

He described inland water transport as one of the more gratifying developments in recent years, with the quantum of cargo ferried rising sharply from about 18 million tonne in 2013-14 to 146 million tonne, at a compounded annual growth rate of 21%.

The West Asian crisis is not just an energy price shock but also a logistics shock with supply disruptions and elevated transportation costs affecting the movement of goods, he said.

"Freight and insurance costs have gone up and are likely to remain elevated as long as geopolitical uncertainty persists," he said.

Inland waterways offer a relatively insulated channel for domestic cargo, away from volatile international shipping lanes, while easing the pressure on road and rail networks, he said.

He pointed out that the growth of inland water transport is part of a broader shift in government spending on logistics infrastructure. Investments in ports, dedicated freight corridors and multimodal logistics hubs have been complemented by efforts to develop national waterways and improve navigability. This has helped address long-standing supply bottlenecks, enabling the country to sustain over 7% economic growth in the post-pandemic period, with lower inflation. The global disruptions underscore the need to build redundancy and resilience into logistics systems, rather than focusing solely on cost efficiency, he said.

As energy imports – particularly crude oil, LPG and natural gas – remain vulnerable to geopolitical shocks, domestic transport alternatives like inland waterways become critical.

"Logistics is one of the key channels through which external shocks transmit into the economy," he noted, adding that improved internal connectivity can mitigate some of these risks.

The CEA framed the current challenges as an opportunity to rethink logistics strategy. "How do we turn compulsions into convictions and opportunities?" he asked, pointing to inland waterways as a case in point – once underutilised, now emerging as a vital component of India's transport mix.

*(The writer is with The Hindu businessline)*

navigability.

बंदरगाहों, समर्पित माल गलियारों और मल्टीमोडल लॉजिस्टिक्स हब में निवेश को राष्ट्रीय जलमार्गों के विकास और नौवहन क्षमता सुधार के प्रयासों द्वारा पूरक किया गया है।

- This has helped address long-standing supply bottlenecks, enabling the country to sustain over 7% economic growth in the post-pandemic period, with lower inflation.

इससे लंबे समय से चली आ रही आपूर्ति बाधाओं को दूर करने में मदद मिली है, जिससे देश महामारी के बाद के दौर में 7% से अधिक आर्थिक वृद्धि को बनाए रखने में सक्षम हुआ है, साथ ही कम मुद्रास्फीति भी बनी रही है।

## 04Ma. Inland waterways can fortify supply chains

अंतर्देशीय जलमार्ग

आपूर्ति श्रृंखलाओं को

Inland waterways offer a relatively insulated channel for domestic cargo, away from volatile international shipping lanes, while easing the pressure on road and rail networks, he said.

उन्होंने कहा कि अंतर्देशीय जलमार्ग घरेलू माल के लिए अपेक्षाकृत सुरक्षित माध्यम प्रदान करते हैं, जो अस्थिर अंतरराष्ट्रीय शिपिंग मार्गों से दूर हैं, साथ ही सड़क और रेल नेटवर्क पर दबाव को कम करते हैं।

- Investments in ports, dedicated freight corridors and multimodal logistics hubs have been complemented by efforts to develop national waterways and improve