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THE HINDU NEWSPAPER

DAILY CURRENT AFFAIRS

13 AUGUST 2025

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13_08_2025 DAILY CURRENT AFFAIRS

TOPICS COVERED (PCS Special)

1. 18th International Olympiad on Astronomy and Astrophysics inaugurated in Mumbai
मुंबई में 18वां अंतर्राष्ट्रीय खगोल विज्ञान और खगोल भौतिकी ओलंपियाड उद्घाटित
2. Shukla's ISS trip will help Gaganyaan mission: ISRO chief

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शुक्ला की आईएसएस यात्रा गगनयान मिशन में मदद करेगी: इसरो प्रमुख

3. Pilgrims hospitalised due to chlorine gas leak in Iraq इराक में क्लोरीन गैस रिसाव से तीर्थयात्री अस्पताल में भर्ती

18th International Olympiad on Astronomy and Astrophysics inaugurated in Mumbai

PCS

Snehal Mutha
MUMBAI

India is ensuring that technology is the priority for Viksit Bharat, Ajay Kumar Sood, Principal Scientific Advisor to the Government of India, said at the opening ceremony of the 18th International Olympiad on Astronomy and Astrophysics (IOAA) held on Tuesday in Mumbai.

"The participants should return to their country with new ideas, inspiration, and enriched thought processes," Prof. Sood said, referring to the Olympiad as a "science sport".

Over 300 high school students from 64 countries have participated in the 10-day Olympiad hosted by



Dignitaries at the opening ceremony of 18th IOAA at the Jio World Convention Centre in Mumbai on Tuesday. EMMANUAL YOGINI

the Homi Bhabha Centre for Science Education at the Tata Institute of Fundamental Research.

Astronomy is not only a study of the cosmos, Prof. Sood said in his inaugural speech, it is an ecosystem

where extremely sensitive instruments involving computation, Artificial Intelligence (AI), machine learning, and more are used, offering many avenues to pursue in future.

This is the second time

that India is hosting the IOAA, after the 2016 edition in Bhubaneswar.

This year's theme is 'Vasudhaiva Kutumbakam', the "ancient Indian idea of world is family under one sky".

PM's message

The future lies in the hands of young minds, solving real time problems, and India believes in international collaboration, Prime Minister Narendra Modi said in a video message to the participants.

"The next scientific breakthrough could be at the hands of these young minds, who knows?" Mr. Modi said, highlighting India's achievements in the field of science.

Participants from Class-

es 10 to 12 are selected after a rigorous process to compete at the international level of the Olympiad. During the 10-day event, students have to appear in several challenging exams.

The dignitaries present at the opening ceremony included Ajit Kembhavi, former vice-president of the International Astronomical Union. "There is a possibility that your entire professional journey could be shaped here as you will get inspired to do great things in life," Mr. Kembhavi said.

The IOAA was conceived in 2006 to meet the growing global interest in astronomy among high school students, with the first edition held in Chiang Mai, Thailand, in 2007.

18th International Olympiad on Astronomy and Astrophysics inaugurated in Mumbai

मुंबई में 18वां अंतर्राष्ट्रीय खगोल विज्ञान और खगोल भौतिकी ओलंपियाड उद्घाटित

- India is ensuring that technology is the priority for Viksit Bharat, Ajay Kumar Sood, Principal Scientific Advisor to the Government of India, said at the opening ceremony of the **18th International Olympiad on Astronomy and Astrophysics (IOAA) held on Tuesday in Mumbai.**

भारत यह सुनिश्चित कर रहा है कि विकसित भारत के लिए प्रौद्योगिकी प्राथमिकता हो, यह बात भारत सरकार के प्रधान वैज्ञानिक सलाहकार अजय कुमार सूद ने मंगलवार को मुंबई में आयोजित 18वें अंतर्राष्ट्रीय खगोल विज्ञान और खगोल भौतिकी ओलंपियाड (IOAA) के उद्घाटन समारोह में कही।

- "The participants should return to their country with new ideas, inspiration, and enriched thought processes," Prof. Sood said, referring to the Olympiad as a "science sport".

"प्रतिभागियों को अपने देश नए विचारों, प्रेरणा और समृद्ध सोच प्रक्रिया के साथ लौटना चाहिए," प्रो. सूद ने कहा, जिन्होंने इस ओलंपियाड को "विज्ञान खेल" कहा।

- Over 300 high school students from 64 countries have participated in the 10-day Olympiad hosted by the **Homi Bhabha Centre for Science Education at the Tata Institute of Fundamental Research.**

- 64 देशों के 300 से अधिक हाई स्कूल छात्रों ने टाटा इंस्टीट्यूट ऑफ फंडामेंटल रिसर्च के होमी

भाभा विज्ञान शिक्षा केंद्र द्वारा आयोजित 10-दिवसीय ओलंपियाड में भाग लिया है।

- Astronomy is not only a study of the cosmos, Prof. Sood said in his inaugural speech, it is an ecosystem where extremely sensitive instruments involving



computation, **Artificial Intelligence (AI)**, machine learning, and more are used, offering many avenues to pursue in future.

• प्रो. सूद ने अपने उद्घाटन भाषण में कहा कि खगोल विज्ञान केवल ब्रह्मांड का अध्ययन ही नहीं है, बल्कि यह एक ऐसा पारिस्थितिकी तंत्र है जिसमें गणना, **कृत्रिम बुद्धिमत्ता (AI)**, मशीन लर्निंग और अन्य तकनीकों से जुड़े अत्यंत संवेदनशील उपकरणों का उपयोग होता है, जो भविष्य में कई अवसर प्रदान करते हैं।

This is the **second time** that India is hosting the IOAA, after the **2016 edition** in **Bhubaneswar**.

यह दूसरी बार है जब भारत IOAA की मेजबानी कर रहा है, इससे पहले **2016 संस्करण भुवनेश्वर** में आयोजित हुआ था।

- This year's theme is '**Vasudaiva Kutumbakam**', the "ancient Indian idea of world is family under one sky".
इस वर्ष का विषय है '**वसुधैव कुटुंबकम्**', जो "एक आकाश के नीचे विश्व परिवार" की प्राचीन भारतीय अवधारणा है।
- **PM's message**
प्रधानमंत्री का संदेश
- The future lies in the hands of young minds, solving real time problems, and India believes in international collaboration, **Prime Minister Narendra Modi** said in a video message to the participants.
भविष्य युवा मस्तिष्कों के हाथों में है, जो वास्तविक समय की समस्याओं का समाधान करते हैं, और भारत अंतर्राष्ट्रीय सहयोग में विश्वास करता है, यह बात **प्रधानमंत्री नरेंद्र मोदी** ने प्रतिभागियों को भेजे गए एक वीडियो संदेश में कही।
- "The next scientific breakthrough could be at the hands of these young minds, who knows?" Mr. Modi said, highlighting India's achievements in the field of science.
• "अगली वैज्ञानिक सफलता इन युवा मस्तिष्कों के हाथों में हो सकती है, कौन जानता है?" श्री मोदी ने कहा, जिन्होंने विज्ञान के क्षेत्र में भारत की उपलब्धियों को रेखांकित किया।
- **Participants from Classes 10 to 12** are selected after a rigorous process to compete at the international level of the Olympiad. During the **10-day event**, students have to appear in several challenging exams.
• **कक्षा 10 से 12** के प्रतिभागियों का चयन एक कठोर प्रक्रिया के बाद ओलंपियाड के अंतर्राष्ट्रीय स्तर पर प्रतिस्पर्धा के लिए किया जाता है। **10-दिवसीय कार्यक्रम** के दौरान, छात्रों को कई चुनौतीपूर्ण परीक्षाओं में शामिल होना पड़ता है।
- The dignitaries present at the opening ceremony included **Ajit Kembhavi**, former vice-president of the **International Astronomical Union**. "There is a possibility that your entire professional journey could be shaped here as you will get inspired to do great things in life," Mr. Kembhavi said.
• उद्घाटन समारोह में उपस्थित गणमान्य व्यक्तियों में **अजीत केंभावी**, **अंतर्राष्ट्रीय खगोल संघ** के पूर्व उपाध्यक्ष भी शामिल थे। "संभावना है कि आपका पूरा पेशेवर सफर यहां आकार ले सकता है क्योंकि आपको जीवन में महान कार्य करने की प्रेरणा मिलेगी," श्री केंभावी ने कहा।

The IOAA was conceived in **2006** to meet the growing global interest in astronomy among high school students, with the first edition held in **Chiang Mai, Thailand, in 2007**.

IOAA की परिकल्पना **2006** में हाई स्कूल के छात्रों में खगोल विज्ञान में बढ़ती वैश्विक रुचि को पूरा करने के



लिए की गई थी, और पहला संस्करण 2007 में चियांग माई, थाईलैंड में आयोजित हुआ था।

Shukla's ISS trip will help Gaganyaan mission: ISRO chief

PCS
IGS III: S&T
THIRUVANANTHAPURAM

Group Captain Shubhan-shu Shukla's experience aboard the International Space Station (ISS) will prove valuable for Gaganyaan, India's upcoming human spaceflight programme, V. Narayanan, Chairman of the Indian Space Research Organisation (ISRO), said on Sunday.



V. Narayanan

Mr. Narayanan was addressing the 13th convocation of the Indian Institute of Space Science and Technology in virtual mode.

Stressing the importance of safety in such missions, Mr. Narayanan reiterated how the Indian side had insisted that the Axiom-4 mission, in which Group Captain Shukla was a crew member, should be cleared for lift-off only after rectifying the leakage detected on the rocket on July 10.

"Originally the launch was scheduled for June 11. On June 10 we came to know that there was a small leakage in the Falcon 9 rocket of the SpaceX team. And it was the Indian team that raised the objection that without it being corrected, the rocket should not take off," he said. The launch was put

off, thereby ensuring the safety of the astronauts, he recalled.

The leak was corrected, and the launch subsequently took place on July 25. Group Captain Shukla and other crew members returned safely after spending 18 days on the ISS. Mr. Narayanan also recounted how India, from having launched its space programme with a sounding rocket from America and payload from France in the 1960s, has emerged as a major player in the international space scene. He described the recent successful NASA-ISRO Synthetic Aperture Radar (NISAR) mission as an example of this achievement.

The country currently has 56 satellites in orbit, and the number is likely to increase three times in two or three years, he said.

चाहिए।

- "Originally the launch was scheduled for **June 11**. On **June 10** we came to know that there was a small leakage in the **Falcon 9 rocket** of the **SpaceX** team. And it was the Indian team that raised the objection that without it being corrected, the rocket should not take off," he said.

"मूल रूप से प्रक्षेपण 11 जून के लिए निर्धारित था। 10 जून को हमें पता चला कि स्पेसएक्स टीम के फाल्कन 9 रॉकेट में एक छोटा रिसाव है। और यह भारतीय टीम थी जिसने आपत्ति जताई कि जब तक इसे ठीक नहीं किया जाता, रॉकेट को उड़ान नहीं भरनी चाहिए," उन्होंने कहा।

- The launch was put off, thereby ensuring the **safety of the astronauts**, he recalled. उन्होंने याद किया कि प्रक्षेपण को टाल दिया गया, जिससे अंतरिक्ष यात्रियों की सुरक्षा सुनिश्चित हुई।

Shukla's ISS trip will help Gaganyaan mission: ISRO chief

शुक्ला की आईएसएस यात्रा गगनयान मिशन में मदद करेगी: इसरो प्रमुख

Group Captain Shubhanshu Shukla's experience aboard the International Space Station (ISS) will prove valuable for Gaganyaan, India's upcoming human spaceflight programme, V. Narayanan, Chairman of the Indian Space Research Organisation (ISRO), said on Sunday.

ग्रुप कैप्टन शुभांशु शुक्ला का अंतर्राष्ट्रीय अंतरिक्ष स्टेशन (आईएसएस) पर अनुभव गगनयान, भारत के आगामी मानव अंतरिक्ष उड़ान कार्यक्रम के लिए मूल्यवान साबित होगा, यह बात इसरो के अध्यक्ष वी. नारायणन ने रविवार को कही।

- Mr. Narayanan was addressing the **13th convocation** of the **Indian Institute of Space Science and Technology** in virtual mode.

श्री नारायणन भारतीय अंतरिक्ष विज्ञान और प्रौद्योगिकी संस्थान के 13वें दीक्षांत समारोह को वर्चुअल मोड में संबोधित कर रहे थे।

- Stressing the importance of **safety** in such missions, Mr. Narayanan reiterated how the Indian side had insisted that the **Axiom-4 mission**, in which Group Captain Shukla was a crew member, should be cleared for lift-off only after rectifying the leakage detected on the rocket on **July 10**.

ऐसे मिशनों में सुरक्षा के महत्व पर जोर देते हुए, श्री नारायणन ने दोहराया कि भारतीय पक्ष ने इस बात पर जोर दिया था कि **एक्सओम-4 मिशन**, जिसमें ग्रुप कैप्टन शुक्ला एक कू सदस्य थे, को केवल **10 जुलाई** को रॉकेट में पाए गए रिसाव को ठीक करने के बाद ही प्रक्षेपण की अनुमति दी जानी



- The leak was corrected, and the launch subsequently took place on **July 25**. Group Captain Shukla and other crew members returned safely after spending **18 days** on the ISS.

रिसाव को ठीक कर दिया गया, और बाद में प्रक्षेपण **25 जुलाई** को हुआ। ग्रुप कैप्टन शुकला और अन्य क्रू सदस्य आईएसएस पर **18 दिन** बिताने के बाद सुरक्षित लौट आए।

- Mr. Narayanan also recounted how India, from having launched its space programme with a sounding rocket from **America** and payload from **France** in the **1960s**, has emerged as a major player in the international space scene.
श्री नारायणन ने यह भी बताया कि कैसे भारत ने **1960 के दशक** में **अमेरिका** से साउंडिंग रॉकेट और **फ्रांस** से पेलोड के साथ अपने अंतरिक्ष कार्यक्रम की शुरुआत की थी और अब वह अंतर्राष्ट्रीय अंतरिक्ष क्षेत्र में एक प्रमुख खिलाड़ी बन गया है।
- He described the recent successful **NASA-ISRO Synthetic Aperture Radar (NISAR)** mission as an example of this achievement.
उन्होंने हाल ही में सफल हुए **नासा-इसरो सिंथेटिक एपर्चर रडार (निसार)** मिशन को इस उपलब्धि का उदाहरण बताया।
- The country currently has **56 satellites** in orbit, and the number is likely to increase **three times** in **two or three years**, he said.
उन्होंने कहा कि देश के पास वर्तमान में कक्षा में **56 उपग्रह** हैं, और यह संख्या **दो या तीन वर्षों** में **तीन गुना** बढ़ने की संभावना है।

Gaganyaan

- Gaganyaan** is India's **first human spaceflight mission**, being developed and implemented by the **Indian Space Research Organisation (ISRO)** under the Department of Space, Government of India.
- The programme aims to send a crew of **2–3 astronauts** into **Low Earth Orbit (LEO)** for a **duration of about 3 days** and return them safely to Earth.
- It is a **flagship mission** in India's space programme, showcasing indigenous capabilities in crew safety, life support, and orbital operations.
- Announced:** August 15, 2018, by Prime Minister **Narendra Modi** during Independence Day speech from Red Fort.
- Target Launch:** Initially planned for **2022** to mark 75 years of Indian Independence (Azadi Ka Amrit Mahotsav), but delayed due to COVID-19 and additional safety trials.
- Current Target:** **2025** for the first crewed mission, with **uncrewed test flights** before that.

Key Objectives



- Demonstrate India's capability for **human-rated launch vehicle systems**.
- Ensure **crew safety** through life support, emergency escape, and re-entry systems.
- Develop **indigenous technology** for human spaceflight to reduce dependence on foreign agencies.
- Strengthen India's standing in the **global space community**.

Mission Profile

- **Orbit Altitude:** Approximately **400 km** above Earth's surface.
- **Mission Duration:** Around **3 days** in space.
- **Launch Vehicle:** **Human-rated GSLV Mk-III** (also called **HLVM-3**).
- **Crew Module:** Pressurised capsule carrying astronauts, designed for safe re-entry.
- **Service Module:** Unpressurised module with propulsion and support systems.
- **Crew Size:** Initially **2–3 astronauts**, known as **Vyomnauts** (from Sanskrit "Vyoma" meaning space).

Major Components

Human-Rated GSLV Mk-III (HLVM-3)

- Modified for enhanced reliability, safety redundancies, and crew escape systems.

Crew Escape System (CES)

- Critical safety feature for emergency evacuation during launch or ascent.

Environmental Control and Life Support System (ECLSS)

- Maintains cabin temperature, pressure, and oxygen levels.

Re-entry & Recovery

- Heat shield for atmospheric re-entry and parachute-based descent for sea landing in the Arabian Sea or Bay of Bengal.

Progress and Updates



- **Astronaut Training:** Four IAF pilots selected and trained at **Gagarin Cosmonaut Training Center**, Russia (completed Jan 2021).
- **Test Flights:**
 - **Uncrewed Test Flight 1 (G1):** Planned for 2024 to validate systems.
 - **Uncrewed Test Flight 2 (G2):** Will carry a humanoid robot “**Vyommitra**” to simulate human presence.
- **Pad Abort Test:** Conducted successfully in 2018 to validate CES.
- **Recent Update (July 2024):** ISRO completed human-rating of **GSLV Mk-III** and integrated crew module testing

Pilgrims hospitalised due to chlorine gas leak in Iraq

PCS

600

Pilgrims in Iraq were briefly hospitalised with respiratory problems after **inhaling chlorine as the result of a leak at a water treatment station**. The incident took place overnight on the route between the two Shiite holy cities of **Najaf and Karbala**. AFP

Pilgrims hospitalised due to chlorine gas leak in Iraq **इराक में क्लोरीन गैस रिसाव से तीर्थयात्री अस्पताल में भर्ती**

600 Pilgrims in Iraq were briefly hospitalized with **respiratory problems** after inhaling **chlorine** as the result of a **leak** at a water treatment station.

इराक में **600 तीर्थयात्री क्लोरीन गैस के रिसाव से उत्पन्न सांस की समस्याओं** के कारण अस्थायी रूप से अस्पताल में भर्ती हुए।

The incident took place **overnight** on the route between the two **Shiite holy cities** of **Najaf and Karbala**.

यह घटना रातभर दो शिया पवित्र शहरों **नजफ और करबला** के बीच मार्ग पर हुई।



TOPICS COVERED (GS Paper I: History, Society and Geography)

1. Signing off on an entrenched symbol of stigma

गहरे जमे कलंक के प्रतीक को समाप्त करना

Signing off on an entrenched symbol of stigma

GS I: Society

In rural Tamil Nadu, the word 'colony' has become a symbol of social stigma and of being associated with a 'lower caste neighbourhood'. It has continued to be a social marker of 'untouchability'. Therefore the announcement by Tamil Nadu Chief Minister M.K. Stalin in the Legislative Assembly, on April 29, 2025, that all the village names ending with 'colony' and others containing denigrating caste references such as 'Pallappatti', 'Paraiyappatti', 'Naavidhan Kulam', 'Paraiyan Kulam', 'Sakkilpatti' would be removed from State records, and that such villages would be renamed is significant.

We can reasonably hypothesise that the practice of segregating the toiling masses into isolated settlements away from the quarters of higher castes based on the *varnashrama* system began sometime around 12th century CE. We began to see literary references supporting this from the 12th century onwards.

The impact in rural Tamil Nadu

Over the centuries, names have cropped up with the intent of conveying in a derogatory manner the lower caste nature of such localities. Names such as Cheri Street, Paraya Street, Palla Street, Scavenger Street, Harijan Colony, Adi Dravidar Colony, Old Colony, New Colony, and Ambedkar Colony evolved. Some argue that 'colony' is after all an 'innocuous' word, without any 'caste' connotation. Hence, dropping the word 'colony' from the names of localities is pointless. They cite examples from urban areas such as Railway Colony and Jayendrar Colony which are secular sites that are home to people from all castes and creeds. But the reality in rural Tamil is quite different, where the word 'colony' has a totally different import. 'Colony' is exclusively used to refer to areas inhabited by lower castes.

Beginning with the Portuguese in the 15th century, followed by the Spanish, the Dutch, the British, the French and the others, all of them set up colonies the world over including the Indian subcontinent. The European colonists also started using the word 'colony' to refer to the 'colonial quarters' where they lived within their 'colonised territories'.

Primarily, those were 'European Colonies' or 'White Settlements'. Over the centuries, the usage was extended to refer to residential and housing colonies of all kinds with no connection to the 'colonial' enterprise.

In what could be one of the most ironic twists of words acquiring strange meanings, the transformation of the word 'colony', from referring to 'elite colonial spaces' to that of 'localities of ostracised, lower caste Indians', is bizarre and difficult to fathom.

The word 'colony' has acquired such social stigma and is a convenient tool to 'dog whistle' in rural India. With a person's residential address being an essential component of all kinds of 'official documents' such as the Aadhaar card, ration card, passport, bank passbook, voter id card, and driving licence to name a few, these



Imavam
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caste specific settlement names including the ones ending with 'colony' immediately 'reveals' one's identity, triggering spontaneous prejudiced reactions, condescending attitudes and biased decisions from social peers and those in positions of authority. The realisation that they are being victimised merely because of belonging to a historically marginalised caste group has a devastating psychological impact on those who are subjected to such an ordeal. It might be quite impossible for anyone to relate to unless they have undergone this first hand. The marginalisation and the discrimination are not merely historical, but an ongoing reality for a significant part of Indian society.

Usage over the centuries

Historically, going back a few centuries, the word 'chery' or 'cherry' has come to be used to denote settlements of lower castes in Tamil Nadu. By the 20th century, 'chery' and 'colony' became synonyms referring to the localities of untouchable castes. However, in ancient Tamil literature, the word 'chery' was quite a common word, referring to any settlement where the general public reside, and with no negative connotation.

Tolkappiyam, one of the oldest Tamil compositions available, generally ascribed to the 7th century BCE, mentions 'chery'. Being a grammar book, it outlines rules for a genre of literature called "Pulan" which can be roughly identified with "Pallu" literature of the 16th century. A 'Pulan' literature should be composed of words that are spoken among common people which do not need any 'research' or interpretation. *Tolkappiyam* uses "chery mozhi" as the "language of common people".

The 18 ancient literary treatises called '*Patimemelanakku*' from the last Tamil academy (roughly belonging to the Fifth century BCE) have copious references to the word 'chery'. '*Kurinthokai*', the celebrated 'Akam' poetry collection, has six references. All the references use the word 'chery' with the meaning of a place everyone in a village lives. There is no evidence of 'chery' being used in a demeaning way. The '*Aha-nanooru*' collection has 15 references to the word 'Chery'. *Silappathikaram*, written in the Second century CE, refers to the outskirts of Madurai where Kovalan and Kannaki rested along with the Samana monk, 'Kavunthi Adigal', and has '*puranchery*', which literally means 'settlement on the outskirts'. The text also mentions that it is the habitation site of 'Brahmins'.

Emerging between the Sixth and Ninth centuries CE, the social and political impact of the Bhakti movement was more sharply felt later by the Cholas. Grand temple building accelerated at break-neck pace with their ascent. Some gods got sanctified as 'mainstream' gods, while others became marginalised. The rise of grand temples brought about a sea change in the way social organisation functioned and how institutions of knowledge production and knowledge

dissemination operated. '*Periya Puranam*' composed by Sekkizhar during the 12th century CE mentions '*thendachery*', literally meaning 'Untouchable chery'. Villages and towns were partitioned to designate certain areas as 'untouchable' quarters. The remnants of these restrictions survive to this day even after the various struggles of the 19th and 20th centuries to abolish them. It was during one of these struggles that 'Thanthai Periyar' courted prison in Vaikkom.

Vijayanagar rule followed in the 14th century. Under Madurai, Gingee and Thanjavur Nayakkas, the *varnashrama dharma* was sought to be implemented with extraordinary brutality during the 14th and 17th centuries, further strengthening the social and physical segregation of communities. Rule by a fragmented polity followed leading to Europeans gaining a firm foothold in Tamil Nadu. On the social front, existing schisms only grew deeper.

Mahatma Gandhi coined the word 'Harijan' to refer to untouchable castes. It is ironic that the term coined to symbolically 'elevate' their status joined the already rich repertoire of oppressive instruments of humiliation, stigma, exclusion and prejudice. 'Harijan Colony' became a ghettoised reference for Dalit settlements.

Iyothee Thass Pandithar urged the adoption of the term 'Adi-Dravidar'. M.C. Rajah of the Justice Party government in the Madras Presidency, passed a resolution in the Madras Legislative Assembly in 1922 to group all untouchable castes under the category of 'Adi-Dravidar' instead of 'Parayar' and 'Pancharamar' communities. However, even the term 'Adi-Dravidar' joined the list of dreaded words.

In perspective

Under British rule, there was a regimented method of classifying and documenting everything in official records, which included even derogatory names of lower caste habitations. Words such as 'chery' and 'colony' are being used exclusively used to identify Dalit neighbourhoods. Though restricted to rural Tamil Nadu, the government needs to take its administrative move to spearhead positive social change. Places such as 'Velachery' or 'Pondichery' do not signify any degrading reference and are treated as regular place names meant for everyone. Cities will continue to have area names ending with 'Colony' such as 'Saibaba Colony'. However, references to 'colony' and 'chery' in rural areas will be removed. Instead, they will have the names of popular flowers or poets or scientists. The names of political leaders will be strictly avoided.

While this is not a welfare scheme announcement, it is a measure taken with a long-term view to encourage positive social change in the endeavour to achieve greater social integration. Only a socially cohesive society can achieve progress and collective prosperity. To that end it is both a 'symbolic' and 'historic' gesture.

The Tamil Nadu government's administrative move is remove the word 'colony' from official records is both a symbolic and historic gesture with the aim of greater social integration

Signing off on an entrenched symbol of stigma

गहरे जमे कलंक के प्रतीक को समाप्त करना

- In rural Tamil Nadu, the word 'colony' has become a symbol of social stigma and of being associated with a 'lower caste neighbourhood'. It has continued to be a social marker of 'untouchability'. Therefore the announcement by Tamil Nadu Chief Minister M.K. Stalin in the Legislative Assembly, on April 29, 2025, that all the village names ending with 'colony' and others containing denigrating caste references such as 'Pallappatti', 'Paraiyappatti', 'Naavidhan Kulam', 'Paraiyan



Kulam', 'Sakkilippatti' would be removed from State records, and that such villages would be renamed is significant.

ग्रामीण तमिलनाडु में 'कॉलोनी' शब्द सामाजिक कलंक और 'निचली जाति के मोहल्ले' से जुड़ा प्रतीक बन गया है। यह 'अछूतपन' का सामाजिक संकेतक बना हुआ है। इसलिए 29 अप्रैल 2025 को तमिलनाडु के मुख्यमंत्री एम.के. स्टालिन ने विधानसभा में घोषणा की कि सभी ऐसे गांवों के नाम जो 'कॉलोनी' से समाप्त होते हैं और अन्य जिनमें जातिसूचक शब्द जैसे 'पल्लापट्टी', 'परैयापट्टी', 'नाविधन कुलम', 'परैयन कुलम', 'सक्किलिपट्टी' शामिल हैं, उन्हें राज्य के रिकॉर्ड से हटाया जाएगा और ऐसे गांवों का पुनर्नामकरण किया जाएगा।

- We can reasonably hypothesise that the practice of segregating the toiling masses into isolated settlements away from the quarters of higher castes based on the **varnashrama system** began sometime around **12th century CE**. We began to see literary references supporting this from the **12th century** onwards.

यह तर्कसंगत रूप से माना जा सकता है कि वर्णाश्रम व्यवस्था के आधार पर मेहनतकश लोगों को उच्च जातियों के मोहल्लों से दूर अलग बस्तियों में बसाने की प्रथा लगभग **12वीं शताब्दी ईस्वी** में शुरू हुई। इसके समर्थन में साहित्यिक संदर्भ हमें **12वीं शताब्दी** से मिलने लगे।

- Over the centuries, names have cropped up with the intent of conveying in a derogatory manner the lower caste nature of such localities. Names such as **Cheri Street, Paraya Street, Palla Street, Scavenger Street, Harijan Colony, Adi Dravidar Colony, Old Colony, New Colony, and Ambedkar Colony** evolved. Some argue that 'colony' is after all an '**innocuous**' word, without any '**caste**' connotation. Hence, dropping the word 'colony' from the names of localities is pointless. They cite examples from urban areas such as **Railway Colony** and **Jayendrar Colony** which are secular sites that are home to people from all castes and creeds. But the reality in rural Tamil is quite different, where the word 'colony' has a totally different import. 'Colony' is exclusively used to refer to areas inhabited by lower castes.

सदियों के दौरान, ऐसे मोहल्लों की निचली जाति प्रकृति को अपमानजनक तरीके से दर्शाने के लिए नाम विकसित हुए। जैसे चेरी स्ट्रीट, पराया स्ट्रीट, पल्ला स्ट्रीट, स्कैवेंजर स्ट्रीट, हरिजन कॉलोनी, आदि द्रविड़र कॉलोनी, ओल्ड कॉलोनी, न्यू कॉलोनी और अंबेडकर कॉलोनी। कुछ लोग तर्क देते हैं कि 'कॉलोनी' आखिरकार एक 'निर्दोष' शब्द है, जिसमें कोई 'जाति' संबंधी भाव नहीं है। इसलिए, मोहल्लों के नामों से 'कॉलोनी' शब्द हटाना बेकार है। वे शहरी क्षेत्रों जैसे रेलवे कॉलोनी और जयेंद्र कॉलोनी के उदाहरण देते हैं, जो सभी जातियों और धर्मों के लोगों के घर हैं। लेकिन ग्रामीण तमिल में वास्तविकता बिल्कुल अलग है, जहां 'कॉलोनी' शब्द का पूरी तरह अलग अर्थ है। 'कॉलोनी' विशेष रूप से निचली जातियों के निवास क्षेत्रों के लिए उपयोग किया जाता है।

- Beginning with the **Portuguese in the 15th century**, followed by the **Spanish, the Dutch, the British, the French** and the others, all of them set up colonies the world over including the **Indian subcontinent**. The **European colonists** also started using the word 'colony' to refer to the '**colonial quarters**' where they lived within their '**colonised territories**'.

15वीं शताब्दी में पुर्तगालियों से शुरू होकर, उसके बाद स्पेनिश, डच, ब्रिटिश, फ्रेंच और अन्य, सभी ने दुनिया भर में, जिसमें भारतीय उपमहाद्वीप भी शामिल है, कॉलोनियां स्थापित कीं। यूरोपीय



उपनिवेशवादियों ने भी अपने 'औपनिवेशिक क्षेत्रों' में रहने वाले 'कॉलोनियल क्वार्टर' को संदर्भित करने के लिए 'कॉलोनी' शब्द का उपयोग शुरू किया।

Chronology of European Arrival for Trade in India

Portuguese – First to Arrive (1498)

- **Year:** 1498
- **Key Event:** Vasco da Gama landed at **Calicut (Kozhikode)** on the Malabar Coast.
- **Purpose:** Establish direct trade in spices, bypassing Arab intermediaries.
- **Impact:** Established several trading posts; **Goa** became their capital in 1510.
- **Significance:** First Europeans to establish sea trade with India.

Dutch – Second to Arrive (1605)

- **Year:** 1605
- **Key Event:** First factory established at **Masulipatnam** (Andhra Pradesh).
- **Purpose:** Spice trade and competition with Portuguese.
- **Impact:** Took over many Portuguese possessions in the East Indies; strong presence in Malabar and Coromandel coasts.
- **Decline:** Defeated by the English in the Battle of Colachel (1741) and gradually withdrew from India.

British – Third to Arrive (1613)

- **Year:** 1613
- **Key Event:** First factory established at **Surat**.
- **Purpose:** Initially focused on spice and textile trade.
- **Impact:** Gradually expanded political influence; became dominant colonial power by the 18th century.
- **Significance:** East India Company rule led to British colonial administration.

Danish – Fourth to Arrive (1620) (*often skipped in general lists, but historically relevant*)

- **Year:** 1620
- **Key Event:** Established settlement at **Tranquebar** (Tamil Nadu).
- **Impact:** Limited influence; sold territories to the British in 1845.

French – Fifth to Arrive (1664)

- **Year:** 1664
- **Key Event:** Formation of **French East India Company**; first factory at **Surat** (1668) and **Pondicherry** (1674).
- **Purpose:** Spice, textile, and indigo trade.
- **Impact:** Competed with the British; influence declined after **Carnatic Wars** (18th century).



- Primarily, those were **'European Colonies'** or **'White Settlements'**. Over the centuries, the usage was extended to refer to residential and housing colonies of all kinds with no connection to the **'colonial'** enterprise.

मुख्य रूप से, वे **'यूरोपीय कॉलोनियां'** या **'श्वेत बस्तियां'** थीं। सदियों में, इसका उपयोग सभी प्रकार की आवासीय और हाउसिंग कॉलोनियों के लिए किया जाने लगा, जिनका **'औपनिवेशिक'** उद्द्यम से कोई संबंध नहीं था।

- In what could be one of the most ironic twists of words acquiring strange meanings, the transformation of the word **'colony'**, from referring to **'elite colonial spaces'** to that of **'localities of ostracised, lower caste Indians'**, is bizarre and difficult to fathom.

यह संभवतः शब्दों के अजीब अर्थ अपनाने के सबसे **विडंबनापूर्ण** मोड़ों में से एक है, जिसमें **'कॉलोनी'** शब्द का **'विशिष्ट औपनिवेशिक स्थानों'** से **'बहिष्कृत, निचली जाति के भारतीयों के मोहल्लों'** में परिवर्तन, अजीब और समझना कठिन है।

- The word **'colony'** has acquired such social stigma and is a convenient tool to **'dog whistle'** in rural India. With a person's **residential address** being an essential component of all kinds of **'official documents'** such as the **Aadhaar card, ration card, passport, bank passbook, voter ID card, and driving licence**, these...

'कॉलोनी' शब्द इतना **सामाजिक कलंक** प्राप्त कर चुका है कि यह ग्रामीण भारत में **'डॉग व्हिसल'** का सुविधाजनक उपकरण बन गया है। किसी व्यक्ति का **आवासीय पता** सभी प्रकार के **'आधिकारिक दस्तावेजों'** जैसे **आधार कार्ड, राशन कार्ड, पासपोर्ट, बैंक पासबुक, वोटर आईडी कार्ड और ड्राइविंग लाइसेंस** का आवश्यक हिस्सा होने के कारण, ये...

- Caste-specific settlement names and prejudice**

जाति-विशिष्ट बस्ती के नाम और पूर्वाग्रह

Caste specific settlement names including the ones ending with **'colony'** immediately **'reveals'** one's identity, triggering spontaneous prejudiced reactions, condescending attitudes and biased decisions from social peers and those in positions of authority.

जाति-विशिष्ट बस्ती के नाम, जिनमें **'कॉलोनी'** पर समाप्त होने वाले भी शामिल हैं, तुरंत किसी की पहचान **'प्रकट'** कर देते हैं, जिससे सामाजिक साथियों और अधिकार की स्थिति में बैठे लोगों से स्वतः **पूर्वाग्रहपूर्ण** प्रतिक्रियाएं, अहंकारी रवैया और पक्षपाती निर्णय उत्पन्न होते हैं।

The realisation that they are being victimised merely because of belonging to a historically marginalised caste group has a devastating psychological impact on those who are subjected to such an ordeal.

यह एहसास कि उन्हें केवल एक **ऐतिहासिक रूप से हाशिये पर रहे जाति समूह** से संबंधित होने के कारण शिकार बनाया जा रहा है, ऐसे कष्ट झेलने वालों पर विनाशकारी मनोवैज्ञानिक प्रभाव डालता है।

It might be quite impossible for anyone to relate to unless they have undergone this first hand.

जब तक कोई स्वयं इसे प्रत्यक्ष रूप से नहीं झेलता, तब तक किसी के लिए इससे जुड़ पाना लगभग असंभव हो सकता है।

The marginalisation and the discrimination are not merely historical, but an ongoing reality for a significant part of Indian society.



हाशिये पर डाला जाना और भेदभाव केवल ऐतिहासिक नहीं है, बल्कि भारतीय समाज के एक बड़े हिस्से के लिए यह एक चलती हुई हकीकत है।

• **Usage over the centuries**

सदियों में प्रयोग

Historically, going back a few centuries, the word **'chery'** or **'cherry'** has come to be used to denote settlements of lower castes in **Tamil Nadu**.

ऐतिहासिक रूप से, कुछ सदियों पीछे जाने पर, **'चेरी'** या **'चेरी'** शब्द **तमिलनाडु** में निचली जातियों की बस्तियों को दर्शाने के लिए प्रयुक्त होने लगा।

By the **20th century**, **'cherry'** and **'colony'** became synonyms referring to the localities of untouchable castes.

20वीं सदी तक, **'चेरी'** और **'कॉलोनी'** अस्पृश्य जातियों के इलाकों के पर्याय बन गए।

However, in ancient Tamil literature, the word **'chery'** was quite a common word, referring to any settlement where the general public reside, and with no negative connotation.

हालांकि, प्राचीन तमिल साहित्य में **'चेरी'** शब्द एक सामान्य शब्द था, जो किसी भी ऐसी बस्ती को संदर्भित करता था जहां आम लोग रहते थे, और इसका कोई नकारात्मक अर्थ नहीं था।

• **Tolkappiyam and early references**

तोलकाप्पियम और प्रारंभिक संदर्भ

Tolkappiyam, one of the oldest Tamil compositions available, generally ascribed to the **7th century BCE**, mentions **'chery'**.

तोलकाप्पियम, उपलब्ध सबसे प्राचीन तमिल रचनाओं में से एक, जिसे सामान्यतः **7वीं शताब्दी ईसा पूर्व** का माना जाता है, में **'चेरी'** का उल्लेख है।

Being a grammar book, it outlines rules for a genre of literature called **"Pulan"** which can be roughly identified with **"Pallu" literature** of the **16th century**.

यह एक व्याकरण पुस्तक होने के नाते, इसमें **"पुलन"** नामक साहित्य की एक विधा के नियम बताए गए हैं, जिसे मोटे तौर पर **16वीं सदी** के **"पल्लु"** साहित्य से पहचाना जा सकता है।

A **'Pulan'** literature should be composed of words that are spoken among common people which do not need any 'research' or interpretation.

'पुलन' साहित्य आम लोगों में बोले जाने वाले शब्दों से रचा जाना चाहिए, जिन्हें किसी 'शोध' या व्याख्या की आवश्यकता नहीं होती।

Tolkappiyam uses **"chery mozhi"** as the "language of common people".

तोलकाप्पियम **"चेरी मोज़ी"** का प्रयोग "आम लोगों की भाषा" के रूप में करता है।

Tolkappiyam

- **Tolkappiyam** is the **oldest extant Tamil grammar text** and a key work in classical Tamil literature.
- Composed in **Sangam Age** (estimated between **500 BCE – 200 CE**, though some scholars suggest earlier dates).



- Author: **Tolkappiyar** (disciple of Agastya, as per tradition).
- It is not just a grammar book but also a **treatise on poetics, rhetoric, and socio-cultural aspects** of ancient Tamil society.

The work is divided into **three books (athikaram)** with a total of **1,612 sutras**:

1. **Ezhuttadhikaram** (*Letters / Sounds*)
 - Deals with **phonetics and orthography**.
 - Explains classification of Tamil letters, pronunciation rules, and euphonic combinations.
2. **Soladhikaram** (*Words*)
 - Covers **morphology and etymology**.
 - Describes rules for forming words, inflections, and grammatical categories (nouns, verbs, particles).
3. **Poruladhikaram** (*Subject Matter*)
 - Discusses **semantics, prosody, and literary conventions**.
 - Elaborates on *akam* (interior, love) and *puram* (exterior, war, public life) themes in Sangam poetry.
 - Gives details on **landscapes (Tinai)** — Kurinji (mountains), Mullai (forests), Marutham (farmland), Neithal (coast), Palai (desert) — linking them to emotions, seasons, and deities.

3. Key Features & Significance

- **Earliest Tamil Grammar**: Foundation for later works like *Nannool*.
- **Linguistic Heritage**: Preserves rules that are still relevant in modern Tamil.
- **Cultural Document**: Gives insights into Sangam-era society, ethics, polity, economy, and environment.
- **Dual Nature**: Combines **linguistics** with **poetics and anthropology**.
- **Pan-Dravidian Links**: Linguists find connections between *Tolkappiyam* rules and other Dravidian languages.

4. Historical & Literary Context

- Likely composed after the *Agattiyam* (now lost), which was said to be the earliest Tamil grammar.
- Reflects interaction between Tamil culture and Sanskrit tradition, though it remains distinctively Tamil in structure.
- Belongs to **Sangam Literature corpus**, which includes *Ettuthokai* (Eight Anthologies) and *Pattupattu* (Ten Idylls).

Ancient Tamil literature references

प्राचीन तमिल साहित्य में संदर्भ

The **18 ancient literary treatises** called '**Patinnemelkanakku**' from the last Tamil academy (**5th century BCE**) have copious references to the word '**chery**'.



अंतिम तमिल संगम (5वीं शताब्दी ईसा पूर्व) के 18 प्राचीन साहित्यिक ग्रंथ जिन्हें 'पट्टिन्नेमेल्लकानक्कु' कहा जाता है, में 'चेरी' शब्द के प्रचुर संदर्भ हैं।

'Kurunthokai', the celebrated 'Akam' poetry collection, has six references.

प्रसिद्ध 'अकम' कविता संग्रह 'कुरुन्थोकई' में छह संदर्भ हैं।

All the references use the word 'chery' with the meaning of a place everyone in a village lives.

सभी संदर्भों में 'चेरी' शब्द का प्रयोग ऐसे स्थान के अर्थ में किया गया है जहां गांव के सभी लोग रहते हैं।

There is no evidence of 'chery' being used in a demeaning way.

'चेरी' के अपमानजनक अर्थ में प्रयोग का कोई प्रमाण नहीं है।

The 'Aha-nanooru' collection has 15 references to the word 'Chery'.

'अहा-नानूरु' संग्रह में 'चेरी' शब्द के 15 संदर्भ हैं।

Silappathikaram (2nd century CE) refers to the outskirts of Madurai where Kovalan and Kannaki rested along with the Samana monk, 'Kavunthi Adigal', and has 'puranchery', literally meaning 'settlement on the outskirts'.

सिलप्पथिकारम (ईस्वी की 2वीं सदी) में मदुरै के बाहरी इलाके का उल्लेख है, जहां कोवलन और कन्नगी ने सामन भिक्षु 'कवुन्थी अडिगल' के साथ विश्राम किया, और इसमें 'पुरंचेरी' शब्द है, जिसका शाब्दिक अर्थ 'बाहरी इलाके की बस्ती' है।

The text also mentions that it is the habitation site of 'Brahmins'.

पाठ में यह भी उल्लेख है कि यह 'ब्राह्मणों' का निवास स्थान है।

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

1. Nominations to J&K Assembly outside the realm of elected govt.: Centre

निर्वाचित सरकार के दायरे से बाहर J&K विधानसभा में नामांकन: केंद्र

2. Regional rivals may join hands to fight Bodoland elections in Assam

असम में बोडोलैंड चुनाव लड़ने के लिए क्षेत्रीय प्रतिद्वंद्वी हाथ मिला सकते हैं

3. LS Speaker sets in motion process to remove HC judge

लोकसभा अध्यक्ष ने HC जज को हटाने की प्रक्रिया शुरू की



4. SC questions 'potentiality of abuse' of BNS Section 152

सुप्रीम कोर्ट ने BNS की धारा 152 के 'दुरुपयोग की संभाव्यता' पर सवाल उठाया

5. 10 MoUs under discussion ahead of Singaporean PM Lawrence Wong's visit

सिंगापुर के प्रधानमंत्री लॉरेंस वोंग की यात्रा से पहले 10 समझौतों पर चर्चा

6. Providing justice for juveniles किशोरों को न्याय प्रदान करना

7. Kaleshwaram Lift Irrigation Project (KLIP) कालेश्वरम लिफ्ट सिंचाई परियोजना (KLIP)

8. Daily Quiz – August 6 Edition दैनिक प्रश्नोत्तरी – 6 अगस्त संस्करण

Nominations to J&K Assembly outside the realm of elected govt.: Centre

GS II: Governor

Vijaita Singh
NEW DELHI

The Union Home Ministry has informed the Jammu and Kashmir High Court that the Union Territory's Lieutenant-Governor can nominate five members to the J&K Legislative Assembly without the government's "aid and advice". It said the office of the Lieutenant-Governor was not an extension of the government.

The Ministry said that the nominations were "outside the realm of the business of the elected government of J&K".

The powers to nominate three members – two Kashmiri migrants, including a woman, and one member from the Pakis-

tan-occupied J&K (PoJK) community – to the Assembly was inserted to the J&K Reorganisation Act, 2019 by Parliament in 2023 with an amendment. The 2019 Act had also provided for nomination of two women to the Assembly if, in the opinion of the Lieutenant-Governor, women are not adequately represented in the Assembly.

The amendment was challenged through a public interest litigation petition filed by Congress leader Ravinder Kumar Sharma. While hearing the petition, the High Court on October 21, 2024 had sought a reply from the Union government on the changes to the 2019 Act.

"Once Parliament by law recognises the Lieute-

nant-Governor as a distinct authority from the government of Union Territory, it necessarily follows that when a power is conferred upon the Lieutenant-Governor, then the same must be exercised as a statutory function and not as an extension of his duties as the head of the U.T. government," the MHA's affidavit filed on July 24 said.

L-G's discretion

The Ministry also said in court that "...there can be no manner of doubt that it is the Lieutenant-Governor who has to exercise this statutory duty in his discretion, as a statutory functionary and not as an extension of the government, thus, without aid and advice".

Turf war

The Centre has said the office of the Lieutenant-Governor in Jammu and Kashmir is not an extension of the government

■ The nominations are 'outside the realm of the business of the elected government of J&K', the Ministry says in an affidavit filed in the J&K HC

■ "The sanctioned strength of the [J&K] Assembly, therefore, is not 114, but 114 + all members nominated in terms of Sections 15, 15A and 15B [of the Act]"



J&K L-G MANOJ SINHA

■ The affidavit, came after J&K High Court sought a reply from the Union government on October 21, 2024, on the amendments to the J&K Reorganisation Act, 2019

"Whether Sections, 15, 15-A and 15-b of the J&K Reorganisation Act, 2019, making provision for nominating the members of Legislative Assembly over and above the sanctioned strength of the Legislative

Assembly, and which have the potential of converting the minority government into a majority government and vice versa, is *ultra vires* the Constitution being in violation of the basic structure of the Constitu-

tion?" it had asked.

The 2023 amendment had increased the total number of seats to 119 from the existing 114. The government had kept 24 seats vacant for the PoJK areas. The Ministry, in its affidavit, said the "present writ petition has become academic as the scenario contemplated did not arise". It said that "the interpretation of Section 12 of the Union Territories Act, 1963 would *pari materia* apply to Sections 15, 15A and 15B of the J&K Reorganisation Act and accordingly, the nominations so made, would be made without the aid and advice of the Council of Ministers, being outside the realm of the business of the elected government of J&K."

The Ministry said the petitioner had failed to substantiate the claim that the nominations made under the J&K Reorganisation Act, 2019 exceed the sanctioned strength of the Legislative Assembly, while those under the Government of Union Territories Act, 1963, do not. "The petitioner has not provided any cogent legal basis or statutory interpretation to support such a distinction, and the submissions in this regard remain misconceived and unsustainable in law," it said.

It added that Section 14 (3) of the 2019 Act "does not provide the total strength of the Legislative Assembly; but merely provides the number of directly elected members to such

Legislative Assembly". "The sanctioned strength of the Assembly, therefore, is not 114, but 114 + all members nominated in terms of Sections 15, 15A and 15B," the Home Ministry said.

It further said that the fallacious statutory interpretation of the petitioner was to be cross-applied to the Union Territory of Puducherry, then as per such reading, the total strength of the Assembly of Puducherry under Section 3(2) of the 1963 Act would be 30. "Whereas, as per his own case, the sanctioned strength of the Legislative Assembly for the UT of Puducherry has been stated to be 33, i.e. 30 +3," MHA said.

The case is scheduled for hearing on August 14.

Nominations to J&K Assembly outside the realm of elected govt.: Centre



निर्वाचित सरकार के दायरे से बाहर J&K विधानसभा में नामांकन: केंद्र

• The Union Home Ministry informed the Jammu and Kashmir High Court that the Union Territory's Lieutenant-Governor can nominate five members to the J&K Legislative Assembly without the government's "aid and advice". It said the office of the Lieutenant-Governor was not an extension of the government. केंद्रीय गृह मंत्रालय ने जम्मू-कश्मीर उच्च न्यायालय को सूचित किया कि केंद्र शासित प्रदेश के उप-राज्यपाल पांच सदस्यों को जम्मू-कश्मीर विधानसभा में सरकार की "सहायता और सलाह" के बिना नामित कर सकते हैं। इसमें कहा गया कि उप-राज्यपाल का कार्यालय सरकार का विस्तार नहीं है।

- The Ministry said that the nominations were "outside the realm of the business of the elected government of J&K".
मंत्रालय ने कहा कि नामांकन "जम्मू-कश्मीर की निर्वाचित सरकार के कार्यक्षेत्र से बाहर" हैं।

- The powers to nominate three members — two **Kashmiri migrants** (including a woman) and one from the **Pakistan-occupied J&K (PoJK)** community — to the Assembly was inserted to the **J&K Reorganisation Act, 2019** by Parliament in 2023 with an amendment. The 2019 Act also provided for nomination of two women to the Assembly if, in the opinion of the Lieutenant-Governor, women are not adequately represented.

विधानसभा में तीन सदस्यों — दो कश्मीरी प्रवासी (एक महिला सहित) और एक पाकिस्तान अधिकृत जम्मू-कश्मीर (PoJK) समुदाय से — को नामित करने की शक्ति जम्मू-कश्मीर पुनर्गठन अधिनियम, 2019 में संसद द्वारा 2023 में संशोधन के माध्यम से जोड़ी गई थी। 2019 के अधिनियम में यह भी प्रावधान था कि यदि उप-राज्यपाल की राय में महिलाओं का पर्याप्त प्रतिनिधित्व नहीं है, तो दो महिलाओं को नामित किया जा सकता है।

- The amendment was challenged through a **public interest litigation** by **Congress leader Ravinder Kumar Sharma**. The High Court on **October 21, 2024** sought a reply from the Union government on the changes to the 2019 Act.

इस संशोधन को कांग्रेस नेता रविंदर कुमार शर्मा द्वारा जनहित याचिका के माध्यम से चुनौती दी गई थी। उच्च न्यायालय ने 21 अक्टूबर 2024 को 2019 के अधिनियम में किए गए परिवर्तनों पर केंद्र सरकार से जवाब मांगा।

- The **MHA's affidavit** filed on **July 24** stated that once Parliament recognises the Lieutenant-Governor as a distinct authority, any power conferred upon him must be exercised as a statutory function and not as an extension of his duties as UT government head.

गृह मंत्रालय के शपथपत्र (दायर 24 जुलाई) में कहा गया कि एक बार संसद उप-राज्यपाल को एक अलग प्राधिकरण के रूप में मान्यता देती है, तो उसे दी गई कोई भी शक्ति एक सांविधिक कार्य के रूप में प्रयोग की जानी चाहिए, न कि यू.टी. सरकार के प्रमुख के कर्तव्यों के विस्तार के रूप में।

- **L-G's discretion**

उप-राज्यपाल का विवेकाधिकार

- The Ministry told the court there was no doubt the Lieutenant-Governor must exercise this duty in his discretion as a statutory functionary, without aid and advice.



मंत्रालय ने अदालत में कहा कि इसमें कोई संदेह नहीं कि उप-राज्यपाल को यह कर्तव्य अपने विवेक से एक सांविधिक पदाधिकारी के रूप में, बिना सहायता और सलाह के निभाना है।

- It was questioned whether **Sections 15, 15-A and 15-B of the J&K Reorganisation Act, 2019**, which allow nominating members above sanctioned strength and can potentially convert a minority into a majority government (and vice versa), violate the Constitution's basic structure.

यह प्रश्न उठाया गया कि क्या **जम्मू-कश्मीर पुनर्गठन अधिनियम, 2019** की धारा 15, 15-ए और 15-बी, जो स्वीकृत शक्ति से अधिक सदस्यों को नामित करने की अनुमति देती हैं और संभावित रूप से अल्पमत सरकार को बहुमत सरकार में (और इसके विपरीत) बदल सकती हैं, संविधान के मूल ढांचे का उल्लंघन करती हैं।

- The **2023 amendment** increased seats from **114 to 119**. **24 seats** were kept vacant for **PoJK** areas. MHA said the writ petition became academic as the scenario did not arise. It also said **Union Territories Act, 1963 – Section 12** applies to J&K Act Sections 15, 15A, 15B, meaning nominations are without aid and advice of Ministers. **2023 के संशोधन** ने सीटें **114** से बढ़ाकर **119** कर दीं। **PoJK** क्षेत्रों के लिए **24 सीटें** खाली रखी गईं। गृह मंत्रालय ने कहा कि यह रिट याचिका शैक्षणिक बन गई है क्योंकि ऐसा परिदृश्य उत्पन्न नहीं हुआ। मंत्रालय ने यह भी कहा कि **केंद्र शासित प्रदेश अधिनियम, 1963 – धारा 12** जम्मू-कश्मीर अधिनियम की धाराओं 15, 15ए, 15बी पर लागू होती है, यानी नामांकन मंत्रियों की सहायता और सलाह के बिना होंगे।
- The Ministry said the petitioner failed to prove nominations under the J&K Act exceed sanctioned strength, unlike under the Union Territories Act. No valid legal basis or statutory interpretation was given. मंत्रालय ने कहा कि याचिकाकर्ता यह साबित करने में विफल रहा कि जम्मू-कश्मीर अधिनियम के तहत नामांकन स्वीकृत शक्ति से अधिक हैं, जबकि केंद्र शासित प्रदेश अधिनियम में ऐसा नहीं है। कोई ठोस कानूनी आधार या सांविधिक व्याख्या प्रस्तुत नहीं की गई।
- **Section 14(3)** of the 2019 Act provides only the number of directly elected members, not total strength. 2019 अधिनियम की धारा **14(3)** केवल प्रत्यक्ष निर्वाचित सदस्यों की संख्या बताती है, कुल शक्ति नहीं।

The sanctioned strength is **114 + nominated members** under Sections 15, 15A, 15B.

स्वीकृत शक्ति **114 + धाराओं 15, 15ए, 15बी** के तहत नामित सदस्य है।

- If the petitioner's interpretation applied to **Puducherry**, its Assembly strength under **Section 3(2)** of the 1963 Act would be **30**, but as per petitioner's own claim, Puducherry has **33** members (30+3). यदि याचिकाकर्ता की व्याख्या **पुडुचेरी** पर लागू की जाए, तो 1963 अधिनियम की धारा **3(2)** के तहत उसकी विधानसभा की शक्ति **30** होगी, लेकिन याचिकाकर्ता के अनुसार, पुडुचेरी में **33** सदस्य (30+3) हैं।
- The case is scheduled for hearing on **August 14**. मामले की सुनवाई **14 अगस्त** को होगी।



Regional rivals may join hands to fight Bodoland elections in Assam

GS II: Vith Schedule

The Hindu Bureau

GUWAHATI

The Bharatiya Janata Party's bid to be the dominant political entity in the Bodoland Territorial Region (BTR) may bring two rival regional parties together ahead of the elections to the **Bodoland Territorial Council (BTC)**, expected to be held in September.

The BTC governs the BTR comprising five districts across western and north-central Assam. The Bodos are the largest ethnic group in the BTR.

Leaders of the influential All Bodo Students' Union (ABSU) and other Bodo organisations have urged the United People's Party Liberal (UPPL) and the Bodoland People's Front (BPF) to contest the upcoming polls together. The UPPL is currently an ally of the BJP, and the BPF is a former ally.

Unification proposal

The other organisations include the Bodo Sahitya Sabha and forums of former members of two disbanded extremist groups, Bodoland Liberation Tigers and National Democratic Front of Bodoland.

ABSU president Dipen Boro said the organisations have proposed unification



BTC head Pramod Boro with Assam Chief Minister Himanta Biswa Sarma at an event in Kokrajhar in July. ANI

to UPPL president Pramod Boro and his BPF counterpart Hagrama Mohilary. Pramod Boro is the head of the BTC, which the UPPL rules in alliance with the BJP.

"We sent a letter on the unification issue to both the leaders on August 5. We expect a positive response by August 12," he said, adding that the people of BTR want the rivalry between the two parties to end as they do not want the region to relapse into the kind of violence it witnessed earlier.

Pramod Boro said his party would consider the proposal, but pointed out that a united political front cannot be one-sided. "We do not believe in the politics of division as unity in diversity is the essence of In-

dia, which Prime Minister Narendra Modi emphasises through his 'sabka saath, sabka vikas' call," he said.

"We have no problem in contesting the council polls together. We have given a written reply to the organisations. It is now the turn of the UPPL chief to do so," Mr Mohilary said.

'Welcome move'

Chief Minister Himanta Biswa Sarma welcomed the proposal for unity between the UPPL and BPF. However, the BJP is believed to have made the two BTR-specific parties jittery by indicating it would contest all 40 seats in the BTC after months of keeping its option of a pre-poll alliance with either the UPPL and the BPF open.

The BJP is keen on controlling the BTC after years of wielding power in two other tribal councils formed under the Sixth Schedule of the Constitution of India - Karbi Anglong Autonomous Council and North Cachar Hills Autonomous Council.

In the last BTC polls held in December 2020, the BPF emerged as the single-largest party with 17 seats, followed by the UPPL with 12, and the BJP with nine. The Congress and the Gana Suraksha Party won one seat each.

Defections from the BPF and Congress resulted in the UPPL and BJP gaining seats, increasing their counts to 15 and 14, respectively.

Rift in BJP alliance

Meanwhile, the BTC polls appear to have driven a wedge between the BJP and its other regional ally, the Asom Gana Parishad (AGP). Addressing an event of the Kokrajhar district BJP unit a few days ago, the Chief Minister said his party was neither against the UPPL nor the BPF. "However, lotus will bloom in the BTC," he said, while claiming the BJP was primarily instrumental in ensuring lasting peace in the BTR.

Regional rivals may join hands to fight

Bodoland elections in Assam

असम में बोडोलैंड चुनाव लड़ने के लिए क्षेत्रीय प्रतिद्वंद्वी हाथ मिला सकते हैं

The Bharatiya Janata Party's bid to be the dominant political entity in the Bodoland Territorial Region (BTR) may bring two rival regional parties together ahead of the elections to the Bodoland Territorial Council (BTC), expected to be held in September.

भारतीय जनता पार्टी की बोडोलैंड क्षेत्रीय क्षेत्र (BTR) में प्रमुख राजनीतिक इकाई बनने की बोली बोडोलैंड क्षेत्रीय परिषद (BTC) के चुनावों से पहले, जो सितंबर में होने की उम्मीद है, दो प्रतिद्वंद्वी क्षेत्रीय दलों को एक साथ ला सकती है।

The BTC governs the BTR comprising five districts across western and north-central Assam. The Bodos are the largest ethnic group in the BTR.



BTC पश्चिमी और उत्तर-मध्य असम में फैले पांच जिलों वाले BTR का शासन करता है। बोडो BTR का सबसे बड़ा जातीय समूह हैं।

Leaders of the influential **All Bodo Students' Union (ABSU)** and other **Bodo organisations** have urged the **United People's Party Liberal (UPPL)** and the **Bodoland People's Front (BPF)** to contest the upcoming polls together. The **UPPL** is currently an ally of the **BJP**, and the **BPF** is a former ally.

प्रभावशाली **ऑल बोडो स्टूडेंट्स यूनियन (ABSU)** और अन्य **बोडो संगठनों** के नेताओं ने **यूनाइटेड पीपुल्स पार्टी लिबरल (UPPL)** और **बोडोलैंड पीपुल्स फ्रंट (BPF)** से आगामी चुनाव साथ लड़ने का आग्रह किया है। **UPPL** वर्तमान में **BJP** की सहयोगी है और **BPF** पूर्व सहयोगी है।

• **Unification proposal**
एकीकरण प्रस्ताव

The other organisations include the **Bodo Sahitya Sabha** and forums of former members of two disbanded extremist groups, **Bodoland Liberation Tigers** and **National Democratic Front of Bodoland**.

अन्य संगठनों में **बोडो साहित्य सभा** और दो भंग किए गए उग्रवादी समूहों **बोडोलैंड लिबरेशन टाइगर्स** और **नेशनल डेमोक्रेटिक फ्रंट ऑफ बोडोलैंड** के पूर्व सदस्यों के मंच शामिल हैं।

- **ABSU** president **Dipen Boro** said the organisations have proposed unification to **UPPL** president **Pramod Boro** and his **BPF** counterpart **Hagrama Mohilary**. **Pramod Boro** is the head of the **BTC**, which the **UPPL** rules in alliance with the **BJP**. **ABSU** अध्यक्ष **दिपेन बोरों** ने कहा कि संगठनों ने **UPPL** अध्यक्ष **प्रमोद बोरों** और उनके **BPF** समकक्ष **हाग्रामा मोहिलारी** को एकीकरण का प्रस्ताव दिया है। **प्रमोद बोरों** **BTC** के प्रमुख हैं, जिसे **UPPL** **BJP** के साथ गठबंधन में शासित करता है।

- "We sent a letter on the unification issue to both the leaders on **August 5**. We expect a positive response by **August 12**," he said, adding that the people of **BTR** want the rivalry between the two parties to end as they do not want the region to relapse into the kind of violence it witnessed earlier.

उन्होंने कहा, "हमने **5 अगस्त** को दोनों नेताओं को एकीकरण के मुद्दे पर पत्र भेजा। हमें **12 अगस्त** तक सकारात्मक प्रतिक्रिया की उम्मीद है," उन्होंने यह भी जोड़ा कि **BTR** के लोग चाहते हैं कि दोनों दलों के बीच प्रतिद्वंद्विता समाप्त हो, क्योंकि वे नहीं चाहते कि क्षेत्र पहले की तरह हिंसा में वापस जाए।

- **Pramod Boro** said his party would consider the proposal, but pointed out that a united political front cannot be one-sided. "We do not believe in the politics of division as unity in diversity is the essence of India, which **Prime Minister Narendra Modi** emphasises through his '**sabka saath, sabka vikas**' call," he said.

प्रमोद बोरों ने कहा कि उनकी पार्टी इस प्रस्ताव पर विचार करेगी, लेकिन यह भी बताया कि एक संयुक्त राजनीतिक मोर्चा एकतरफा नहीं हो सकता। उन्होंने कहा, "हम विभाजन की राजनीति में विश्वास नहीं करते क्योंकि विविधता में एकता भारत का सार है, जिस पर **प्रधानमंत्री नरेंद्र मोदी** अपने '**सबका साथ, सबका विकास**' आह्वान के माध्यम से जोर देते हैं।"

- "We have no problem in contesting the council polls together. We have given a written reply to the organisations. It is now the turn of the **UPPL** chief to do so," **Mr Mohilary** said.

श्री मोहिलारी ने कहा, "हमें परिषद चुनाव एक साथ लड़ने में कोई आपत्ति नहीं है। हमने संगठनों को लिखित जवाब दिया है। अब **UPPL** प्रमुख की बारी है।"

'Welcome move'
'स्वागत योग्य कदम'

- **Chief Minister Himanta Biswa Sarma** welcomed the proposal for unity between the **UPPL** and **BPF**.

मुख्यमंत्री हिमंत बिस्वा सरमा ने **UPPL** और **BPF** के बीच एकता के प्रस्ताव का स्वागत किया।

However, the **BJP** is believed to have made the two **BTR-specific** parties jittery by indicating it would contest all **40 seats** in the **BTC** after months of keeping its option of a pre-poll alliance with either the **UPPL** and the **BPF** open.



हालांकि, यह माना जाता है कि **BJP** ने कई महीनों तक **UPPL** या **BPF** के साथ चुनाव-पूर्व गठबंधन का विकल्प खुला रखने के बाद संकेत देकर कि वह **BTC** की सभी **40 सीटों** पर चुनाव लड़ेगी, दोनों **BTR-विशिष्ट** पार्टियों को चिंतित कर दिया है।

- The **BJP** is keen on controlling the **BTC** after years of wielding power in two other tribal councils formed under the **Sixth Schedule** of the **Constitution of India** – **Karbi Anglong Autonomous Council** and **North Cachar Hills Autonomous Council**.

BJP भारत के संविधान के छठे अनुसूची के तहत गठित दो अन्य जनजातीय परिषदों – **कार्बी आंगलॉग स्वायत्त परिषद** और **नॉर्थ कछार हिल्स स्वायत्त परिषद** – में वर्षों तक सत्ता संभालने के बाद **BTC** पर नियंत्रण करने के इच्छुक है।

- In the last **BTC** polls held in **December 2020**, the **BPF** emerged as the single-largest party with **17 seats**, followed by the **UPPL** with **12**, and the **BJP** with **nine**. The **Congress** and the **Gana Suraksha Party** won **one seat** each.

दिसंबर 2020 में हुए पिछले **BTC** चुनावों में **BPF 17 सीटों** के साथ एकल सबसे बड़ी पार्टी के रूप में उभरी, उसके बाद **UPPL 12**, और **BJP 9** सीटों के साथ थी। **कांग्रेस** और **गण सुरक्षा पार्टी** ने **एक-एक सीट** जीती।

Defections from the **BPF** and **Congress** resulted in the **UPPL** and **BJP** gaining seats, increasing their counts to **15** and **14**, respectively.

BPF और **कांग्रेस** से दलबदल के कारण **UPPL** और **BJP** को सीटें मिलीं, जिससे उनकी संख्या क्रमशः **15** और **14** हो गई।

- Rift in BJP alliance**

BJP गठबंधन में दरार

Meanwhile, the **BTC** polls appear to have driven a wedge between the **BJP** and its other regional ally, the **Asom Gana Parishad (AGP)**.

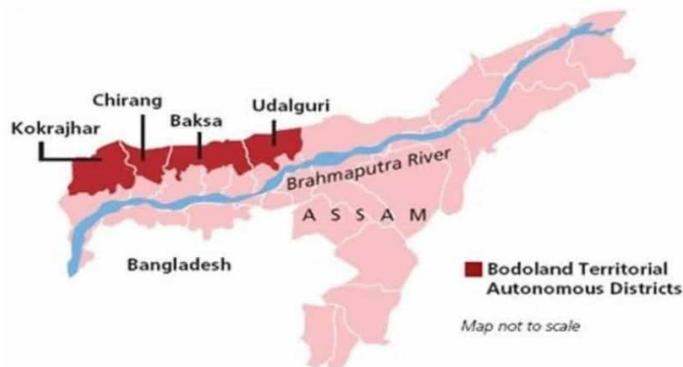
इस बीच, **BTC** चुनावों ने **BJP** और उसके अन्य क्षेत्रीय सहयोगी **असम गण परिषद (AGP)** के बीच दरार पैदा कर दी है।

- Addressing an event of the **Kokrajhar district BJP unit** a few days ago, the **Chief Minister** said his party was neither against the **UPPL** nor the **BPF**. "However, lotus will bloom in the **BTC**," he said, while claiming the **BJP** was primarily instrumental in ensuring lasting peace in the **BTR**.

कुछ दिन पहले **कोकराझार जिला BJP इकाई** के एक कार्यक्रम को संबोधित करते हुए, **मुख्यमंत्री** ने कहा कि उनकी पार्टी न तो **UPPL** के खिलाफ है और न ही **BPF** के। उन्होंने कहा, "हालांकि, कमल **BTC** में खिलेगा," जबकि दावा किया कि **BJP** मुख्य रूप से **BTR** में स्थायी शांति सुनिश्चित करने में सहायक रही है।

Bodoland Territorial Council (BTC)

- The **Bodoland Territorial Council (BTC)** is the **autonomous governing body** of the **Bodoland Territorial Region (BTR)** in Assam, established under the **Sixth Schedule of the Indian Constitution**.





- It emerged through a peace process aimed at addressing Bodo aspirations for greater autonomy.
- The region spans approximately **8,970 km²**, encompassing four districts.
- **Official languages** include **Bodo, Assamese, and English**.

Historical Background

- The roots of autonomy trace back to **1993**, when the **first Bodo Accord** resulted in the formation of the **Bodoland Autonomous Council**.
- The **2003 Peace Accord** upgraded this to the **Bodoland Territorial Council (BTC)**, granting enhanced powers.
- The **2020 Bodo Peace Accord** further transformed the area into the **Bodoland Territorial Region (BTR)**, increasing BTC's legislative, executive, and administrative powers and setting the stage for territorial realignment to consolidate Bodo-majority areas.

Geography & Demographics

Region Profile

- BTR lies in northwest Assam. Its administrative headquarters is **Kokrajhar**.
- The BTC covers about **11% of Assam's land area** and houses nearly **10% of its population**.
- Based on 2025 data, the region has around **31.55 lakh residents**, with a literacy rate of **71.62%**.
- Total villages are approximately **3,079**, including **2,890 revenue villages, 2,272 tribal belt & block villages, 618 outside tribal blocks**, and **189 forest villages**.

BTC Structure & Governance

Composition

- The legislative body comprises **40 elected members** and **6 nominated members** appointed by the Assam Governor from unrepresented communities, totaling **46 seats**.
- **Leadership** includes:
 - **Chief Executive Member (CEM)** – currently **Pramod Boro**, heading the executive council.
 - **Speaker** – presides over legislative sessions.
- Terms last **five years**, with the **next election expected in 2025**.



Example Highlight

- From **2005 to 2020, Hagrama Mohilary**, former leader of the Bodo Liberation Tigers Force, served as the CEM, guiding the region through a significant phase of stability and development.

Powers & Competencies

Authority Powers

- Under the Sixth Schedule and the 2003 and 2020 accords, the BTC has comprehensive **legislative and executive powers** over a wide array of subjects such as:
 - **Forestry, agriculture, education, health, land revenue, public works, tourism, tribal welfare, urban planning, and more.**

Financial Control

- The council can **levy taxes, fees, and tolls** on land, buildings, vehicles, goods transit, employment, sanitation, and more—funding its infrastructure and developmental activities.

Example of Influence

- The BTC administers local markets, handlooms, fisheries, renewable energy programs, AYUSH health services, cultural affairs, and disaster management—underscoring its broad autonomy.

Recent Political & Administrative Developments

Elections & Population

- **Draft electoral rolls** for the upcoming 2025 council elections were released in **July 2025**, showing **26.69 lakh voters**, up by 3 lakh due to natural growth and inclusion of **81 new villages**.



LS Speaker sets in motion process to remove HC judge

Birla constitutes three-member committee to probe charges against Justice Yashwant Varma over finding of burnt currency notes at his residence; panel to submit its report as early as possible

GS II: Judiciary

Sandeep Phukan
NEW DELHI

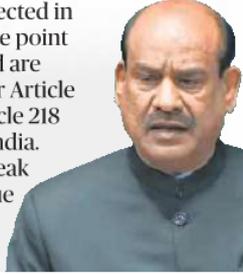
Lok Sabha Speaker Om Birla on Tuesday set in motion the process of removing Justice Yashwant Varma of Allahabad High Court by admitting a motion, signed by 146 members, and constituting a three-member inquiry committee to probe the charges against Justice Varma.

The inquiry committee comprises Supreme Court judge Justice Aravind Kumar, Madras High Court Chief Justice Manindra Mohan Shrivastava and senior Karnataka High Court advocate B.V. Acharya.

Justice Varma was repatriated from the Delhi High Court to the Allahabad High Court after burnt wads of currency notes were found at his official

The facts connected in the present case point towards corruption and are eligible for action as per Article 124, Article 217 and Article 218 of the Constitution of India. Parliament needs to speak in one voice on this issue

OM BIRLA
Lok Sabha Speaker



residence on March 14. Later, an in-house inquiry of the Supreme Court had indicted Justice Varma.

"The committee will submit its report as early as possible. The proposal [for removal of Justice Varma] will remain pending till the receipt of the report of the inquiry committee," Mr. Birla informed the House.

He said he accepted the proposal received on July 21 and constituted a three-

member panel for the removal of the judge from his post in accordance with Section 3(2) of the Judges (Inquiry) Act 1968.

'Foundation of trust'

Mr. Birla said unimpeachable character and financial and intellectual integrity were the foundation of the trust a common person has in the judiciary. "The facts connected in the present case point towards

corruption and are eligible for action as per Article 124, Article 217 and Article 218 of the Constitution of India. Parliament needs to speak in one voice on this issue and every citizen of this country should send a clear message about its commitment to zero tolerance to corruption."

Earlier, then Chief Justice of India Sanjiv Khanna had asked Justice Varma to resign or face impeachment proceedings after receiving the report of an in-house probe committee in March. As Justice Varma refused to quit, CJI Khanna forwarded the report to the President and the Prime Minister for the removal of the judge.

Though Justice Varma had moved the SC against CJI Khanna's recommendation for his removal, the top court rejected his plea.

LS Speaker sets in motion process to remove HC judge

लोकसभा अध्यक्ष ने HC जज को हटाने की प्रक्रिया शुरू की

• **Birla constitutes three-member committee to probe charges against Justice Yashwant Varma over finding of burnt currency notes at his residence; panel to submit its**

report as early as possible

बिड़ला ने जस्टिस यशवंत वर्मा के आवास पर जली हुई मुद्रा नोटों की बरामदगी के आरोपों की जांच के लिए तीन सदस्यीय समिति गठित की; पैनल को जल्द से जल्द अपनी रिपोर्ट सौंपनी है

- **Lok Sabha Speaker Om Birla on Tuesday set in motion the process of removing Justice Yashwant Varma of Allahabad High Court by admitting a motion, signed by 146 members, and constituting a three-member inquiry committee to probe the charges against Justice Varma.**

लोकसभा अध्यक्ष ओम बिड़ला ने मंगलवार को इलाहाबाद उच्च न्यायालय के जस्टिस यशवंत वर्मा को हटाने की प्रक्रिया शुरू की, जिसके लिए 146 सदस्यों द्वारा हस्ताक्षरित एक प्रस्ताव को स्वीकार किया और तीन सदस्यीय जांच समिति गठित की।

- The inquiry committee comprises **Supreme Court judge Justice Aravind Kumar, Madras High Court Chief Justice Manindra Mohan Shrivastava** and senior **Karnataka High Court advocate B.V. Acharya.**

जांच समिति में सुप्रीम कोर्ट के जस्टिस अरविंद कुमार, मद्रास हाई कोर्ट के मुख्य न्यायाधीश मनींद्र मोहन श्रीवास्तव और कर्नाटक हाई कोर्ट के वरिष्ठ वकील बी.वी. आचार्य शामिल हैं।

- **Justice Varma was repatriated from the Delhi High Court to the Allahabad High Court after burnt wads of currency notes were found at his official residence on March 14. Later, an in-house inquiry of the Supreme Court had indicted Justice Varma.**

जस्टिस वर्मा को दिल्ली हाई कोर्ट से इलाहाबाद हाई कोर्ट स्थानांतरित कर दिया गया, जब 14



मार्च को उनके सरकारी आवास पर जले हुए नोटों के बंडल मिले। बाद में, **सुप्रीम कोर्ट** की आंतरिक जांच में जस्टिस वर्मा को दोषी ठहराया गया।

- “The committee will submit its report **as early as possible**. The proposal [for removal of Justice Varma] will remain pending till the receipt of the report of the inquiry committee,” **Mr. Birla** informed the House.
“समिति अपनी रिपोर्ट **जल्द से जल्द** सौंपेगी। [जस्टिस वर्मा को हटाने का] प्रस्ताव जांच समिति की रिपोर्ट प्राप्त होने तक लंबित रहेगा,” **श्री बिड़ला** ने सदन को बताया।
- He said he accepted the proposal received on **July 21** and constituted a three-member panel for the removal of the judge from his post in accordance with **Section 3(2) of the Judges (Inquiry) Act 1968**.
उन्होंने कहा कि उन्होंने **21 जुलाई** को प्राप्त प्रस्ताव को स्वीकार किया और **न्यायाधीश (जांच) अधिनियम 1968** की धारा **3(2)** के तहत न्यायाधीश को पद से हटाने के लिए तीन सदस्यीय पैनल गठित किया।
- **‘Foundation of trust’** — Mr. Birla said unimpeachable character and financial and intellectual integrity were the foundation of the trust a common person has in the judiciary.
‘विश्वास की नींव’ — श्री बिड़ला ने कहा कि निर्दोष चरित्र और वित्तीय व बौद्धिक ईमानदारी, आम नागरिक के न्यायपालिका पर विश्वास की नींव होती है।
- “The facts connected in the present case point towards corruption and are eligible for action as per **Article 124, Article 217 and Article 218 of the Constitution of India**. Parliament needs to speak in one voice on this issue and every citizen of this country should send a clear message about its commitment to zero tolerance to corruption.”
“इस मामले से जुड़े तथ्य **संविधान के अनुच्छेद 124, अनुच्छेद 217 और अनुच्छेद 218** के अनुसार भ्रष्टाचार की ओर संकेत करते हैं और कार्रवाई योग्य हैं। संसद को इस मुद्दे पर एक स्वर में बोलना चाहिए और देश के हर नागरिक को भ्रष्टाचार के प्रति शून्य सहिष्णुता की अपनी प्रतिबद्धता का स्पष्ट संदेश देना चाहिए।”
- Earlier, then **Chief Justice of India Sanjiv Khanna** had asked **Justice Varma** to resign or face impeachment proceedings after receiving the report of an in-house probe committee in **March**.
पहले, तत्कालीन **भारत के मुख्य न्यायाधीश संजीव खन्ना** ने **मार्च** में आंतरिक जांच समिति की रिपोर्ट प्राप्त करने के बाद **जस्टिस वर्मा** से इस्तीफा देने या महाभियोग की कार्यवाही का सामना करने के लिए कहा था।
- As **Justice Varma** refused to quit, **CJI Khanna** forwarded the report to the **President** and the **Prime Minister** for the removal of the judge.
जब **जस्टिस वर्मा** ने इस्तीफा देने से इंकार कर दिया, तो **मुख्य न्यायाधीश खन्ना** ने न्यायाधीश को हटाने के लिए रिपोर्ट **राष्ट्रपति** और **प्रधानमंत्री** को भेज दी।
- Though **Justice Varma** had moved the **SC** against **CJI Khanna’s** recommendation for his removal, the top court rejected his plea.
हालांकि **जस्टिस वर्मा** ने अपनी बर्खास्तगी के लिए **मुख्य न्यायाधीश खन्ना** की सिफारिश के खिलाफ **सुप्रीम कोर्ट** में याचिका दायर की थी, लेकिन शीर्ष अदालत ने उनकी याचिका खारिज कर दी।

Removal of Judges under the Judges (Inquiry) Act, 1968

- The **Judges (Inquiry) Act, 1968** was enacted under **Article 124(5) of the Constitution of India** to lay down the detailed procedure for investigating allegations of misbehaviour or incapacity against Judges of the **Supreme Court and High Courts**.

Grounds for Removal

- **Proven Misbehaviour** – Covers:
 - Wilful misconduct
 - Corruption and lack of integrity



- Moral turpitude
- Abuse of judicial office
- Actions bringing disrepute to the judiciary

• **Incapacity** – Refers to:

- Physical inability to discharge judicial functions
- Mental incapacity rendering the judge unfit to perform duties

Procedure under the Judges (Inquiry) Act, 1968

- A removal motion must be signed by **at least 100 Members of the Lok Sabha or 50 Members of the Rajya Sabha**.
- Submitted to the **Speaker of Lok Sabha** or the **Chairman of Rajya Sabha**.
- The Presiding Officer consults and decides whether to admit or refuse the motion.

2. Formation of Inquiry Committee

- If admitted, a **three-member Inquiry Committee** is constituted comprising:
 - **One Judge of the Supreme Court**
 - **Chief Justice of a High Court**
 - **One distinguished jurist** (as deemed fit by the Speaker/Chairman)

Investigation Process

- Committee frames **definite charges** and communicates them to the concerned judge.
- Judge is allowed to present a **written statement of defence**.
- In incapacity cases, the committee may recommend **medical examination**; refusal can lead to presumption of incapacity.

Committee Report

- Committee submits a detailed report to the **Speaker or Chairman**.
- The report is then laid before the respective House of Parliament.

Parliamentary Consideration

- If the committee finds the judge guilty of misbehaviour/incapacity:
 - The originating House debates and votes.
 - A **special majority** is required:
 - **Majority of the total membership of the House**, and
 - **Two-thirds of members present and voting**.
- The other House must pass the motion with the same special majority in the **same session**.

6. Presidential Order of Removal

- After both Houses approve, an **address is sent to the President**.
- The **President issues an order for removal** of the judge during the same Parliamentary session.

Historical Examples

- **Justice V. Ramaswami (1991, Supreme Court)** – First judge to face removal motion. Found guilty by the committee, but motion failed in Lok Sabha due to abstentions.
- **Justice Soumitra Sen (Calcutta High Court)** – Found guilty of misappropriation of funds; Rajya Sabha passed removal motion in 2011, but he resigned before Lok Sabha



could vote.

- **Justice P. D. Dinakaran (Sikkim High Court CJ)** – Faced corruption allegations; resigned before completion of removal proceedings.
- **Justice Narayan Shukla (Allahabad High Court)** – CJI recommended removal in 2018 for corruption; he retired before Parliament acted.

Expert Insight

- Senior Advocate **Raju Ramachandran** stressed that removal proceedings must be transparent, fair, and constitutionally compliant to maintain public trust in the judiciary.

SC questions 'potentiality of abuse' of BNS Section 152

The Bench asks if risk of misuse of **Section 152 of BNS** is a reason to declare it unconstitutional; top court protects Siddharth Varadarajan and Foundation members from coercive police action

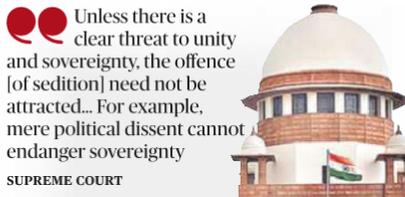
GS II: Sedition

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Tuesday asked if "potentiality of abuse" by the state of **Section 152 of the Bharatiya Nyaya Sanhita (BNS)**, which punishes "acts endangering sovereignty, unity and integrity of India", could be a ground to declare the law itself unconstitutional.

A Bench of Justices Surya Kant and Joymalya Bagchi raised the question to senior advocate Nitya Ramakrishnan, appearing for the **Foundation of Independent Journalism and Siddharth Varadarajan**, one of the founding editors of the online news portal **The Wire**, who is facing an FIR under **Section 152** and other offences under the BNS at Morigaon Police Station, Assam, for the publication of a news article.

The petition submitted that the arrest of Mr. Varadarajan and/or others was



"imminent".

The Bench protected Mr. Varadarajan and the members of the Foundation from any coercive action by the police.

It issued notice to the Union government and the State of Assam, represented by Solicitor-General Tushar Mehta.

Ms. Ramakrishnan argued that **Section 152 of the BNS**, though worded differently and avoiding the term 'sedition', was "in essence" the colonial sedition provision of **Section 124A of the Indian Penal Code (IPC)**. Senior counsel submitted that **Section 152** was vaguely worded, its

ambiguity cloaking an immense capacity to chill free speech, especially of journalists.

Justice Bagchi agreed with Ms. Ramakrishnan that vagueness in a penal provision was a valid ground to challenge it.

Justice Bagchi said the top court's judgment in the Kedar Nath Singh case had clearly defined that sedition could not be invoked under **Section 124A** until there was clear proof that words or action had incited violence.

"The acts which come within **Section 124A** and **Section 152**, by way of comparative interpretation,

would be covered by the ratio of the Kedar Nath Singh verdict that unless there is a clear threat to unity and sovereignty, the offence [of sedition] need not be attracted," Justice Bagchi observed.

Justice Kant said a general list of acts endangering sovereignty could not be prepared by the court; it would depend on a case by case basis. "For example, mere political dissent cannot endanger sovereignty," Justice Kant said.

Mr. Mehta asked whether a challenge to a provision could be used as a ground to gain anticipatory bail or seek the quashing of an FIR under **Section 438** of the Code of Criminal Procedure.

Justice Kant responded by asking Mr. Mehta whether custodial interrogation was necessary in the case of journalists.

Mr. Mehta replied that journalists could not be considered a "separate class" under the law.

SC questions 'potentiality of abuse' of BNS Section 152
सुप्रीम कोर्ट ने BNS की धारा 152 के 'दुरुपयोग की संभाव्यता' पर सवाल उठाया

The Supreme Court on Tuesday asked if "potentiality of abuse" by the state of **Section 152 of the Bharatiya Nyaya Sanhita (BNS)**, which punishes "acts endangering sovereignty, unity and integrity of India", could be a ground to declare the law itself unconstitutional.

सुप्रीम कोर्ट ने मंगलवार को पूछा कि क्या भारतीय न्याय संहिता (BNS) की धारा 152 का राज्य

द्वारा "दुरुपयोग की संभाव्यता", जो "भारत की संप्रभुता, एकता और अखंडता को खतरे में डालने वाले कृत्यों" को दंडित करती है, स्वयं कानून को असंवैधानिक घोषित करने का आधार हो सकती है।

- A Bench of Justices Surya Kant and Joymalya Bagchi raised the question to senior advocate Nitya Ramakrishnan, appearing for the **Foundation of Independent Journalism and Siddharth Varadarajan**, one of the founding editors of the online news portal **The Wire**, who is facing an FIR under **Section 152** and other offences under the BNS at **Morigaon Police Station, Assam**, for the publication of a news article.

न्यायमूर्ति सुर्यकांत और जॉयमाल्या बागची की पीठ ने यह सवाल वरिष्ठ अधिवक्ता नित्य रामकृष्णन से पूछा, जो **फाउंडेशन ऑफ इंडिपेंडेंट जर्नलिज्म और सिद्धार्थ वरदराजन**



(ऑनलाइन न्यूज़ पोर्टल द वायर के संस्थापक संपादकों में से एक) का प्रतिनिधित्व कर रही थीं, जिन पर मोरीगांव पुलिस स्टेशन, असम में एक समाचार लेख प्रकाशित करने के लिए BNS की धारा 152 और अन्य अपराधों के तहत FIR दर्ज है।

- The petition submitted that the arrest of **Mr. Varadarajan** and/or others was “imminent”.
याचिका में कहा गया कि श्री वरदराजन और/या अन्य की गिरफ्तारी “आसन्न” है।
- The Bench protected **Mr. Varadarajan** and the members of the **Foundation** from any **coercive action** by the police.
पीठ ने श्री वरदराजन और फाउंडेशन के सदस्यों को पुलिस की किसी भी जबरदस्ती की कार्रवाई से संरक्षण दिया।
- It issued **notice** to the **Union government** and the **State of Assam**, represented by **Solicitor-General Tushar Mehta**.
इसने केंद्र सरकार और असम राज्य को नोटिस जारी किया, जिनका प्रतिनिधित्व सॉलिसिटर जनरल तुषार मेहता ने किया।
- Ms. Ramakrishnan** argued that **Section 152** of the **BNS**, though worded differently and avoiding the term ‘**sedition**’, was “**in essence**” the colonial sedition provision of **Section 124A** of the **Indian Penal Code (IPC)**.
सुश्री रामकृष्णन ने तर्क दिया कि BNS की धारा 152, यद्यपि अलग शब्दों में और ‘राजद्रोह’ शब्द से बचते हुए लिखी गई है, लेकिन “मूल रूप से” यह भारतीय दंड संहिता (IPC) की धारा 124A का औपनिवेशिक राजद्रोह प्रावधान है।
- Senior counsel submitted that **Section 152** was **vaguely worded**, its **ambiguity** cloaking an immense capacity to **chill free speech**, especially of journalists.
वरिष्ठ वकील ने कहा कि धारा 152 को अस्पष्ट शब्दों में लिखा गया है, और इसकी अस्पष्टता में अभिव्यक्ति की स्वतंत्रता को ठंडा करने की अत्यधिक क्षमता छिपी है, विशेष रूप से पत्रकारों की।
Justice Bagchi agreed with **Ms. Ramakrishnan** that **vagueness** in a penal provision was a valid ground to challenge it.
न्यायमूर्ति बागची ने सुश्री रामकृष्णन से सहमति जताई कि दंड प्रावधान में अस्पष्टता इसे चुनौती देने का एक वैध आधार है।
- Justice Bagchi** said the top court’s judgment in the **Kedar Nath Singh** case had clearly defined that sedition could not be invoked under **Section 124A** until there was clear proof that words or action had **incited violence**.
न्यायमूर्ति बागची ने कहा कि सर्वोच्च न्यायालय के केदार नाथ सिंह मामले में दिए गए फैसले ने स्पष्ट रूप से परिभाषित किया था कि धारा 124A के तहत राजद्रोह तब तक लागू नहीं किया जा सकता जब तक कि शब्दों या कार्य से हिंसा भड़काने का स्पष्ट सबूत न हो।
- “The acts which come within **Section 124A** and **Section 152**, by way of comparative interpretation, would be covered by the ratio of the **Kedar Nath Singh** verdict that unless there is a clear threat to unity and sovereignty, the offence [of sedition] need not be attracted,” **Justice Bagchi** observed.
“धारा 124A और धारा 152 के अंतर्गत आने वाले कार्य, तुलनात्मक व्याख्या के आधार पर, केदार नाथ सिंह के फैसले के सिद्धांत के अंतर्गत आएंगे कि जब तक एकता और संप्रभुता को स्पष्ट खतरा न हो, तब तक [राजद्रोह] का अपराध लागू नहीं होगा,” न्यायमूर्ति बागची ने कहा।
- Justice Kant** said a **general list** of acts endangering sovereignty could not be prepared by the court; it would depend on a **case by case** basis. “For example, mere **political dissent** cannot endanger sovereignty,” **Justice Kant** said.
न्यायमूर्ति कांत ने कहा कि संप्रभुता को खतरे में डालने वाले कृत्यों की कोई सामान्य सूची अदालत द्वारा तैयार नहीं की जा सकती; यह प्रत्येक मामले के आधार पर निर्भर करेगा। “उदाहरण के लिए, मात्र राजनीतिक असहमति संप्रभुता को खतरे में नहीं डाल सकती,” न्यायमूर्ति कांत ने कहा।
- Mr. Mehta** asked whether a **challenge** to a provision could be used as a ground to gain **anticipatory bail** or seek the **quashing** of an **FIR** under **Section 438** of the **Code of Criminal Procedure**.



श्री मेहता ने पूछा कि क्या किसी प्रावधान को चुनौती देना अग्रिम जमानत प्राप्त करने या आपराधिक प्रक्रिया संहिता की धारा 438 के तहत FIR को रद्द करने का आधार हो सकता है।

- **Justice Kant** responded by asking **Mr. Mehta** whether **custodial interrogation** was necessary in the case of **journalists**.
न्यायमूर्ति कांत ने श्री मेहता से पूछा कि क्या पत्रकारों के मामले में हिरासत में पूछताछ आवश्यक
- **Mr. Mehta** replied that **journalists** could not be considered a “**separate class**” under the law.
श्री मेहता ने कहा कि पत्रकारों को कानून के तहत “अलग वर्ग” नहीं माना जा सकता।

10 MoUs under discussion ahead of Singaporean PM Lawrence Wong's visit

GS II: India Singapore

Kallol Bhattacharjee
NEW DELHI

Around 10 major MoUs are under discussion between India and Singapore as the two sides are preparing for the proposed India visit of Singaporean Prime Minister Lawrence Wong, diplomatic sources have said. The visit of Mr. Wong and the agreements to be sealed during the visit are expected to feature in the third India-Singapore Ministerial Roundtable (ISMR) that will be held here on Wednesday.

External Affairs Minister S. Jaishankar, Finance Minister Nirmala Sitharaman, Commerce and Industry Minister Piyush Goyal and Minister of Information Technology Ashwini Vaishnaw are among those who will participate in the ISMR.



PM Narendra Modi with his Singaporean counterpart Lawrence Wong at a meeting in Singapore in September 2024. FILE PHOTO

The Singaporean side will be represented by Gan Kim Yong, Deputy Prime Minister and Minister for Trade and Industry; K. Shanmugam, Coordinating Minister for National Security and Minister for Home Affairs; Vivian Balakrishnan, Minister for Foreign Affairs; Josephine

Teo, Minister for Digital Development and Information; Tan See Leng, Minister for Manpower, and Jeffrey Siow, Acting Minister for Transport. A diplomatic source said that the Ministers are expected to focus on digital technology, connectivity, healthcare and sustainability.

- The visit of Mr. Wong and the agreements to be sealed during the visit are expected to feature in the **third India-Singapore Ministerial Roundtable (ISMR)** that will be held here on Wednesday.

श्री वोंग की यात्रा और इस दौरान होने वाले समझौते तीसरे भारत-सिंगापुर मंत्रीस्तरीय गोलमेज सम्मेलन (ISMR) में शामिल होने की उम्मीद है, जो यहां बुधवार को आयोजित किया जाएगा।

10 MoUs under discussion ahead of Singaporean PM Lawrence Wong's visit

सिंगापुर के प्रधानमंत्री लॉरेंस वोंग की यात्रा से पहले 10 समझौतों पर चर्चा

Around 10 major MoUs are under discussion between India and Singapore as the two sides are preparing for the **proposed India visit of Singaporean Prime Minister Lawrence Wong**, diplomatic sources have said.

कूटनीतिक सूत्रों के अनुसार भारत और सिंगापुर के बीच लगभग 10 प्रमुख समझौता ज्ञापनों (MoUs) पर चर्चा जारी है क्योंकि दोनों पक्ष सिंगापुर के प्रधानमंत्री लॉरेंस वोंग की प्रस्तावित भारत यात्रा की तैयारी कर रहे हैं।



- External Affairs Minister S. Jaishankar, Finance Minister Nirmala Sitharaman, Commerce and Industry Minister Piyush Goyal and Minister of Information Technology Ashwini Vaishnaw are among those who will participate in the ISMR. विदेश मंत्री एस. जयशंकर, वित्त मंत्री निर्मला सीतारमण, वाणिज्य और उद्योग मंत्री पीयूष गoyal तथा सूचना प्रौद्योगिकी मंत्री अश्विनी वैष्णव उन लोगों में शामिल हैं जो ISMR में भाग लेंगे।
- The Singaporean side will be represented by Gan Kim Yong, Deputy Prime Minister and Minister for Trade and Industry; K. Shanmugam, Coordinating Minister for National Security and Minister for Home Affairs; Vivian Balakrishnan, Minister for Foreign Affairs; Josephine Teo, Minister for Digital Development and Information; Tan See Leng, Minister for Manpower, and Jeffrey Siow, Acting Minister for Transport.
 - सिंगापुर की ओर से गैन किम योंग (उप प्रधानमंत्री और व्यापार एवं उद्योग मंत्री), के. शनमुगरम (राष्ट्रीय सुरक्षा समन्वय मंत्री और गृह मंत्री), विवियन बालकृष्णन (विदेश मंत्री), जोसेफिन टियो (डिजिटल विकास और सूचना मंत्री), तान सी लेंग (श्रम मंत्री) और जेफ्री सियो (कार्यवाहक परिवहन मंत्री) प्रतिनिधित्व करेंगे।
- A diplomatic source said that the Ministers are expected to focus on digital technology, connectivity, healthcare and sustainability.

Providing justice for juveniles

The purpose of the JJ Act is undermined when minors are sent to adult prisons

GS II: Social Justice:
Juvenile Justice
STATE OF PLAY

Geeta Sajjanshetty

Recently, the Karnataka High Court delivered a landmark judgment in criminal appeal no. 200093 of 2019, emphasising the crucial role that police and magistrates must play in identifying juvenile offenders at the very inception of a criminal case. It reiterated the need for vigilance when taking cognisance of offences involving juveniles. The court stressed that proper identification could prevent minors from being wrongly imprisoned with adults.

Karthik, convicted of murdering Muniyappa, was the second accused in the case, while his father was the primary accused. Evidence established that Muniyappa had eloped with Chaitra, Karthik's sister, without the family's approval. Both Karthik and his father held a grudge against Muniyappa, and multiple eyewitnesses confirmed their involvement in the crime.

When the matter reached the High Court on appeal, the issue of juvenility was raised. Under established legal principles, a plea of juvenility can be introduced at any stage of the proceedings – even after the trial has concluded. Juvenility refers to the claim that the accused was under 18 years of age at the time of the offence was committed, in which case the individual should be tried under the Juvenile Justice (Care and Protection of Children) Act, 2015 (the JJ Act).

In this case, the offence occurred in 2011, when the JJ Act, 2000, was in force. Though the application asserting juvenility was filed in 2023, the High Court clarified that as per Section 25 of the JJ



Act, 2015, the law applicable at the time of the offence must prevail. The court firmly stated that if the police or magistrate had paid closer attention at the time of arrest and trial, Karthik could have been identified as a juvenile and placed under the juvenile justice system. Instead, he spent 13 years in an adult prison – a grave miscarriage of justice.

The JJ Act mandates that minors must be presented before the Juvenile Justice Board (JJB). Unfortunately, in numerous cases, juveniles are incorrectly treated as adults and placed in jails, where they are exposed to physical violence, sexual abuse, and are at risk of becoming hardened criminals. Acknowledging the violation of Karthik's rights, the court awarded him compensation of ₹50,000 for having spent 13 years in jail. Had he been produced before the JJB, he would have served a maximum of three years in a juvenile home.

In a precedent-setting move, the court ordered the Additional Registrar General, who holds the rank of a Sessions Judge, to conduct the inquiry into Karthik's juvenility claim. This ensured the matter was handled swiftly and with due judicial authority. The court also directed that the judgment be submitted to the JJ High Court Committee, reinforcing the need for systemic awareness and reform.

Newly appointed members and chairpersons of the JJBs

must now be sensitised to the updated Karnataka Juvenile Justice (Care and Protection) Rules, 2025. Additionally, police officials, advocates, magistrates, and judges of children's courts must be thoroughly informed about the 2025 rules.

Too often, juveniles are treated as adults, despite their own pleas that they are underage. In many instances, magistrates deny them bail, and the psychological trauma of being placed in an adult jail can have long-lasting impacts. There have also been cases where juveniles arrested along with adult offenders are treated as adults and placed behind bars instead of observation homes meant for juveniles.

In a recent judgment, the Patna High Court accepted a plea of juvenility raised 32 years after the alleged offence.

In another judgment in criminal appeal No. 347 of 2018, the Supreme Court emphasised that a cautious approach must be adopted when a plea of juvenility is raised. In this case, the appellant relied on a transfer certificate to support the claim of juvenility. However, the court reiterated that the determination of age must be based on the documents specified under the JJ Act. Since other official records indicated that the individual was not a minor at the time of the offence, the court rejected the plea of juvenility.

The aim of the JJ Act is to provide a rehabilitative and reformative environment, allowing juveniles to reintegrate into society. This core purpose is undermined when minors are sent to adult prisons.

Names have been changed to protect identity. Geeta Sajjanshetty is an Advocate at the High Court of Karnataka, Kalarburagi Bench, and former Juvenile Justice Board Member, Kalarburagi

Providing justice for juveniles किशोरों को न्याय प्रदान करना

The purpose of the JJ Act is undermined when minors are sent to adult prisons.

जे जे अधिनियम का उद्देश्य तब कमजोर पड़ जाता है जब नाबालिगों को वयस्क जेलों में भेज दिया जाता है।

• Recently, the Karnataka High Court delivered a landmark judgment in criminal appeal no. 200093 of 2019, emphasising the crucial role that police and magistrates must play in identifying juvenile offenders at the very inception of a criminal case.

हाल ही में कर्नाटक उच्च न्यायालय ने आपराधिक अपील संख्या 200093, 2019 में एक ऐतिहासिक निर्णय दिया, जिसमें यह जोर दिया गया कि आपराधिक मामले की शुरुआत में ही पुलिस और मजिस्ट्रेट्स को किशोर अपराधियों की पहचान में महत्वपूर्ण भूमिका निभानी चाहिए।

• It reiterated the need for vigilance when taking cognisance of offences involving juveniles.

इसने किशोरों से जुड़े अपराधों की संज्ञान लेते समय सतर्कता की आवश्यकता को दोहराया।



- The court stressed that proper identification could prevent minors from being wrongly imprisoned with adults.
अदालत ने ज़ोर दिया कि सही पहचान नाबालिगों को वयस्कों के साथ गलत तरीके से कैद होने से बचा सकती है।
- **Karthik**, convicted of murdering **Muniyappa**, was the second accused in the case, while his father was the primary accused.
कार्तिक, जिसे **मुनियप्पा** की हत्या का दोषी ठहराया गया, मामले में दूसरा आरोपी था, जबकि उसके पिता मुख्य आरोपी थे।
- Evidence established that **Muniyappa** had eloped with **Chaitra**, Karthik's sister, without the family's approval.
सबूतों से यह साबित हुआ कि **मुनियप्पा** ने **चैत्रा**, कार्तिक की बहन, के साथ परिवार की अनुमति के बिना भागकर शादी की थी।
- Both Karthik and his father held a grudge against Muniyappa, and multiple eyewitnesses confirmed their involvement in the crime.
कार्तिक और उसके पिता दोनों को मुनियप्पा से दुश्मनी थी, और कई चश्मदीद गवाहों ने अपराध में उनकी संलिप्तता की पुष्टि की।
- When the matter reached the High Court on appeal, the issue of **juvenility** was raised.
जब मामला अपील में उच्च न्यायालय पहुँचा, तो **किशोरावस्था** का मुद्दा उठाया गया।
- Under established legal principles, a plea of juvenility can be introduced at any stage of the proceedings — even after the trial has concluded.
स्थापित कानूनी सिद्धांतों के तहत, किशोरावस्था की दलील कार्यवाही के किसी भी चरण में पेश की जा सकती है — यहां तक कि मुकदमे के समाप्त होने के बाद भी।
- **Juvenility** refers to the claim that the accused was under **18 years of age** at the time the offence was committed, in which case the individual should be tried under the **Juvenile Justice (Care and Protection of Children) Act, 2015 (the JJ Act)**.
किशोरावस्था का अर्थ है यह दावा कि अपराध के समय आरोपी की आयु **18 वर्ष से कम** थी, ऐसी स्थिति में व्यक्ति पर **किशोर न्याय (बालकों की देखरेख और संरक्षण) अधिनियम, 2015** (जे जे अधिनियम) के तहत मुकदमा चलना चाहिए।
- In this case, the offence occurred in **2011**, when the **JJ Act, 2000** was in force.
इस मामले में अपराध **2011** में हुआ, जब **जे जे अधिनियम, 2000** लागू था।
- Though the application asserting juvenility was filed in **2023**, the High Court clarified that as per **Section 25 of the JJ Act, 2015**, the law applicable at the time of the offence must prevail.
हालांकि किशोरावस्था का दावा करने वाला आवेदन **2023** में दायर किया गया था, उच्च न्यायालय ने स्पष्ट किया कि **जे जे अधिनियम, 2015 की धारा 25** के अनुसार, अपराध के समय लागू कानून ही प्रभावी रहेगा।
- The court firmly stated that if the police or magistrate had paid closer attention at the time of arrest and trial, **Karthik** could have been identified as a juvenile and placed under the juvenile justice system.
अदालत ने दृढ़ता से कहा कि यदि गिरफ्तारी और मुकदमे के समय पुलिस या मजिस्ट्रेट ने अधिक ध्यान दिया होता, तो **कार्तिक** को किशोर के रूप में पहचाना जा सकता था और किशोर न्याय प्रणाली में रखा जा सकता था।
- Instead, he spent **13 years** in an adult prison — a grave miscarriage of justice.
इसके बजाय, उसने **13 साल** एक वयस्क जेल में बिताए — यह न्याय की गंभीर विफलता थी।



- The JJ Act mandates that minors must be presented before the **Juvenile Justice Board (JJB)**.
जे जे अधिनियम अनिवार्य करता है कि नाबालिगों को किशोर न्याय बोर्ड (जे जे बी) के सामने प्रस्तुत किया जाए।

What is Telangana's Kaleshwaram project?

Where has the Kaleshwaram Lift Irrigation Project been built? Why was the location of the project suddenly shifted from Tummidihatti to Medigadda? Why did the piers of the Sundilla barrage sink? Who did the one-man judicial commission question regarding the project?

GS II: Inter State Relations
EXPLAINER

M. Rajeev

The story so far:

The Kaleshwaram Lift Irrigation Project (KLIP), billed as the lifeline of Telangana by the previous Bharat Rashtra Samithi (BRS) government, is mired in controversies over the manner in which it has been executed. A barrage forming a major component of the project suffered damages within three years of its inauguration, while two others constructed upstream developed cracks resulting in the charge that the KLIP was a colossal waste of public money.

What is the KLIP?

The KLIP is a multi-purpose irrigation project on the Godavari river in Kaleshwaram of Bhupalpally in Telangana. Billed as the world's largest multi-stage irrigation project, Kaleshwaram's upstream influence is at the confluence of Pranahita and Godavari. It utilises a canal network of more than 1,800 km. The project was conceived by the BRS government, headed by K. Chandrasekhar Rao, to provide irrigation facilities to over 16 lakh acres in 13 districts of Telangana, besides stabilising the existing ayacut. It aims at storing and distributing 240 thousand million cubic feet (tmc ft) of Godavari water of which 169 tmc ft is proposed to be allocated for irrigation, 30 tmc ft for drinking water to Hyderabad, 16 tmc ft for miscellaneous and industrial uses and another 10 tmc ft for drinking water to villages en route.

Where was it built?

The government has constructed barrages across Godavari at Ramadugu, Medigadda, Sundilla and Annaram. The water is stored there to cater to drinking water and irrigation needs. The project was conceived at a cost of ₹71,000 crore initially. The cost escalated to close to over ₹1 lakh crore over a period of time.



Bad planning: Water levels of the Medigadda barrage of the Kaleshwaram project in 2024. FILE PHOTO

Finishing works is likely to take few more thousands of crores.

What is the controversy?

The project has been mired in controversies right from the beginning as the then government shifted the location from Tummidihatti to Medigadda even after reportedly receiving hydrology clearance for the former location. The shifting of the site was made on the pretext of non-availability of water at Tummidihatti, but an inquiry revealed that the Central Water Commission had estimated the water availability at Tummidihatti to be over 200 tmc ft.

A major allegation that has surfaced in the construction of the project was that the barrages were constructed on

permeable foundations rather than strong foundations that can withstand the inflow of heavy quantum of water. The shifting of location, from Tummidihatti to Medigadda, too came under criticism as almost 30% of the works at Pranahita Chevella Sujala Sravanti (PCSS) project, started in united Andhra Pradesh in 2008, at Tummidihatti costing over ₹11,000 crore were completed by then. Another major charge against the BRS Government was that the decision to go ahead with the project was taken solely by Mr. Chandrasekhar Rao. It was alleged that he had not obtained the consent of the State Cabinet before launching work on the project.

The faults in the Kaleshwaram project were exposed during the BRS regime

when the piers of the Sundilla barrage sunk, substantiating the claims that the barrage was constructed on permeable foundation. Two other barrages, Annaram and Sundilla, too developed cracks as the government impounded and stored huge quantities of water against technical advice.

Was an inquiry ordered?

The constitution of a judicial commission to probe the lapses in the Kaleshwaram project was an election promise of the Congress. Subsequently, Chief Minister A. Revanth Reddy constituted a one-man judicial commission headed by Justice Pinaki Chandra Ghose for a thorough inquiry into the process. Justice Ghose examined over 110 witnesses during the course of his 15 month inquiry and those examined included former CM K.

Chandrasekhar Rao, former Ministers T. Harish Rao (Irrigation) and Eatala Rajender (Finance) of BRS government, the latter especially for releasing funds adopting a "negligent and indifferent attitude". The judicial commission submitted its report on July 31, and subsequently the Telangana government decided to take up a discussion on the Kaleshwaram project in the legislature during the monsoon session. The government plans to explain the lapses to the people in detail and to elicit views of all political parties, including the BRS, on the future course of action.

How has the BRS reacted?

The BRS on its part appears to be guarded in its response to the accusations. Mr. Harish Rao, however, defended the project claiming that the project received approvals from several statutory bodies, including the CWC. It also had the approval of the Cabinet, the papers of which have not been revealed by the government. The project was also ratified by the Assembly when Chief Minister Chandrasekhar Rao had made a power point presentation, the first of its kind, on the Kaleshwaram project, elaborating on its salient features.

THE GIST

▼ The KLIP is a multi-purpose irrigation project on the Godavari river in Kaleshwaram of Bhupalpally in Telangana.

▼ A major allegation that has surfaced in the construction of the project was that the barrages were constructed on permeable foundations rather than strong foundations that can withstand the inflow of heavy quantum of water.

▼ The constitution of a judicial commission to probe the lapses in the Kaleshwaram project was an election promise of the Congress.

Kaleshwaram Lift Irrigation Project (KLIP)

कालेश्वरम लिफ्ट सिंचाई परियोजना (KLIP)

The **Kaleshwaram Lift Irrigation Project (KLIP)**, billed as the lifeline of Telangana by the previous Bharat Rashtra Samithi (BRS) government, is mired in controversies over the manner in which it has been executed.

कालेश्वरम लिफ्ट सिंचाई परियोजना (KLIP), जिसे पिछली भारत राष्ट्र समिति (BRS) सरकार ने तेलंगाना की जीवनरेखा बताया था, इसके निष्पादन के तरीके को लेकर विवादों में घिरी हुई है।

- A barrage forming a major component of the project suffered damages within **three years** of its inauguration, while two others constructed upstream developed cracks resulting in the charge that the KLIP was a colossal waste of public money.

परियोजना का एक प्रमुख घटक बैराज उद्घाटन के तीन साल के भीतर क्षतिग्रस्त हो गया,



जबकि ऊपर की ओर बनाए गए दो अन्य में दरारें आ गईं, जिसके परिणामस्वरूप यह आरोप लगा कि KLIP जनता के पैसे की भारी बर्बादी थी।

What is KLIP?

KLIP क्या है?

- The **KLIP** is a multi-purpose irrigation project on the **Godavari river in Kaleshwaram of Bhupalpally** in Telangana.
KLIP तेलंगाना के भूपालपल्ली के कालेश्वरम में गोदावरी नदी पर एक बहुउद्देशीय सिंचाई परियोजना है।
Billed as the **world's largest multi-stage irrigation project**, Kaleshwaram's upstream influence is at the confluence of **Pranahita and Godavari**.
इसे दुनिया की सबसे बड़ी बहु-चरणीय सिंचाई परियोजना कहा जाता है, जिसका ऊपरी प्रभाव प्रणहिता और गोदावरी के संगम पर है।
- It utilises a canal network of more than **1,800 km**.
यह **1,800 किमी** से अधिक की नहर नेटवर्क का उपयोग करती है।
The project was conceived by the **BRS government**, headed by **K. Chandrasekhar Rao**, to provide irrigation facilities to over **16 lakh acres** in **13 districts** of Telangana, besides stabilising the existing ayacut.
परियोजना को **K. चंद्रशेखर राव** के नेतृत्व वाली **BRS सरकार** ने तेलंगाना के **13 जिलों** में **16 लाख एकड़** से अधिक भूमि को सिंचाई सुविधा प्रदान करने और मौजूदा आयाकट को स्थिर करने के लिए तैयार किया था।
- It aims at storing and distributing **240 thousand million cubic feet (tmc ft)** of Godavari water of which **169 tmc ft** is proposed for irrigation, **30 tmc ft** for drinking water to Hyderabad, **16 tmc ft** for miscellaneous and industrial uses and another **10 tmc ft** for drinking water to villages en route.
इसका उद्देश्य गोदावरी के **240 हजार मिलियन क्यूबिक फीट (tmc ft)** पानी को संग्रहित और वितरित करना है, जिसमें **169 tmc ft** सिंचाई के लिए, **30 tmc ft** हैदराबाद को पेयजल के लिए, **16 tmc ft** विविध और औद्योगिक उपयोग के लिए और **10 tmc ft** मार्ग में आने वाले गांवों को पेयजल के लिए प्रस्तावित है।

Where was it built?

यह कहाँ बनाया गया था?

- The government has **constructed barrages across Godavari at Ramadugu, Medigadda, Sundilla and Annaram**.
सरकार ने गोदावरी पर **रामदुगु, मेड़ीगड्डा, सुंडिल्ला और अन्नाराम** में बैराज बनाए हैं।
The water is stored there to cater to drinking water and irrigation needs.
वहां पानी को पेयजल और सिंचाई की आवश्यकताओं को पूरा करने के लिए संग्रहित किया जाता है।
The project was conceived at a cost of **₹71,000 crore** initially.
परियोजना को शुरू में **₹71,000 करोड़** की लागत से तैयार किया गया था।
The cost escalated to close to over **₹1 lakh crore** over a period of time.
समय के साथ लागत बढ़कर **₹1 लाख करोड़** से अधिक हो गई।
Finishing work is likely to take a few more thousands of crores.
अंतिम कार्यों में कुछ और हजार करोड़ रुपये लगने की संभावना है।



Quiz

The names of the atomic bombs that were dropped in Hiroshima and Nagasaki. Ans: Little Boy, Fat Man

हिरोशिमा और नागासाकी पर गिराए गए परमाणु बमों के नाम। उत्तर: लिटिल बॉय, फैट मैन

- The name of the research program that produced the first nuclear weapons. Ans: **Manhattan Project**
पहले परमाणु हथियारों का उत्पादन करने वाले अनुसंधान कार्यक्रम का नाम। उत्तर: मैनहैटन प्रोजेक्ट
- Define the **Franck Report**. Ans: The **Franck Report** was a document signed by several prominent nuclear physicists recommending that the **United States** not use the **atomic bomb** as a weapon to prompt the surrender of **Japan** in **World War II**.
फ्रैंक रिपोर्ट को परिभाषित करें। उत्तर: **फ्रैंक रिपोर्ट** एक दस्तावेज था जिस पर कई प्रमुख परमाणु भौतिकविदों ने हस्ताक्षर किए थे, जिसमें **संयुक्त राज्य अमेरिका** को सलाह दी गई थी कि वह **द्वितीय विश्व युद्ध** में **जापान** को आत्मसमर्पण कराने के लिए **परमाणु बम** का हथियार के रूप में उपयोग न करे।
- This was a secret agreement between the **U.K.** and the **U.S.** outlining the terms for the coordinated development of **nuclear energy** and **nuclear weapons**. Ans: **Quebec Agreement**
यह **यू.के.** और **यू.एस.** के बीच एक गुप्त समझौता था जिसमें **परमाणु ऊर्जा** और **परमाणु हथियारों** के समन्वित विकास की शर्तें निर्धारित की गई थीं। उत्तर: **क्यूबेक एग्रीमेंट**
- The Japanese term used to define a 'person affected by exposure to **radioactivity**'.
Ans: **Hibakusha**
रेडियोधर्मिता के संपर्क से प्रभावित व्यक्ति को परिभाषित करने के लिए उपयोग किया जाने वाला जापानी शब्द। उत्तर: **हिबाकुशा**
- Visual: Identify this person. Ans: **Robert Oppenheimer**. He was a **theoretical physicist** who served as the director of the **Manhattan Project**
दृश्य: इस व्यक्ति की पहचान करें। उत्तर: **रॉबर्ट ओपेनहाइमर**। वह एक **सैद्धांतिक भौतिक विज्ञानी** थे जिन्होंने **मैनहैटन प्रोजेक्ट** के निदेशक के रूप में कार्य किया।
- Early Birds: **Pranab Biswas | Tamal Biswas | Sunil Madhavan | Piyali Tuli | Dodo Jayaditya**
प्रारंभिक उत्तरदाता: **प्रणब विश्वास | तमाल विश्वास | सुनील माधवन | पियाली तुली | डोडो जयहादित्य**

TOPICS COVERED (GS Paper III: Polity, Governance, And International Relations)

- Retail inflation hits 8-year low of 1.55% as food prices drop**
खाद्य कीमतों में गिरावट से खुदरा मुद्रास्फीति 8 साल के निचले स्तर 1.55% पर
- Port restriction on Bangladeshi jute to protect local industries: officials**



स्थानीय उद्योगों की रक्षा के लिए बांग्लादेशी जूट पर बंदरगाह प्रतिबंध: अधिकारी

3. Filed plea against SC verdict to reduce IPS deputation in CAPFs, Minister informs LS

CAPFs में IPS प्रतिनियुक्ति कम करने के SC फैसले के खिलाफ याचिका दायर, मंत्री ने लोकसभा को बताया

4. India has set an example in lion conservation: Minister भारत ने शेर संरक्षण में उदाहरण प्रस्तुत किया: मंत्री

5. Latest muon data narrows gap but leaves physics mysteries unresolved

ताज़ा म्यॉन डेटा ने अंतर को कम किया लेकिन भौतिकी के रहस्य अनसुलझे छोड़े

6. The difficult path for Trump's 'one big budget bet' ट्रंप की 'वन बिग बजट बेट' के लिए कठिन राह

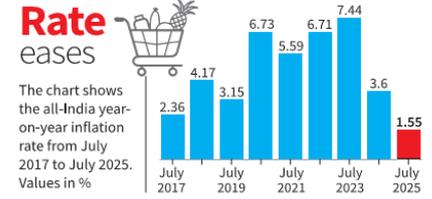
7. New Rules on Chemically Contaminated Sites रासायनिक रूप से प्रदूषित स्थलों पर नए नियम

8. How Artificial Intelligence is Tackling Mathematical Problem-Solving

कृत्रिम बुद्धिमत्ता गणितीय समस्या-समाधान को कैसे संभाल रही है



Retail inflation hits 8-year low of 1.55% as food prices drop



SOURCE: MINISTRY OF STATISTICS & PROGRAMME IMPLEMENTATION

GS III: Inflation

The Hindu Bureau
NEW DELHI

Retail inflation in India slipped to 1.55% in July, its lowest rate since June 2017, driven by a drop in food prices. This is below the Reserve Bank of India's comfort band of 2% to 6%. The Consumer Price Index (CPI), released by the Ministry of Statistics and Programme Implementation on Tuesday, showed that inflation has been easing for nine consecutive months.

The rate of inflation in the food and beverages category came in at -0.8% in July, lower than the -0.2% seen in June, and the 5.1% rate in July 2024.

"In the food basket, there was deflation in key items such as vegetables, pulses, spices, and meat," said Rajani Sinha, chief economist at CareEdge Ratings. "Looking ahead, food inflation is likely to remain contained." Vegetable and pulses inflation contracted 21% and 14% respectively, driven by a high base and falling prices. Ms. Sinha said the good progress of the monsoon, adequate reservoir levels, and strong *kharif* sowing bode well for agricultural output and food price stability.

Core inflation, which excludes the impact of food and fuel prices, also eased to 4.1% in July 2025 from 4.4% in the previous month, nearly at the RBI's

target of 4%.

The other broad categories in the CPI saw little change from the previous month. The paan, tobacco, and intoxicants category saw inflation remain flat at 2.4% in July. Similarly, the clothing and footwear category saw inflation ease marginally to 2.5% in July from 2.5% in June.

Inflation in the housing segment remained at 3.2% in July, while the fuel and light category saw inflation quicken to 2.7% in July from 2.5% in June.

High base benefit

Dipanjita Mazumdar, an economist at the Bank of Baroda, said that a statistical high base will continue to keep the inflation rate down between September and December 2025.

"The current cycle is acting in favour of us when the inflationary impact from tariffs is the centre point of global discussions," she said in a note. "We expect the downside risk to global growth will largely keep international commodity prices in check. This is expected to partly negate the higher tariff rates in place." However, she added that India needs to be watchful in case it has to completely stop buying Russian oil in compliance with U.S. President Donald Trump's demands. "In this case, some diversification towards Kuwait and Iraq would also lend support."

Retail inflation hits 8-year low of 1.55% as food prices drop

खाद्य कीमतों में गिरावट से खुदरा मुद्रास्फीति 8 साल के निचले स्तर 1.55% पर

Retail inflation in India slipped to 1.55% in July, its lowest rate since June 2017, driven by a drop in food prices. This is below the Reserve Bank of India's comfort band of 2% to 6%.

भारत में खुदरा मुद्रास्फीति जुलाई में 1.55% पर आ गई, जो जून 2017 के बाद का सबसे निचला स्तर है, और इसका कारण खाद्य कीमतों में गिरावट है। यह भारतीय रिज़र्व बैंक के 2% से 6% के आराम क्षेत्र से नीचे है।

- The Consumer Price Index (CPI), released by the Ministry of Statistics and Programme Implementation on Tuesday, showed that inflation has been easing for nine consecutive months.

सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय द्वारा मंगलवार को जारी उपभोक्ता मूल्य सूचकांक (CPI) ने दिखाया कि मुद्रास्फीति लगातार नौ महीनों से घट रही है।

- The rate of inflation in the food and beverages category came in at -0.8% in July, lower than the -0.2% seen in June, and the 5.1% rate in July 2024.

खाद्य और पेय पदार्थ श्रेणी में मुद्रास्फीति की दर जुलाई में -0.8% रही, जो जून के -0.2% और जुलाई 2024 के 5.1% से कम है।

- "In the food basket, there was deflation in key items such as vegetables, pulses, spices, and meat," said Rajani Sinha, chief economist at CareEdge Ratings. "Looking ahead, food inflation is likely to remain contained."

CareEdge Ratings की मुख्य अर्थशास्त्री रजनी सिन्हा ने कहा, "खाद्य टोकरी में सब्जियों, दालों, मसालों और मांस जैसे प्रमुख वस्तुओं में मुद्रास्फीति में गिरावट दर्ज की गई। आगे चलकर खाद्य मुद्रास्फीति के नियंत्रण में रहने की संभावना है।"

- Vegetable and pulses inflation contracted 21% and 14% respectively, driven by a high base and falling prices.

सब्जियों और दालों की मुद्रास्फीति क्रमशः 21% और 14% घटी, जिसका कारण उच्च आधार और गिरती कीमतें रहीं।

- Ms. Sinha said the good progress of the monsoon, adequate reservoir levels, and strong *kharif* sowing bode well for agricultural output and food price stability.

श्रीमती सिन्हा ने कहा कि मानसून की अच्छी प्रगति, पर्याप्त जलाशय स्तर, और मजबूत खरीफ बुवाई कृषि उत्पादन और खाद्य मूल्य स्थिरता के लिए अनुकूल संकेत हैं।

- Core inflation, which excludes the impact of food and fuel prices, also eased to 4.1% in July 2025 from 4.4% in the previous month, nearly at the RBI's target of 4%.

कोर मुद्रास्फीति, जिसमें खाद्य और ईंधन कीमतों का प्रभाव शामिल नहीं होता, जुलाई 2025 में घटकर 4.1% हो गई, जो पिछले महीने के 4.4% से कम है और RBI के 4% लक्ष्य के करीब है।

- The other broad categories in the CPI saw little change from the previous month. CPI की अन्य व्यापक श्रेणियों में पिछले महीने की तुलना में बहुत कम बदलाव हुआ।



- The **paan, tobacco, and intoxicants** category saw inflation remain flat at **2.4% in July**.
पान, तंबाकू और नशीले पदार्थ श्रेणी में जुलाई में मुद्रास्फीति 2.4% पर स्थिर रही।
- Similarly, the **clothing and footwear** category saw inflation ease marginally to **2.5% in July from 2.5% in June**.
इसी तरह, कपड़े और जूते-चप्पल श्रेणी में मुद्रास्फीति जून के 2.5% से घटकर जुलाई में 2.5% पर मामूली कमी दर्ज हुई।
- Inflation in the **housing** segment remained at **3.2% in July**, while the **fuel and light** category saw inflation quicken to **2.7% in July from 2.5% in June**.
आवास खंड में जुलाई में मुद्रास्फीति 3.2% पर स्थिर रही, जबकि ईंधन और प्रकाश श्रेणी में मुद्रास्फीति जून के 2.5% से बढ़कर जुलाई में 2.7% हो गई।
- **High base benefit** — **Dipanwita Mazumdar**, an economist at the Bank of Baroda, said that a statistical high base will continue to keep the inflation rate down between **September and December 2025**.
उच्च आधार का लाभ — बैंक ऑफ बड़ौदा की अर्थशास्त्री दिपन्विता मजूमदार ने कहा कि सांख्यिकीय उच्च आधार सितंबर से दिसंबर 2025 के बीच मुद्रास्फीति दर को नीचे बनाए रखेगा।
- “The current cycle is acting in favour of us when the inflationary impact from **tariffs** is the centre point of global discussions,” she said in a note. “We expect the downside risk to global growth will largely keep international **commodity prices** in check. This is expected to partly negate the higher tariff rates in place.”
उन्होंने एक नोट में कहा, “वर्तमान चक्र हमारे पक्ष में काम कर रहा है, जब शुल्कों से उत्पन्न मुद्रास्फीति का प्रभाव वैश्विक चर्चाओं का केंद्र बिंदु है। हमें उम्मीद है कि वैश्विक वृद्धि के नकारात्मक जोखिम से अंतरराष्ट्रीय वस्तु कीमतें काफी हद तक नियंत्रण में रहेंगी। इससे मौजूदा उच्च शुल्क दरों का प्रभाव आंशिक रूप से कम होगा।”
- However, she added that India needs to be watchful in case it has to completely stop buying **Russian oil** in compliance with the U.S. **President Donald Trump's** demands.
हालांकि, उन्होंने कहा कि अगर अमेरिकी राष्ट्रपति डोनाल्ड ट्रंप की मांगों के अनुपालन में भारत को रूसी तेल की खरीद पूरी तरह से रोकनी पड़ी, तो उसे सतर्क रहना होगा।
- “In this case, some diversification towards **Kuwait** and **Iraq** would also lend support.”
“ऐसे मामले में कुवैत और इराक की ओर कुछ विविधीकरण भी सहारा देगा।”

Inflation महंगाई

- Inflation refers to a sustained increase in the general price level of goods and services in an economy over a period of time.
महंगाई का तात्पर्य एक निश्चित अवधि में किसी अर्थव्यवस्था में वस्तुओं और सेवाओं की सामान्य मूल्य स्तर में लगातार वृद्धि से है।
- This leads to a decrease in the purchasing power of money, meaning consumers can buy less with the same amount of money.
यह मुद्रा की क्रय शक्ति में कमी लाता है, जिसका अर्थ है कि उपभोक्ता एक ही राशि में कम वस्तुएं खरीद सकते हैं।

Types of Inflation महंगाई के प्रकार



Demand-Pull Inflation मांग-आधारित महंगाई

- Occurs when the aggregate demand in an economy outpaces aggregate supply, leading to higher prices.
जब किसी अर्थव्यवस्था में कुल मांग, कुल आपूर्ति से अधिक हो जाती है, तो यह कीमतों में वृद्धि का कारण बनती है।

Causes:

कारण:

- Rising Population:** An increasing population elevates the demand for goods and services.
बढ़ती जनसंख्या: जनसंख्या में वृद्धि वस्तुओं और सेवाओं की मांग को बढ़ाती है।
- Increase in Incomes:** Higher disposable incomes boost consumer spending.
आय में वृद्धि: अधिक खर्च योग्य आय उपभोक्ता खर्च को बढ़ाती है।
- Government Expenditure:** Enhanced public spending can stimulate demand.
सरकारी व्यय: सार्वजनिक खर्च में वृद्धि मांग को प्रोत्साहित कर सकती है।
- Low-Interest Rates:** Encourage borrowing and investing, increasing demand.
कम ब्याज दरें: उधारी और निवेश को प्रोत्साहित करती हैं, जिससे मांग बढ़ती है।
- Export Demand:** Higher demand for exports reduces domestic supply, raising prices.
निर्यात की मांग: निर्यात की अधिक मांग घरेलू आपूर्ति को कम कर देती है, जिससे कीमतें बढ़ती हैं।
- Example:** During economic booms, increased consumer confidence and spending can lead to demand-pull inflation.
उदाहरण: आर्थिक उछाल के समय, उपभोक्ताओं के विश्वास और खर्च में वृद्धि मांग-आधारित महंगाई को जन्म दे सकती है।

Cost-Push Inflation

लागत-आधारित महंगाई

- Arises when the costs of production increase, leading producers to raise prices to maintain profit margins.
जब उत्पादन लागत में वृद्धि होती है, तो निर्माता लाभ बनाए रखने के लिए कीमतें बढ़ा देते हैं।

Causes:

कारण:

- Rise in Input Prices:** Increased costs of raw materials like oil and metals.
इनपुट कीमतों में वृद्धि: तेल और धातुओं जैसे कच्चे माल की लागत में वृद्धि।
- Increase in Wages:** Higher labor costs can lead to increased prices.
वेतन में वृद्धि: मजदूरी की लागत बढ़ने से कीमतें बढ़ सकती हैं।
- Hoarding and Black Marketing:** Artificial scarcity can drive prices up.
माल की जमाखोरी और काला बाज़ारी: कृत्रिम कमी कीमतों को बढ़ा सकती है।
- Failure of Monsoons:** Poor agricultural output can reduce supply, increasing prices.
मॉनसून की विफलता: कृषि उत्पादन में गिरावट आपूर्ति को कम कर देती है जिससे महंगाई बढ़ती है।



- **Example:** A surge in global oil prices can increase transportation and production costs, leading to cost-push inflation.

उदाहरण: वैश्विक तेल कीमतों में वृद्धि परिवहन और उत्पादन लागत को बढ़ा देती है, जिससे लागत-आधारित महंगाई होती है।

Inflation-Growth Trade-Off

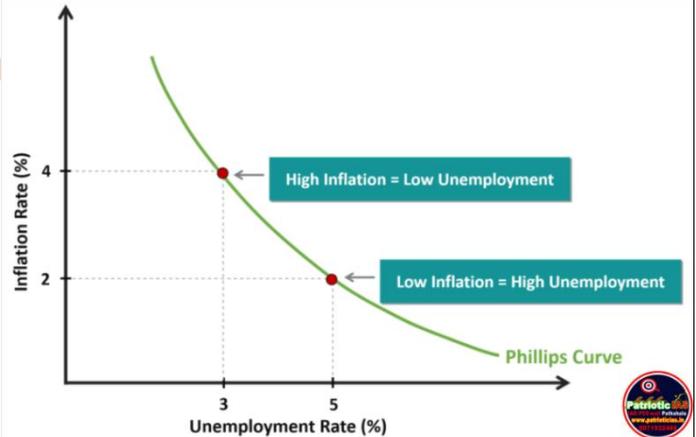
मुद्रास्फीति-विकास का अदला-बदली

- The **inflation-growth trade-off** refers to an economic situation where attempts to **stimulate economic growth** can result in **higher inflation**.
मुद्रास्फीति-विकास का **अदला-बदली** उस आर्थिक स्थिति को दर्शाता है जहाँ **आर्थिक विकास को प्रोत्साहित करने के प्रयासों से अधिक मुद्रास्फीति** हो सकती है।
- This occurs when **aggregate demand rises faster than aggregate supply**, which increases the **Gross Domestic Product (GDP)** and also raises **general price levels**.
यह स्थिति तब उत्पन्न होती है जब **सामूहिक मांग, सामूहिक आपूर्ति से तेज़ी से बढ़ती है**, जिससे **सकल घरेलू उत्पाद (GDP)** में वृद्धि होती है और साथ ही **सामान्य मूल्य स्तर** भी बढ़ता है।
- For example, **during periods of economic expansion**, increased **consumer spending** drives up **demand** for goods and services.
उदाहरण के लिए, **आर्थिक विस्तार के दौरान, उपभोक्ता खर्च में वृद्धि से वस्तुओं और सेवाओं की मांग बढ़ जाती है**।
- If the **supply** does not match the **increased demand**, **prices rise**, causing **inflation**.
यदि **आपूर्ति, बढ़ी हुई मांग के अनुरूप नहीं होती है**, तो **कीमतें बढ़ती हैं**, जिससे **मुद्रास्फीति** होती है।
- This reflects the **delicate balance** policymakers must maintain between **stimulating growth** and **controlling inflation**.
यह नीति निर्माताओं को **विकास को प्रोत्साहित करने और मुद्रास्फीति को नियंत्रित करने के बीच संतुलन बनाए रखने की आवश्यकता** को दर्शाता है।

The Phillips Curve:

फिलिप्स वक्र

- The **Phillips Curve**, introduced by economist **A.W. Phillips** in **1958**, shows an **inverse relationship between inflation and unemployment**.
फिलिप्स वक्र, जिसे अर्थशास्त्री **ए. डब्ल्यू. फिलिप्स** ने **1958** में प्रस्तुत किया था, **मुद्रास्फीति और बेरोजगारी के बीच उलटा संबंध दर्शाता है**।
- According to this concept, when **unemployment is low, inflation tends to be high**, and **vice versa**.
इस सिद्धांत के अनुसार, जब **बेरोजगारी कम होती है, तो मुद्रास्फीति अधिक होती है और इसके विपरीत भी होता है**।
- This implies that **policies** aiming to **reduce unemployment** may lead to **higher inflation**, while **inflation control measures** may result in **higher unemployment**.
इसका अर्थ है कि **बेरोजगारी को कम करने वाली नीतियाँ, अधिक मुद्रास्फीति ला सकती हैं**, जबकि **मुद्रास्फीति नियंत्रण उपाय, बेरोजगारी बढ़ा सकते हैं**।
- This **trade-off** is primarily observed in the **short run**.
यह **व्यापारिक संबंध मुख्यतः स्वल्पकालिक (Short Run)** अवधि में देखा जाता है।
- In the **long run**, this relationship may not hold due to the adjustment of **inflation expectations** over time.
दीर्घकालिक (Long Run) अवधि में, यह संबंध टिकाऊ नहीं रहता क्योंकि समय के साथ **मुद्रास्फीति की अपेक्षाएँ** समायोजित हो जाती हैं।





Stagflation

मंदी के साथ महंगाई

• **Stagflation** is a **rare and economically harmful** situation where **high inflation** co-exists with **economic stagnation** or a **slowdown in growth**.

• स्टैगफ्लेशन एक दुर्लभ और आर्थिक रूप से हानिकारक स्थिति है जिसमें उच्च मुद्रास्फीति के साथ आर्थिक स्थिरता या विकास में गिरावट एक साथ मौजूद होती है।

• In other words, **prices keep rising** despite the economy **not producing enough goods and services** or facing a **decline in output**.

• दूसरे शब्दों में, कीमतें लगातार बढ़ती हैं जबकि अर्थव्यवस्था पर्याप्त वस्तुएं और सेवाएं नहीं पैदा कर पा रही होती है या उत्पादन में गिरावट आ रही होती है।

Key Features of Stagflation

स्टैगफ्लेशन की प्रमुख विशेषताएँ

• **High Inflation:** Prices of goods and services rise **persistently**.

• उच्च मुद्रास्फीति: वस्तुओं और सेवाओं की कीमतें लगातार बढ़ती हैं।

• **Stagnant or Declining Output:** **GDP growth** is **very low or even negative**.

• स्थिर या घटता हुआ उत्पादन: **GDP वृद्धि** बहुत कम या नकारात्मक होती है।

• **High Unemployment:** As the economy slows, companies **stop hiring** or even **lay off workers**.

• उच्च बेरोज़गारी: जब अर्थव्यवस्था धीमी होती है, तो कंपनियाँ नौकरी देना बंद कर देती हैं या कर्मचारियों को निकालना शुरू कर देती हैं।

Why Stagflation is Harmful?

स्टैगफ्लेशन क्यों हानिकारक है?

• **Policy Dilemma:** Traditional tools like **interest rate cuts** (to boost growth) or **hikes** (to control inflation) are **ineffective or conflicting** during stagflation.

• नीतिगत दुविधा: पारंपरिक उपाय जैसे कि ब्याज दरों में कटौती (विकास को बढ़ावा देने के लिए) या बढ़ोतरी (मुद्रास्फीति को नियंत्रित करने के लिए) स्टैगफ्लेशन के दौरान अप्रभावी या परस्पर विरोधी होते हैं।

• For example, if the government **increases interest rates** to control inflation, it could **further reduce demand** and **worsen stagnation**.

• उदाहरण के लिए, यदि सरकार मुद्रास्फीति को नियंत्रित करने के लिए ब्याज दरें बढ़ाती है, तो यह मांग को और घटा सकती है और मंदी को और बढ़ा सकती है।

Causes of Stagflation – Supply-Side Constraints

स्टैगफ्लेशन के कारण – आपूर्ति पक्ष की बाधाएँ

• The situation usually arises due to **supply-side shocks or disruptions** rather than **demand-side excesses**.



• यह स्थिति आमतौर पर मांग पक्ष की अधिकता के बजाय आपूर्ति पक्ष के झटकों या व्यवधानों के कारण उत्पन्न होती है।

Example:

उदाहरण:

– A sudden rise in crude oil prices, which increases production and transportation costs.

– कच्चे तेल की कीमतों में अचानक वृद्धि, जिससे उत्पादन और परिवहन लागत बढ़ जाती है।

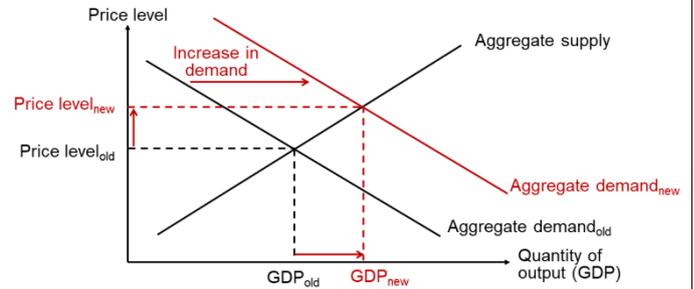
– Crop failure, leading to higher food prices while reducing rural income and demand.

– फसल विफलता, जिससे खाद्य वस्तुओं की कीमतें बढ़ती हैं और ग्रामीण आय व मांग घटती है।

– War or pandemic, which can disrupt supply chains.

– युद्ध या महामारी, जो आपूर्ति श्रृंखलाओं को बाधित कर सकते हैं।

Demand-driven inflation goes hand in hand with rising GDP



Graphical Illustration of Stagflation
स्टैगफ्लेशन का ग्राफ द्वारा चित्रण

• X-Axis: Output (GDP)

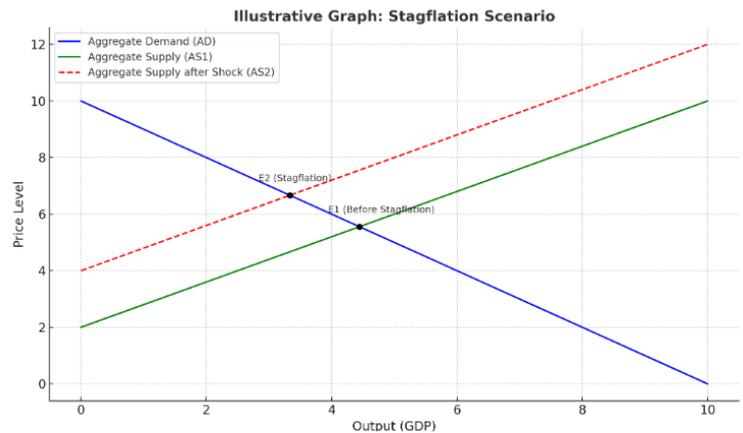
• X-अक्ष: उत्पादन (GDP)

• Y-Axis: Price Level

• Y-अक्ष: मूल्य स्तर

• **E1 (Before Stagflation)** is the initial equilibrium where **Aggregate Demand (AD)** intersects **Aggregate Supply (AS1)** — output is **higher**, and prices are **moderate**.

• **E1 (स्टैगफ्लेशन से पहले)** प्रारंभिक संतुलन बिंदु है, जहाँ **समग्र मांग (AD)** और **समग्र आपूर्ति (AS1)** एक-दूसरे को काटते हैं — उत्पादन **अधिक** होता है और कीमतें **मध्यम** होती हैं।



• **E2 (Stagflation)** is the new equilibrium after a **leftward shift** of the AS curve to **AS2** due to a **supply-side shock** — output **falls** and prices **rise**.

• **E2 (स्टैगफ्लेशन)** एक नया संतुलन बिंदु है जब **AS** वक्र बाएँ खिसक कर **AS2** बनता है, यह **आपूर्ति पक्ष के झटके** के कारण होता है — उत्पादन **कम** हो जाता है और कीमतें **बढ़** जाती हैं।



• This reflects the **classic definition** of stagflation: **low growth** (stagnation) combined with **high inflation**.

• यह स्टैगप्लेशन की **क्लासिक परिभाषा** को दर्शाता है: **कम विकास** (मंदी) और **उच्च मुद्रास्फीति** का मेल।

Structural Rigidities

संरचनात्मक जड़ताएँ

• Structural rigidities refer to **deep-rooted, long-term bottlenecks or constraints** in the economy that prevent the **smooth functioning of markets**, especially on the **supply side**.

• संरचनात्मक जड़ताएँ अर्थव्यवस्था में **गहराई से जुड़ी, दीर्घकालिक बाधाओं** को दर्शाती हैं जो विशेष रूप से **आपूर्ति पक्ष** पर बाजारों के **सामान्य संचालन** में बाधा डालती हैं।

• These rigidities make it difficult for the economy to respond to **changes in demand** or **inflationary pressures**.

• ये जड़ताएँ अर्थव्यवस्था को **मांग में बदलाव** या **मुद्रास्फीतिक दबावों** के प्रति प्रतिक्रिया देने में कठिन बनाती हैं।

How Structural Rigidities Cause Inflation

संरचनात्मक जड़ताएँ मुद्रास्फीति का कारण कैसे बनती हैं

• When **supply cannot respond adequately** to rising demand due to **long-term bottlenecks**, it leads to either **demand-pull inflation** or **cost-push inflation**.

• जब **दीर्घकालिक बाधाओं** के कारण **आपूर्ति बढ़ती मांग का पर्याप्त उत्तर नहीं दे पाती**, तो यह या तो **मांग-संचालित मुद्रास्फीति** या **लागत-संचालित मुद्रास्फीति** का कारण बनती है।

• The situation worsens when these **inefficiencies** persist despite **government policies**.

• स्थिति तब और बिगड़ जाती है जब ये **अप्रभावी व्यवस्थाएँ सरकारी नीतियों** के बावजूद बनी रहती हैं।

Examples of Structural Rigidities

संरचनात्मक जड़ताओं के उदाहरण

• **Agricultural Produce Market Committees (APMCs)**: These regulated markets often limit **free trade** of agricultural goods. Farmers are forced to sell through **mandis**, which increases **middlemen costs** and reduces **supply efficiency**, resulting in **higher food prices**.

• **कृषि उत्पाद विपणन समिति (APMCs)**: ये विनियमित बाजार अक्सर कृषि उत्पादों के **मुक्त व्यापार** को सीमित करते हैं। किसानों को **मंडियों** के माध्यम से ही बेचने को बाध्य किया जाता है, जिससे **बिचौलियों की लागत बढ़ती है** और **आपूर्ति दक्षता घटती है**, जिससे **खाद्य कीमतें बढ़ती हैं**।

• **Lack of Infrastructure**: Poor **roads, railways, warehouses**, and **power supply** hinder the movement and storage of goods. This increases the **cost of production** and causes **supply shortages**.



• **बुनियादी ढाँचे की कमी:** कमजोर सड़कें, रेलवे, गोदाम और बिजली आपूर्ति माल की आवाजाही और भंडारण में बाधा डालते हैं। इससे उत्पादन लागत बढ़ती है और आपूर्ति में कमी आती है।

• **Low Savings Rate:** A lower share of household income going into **savings** reduces **investment** in productive sectors, slowing **capital formation** and **economic growth**.

• **कम बचत दर:** घरेलू आय का कम हिस्सा बचत में जाने से उत्पादक क्षेत्रों में निवेश घटता है, जिससे पूंजी निर्माण और आर्थिक वृद्धि धीमी होती है।

• **Inadequate Foreign Direct Investment (FDI):** Without adequate **FDI**, sectors like **manufacturing, infrastructure, and logistics** remain **under-invested**, leading to **under-capacity** and **supply delays**.

• **प्रत्यक्ष विदेशी निवेश (FDI) की कमी:** पर्याप्त **FDI** न होने से उत्पादन, बुनियादी ढाँचा, और लॉजिस्टिक्स जैसे क्षेत्रों में पर्याप्त निवेश नहीं हो पाता, जिससे क्षमता से कम उत्पादन और आपूर्ति में विलंब होता है।

• **Shortage of Foreign Exchange Reserves:** It limits the country's ability to **import critical raw materials** or **capital goods**, leading to **production bottlenecks** and **inflation**.

• **विदेशी मुद्रा भंडार की कमी:** यह देश की क्षमता को महत्वपूर्ण कच्चे माल या पूंजीगत वस्तुओं के आयात में सीमित करता है, जिससे उत्पादन में बाधाएँ और मुद्रास्फीति उत्पन्न होती है।

Quantity Theory of Money

मुद्रा की मात्रा का सिद्धांत

- When the **money supply** in an economy increases faster than the rate at which **goods and services** are produced, there is more money chasing the same amount of goods.

जब किसी अर्थव्यवस्था में मुद्रा की आपूर्ति उस दर से तेज़ी से बढ़ती है जिस दर से सामान और सेवाओं का उत्पादन होता है, तो समान मात्रा के सामान के पीछे अधिक पैसा दौड़ता है।

- This leads to a **fall in the purchasing power** of money — i.e., **inflation**. इससे मुद्रा की क्रय शक्ति में गिरावट आती है — यानी मुद्रास्फीति होती है।
- **Example:** If the **money supply** grows by **12%**, but **output** grows only by **3%**, prices will likely rise.

उदाहरण: यदि मुद्रा आपूर्ति में 12% की वृद्धि होती है, लेकिन उत्पादन केवल 3% बढ़ता है, तो कीमतें बढ़ने की संभावना रहती है।

- The faster and higher the increase in the **quantity of money**, the higher the **inflation rate** — assuming **output** remains unchanged or grows slowly. मुद्रा की मात्रा में जितनी तेज़ी और अधिकता से वृद्धि होगी, मुद्रास्फीति की दर उतनी ही अधिक होगी — यदि उत्पादन स्थिर रहता है या धीरे-धीरे बढ़ता है।
- In simple terms: more money without corresponding goods means **higher prices**. सरल शब्दों में: यदि सामान की तुलना में अधिक पैसा हो, तो इसका अर्थ होता है उच्च कीमतें।
- The **value of money** is **relative**, not **fixed**. मुद्रा का मूल्य सापेक्ष होता है, स्थिर नहीं होता।



- If **money supply** increases more than the **supply of goods**, each unit of money will **buy fewer goods**.
यदि **मुद्रा की आपूर्ति**, **सामानों की आपूर्ति** से अधिक हो जाती है, तो मुद्रा की प्रत्येक इकाई **कम सामान खरीदेगी**।
- Thus, the **purchasing power** (or value) of money falls when too much money is available compared to available goods.
इस प्रकार, जब उपलब्ध सामान की तुलना में बहुत अधिक मुद्रा उपलब्ध होती है, तो मुद्रा की **क्रय शक्ति (या मूल्य)** गिर जाता है।

MV = PY

- This is the **core equation** of the quantity theory of money.
यह मुद्रा की मात्रा के सिद्धांत का **मुख्य समीकरण** है।
- It states that: **Money Supply (M) × Velocity of Money (V) = Price Level (P) × Output (Y)**
यह कहता है: **मुद्रा आपूर्ति (M) × मुद्रा का वेग (V) = मूल्य स्तर (P) × उत्पादन (Y)**
- It balances the **total money spent** in the economy with the **total value of goods and services produced**.
यह अर्थव्यवस्था में **कुल खर्च की गई मुद्रा को उत्पादित वस्तुओं और सेवाओं के कुल मूल्य के साथ संतुलित करता है**।
- **Velocity of money** refers to how frequently a unit of currency is used in transactions over a period.
- **मुद्रा का वेग** उस आवृत्ति को दर्शाता है जिससे किसी मुद्रा की इकाई को एक अवधि में लेन-देन में उपयोग किया जाता है।
- It connects **money supply (M)** to the **price level (P)** through **economic activity (Y)**.
- यह **मुद्रा आपूर्ति (M)** को **मूल्य स्तर (P)** से **आर्थिक गतिविधि (Y)** के माध्यम से जोड़ता है।
- If money circulates faster (**high velocity**), it can cause more spending, possibly increasing prices.
- यदि मुद्रा तेज़ी से चलती है (**उच्च वेग**), तो यह अधिक खर्च को जन्म दे सकती है, जिससे कीमतें बढ़ सकती हैं।

Role of Velocity of Money

मुद्रा के वेग की भूमिका

- If people or institutions **hold onto money** instead of spending it (due to fear, savings preference, or economic uncertainty), **velocity decreases**.
- यदि लोग या संस्थाएं खर्च करने के बजाय **मुद्रा को रोक कर रखें** (डर, बचत की प्रवृत्ति या आर्थिक अनिश्चितता के कारण), तो **मुद्रा का वेग घटता है**।
- **Lower velocity** means money moves more slowly through the economy, reducing overall spending and potentially reducing **inflationary pressure**.
- **कम वेग का अर्थ है कि मुद्रा अर्थव्यवस्था में धीरे-धीरे चलती है, जिससे कुल खर्च कम होता है और मुद्रास्फीति के दबाव में कमी आ सकती है**।
- When people spend more freely, money changes hands more frequently.
- जब लोग अधिक स्वतंत्र रूप से खर्च करते हैं, तो मुद्रा बार-बार हाथ बदलती है।



- This increases the **velocity of money**, which can increase demand and potentially raise the **price level**, contributing to **inflation** if supply doesn't keep up.
- इससे **मुद्रा का वेग बढ़ता है**, जो मांग बढ़ा सकता है और **मूल्य स्तर** को ऊँचा कर सकता है, जिससे **मुद्रास्फीति** हो सकती है यदि आपूर्ति बराबरी नहीं करती।

Effects of Inflation मुद्रास्फीति के प्रभाव

• Inflation benefits the debtor

- मुद्रास्फीति कर्जदार को लाभ पहुंचाती है

- When **inflation** occurs, the **value of money decreases** over time.
- जब **मुद्रास्फीति** होती है, तो समय के साथ **पैसे का मूल्य घट** जाता है।
- A **debtor** who took a loan in the past now repays the loan in **depreciated money**, meaning the **real value** of the repayment is **less** than when it was borrowed.
- एक **कर्जदार** जिसने पहले ऋण लिया था, अब वह **घटी हुई मुद्रा** में ऋण चुकाता है, जिसका अर्थ है कि वह अब उस ऋण की **वास्तविक मूल्य** से **कम** चुका रहा है।
- **Example:** If ₹1,00,000 was borrowed when inflation was low, and it is repaid when inflation is high, the **purchasing power** of ₹1,00,000 is now **lower** — the lender receives **less real value**.
- **उदाहरण:** यदि ₹1,00,000 तब उधार लिया गया था जब मुद्रास्फीति कम थी, और इसे तब चुकाया गया जब मुद्रास्फीति अधिक हो गई, तो ₹1,00,000 की **क्रय शक्ति घट** गई — ऋणदाता को **कम वास्तविक मूल्य** प्राप्त होता है।
- **Inflation is considered good for producers/businessmen**
- मुद्रास्फीति को उत्पादकों/व्यवसायियों के लिए लाभकारी माना जाता है
- When **prices rise**, businesses can sell their goods at **higher prices**, potentially earning **more profits**.
- जब **मूल्य बढ़ते** हैं, तो व्यवसाय अपने उत्पादों को **उच्च कीमतों** पर बेच सकते हैं, जिससे उन्हें **अधिक लाभ** हो सकता है।
- This **profit incentive** encourages producers to **increase production**, which may help **boost economic activity** in the short run.
- यह **लाभ का प्रोत्साहन** उत्पादकों को **उत्पादन बढ़ाने** के लिए प्रेरित करता है, जो अल्पकाल में **आर्थिक गतिविधियों को बढ़ावा** दे सकता है।
- However, this is true only when **input costs** do not rise at the **same or faster rate**.
- हालांकि, यह तभी सही होता है जब **इनपुट लागतें उसी या अधिक गति** से न बढ़ें।

Inflation is bad for consumers

मुद्रास्फीति उपभोक्ताओं के लिए हानिकारक होती है

- **Inflation erodes purchasing power** — consumers have to **pay more** for the same goods and services.
- **मुद्रास्फीति क्रय शक्ति को घटाती है** — उपभोक्ताओं को **उसी वस्तु और सेवा** के लिए **अधिक भुगतान** करना पड़ता है।
- Especially harmful for people with **fixed incomes** (like pensioners), whose **real income decreases**, reducing their **standard of living**.
- यह विशेष रूप से **स्थिर आय** वाले लोगों (जैसे पेंशनभोगियों) के लिए हानिकारक है, जिनकी **वास्तविक आय घट** जाती है, जिससे उनका **जीवन स्तर गिर** जाता है।
- **Example:** If someone earns ₹10,000 a month and prices **double**, they can now buy only **half** the goods they used to.
- **उदाहरण:** यदि कोई व्यक्ति ₹10,000 प्रति माह कमाता है और **कीमतें दोगुनी** हो जाती हैं, तो वह अब केवल **आधी वस्तुएँ** ही खरीद सकता है।



Government as debtor benefits

सरकार एक कर्जदार के रूप में लाभ प्राप्त करती है

- Like other debtors, the **government** also borrows money (e.g., via **bonds**).
- अन्य कर्जदारों की तरह, **सरकार** भी (जैसे कि **बॉन्ड** के माध्यम से) ऋण लेती है।
- In times of inflation, the government repays these debts with **depreciated currency**, reducing the **real burden** of public debt.
- मुद्रास्फीति के समय, सरकार ये ऋण **घटी हुई मुद्रा** से चुकाती है, जिससे सार्वजनिक ऋण का **वास्तविक बोझ घट** जाता है।
- This is one reason why **moderate inflation** is sometimes **politically convenient**.
- यही कारण है कि **मध्यम मुद्रास्फीति** को कभी-कभी **राजनीतिक रूप से सुविधाजनक** माना जाता है।

Fiscal Drag or Inflation Tax

राजकोषीय खिंचाव या मुद्रास्फीति कर

- A phenomenon where **inflation pushes individuals into higher tax brackets** under a **progressive tax system**, even when their **real income** has not increased.
- यह एक ऐसी स्थिति है जहाँ **मुद्रास्फीति व्यक्ति को प्रगतिशील कर प्रणाली में उच्च कर स्लैब में पहुंचा देती है**, भले ही उनकी **वास्तविक आय में वृद्धि न हुई हो**।

How it works:

यह कैसे काम करता है:

- Suppose a person's **nominal income** increases due to inflation — say from ₹5,00,000 to ₹6,00,000.
- मान लीजिए किसी व्यक्ति की **नाममात्र आय** मुद्रास्फीति के कारण ₹5,00,000 से बढ़कर ₹6,00,000 हो जाती है।
- This pushes them into a **higher tax bracket**, even though prices of goods have also increased.
- इससे वह व्यक्ति **उच्च कर स्लैब** में चला जाता है, भले ही वस्तुओं की कीमतें भी बढ़ गई हों।
- Their **real income (purchasing power)** might not have increased or might have even **fallen**.
- उनकी **वास्तविक आय (क्रय शक्ति)** बढ़ी नहीं है, बल्कि शायद **घट** भी गई हो।
- The government collects **more tax revenue**, not by changing rates, but because more people pay at **higher rates** due to **nominal income** increases.
- सरकार को **अधिक कर राजस्व** प्राप्त होता है, दरों को बदले बिना, क्योंकि अधिक लोग **उच्च दरों** पर कर देने लगते हैं जो **नाममात्र आय में वृद्धि** के कारण होता है।

Called Inflation Tax because:

इसे मुद्रास्फीति कर कहा जाता है क्योंकि:

- It reduces **disposable income** without formally increasing tax rates.
यह बिना कर दरें बढ़ाए ही **व्यय योग्य आय** को घटा देता है।
- It acts like a **hidden tax** imposed due to inflation.
यह **छिपे हुए कर** की तरह कार्य करता है जो मुद्रास्फीति के कारण लगाया गया है।

Wage-Price Spiral

वेतन-मूल्य सर्पिल

- This is a **self-reinforcing cycle** between **wages and prices**.
यह **वेतनों और कीमतों के बीच एक स्वयं को बनाए रखने वाला चक्र** होता है।

Here's how it works:

यह कैसे काम करता है:

- **Prices increase** (inflation).



- कीमतेँ बढ़ती हैं (मुद्रास्फीति)।
- **Workers demand higher wages** to maintain their standard of living.
- **कामगार अधिक वेतन की मांग** करते हैं ताकि वे अपने जीवन स्तर को बनाए रख सकें।
- Businesses raise wages but then **pass on the cost** to consumers by **increasing prices again**.
- व्यवसाय वेतन बढ़ाते हैं लेकिन इसके बाद इस **लागत को उपभोक्ताओं पर डाल देते हैं** और **कीमतेँ फिर बढ़ा देते हैं**।
- This leads to another round of **wage demands**.
इससे **वेतन मांगों का एक और चक्र** शुरू हो जाता है।
- This cycle causes **persistent inflation** and is often a **challenge for policymakers**.
यह चक्र **लगातार मुद्रास्फीति** पैदा करता है और अक्सर **नीति निर्माताओं के लिए चुनौती** बनता है।
- **Important point:** This spiral can become **hard to control** unless **monetary and fiscal measures** are taken to **break the loop**.
- **महत्वपूर्ण बिंदु:** यह सर्पिल तब तक **नियंत्रित करना कठिन** हो सकता है जब तक कि **मौद्रिक और राजकोषीय उपायों** से इसे **तोड़ने के प्रयास** न किए जाएं।

Types of Inflation:

- **i) Creeping Inflation**
- This happens when the general price level is increasing at 2-3%.
- **ii) Walking Inflation**
- When the Inflation rate is more than 4% but less than 8-10%.
- **iii) Galloping inflation or Hyper Inflation**
- When the inflation rate rises more than 10%, it is referred to as Galloping inflation.
Inflation of more than 50%, becomes Hyper Inflation.
- **iv) Deflation**
- When the prices are falling i.e. the inflation rate is negative, it is known as deflation.
- **v) Disinflation**
- This happens when there is an increase in prices but at a decreasing rate. The inflation rate is still positive in the case of Disinflation
- **vi) Shrinkflation**
- When the producer reduces the quantity of Product while keeping the prices constant, it is called Shrinkflation.
- **vii) Skewflation**
- When there is a rise in prices of certain categories of goods and services while for the other goods and services, the prices remain constant is a scenario of Skewflation.

Measures of Inflation

- The GDP deflator is not a good measure to measure inflation as it does not account for Imports and it is available with a delay (Quarterly availability)

Consumer Price Inflation (CPI)

- The index tries to **measure inflation on the basis of retail prices** which are actually faced by the consumers.
- It consists of a **basket of Goods and Services** where weights are assigned to these goods and services depending on their frequency of use and relative significance.



- The **NSO (National Statistical Organisation)** computes three indices of CPI- CPI(Rural), CPI(Urban), and CPI(Combined).
- The **base year** for all these indices is **2012**.

Items in the CPI basket and their weights:

Items	Rural (%)	Urban (%)	Combined (%)
Food and Beverages	54.18	36.29	45.26
Paan / Tobacco	3.26	1.36	2.38
Clothing and Footwear	7.36	5.57	6.53
Housing	0	21.67	10.07
Fuel and Light	7.94	5.58	6.84
Miscellaneous (utility services)	27.26	29.33	28.32

- Apart from this, the **Labour Bureau has constructed 3 CPIs-** CPI (Agriculture labour, Base year -1986), CPI (Industrial Worker, Base year -2016), CPI (Rural labour, Base year -1986)

Wholesale Price Index

- This is the measure of inflation at the **first point of Bulk Sale in the domestic market** i.e. it **measures the price level at the wholesale level**.
- The WPI basket in India **does not include services and indirect taxes**.
- The **Base year is 2011** and it is compiled by the **Office of Economic Advisor, DPIIT under the Ministry of Commerce**.

Weights in WPI

Items	Weight
Primary Articles including food, Non-Food	22.62 %
Fuel and Power (LPG/Petrol/Diesel)	13.15 %
Manufactured Goods	64.23%



Not his day

Port restriction on Bangladeshi jute to protect local industries: officials

GS III: External Sector

Kallol Bhattacharjee
NEW DELHI

A day after India imposed a fresh round of port restrictions on a range of jute products, officials here justified the move as necessary because Bangladesh's subsidies were "killing" local Indian industries.

The items listed in Monday's order by the **Directorate General of Foreign Trade (DGFT)** included bleached and unbleached woven fabrics of jute or of other textile fibre, twine cordage, rope made of jute, and sacks and bags of jute that have a large market in India. "Imports from Bangladesh shall not be allowed from any land port on the India-Bangladesh Border. However, it is allowed only through the Nhava Sheva seaport," the order issued by DGFT said.

"Bangladesh exporters were misdirecting goods under other HS (Harmo-



The latest order is aimed at further tightening the import of jute, and products made from Bangladeshi jute. FILE PHOTO

nised System) codes. Export subsidies by the Bangladesh government in different names were killing local industries. Anti-dumping duty was being circumvented by clubbing it with other exports at volumes well above their production capacity," an official said.

Monday's order on jute is aimed at further tightening the import of jute, and products made from Ban-

gladeshi jute. On June 27, India banned the entry of a certain range of jute items through land ports, leaving the Nhava Sheva port in Maharashtra open for the same items. That decision followed a May 17 declaration of port restriction by the DGFT targeting ready-made garments from Bangladesh.

The order also banned export by Bangladesh of fruits, fruit flavoured

drinks, and processed food items (baked goods, snacks, chips, and confectionery); cotton and cotton yarn waste; plastic and PVC finished goods except pigments, dyes, plasticisers, and granules; and wooden furniture via the land ports of Assam, Meghalaya, Mizoram, and Tripura. The same goods were also banned from entering India through the Land Customs Stations of Chandrabandha and Fulbari.

Textiles and jute constitute two of the major areas of India-Bangladesh trade, and India's targeting of these items intensified against the backdrop of Bangladesh Chief Adviser Muhammed Yunus's visit to China in March, during which he described Bangladesh as the second largest ready-made garment manufacturer after China, and invited China to take advantage of Bangladesh's business potential.



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Port restriction on Bangladeshi jute to protect local



industries: officials

स्थानीय उद्योगों की रक्षा के लिए बांग्लादेशी जूट पर बंदरगाह प्रतिबंध: अधिकारी

- A day after India imposed a fresh round of port restrictions on a range of jute products, officials here justified the move as necessary because **Bangladesh's subsidies were "killing" local Indian industries.**
भारत द्वारा जूट उत्पादों की एक श्रृंखला पर नए बंदरगाह प्रतिबंध लगाने के एक दिन बाद, यहां के अधिकारियों ने इस कदम को आवश्यक बताया क्योंकि बांग्लादेश की सब्सिडी स्थानीय भारतीय उद्योगों को "खत्म" कर रही थी।
- The **items listed in Monday's order by the Directorate General of Foreign Trade (DGFT)** included bleached and unbleached woven fabrics of jute or of other textile fibre, twine cordage, rope made of jute, and sacks and bags of jute that have a large market in India.
विदेश व्यापार महानिदेशालय (DGFT) के सोमवार के आदेश में सूचीबद्ध वस्तुओं में जूट या अन्य वस्त्र फाइबर से बने ब्लीच और अनब्लीच बुने हुए कपड़े, धागा, रस्सी, और जूट के बोरे और बैग शामिल थे, जिनका भारत में बड़ा बाजार है।
- "Imports from **Bangladesh** shall not be allowed from any land port on the **India-Bangladesh Border**. However, it is allowed only through the **Nhava Sheva seaport**," the order issued by **DGFT** said.
DGFT द्वारा जारी आदेश में कहा गया, "बांग्लादेश से आयात को भारत-बांग्लादेश सीमा के किसी भी भूमि बंदरगाह से अनुमति नहीं दी जाएगी। हालांकि, यह केवल नावा शेवा समुद्री बंदरगाह के माध्यम से ही अनुमत है।"
- "**Bangladesh exporters** were misdirecting goods under other **HS (Harmonised System) codes**. Export subsidies by the **Bangladesh government** in different names were killing local industries. **Antidumping duty** was being circumvented by clubbing it with other exports at volumes well above their production capacity," an official said.
एक अधिकारी ने कहा, "बांग्लादेशी निर्यातक अन्य HS (हार्मोनाइज्ड सिस्टम) कोड्स के तहत माल को गलत दिशा में भेज रहे थे। बांग्लादेश सरकार द्वारा अलग-अलग नामों से दी जाने वाली निर्यात सब्सिडी स्थानीय उद्योगों को खत्म कर रही थी। एंटी-डंपिंग ड्यूटी को अन्य निर्यातों के साथ जोड़कर और उनकी उत्पादन क्षमता से कहीं अधिक मात्रा में भेजकर दरकिनार किया जा रहा था।"
- **Monday's order on jute** is aimed at further tightening the import of jute, and products made from **Bangladeshi jute**.
जूट पर सोमवार का आदेश बांग्लादेशी जूट और उससे बने उत्पादों के आयात को और कड़ा करने के उद्देश्य से है।
- On **June 27**, India banned the entry of a certain range of jute items through land ports, leaving the **Nhava Sheva port** in **Maharashtra** open for the same items.
27 जून को, भारत ने भूमि बंदरगाहों के माध्यम से कुछ प्रकार के जूट उत्पादों के प्रवेश पर प्रतिबंध लगा दिया, और इन वस्तुओं के लिए केवल महाराष्ट्र के नावा शेवा बंदरगाह को खुला रखा।
- That decision followed a **May 17** declaration of port restriction by the **DGFT** targeting ready-made garments from **Bangladesh**.
यह निर्णय 17 मई को DGFT द्वारा बांग्लादेश से आने वाले रेडीमेड परिधानों को लक्षित करते हुए बंदरगाह प्रतिबंध की घोषणा के बाद लिया गया।
- The order also banned export by **Bangladesh** of fruits, fruit flavoured drinks, and processed food items (baked goods, snacks, chips, and confectionery); cotton and cotton yarn waste; plastic and **PVC** finished goods except pigments, dyes, plasticisers, and granules; and wooden furniture via the land ports of **Assam**, **Meghalaya**, **Mizoram**, and **Tripura**.



आदेश में बांग्लादेश से फलों, फलों के स्वाद वाले पेय, और प्रसंस्कृत खाद्य पदार्थों (बेकड गुड्स, सैक्स, चिप्स, और कन्फेक्शनरी); कपास और कपास के धागे के कचरे; प्लास्टिक और पीवीसी तैयार वस्तुओं (पिगमेंट, डार्ड, प्लास्टिसाइज़र, और ग्रैन्यूल्स को छोड़कर); और लकड़ी के फर्नीचर के निर्यात पर भी प्रतिबंध लगाया गया, जो असम, मेघालय, मिजोरम और त्रिपुरा के भूमि बंदरगाहों के माध्यम से भेजे जाते थे।

- The same goods were also banned from entering India through the Land Customs Stations of Changrabandha and Fulbari.

इन्हीं वस्तुओं को चांगराबांधा और फुलबाड़ी के भूमि सीमा शुल्क स्टेशनों से भारत में प्रवेश करने से भी प्रतिबंधित कर दिया गया।

- Textiles and jute constitute two of the major areas of India-Bangladesh trade, and India's targeting of these items intensified against the backdrop of Bangladesh Chief Adviser Muhammed Yunus's visit to China in March, during which he described Bangladesh as the second largest ready-made garment manufacturer after China, and invited China to take advantage of Bangladesh's business potential.

वस्त्र और जूट भारत-बांग्लादेश व्यापार के दो प्रमुख क्षेत्र हैं, और भारत द्वारा इन वस्तुओं को लक्षित करना उस समय तेज हुआ जब मार्च में बांग्लादेश के मुख्य सलाहकार मुहम्मद यूनुस ने चीन का दौरा किया, जिसमें उन्होंने बांग्लादेश को चीन के बाद दूसरा सबसे बड़ा रेडीमेड परिधान निर्माता बताया और चीन को बांग्लादेश की व्यावसायिक संभावनाओं का लाभ उठाने के लिए आमंत्रित किया।

Directorate General of Foreign Trade (DGFT)

- The DGFT is an attached office under the Ministry of Commerce and Industry, Government of India, entrusted with the formulation and implementation of India's Foreign Trade Policy. Its core objective is to promote exports and regulate imports, transitioning from a controller to a facilitator role post-liberalization.
- Earlier known as the Chief Controller of Imports & Exports (CCI&E), it was renamed following economic liberalization in 1991.
- **Organizational Structure**
Headquartered in New Delhi, the DGFT is led by the Director General of Foreign Trade, who holds the rank of Ex-Officio Additional Secretary to the Government of India.
- Operates through a network of regional offices—25 regional offices and 4 zonal offices—across major cities such as Mumbai, Kolkata, Chennai, Delhi, Bengaluru, etc., facilitating localized trade operations and policy implementation.
- The Indian Trade Service (ITS), a Group-A cadre, provides staffing for DGFT and executes trade policies at both headquarters and the regional level.



Filed plea against SC verdict to reduce IPS deputation in CAPFs, Minister informs LS

GS III: Internal Security

The Hindu Bureau

NEW DELHI

The Government of India has filed a review petition against a Supreme Court ruling to “progressively reduce” the deputation of Indian Police Service (IPS) officers in the Central Armed Police Forces (CAPFs), the Lok Sabha was informed on Tuesday.

Responding to a question by Deepender Hooda (Congress) whether the Supreme Court, in its May 23 judgment, ruled in favour of granting Organized Group A Services (OGAS) status to CAPFs and if so, concrete steps had been taken to implement this order, Minister of State for Home Nityanand Rai said, “The government has filed a petition seeking review of the judgment which is presently *sub judice* and is pending adjudication before the Supreme Court.”



Despite the ruling, the Ministry continued to appoint IPS officers to senior posts.

The Hindu reported on May 23 that a Bench of Justices A.S Oka and Ujjal Bhuyan ruled that the deputation posts of IPS officers in the Senior Administrative Grade (SAG) or up to the rank of Inspector General in CAPFs should be “progressively reduced over a period of time, say within an outer limit of two years”. Justice Oka has since retired.

Despite the ruling, the Ministry of Home Affairs (MHA) continued to ap-

point IPS officers to senior posts and since the day of the judgment, at least eight appointments of IPS officers in the rank of Commandant to Inspector Generals in the CAPFs were made.

‘Role of BSF’

The Congress member also asked whether the government considered Border Security Force (BSF) as a civilian force rather than an armed force of the Union despite its combat roles and the steps taken by the government to restore the Old Pension Scheme (OPS) to these personnel, which was withdrawn in 2004.

The Minister replied, “Border Security Force is one of the Central Armed Police Forces (CAPFs) for ensuring the security of the borders of India. The issue is presently *sub judice* and pending adjudication before the Supreme Court.”

Filed plea against SC verdict to reduce IPS deputation in CAPFs,

Minister informs LS

CAPFs में IPS

प्रतिनियुक्ति कम

करने के SC

फैसले के खिलाफ

याचिका दायर,

मंत्री ने लोकसभा

को बताया

- The Government of India has filed a review petition against a Supreme Court ruling to “progressively reduce” the deputation of Indian Police Service (IPS) officers in the

Central Armed Police Forces (CAPFs), the Lok Sabha was informed on Tuesday.

भारत सरकार ने मंगलवार को लोकसभा को बताया कि उसने भारतीय पुलिस सेवा (IPS) अधिकारियों की केंद्रीय सशस्त्र पुलिस बलों (CAPFs) में प्रतिनियुक्ति को “क्रमिक रूप से कम” करने के सुप्रीम कोर्ट के फैसले के खिलाफ एक समीक्षा याचिका दायर की है।

- Responding to a question by Deepender Hooda (Congress) whether the Supreme Court, in its May 23 judgment, ruled in favour of granting Organized Group A Services (OGAS) status to CAPFs and if so, concrete steps had been taken to implement this order, Minister of State for Home Nityanand Rai said, “The government has filed a petition seeking review of the judgment which is presently *sub judice* and is pending adjudication before the Supreme Court.”

दीपेंद्र हुड्डा (कांग्रेस) के प्रश्न के जवाब में कि क्या सुप्रीम कोर्ट ने अपने 23 मई के फैसले में CAPFs को ऑर्गनाइज्ड ग्रुप ए सर्विसेज (OGAS) का दर्जा देने के पक्ष में निर्णय दिया था और यदि हां, तो इस आदेश को लागू करने के लिए ठोस कदम उठाए गए थे, गृह राज्य मंत्री नित्यानंद राय ने



कहा, “सरकार ने इस फैसले की समीक्षा के लिए एक याचिका दायर की है, जो वर्तमान में न्यायालय में लंबित है और सुप्रीम कोर्ट में विचाराधीन है।”

- The Hindu reported on May 23 that a Bench of Justices A.S Oka and Ujjal Bhuyan ruled that the deputation posts of IPS officers in the Senior Administrative Grade (SAG) or up to the rank of Inspector General in CAPFs should be “progressively reduced over a period of time, say within an outer limit of two years”. Justice Oka has since retired.

द हिंदू ने 23 मई को रिपोर्ट किया कि न्यायमूर्ति ए.एस. ओका और उज्जल भूयान की पीठ ने निर्णय दिया कि CAPFs में सीनियर एडमिनिस्ट्रेटिव ग्रेड (SAG) या इंस्पेक्टर जनरल तक के पदों पर IPS अधिकारियों की प्रतिनियुक्ति को “समय के साथ धीरे-धीरे कम” किया जाना चाहिए, यानी अधिकतम दो वर्षों के भीतर। न्यायमूर्ति ओका तब से सेवानिवृत्त हो गए हैं।

- Despite the ruling, the Ministry of Home Affairs (MHA) continued to appoint IPS officers to senior posts and since the day of the judgment, at least eight appointments of IPS officers in the rank of Commandant to Inspector Generals in the CAPFs were made.

फैसले के बावजूद, गृह मंत्रालय (MHA) ने वरिष्ठ पदों पर IPS अधिकारियों की नियुक्ति जारी रखी और फैसले के दिन से अब तक CAPFs में कमांडेंट से लेकर इंस्पेक्टर जनरल तक कम से कम आठ नियुक्तियां की गईं।

- ‘Role of BSF’
‘BSF की भूमिका’

- The Congress member also asked whether the government considered Border Security Force (BSF) as a civilian force rather than an armed force of the Union despite its combat roles and the steps taken by the government to restore the Old Pension Scheme (OPS) to these personnel, which was withdrawn in 2004.

कांग्रेस सदस्य ने यह भी पूछा कि क्या सरकार, इसके युद्धक भूमिकाओं के बावजूद, सीमा सुरक्षा बल (BSF) को संघ की सशस्त्र सेना के बजाय एक नागरिक बल मानती है, और क्या सरकार ने इन कर्मियों को 2004 में वापस ली गई पुरानी पेंशन योजना (OPS) बहाल करने के लिए कदम उठाए हैं।

- The Minister replied, “Border Security Force is one of the Central Armed Police Forces (CAPFs) for ensuring the security of the borders of India. The issue is presently sub judice and pending adjudication before the Supreme Court.”

मंत्री ने जवाब दिया, “सीमा सुरक्षा बल भारत की सीमाओं की सुरक्षा सुनिश्चित करने के लिए केंद्रीय सशस्त्र पुलिस बलों (CAPFs) में से एक है। यह मामला वर्तमान में न्यायालय में लंबित है और सुप्रीम कोर्ट में विचाराधीन है।”



India has set an example in lion conservation: Minister

The rise in population of Asiatic lion shows India's intimate relationship with nature and wildlife, says Bhupender Yadav; praises 'coexistence' of the pastoralist Maldhari community and big cats

GS III: Environment

Abhinav Deshpande
AHMEDABAD

Union Environment Minister Bhupender Yadav on Sunday said the rise in the Asiatic lion population in Gujarat reflected India's intimate relationship with nature and wildlife.

"India has given a commitment to the world to work for nature's conservation through the rehabilitation of wildlife," Mr. Yadav said at a World Lion Day function at Timbdi village in the Barda Wildlife Sanctuary in Devbhumi Dwarka district of Gujarat.

As per the census conducted in May, the estimated population of Asiatic lion has increased to 891 from 674 five years ago.

"The growth of India's lion population since 1889 (when the last Asiatic lions were seen) shows our intimate relationship with nature and wildlife," Mr. Yadav said.

He said the resolution made by Prime Minister Narendra Modi last year to boost Gujarat's lion population and develop the Barda Sanctuary as a new habitat had been fulfilled.

Mr. Yadav said climate change had brought chal-



Increased count: As per the 2025 census, the estimated population of Asiatic lion increased to 891 from 674 five years ago. VIJAY SONEJI

lenges such as heavy rain and cyclones.

To address these, Mr. Modi had initiated multiple global efforts such as the Coalition for Disaster Resilient Infrastructure (CDRI) and the International Solar Alliance.

"In addition, the International Big Cat Alliance has been established. Conservation work has been undertaken for five of the seven big cat species found in India. Asiatic lions are only found in India, and that too in Gir, and Gujarat gets 100% of the pride for

their conservation," he said.

The Minister praised the unique bond between the pastoralist Maldhari community and lions as a model of coexistence.

"If one wants to see the example of wildlife conservation, they should visit Gir, observe the work of the State government, and witness the lifestyle of the Maldhari and other local communities," he said.

Mr. Yadav said the number of tiger reserves in India had risen to 58 from 47 during Mr. Modi's tenure,

and they host 70% of the global tiger population. Snow leopard conservation efforts continue, with their population in India currently at 714.

On cheetah reintroduction, he said, "Bringing African cheetahs to India was a challenge, but we successfully rehabilitated them."

He also mentioned ongoing projects such as Project Lion, Project Tiger, Project Elephant, Project Dolphin, and Project Great Indian Bustard, which are reinforcing India's conservation leadership.

Mr. Yadav said two more species of big cats – jaguar and puma – are found in Latin America, and quoted Mr. Modi's call for global cooperation in conserving all seven big cat species found across 97 countries, especially in Africa and Asia, through knowledge sharing, artificial intelligence, and technology.

CM launches projects

On the occasion, Chief Minister Bhupendra Patel launched 11 eco-development projects worth ₹189 crore, including a new safari park, interpretation centre, and breeding centre at Barda.

India has set an example in lion conservation: Minister

भारत ने शेर संरक्षण में उदाहरण प्रस्तुत किया: मंत्री

The rise in the population of Asiatic lions shows India's intimate relationship with nature and wildlife, says Bhupender Yadav; praises 'coexistence' of the pastoral Maldhari community and big cats.

एशियाई शेर की आबादी में वृद्धि भारत के प्रकृति और वन्यजीव के साथ गहरे संबंध को



दर्शाती है, भूपेंद्र यादव ने कहा; चरवाहा मालधारी समुदाय और बड़े बिल्लियों के 'सहअस्तित्व' की सराहना की।

- **Union Environment Minister Bhupender Yadav** on **Sunday** said the rise in the **Asiatic lion** population in **Gujarat** reflected India's intimate relationship with nature and wildlife.
केंद्रीय पर्यावरण मंत्री भूपेंद्र यादव ने रविवार को कहा कि गुजरात में एशियाई शेर की आबादी में वृद्धि भारत के प्रकृति और वन्यजीव के साथ गहरे संबंध को दर्शाती है।
- "India has given a commitment to the world to work for nature's conservation through the rehabilitation of wildlife," Mr. Yadav said at a **World Lion Day** function at **Timbdi village** in the **Barda Wildlife Sanctuary** in **Devbhumi Dwarka** district of Gujarat.
"भारत ने दुनिया को यह प्रतिबद्धता दी है कि वह वन्यजीवों के पुनर्वास के माध्यम से प्रकृति के संरक्षण के लिए कार्य करेगा," श्री यादव ने **विश्व शेर दिवस** के अवसर पर **गुजरात** के **देवभूमि द्वारका** जिले में **बार्डा वन्यजीव अभयारण्य** के **टिम्बडी गांव** में आयोजित कार्यक्रम में कहा।
- As per the census conducted in **May**, the estimated population of **Asiatic lion has increased to 891 from 674 five years ago**.
मई में किए गए गणना के अनुसार, **एशियाई शेर** की अनुमानित आबादी पांच साल पहले के **674** से बढ़कर **891** हो गई है।
- "The growth of India's lion population since **1889** (when the last Asiatic lions were seen) shows our intimate relationship with nature and wildlife," Mr. Yadav said.
"1889 (जब आखिरी एशियाई शेर देखे गए थे) से भारत की शेर आबादी में वृद्धि हमारे प्रकृति और वन्यजीव के साथ गहरे संबंध को दर्शाती है," श्री यादव ने कहा।
- He said the resolution made by **Prime Minister Narendra Modi** last year to boost **Gujarat's lion population** and develop **the Barda Sanctuary as a new habitat had been fulfilled**.
उन्होंने कहा कि पिछले वर्ष **प्रधानमंत्री नरेंद्र मोदी** द्वारा **गुजरात की शेर आबादी** को बढ़ाने और **बार्डा अभयारण्य** को नया आवास विकसित करने का जो संकल्प लिया गया था, वह पूरा हो चुका है।
- Mr. Yadav said **climate change** had brought challenges such as heavy rain and cyclones.
श्री यादव ने कहा कि **जलवायु परिवर्तन** ने भारी वर्षा और चक्रवात जैसी चुनौतियां लाई हैं।
- To address these, Mr. Modi had initiated multiple global efforts such as the **Coalition for Disaster Resilient Infrastructure (CDRI)** and the **International Solar Alliance**.
इनसे निपटने के लिए, श्री मोदी ने **आपदा सहनशील बुनियादी ढांचा गठबंधन (CDRI)** और **अंतरराष्ट्रीय सौर गठबंधन** जैसे कई वैश्विक प्रयास शुरू किए।
- "In addition, the **International Big Cat Alliance** has been established. **Conservation work has been undertaken for five of the seven big cat species found in India. Asiatic lions** are only found in India, and that too in **Gir**, and **Gujarat** gets 100% of the pride for their conservation," he said.
"इसके अलावा, **अंतरराष्ट्रीय बड़ी बिल्ली गठबंधन** की स्थापना की गई है। भारत में पाई जाने वाली सात बड़ी बिल्ली प्रजातियों में से पांच के संरक्षण कार्य किए गए हैं। **एशियाई शेर** केवल भारत में, और वह भी **गिर** में पाए जाते हैं, और उनके संरक्षण का 100% गर्व **गुजरात** को जाता है," उन्होंने कहा।
- The Minister praised the unique bond between the **pastoralist Maldhari community and lions as a model of coexistence**.
मंत्री ने चरवाहा **मालधारी समुदाय** और शेरों के बीच अद्वितीय संबंध को सहअस्तित्व के एक मॉडल के रूप में सराहा।



- “If one wants to see the example of wildlife conservation, they should visit **Gir**, observe the work of the State government, and witness the lifestyle of the **Maldhari** and other local communities,” he said.
“यदि कोई वन्यजीव संरक्षण का उदाहरण देखना चाहता है, तो उसे **गिर** जाना चाहिए, राज्य सरकार के कार्य को देखना चाहिए और **मालधारी** तथा अन्य स्थानीय समुदायों की जीवनशैली को देखना चाहिए,” उन्होंने कहा।
- Mr. Yadav said the **number of tiger reserves in India had risen to 58 from 47** during Mr. Modi’s tenure, and they host **70%** of the global tiger population.
श्री यादव ने कहा कि श्री मोदी के कार्यकाल में भारत में **बाघ अभयारण्यों** की संख्या **47** से बढ़कर **58** हो गई है, और इनमें वैश्विक बाघ आबादी का **70%** निवास करता है।
- **Snow leopard conservation efforts continue, with their population in India currently at 714.**
हिम तेंदुआ संरक्षण प्रयास जारी हैं, और भारत में इनकी वर्तमान आबादी **714** है।
- On cheetah reintroduction, he said, “Bringing **African cheetahs** to India was a challenge, but we successfully rehabilitated them.”
चीता पुनर्प्रवेश पर उन्होंने कहा, “**अफ्रीकी चीते** को भारत लाना एक चुनौती थी, लेकिन हमने उन्हें सफलतापूर्वक पुनर्वासित किया।”
- He also mentioned ongoing projects such as **Project Lion, Project Tiger, Project Elephant, Project Dolphin, and Project Great Indian Bustard**, which are reinforcing India’s conservation leadership.
उन्होंने **प्रोजेक्ट लायन, प्रोजेक्ट टाइगर, प्रोजेक्ट एलीफेंट, प्रोजेक्ट डॉल्फिन, और प्रोजेक्ट ग्रेट इंडियन बस्टर्ड** जैसे चल रहे प्रोजेक्ट्स का भी उल्लेख किया, जो भारत की संरक्षण नेतृत्व को मजबूत कर रहे हैं।
- Mr. Yadav said two more species of big cats — **jaguar and puma** — are found in **Latin America**, and quoted Mr. Modi’s call for global cooperation in conserving all seven big cat species found across **97 countries**, especially in **Africa** and **Asia**, through knowledge sharing, artificial intelligence, and technology.
श्री यादव ने कहा कि बड़ी बिल्लियों की दो और प्रजातियां — **जगुआर और प्यूमा** — **लैटिन अमेरिका** में पाई जाती हैं, और उन्होंने श्री मोदी के आह्वान का हवाला दिया जिसमें **97 देशों** में पाई जाने वाली सभी सात बड़ी बिल्ली प्रजातियों के संरक्षण में वैश्विक सहयोग का आग्रह किया गया है, विशेषकर **अफ्रीका** और **एशिया** में, ज्ञान साझाकरण, कृत्रिम बुद्धिमत्ता और प्रौद्योगिकी के माध्यम से।

CM launches projects मुख्यमंत्री ने परियोजनाएं शुरू कीं

On the occasion, **Chief Minister Bhupendra Patel** launched **11 eco-development projects** worth ₹189 crore, including a new **safari park, interpretation centre, and breeding centre** at **Barda**.

इस अवसर पर, **मुख्यमंत्री भूपेंद्र पटेल** ने ₹189 करोड़ की **11 पारिस्थितिक विकास परियोजनाएं** शुरू कीं, जिसमें नया **सफारी पार्क, व्याख्या केंद्र, और प्रजनन केंद्र** **बार्डा** में शामिल हैं।



Latest muon data narrows gap but leaves physics mysteries unresolved

The muon is an elementary particle that mimics the electron in every trait except for being 207-times heavier. Discovered in 1936 in cosmic rays, its place in the pattern of the Standard Model was, and remains, something of a mystery, prompting physicist Isidor Rabi to remark: 'Who ordered that?'

Nirmal Ra

Can you weigh an elephant before and after it picks up a one-rupee coin, and tell the difference? You can if the measurement is precise. To detect a 4-gram coin on a 4-tonne creature, the scales must come with a resolution of at least 1 part per million (ppm). Precise measurements such as these routinely lead to startling discoveries in fundamental physics. This is what the physicist Albert Michelson meant by "The future truths of physical science are to be looked for in the sixth place of decimals."

This June, the Muon $g-2$ (pronounced "gee minus two") Experiment at Fermilab in the U.S. presented its highly anticipated final results. With data collected over three years and with the involvement of more than 170 physicists, the collaboration had measured a unique property of a subatomic particle called a muon with an unprecedented precision of 0.127 ppm, outdoing its stated goal of 0.140 ppm.

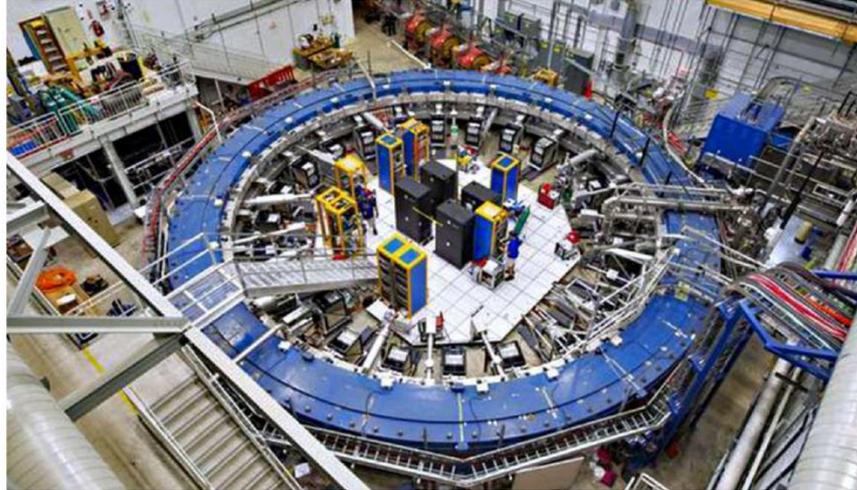
Usually, physicists check such measurements against the prediction of the Standard Model, the theory of subatomic particles that predicts their properties. If they don't match, the measured value would hint at the presence of unseen forces. But in this instance, there are two ways to make theoretical predictions about this property of the muon. One of them is consistent with the Fermilab experiment and the other is far off. Nobody knows which really is right, and an intriguing drama has been unfolding over the last few years with no clear resolution in sight.

g minus 2

The muon is an elementary particle that mimics the electron in every trait except for being 207-times heavier. Discovered in 1936 in cosmic rays, its place in the pattern of the Standard Model was, and still is, something of a mystery, prompting physicist Isidor Rabi to remark: "Who ordered that?"

The muon carries non-zero quantum spin, which means it functions like a petite magnet. The strength of this magnet, called the magnetic moment, is captured by a quantity called the g factor. In a high-school calculation, g would be exactly 2, but in advanced theory its value drifts a tiny bit from 2 due to quantum field effects. It is this so-called anomalous magnetic moment that the Muon $g-2$ Experiment painstakingly ascertained.

Measurements of the $g-2$ of the muon were first made at CERN in Europe and the results were published in 1961 with a



The Muon $g-2$ ring at the Fermi National Accelerator Laboratory outside Chicago in 2017. AP

definition of 4000 ppm. Over the next two decades at CERN, the precision was improved to 7 ppm. Matters took an interesting trans-Atlantic turn when the Muon E821 experiment at the Brookhaven National Lab in the US took data between 1997 and 2001 and achieved a precision of 0.540 ppm, which was similar to the uncertainty in the theoretical prediction. In other words, the two numbers – the theoretical calculation and the observed value – could be meaningfully compared.

And lo and behold, they significantly disagreed.

Contrast with theory

Nothing seemed to have been amiss in the experiment, so many physicists wagered that the disagreement was a hint of 'new physics'. Numerous explanations involving theories beyond the Standard Model poured into the literature over the next two decades. At the same time, the theoretical physicists themselves got down to refining the Standard Model prediction itself, which was no mean task.

So stood affairs until Fermilab started measuring $g-2$ in 2017. When it had collected just 6% of the total intended data by 2021, it had already reached a precision of 0.460 ppm, comparable to E821. This first result was in such excellent agreement with E821 data that when the two results were combined, the discrepancy with theory deepened to worrying levels.

The Muon $g-2$ experiment at Fermilab in the U.S. measured a unique property of a subatomic particle called a muon with an unprecedented precision of 0.127 ppm, outdoing its stated goal of 0.140 ppm

But the spectacle didn't end there. On the very day that Fermilab announced this result to much fanfare, there quietly appeared in *Nature* a new paper in which a group of physicists, called the Budapest-Marseille-Wuppertal (BMW) Lattice collaboration, argued there may be no gap between theory and experiment values after all.

Theorists compute the muon $g-2$ using either (i) Feynman diagrams, a tool that has served calculations in quantum field theory for three quarters of a century, or (ii) the so-called lattice, a supercomputer simulation of spacetime as a discretised grid that represents quantum fields. Both approaches are technically very challenging in this context.

The final results at Fermilab from June are less confusing. They are consistent with their past announcements; it's their contrast with theory that is unsettled.

An old friend

The experimental setup itself was ingenious. A beam of anti-muons is

injected into a 15-m-wide ring with a uniform magnetic field. There the antiparticles make circular orbits with a characteristic frequency. Meanwhile, the antiparticles' spin vectors – a fundamental property of theirs – rotate in the magnetic field and they resemble spinning tops, spinning with a certain spin frequency.

The central conceit is to measure the difference between the frequency of the circular orbits and the spin frequencies. This difference carries direct information on the muon's $g-2$ value.

Both E821 and Fermilab operated on this principle. This is not impossible. Fermilab reused part of the E821 equipment and thus some unknown defects may have made their presence felt in the Fermilab data as well. This is why it is crucial to have a completely independent measurement by a different experimental approach.

An upcoming effort at the Japan Proton Accelerator Research Complex will do just this.

Uncertainty is an old friend of fundamental physics. It has always borne the promise of an imminent disclosure of a deep secret of nature. We wait now for the next word from theorists and hope that the jury will soon be in.

(Nirmal Raj is an assistant professor of theoretical physics at the Centre for High Energy Physics in the Indian Institute of Science, Bengaluru. nraj@isc.ac.in)

THE GIST

Measurements of the $g-2$ of the muon were first made at CERN with a definition of 4,000 ppm. Over decades precision was improved, and the E821 experiment reduced it to 0.540 ppm, which was similar to the uncertainty in the theoretical prediction. In other words, the two numbers could be meaningfully compared. But they significantly disagreed

Fermilab started measuring $g-2$ in 2017 and quickly reached a precision of 0.460 ppm. This was in such agreement with E821 that when they were combined, the discrepancy with theory deepened. Even as this result was being celebrated, another group argued there may be no gap between theory and experiment values after all

All of this proves why it is crucial to have a completely independent measurement by a different approach. An upcoming effort at the Japan Proton Accelerator Research Complex will do just this. Uncertainty is an old friend of fundamental physics. It has always borne the promise of an imminent disclosure of a deep secret of nature

Latest muon data narrows gap but leaves physics mysteries unresolved

ताज़ा म्यॉन डेटा ने अंतर को कम किया लेकिन भौतिकी के रहस्य अनसुलझे छोड़े



The muon is an elementary particle that mimics the electron in every trait except for being 207-times heavier.

म्यॉन एक मौलिक कण है जो हर विशेषता में इलेक्ट्रॉन जैसा होता है, सिवाय इसके कि यह 207 गुना भारी है।

- Discovered in 1936 in cosmic rays, its place in the pattern of the Standard Model was, and remains, something of a mystery, prompting physicist Isidor Rabi to remark: "Who ordered that?"

1936 में कॉस्मिक किरणों में खोजा गया, इसका स्टैंडर्ड मॉडल के पैटर्न में स्थान तब भी और अब भी एक रहस्य बना हुआ है, जिससे भौतिक विज्ञानी इसिडोर राबी ने टिप्पणी की: "यह किसने ऑर्डर किया?"

Muon g-2 Experiment and Precision Measurement

म्यूऑन g-2 प्रयोग और सटीक माप

- Can you weigh an elephant before and after it picks up a one-rupee coin, and tell the difference? You can if the measurement is precise.
क्या आप एक हाथी का वजन एक रुपये का सिक्का उठाने से पहले और बाद में कर सकते हैं और अंतर बता सकते हैं? अगर माप सटीक हो तो आप कर सकते हैं।
- To detect a 4-gram coin on a 4-tonne creature, the scales must come with a resolution of at least 1 part per million (ppm).
4-ग्राम का सिक्का 4-टन के जीव पर पहचानने के लिए तराजू में कम से कम 1 पार्ट प्रति मिलियन (ppm) का रिज़ॉल्यूशन होना चाहिए।
- Precise measurements such as these routinely lead to startling discoveries in fundamental physics.
ऐसे सटीक माप अक्सर मौलिक भौतिकी में चौंकाने वाली खोजों का कारण बनते हैं।
- This is what the physicist Albert Michelson meant by "The future truths of physical science are to be looked for in the sixth place of decimals."
यही वह बात है जो भौतिक वैज्ञानिक अल्बर्ट माइकेल्सन ने कही थी कि "भौतिक विज्ञान की भावी सच्चाइयों को दशमलव के छठे स्थान में देखा जाना चाहिए।"
- This June, the Muon g-2 Experiment at Fermilab in the U.S. presented its highly anticipated final results.
इस जून, अमेरिका के फर्मिलैब में म्यूऑन g-2 प्रयोग ने अपने बहुप्रतीक्षित अंतिम परिणाम प्रस्तुत किए।
- With data collected over three years and with the involvement of more than 170 physicists, the collaboration had measured a unique property of a subatomic particle called a muon with an unprecedented precision of 0.127 ppm, outdoing its stated goal of 0.140 ppm.
तीन वर्षों में एकत्र किए गए डेटा और 170 से अधिक भौतिक वैज्ञानिकों की भागीदारी के साथ, इस सहयोग ने म्यूऑन नामक उपपरमाण्विक कण के एक विशेष गुण को 0.127 ppm की अद्वितीय सटीकता के साथ मापा, जो इसके घोषित लक्ष्य 0.140 ppm से बेहतर था।
- Usually, physicists check such measurements against the prediction of the Standard Model, the theory of subatomic particles that predicts their properties.
आमतौर पर, भौतिक वैज्ञानिक ऐसे मापों को स्टैंडर्ड मॉडल की भविष्यवाणी से मिलाते हैं, जो उपपरमाण्विक कणों के गुणों की भविष्यवाणी करता है।
- If they don't match, the measured value would hint at the presence of unseen forces.
अगर वे मेल नहीं खाते, तो मापा गया मान अदृश्य बलों की उपस्थिति का संकेत देगा।
- But in this instance, there are two ways to make theoretical predictions about this property of the muon.
लेकिन इस मामले में, म्यूऑन के इस गुण की सैद्धांतिक भविष्यवाणी करने के दो तरीके हैं।



- One of them is consistent with the **Fermilab** experiment and the other is far off. इनमें से एक **फर्मिलैब** प्रयोग के अनुरूप है और दूसरा काफी अलग है।
- Nobody knows which really is right, and an intriguing drama has been unfolding over the last few years with no clear resolution in sight.
किसी को नहीं पता कि वास्तव में कौन सही है, और पिछले कुछ वर्षों से एक दिलचस्प घटनाक्रम जारी है, जिसका अभी तक स्पष्ट समाधान नहीं मिला है।

g minus 2

g माइनस 2

- The **muon** is an elementary particle that mimics the electron in every trait except for being **207-times heavier**.
म्यूऑन एक प्राथमिक कण है जो इलेक्ट्रॉन की तरह है, लेकिन यह **207 गुना भारी** है।
- Discovered in **1936** in cosmic rays, its place in the pattern of the **Standard Model** was, and still is, something of a mystery, prompting physicist **Isidor Rabi** to remark: "Who ordered that?"
1936 में कॉस्मिक किरणों में खोजा गया, **स्टैंडर्ड मॉडल** में इसका स्थान तब भी और अब भी एक रहस्य है, जिससे भौतिक वैज्ञानिक **इसिडोर राबी** ने टिप्पणी की: "किसने इसका आदेश दिया?"
- The muon carries **non-zero quantum spin**, which means it functions like a petite magnet.
म्यूऑन में **गैर-शून्य क्वांटम स्पिन** होता है, जिसका मतलब है कि यह एक छोटे चुंबक की तरह काम करता है।
- The strength of this magnet, called the **magnetic moment**, is captured by a quantity called the **g factor**.
इस चुंबक की शक्ति, जिसे **मैग्नेटिक मोमेंट** कहा जाता है, को **g फैक्टर** नामक राशि द्वारा मापा जाता है।
- In a high-school calculation, **g** would be exactly **2**, but in advanced theory its value drifts a tiny bit from 2 due to **quantum field effects**.
हाई-स्कूल गणना में **g** बिल्कुल **2** होगा, लेकिन उन्नत सिद्धांत में इसका मान **क्वांटम फील्ड प्रभावों** के कारण 2 से थोड़ा अलग हो जाता है।
- It is this so-called **anomalous magnetic moment** that the Muon g-2 Experiment painstakingly ascertained.
यही तथाकथित **असामान्य चुंबकीय आघूर्ण** है जिसे म्यूऑन g-2 प्रयोग ने बड़ी मेहनत से निर्धारित किया।

History of Measurements

माप का इतिहास

- Measurements of the g-2 of the muon were first made at **CERN** in Europe and published in **1961** with a definition of **4000 ppm**.
म्यूऑन के g-2 का पहला माप **यूरोप के CERN** में किया गया और **1961** में **4000 ppm** की परिभाषा के साथ प्रकाशित हुआ।
- Over the next two decades at **CERN**, the precision was improved to **7 ppm**.
अगले दो दशकों में **CERN** में सटीकता को **7 ppm** तक सुधारा गया।
- Matters took an interesting trans-Atlantic turn when the **Muon E821** experiment at the **Brookhaven National Lab** in the US took data between **1997 and 2001** and achieved a precision of **0.540 ppm**.
मामला तब एक दिलचस्प अटलांटिक-पार मोड़ पर पहुंचा जब अमेरिका के **ब्रुकहेवन नेशनल लैब** में **म्यूऑन E821** प्रयोग ने **1997 से 2001** के बीच डेटा लिया और **0.540 ppm** की सटीकता हासिल की।



- This precision was similar to the uncertainty in the theoretical prediction.
यह सटीकता सैद्धांतिक भविष्यवाणी की अनिश्चितता के समान थी।
- In other words, the **theoretical calculation** and the **observed value** could be meaningfully compared.
दूसरे शब्दों में, **सैद्धांतिक गणना** और **देखा गया मान** का सार्थक रूप से तुलना किया जा सकता था।
- And lo and behold, they significantly disagree.
और देखो, वे एक-दूसरे से काफी अलग थे।

Latest muon data experiments and theoretical debates

ताज़ा म्यॉन डेटा प्रयोग और सैद्धांतिक बहसें

- Nothing seemed to have been **amiss in the experiment**, so many physicists wagered that the **disagreement** was a hint of '**new physics**'.
प्रयोग में कुछ भी **गलत** नहीं लगा, इसलिए कई भौतिकविदों ने माना कि यह **असहमति 'नई भौतिकी'** का संकेत हो सकती है।
- Numerous **explanations** involving **theories beyond the Standard Model** poured into the literature over the next **two decades**.
अगले **दो दशकों** में **स्टैंडर्ड मॉडल से परे सिद्धांतों** से जुड़ी कई **व्याख्याएं** शोध साहित्य में प्रकाशित हुईं।
- At the same time, **theoretical physicists** refined the **Standard Model prediction** itself, which was **no mean task**.
इसी समय, **सैद्धांतिक भौतिकविदों** ने **स्टैंडर्ड मॉडल भविष्यवाणी** को ही परिष्कृत किया, जो कोई **आसान कार्य** नहीं था।
- So stood affairs until **Fermilab** started measuring **g-2** in **2017**.
स्थिति ऐसी ही रही जब तक **फर्मी लैब** ने **2017** में **g-2** का मापन शुरू नहीं किया।
- By **2021**, with just **6%** of the intended data, Fermilab had already reached a **precision of 0.460 ppm**, comparable to **E821**.
2021 तक, केवल **6%** लक्षित डेटा के साथ, फर्मी लैब ने **0.460 ppm** की **सटीकता** प्राप्त कर ली थी, जो **E821** के बराबर थी।
- This first result was in **excellent agreement** with **E821** data, and when combined, the **discrepancy with theory deepened** to worrying levels.
यह पहला परिणाम **E821** डेटा के साथ **बेहतरीन मेल** में था, और जब इन्हें जोड़ा गया, तो **सिद्धांत के साथ असंगति** चिंताजनक स्तर तक गहरी हो गई।
- On the same day that **Fermilab** announced this result, a **Nature** paper by the **BMW Lattice collaboration** argued there may be **no gap between theory and experiment** after all.
उसी दिन जब **फर्मी लैब** ने यह परिणाम घोषित किया, **BMW लैटिस सहयोग** द्वारा प्रकाशित एक **नेचर** पेपर में तर्क दिया गया कि अंततः **सिद्धांत और प्रयोग में कोई अंतर नहीं** हो सकता।
- Theorists compute **muon g-2** using either **Feynman diagrams** or the **lattice method**, both **technically very challenging**.
सिद्धांतकार **म्यॉन g-2** की गणना या तो **फाइनमैन आरेखों** से या **लैटिस विधि** से करते हैं, जो दोनों ही तकनीकी रूप से बहुत कठिन हैं।
- The final **Fermilab** results from **June** are **consistent** with past announcements, but their **contrast with theory** remains unsettled.
जून में आए अंतिम **फर्मी लैब** के परिणाम पिछले घोषणाओं के **अनुकूल** हैं, लेकिन उनका **सिद्धांत से अंतर** अभी भी अनिर्णीत है।

An old friend
एक पुराना मित्र



- The **experimental setup** was ingenious — a **beam of anti-muons** injected into a **15-m-wide ring** with a **uniform magnetic field**.
प्रयोगात्मक सेटअप अद्भुत था — एंटी-म्यॉन्स की एक बीम को 15 मीटर चौड़े रिंग में डाला गया, जिसमें समान चुंबकीय क्षेत्र था।
- Antiparticles made **circular orbits** while their **spin vectors** rotated like **spinning tops** with a certain **spin frequency**.
प्रतिकणों ने वृत्ताकार कक्षाएं बनाईं, जबकि उनके स्पिन वेक्टर एक निश्चित स्पिन आवृत्ति के साथ लट्टू की तरह घूमते रहे।
- The **key measurement** was the **difference between orbital and spin frequencies**, directly revealing the **muon's g-2 value**.
मुख्य मापन कक्षीय और स्पिन आवृत्तियों के अंतर का था, जो सीधे म्यॉन के g-2 मान को दर्शाता था।
- Both **E821** and **Fermilab** used this principle, with Fermilab reusing **E821 equipment**, possibly carrying **unknown defects**.
E821 और **फर्मी लैब** दोनों ने इस सिद्धांत का उपयोग किया, जिसमें फर्मी लैब ने **E821 उपकरण** का पुनः उपयोग किया, जिससे संभवतः **अज्ञात दोष** भी शामिल हो गए।
- An **independent measurement** by a different experimental approach is crucial; an **upcoming effort at the Japan Proton Accelerator Research Complex** will do this.
एक अलग प्रयोगात्मक दृष्टिकोण से **स्वतंत्र मापन** अत्यंत महत्वपूर्ण है; यह कार्य **जापान प्रोटॉन एक्सेलेरेटर रिसर्च कॉम्प्लेक्स** में होने वाला है।
- **Uncertainty** is an old friend of **fundamental physics**, often hinting at a **deep secret of nature**; now we await the **next word from theorists**.
अनिश्चितता मौलिक भौतिकी की एक पुरानी मित्र है, जो अक्सर **प्रकृति के गहरे रहस्य** का संकेत देती है; अब हम **सिद्धांतकारों के अगले विचार** की प्रतीक्षा कर रहे हैं।

The difficult path for Trump's 'one big budget bet'

GS III: Economy

The most debated government downsizing reform that has been implemented in recent history has been the Department of Government Efficiency (DOGE) initiative under the Donald Trump administration in its second term. The initiative aims to reduce U.S. federal spending, deficit, debt and interest burden, streamline government operations, and enhance government efficiency. The initiative was much in the news with the appointment of Elon Musk, to advise and guide the government on the initiative, and his declaration that the overall goal is to achieve a leaner government by cutting the deficit and reducing the number of federal agencies from over 400 to 99.

Root cause of deficit and debt

The need for a smaller government was felt by the Trump administration due to enormous government spending and deficits. The size of the U.S. government, measured by public expenditure as a percentage of GDP, on average, was 36.49% from 2001 to 2024. Surprisingly, this was the smallest among the seven major advanced economies (MAE). France (56.53%) had the largest government, followed by Italy (49.81%), Germany (46.64%), Canada (41.24%), the United Kingdom (41.09%), and Japan (37.56%). The size of the government in the U.S. has remained the smallest among the MAE for most of the last 25 years.

Yet, overall fiscal balance and government debt have been higher in the U.S. when compared to the MAE. In the triennium ending (TE) 2024, the U.S. had a fiscal balance and debt burden of (-)6.0% and 119.5% of GDP, respectively, compared to the figures of (-)4.1% and 108.6%, respectively, for the MAE. The underlying reason is the lower revenue collection in the U.S. The total revenue of the U.S. government as a percentage of GDP on an average was the lowest (30.55%) during the period 2001-2022 compared to France (51.48%), Italy (45.93%), Germany (44.93%), Canada (39.92%), and the U.K. (36.63%).



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Boosting government revenues is pivotal to reducing America's deficit and debt through DOGE-style expenditure reforms

Between 2001 and 2022, the U.S. has clocked the lowest tax-GDP ratio of 19.27% as against 28.59% for Italy, 28.12% for France, 27.99% for Canada, 26.89% for the U.K., 22.70% for Germany, and 32.74% for OECD countries.

Initiatives and outcomes

The several expenditure reforms the DOGE has implemented are the termination of unused federal government office space leases, cancellation of wasteful contracts, recovery of misallocated funds, federal workforce optimisation involving initiatives such as hiring restrictions, workforce reduction, and offering voluntary buyouts, deregulatory measures aimed at ensuring lawful governance and reducing red tape. There is also Artificial Intelligence-based monitoring of federal employee activity, productivity assessment, and detection of inefficiencies, identifying and consolidating overlapping functions across departments, and cutting down overseas humanitarian and development spending.

DOGE follows a transparent communication strategy by publicly sharing updates (on X or DOGE's portal) on the outcomes. The total estimated expenditure savings from contract/lease cancellations and renegotiations, grant cancellations, fraud and improper payment detection and elimination, asset sales, employee reductions and regulatory changes have been \$190 billion, which amounts to \$1,180 per taxpayer. DOGE has made the distribution of government grants transparent through a payments portal, which allows citizens to see recipient-wise payments of federal grants.

DOGE's Workforce Portal provides information on the agency-wise size of the U.S. government civilian workforce.

To streamline layoffs, it has implemented the "Workforce Reshaping Tool", a modernised version of the Pentagon's Automated Reduction in Force (AutoRIF) software, which assists in terminating federal employees based on criteria

such as seniority and performance. So far, approximately 2,60,000 federal employees have been laid off, retired early, or accepted buyouts. Several federal regulations were repealed and modified, with a cost savings of \$30.1 billion due to reduced regulatory compliance; also, 1.8 million words have been deleted from the rules of several Federal regulations. DOGE publishes a unique unconstitutionality index (UI) measuring the extent of bureaucracy's role in shaping federal policy. As per UI, for every law passed by Congress in 2024, there were about 19 rules created by the bureaucracy.

The path ahead

However, DOGE's journey has seen an unexpected turn after Elon Musk publicly disagreed with U.S. President Donald Trump over the provision incorporated in the much-debated One Big Beautiful Bill (OB BB) for removing tax credits offered to purchase electric vehicles. The OB BB is a legislative extension of the DOGE reform, as it aims to embed multiple fiscal priorities and DOGE-style government efficiency reforms into a single federal law. Ironically, by opposing OB BB, Mr. Musk contradicted his initiatives as an adviser to DOGE. However, the bigger challenge facing the DOGE initiative is that its extended form, the OB BB, is unlikely to resolve the U.S.'s deficit and debt problem, as the tax cuts proposed in the OB BB far exceed the spending cuts, leading to an addition of \$3.2 trillion to the U.S. national debt over the next decade.

Currently, the U.S. has the lowest and below-OECD-average corporate tax rates among the MAE, lower effective tax rates on the rich, and tighter secrecy laws that enable tax evasion by wealthy individuals and corporations. Therefore, unless efforts are made to boost government revenues, Mr. Trump's 'One Big Budget Bet' of reducing America's deficit and debt through DOGE-style expenditure reforms is unlikely to pay off.



The difficult path for Trump's 'one big budget bet' ट्रंप की 'वन बिग बजट बेट' के लिए कठिन राह

The most debated government downsizing reform that has been implemented in recent history has been the **Department of Government Efficiency (DOGE) initiative under the Donald Trump administration in its second term.**

हाल के इतिहास में लागू किया गया सबसे चर्चित सरकारी आकार घटाने का सुधार डोनाल्ड ट्रंप प्रशासन के दूसरे कार्यकाल में डिपार्टमेंट ऑफ गवर्नमेंट एफिशिएंसी (DOGE) पहल रहा है।

- The initiative aims to reduce **U.S. federal spending, deficit, debt and interest burden**, streamline government operations, and enhance government efficiency. इस पहल का उद्देश्य **अमेरिकी संघीय खर्च, घाटा, ऋण और ब्याज का बोझ** कम करना, सरकारी कार्यों को सरल बनाना और सरकारी दक्षता को बढ़ाना है।
- The initiative was much in the news with the **appointment of Elon Musk**, to advise and guide the government on the initiative, and his declaration that the overall goal is to achieve a leaner government by cutting the deficit and reducing the number of **federal agencies from over 400 to 99.** इस पहल ने तब ज्यादा सुर्खियां बटोरीं जब **एलन मस्क** को सरकार को इस पहल पर सलाह और मार्गदर्शन देने के लिए नियुक्त किया गया, और उन्होंने घोषणा की कि कुल लक्ष्य घाटा घटाकर और **संघीय एजेंसियों** की संख्या **400** से घटाकर **99** करके एक पतली-सरल सरकार बनाना है।

Root cause of deficit and debt

घाटे और ऋण का मूल कारण

- The need for a smaller government was felt by the Trump administration due to enormous government spending and deficits. भारी सरकारी खर्च और घाटे के कारण ट्रंप प्रशासन ने एक छोटे आकार की सरकार की आवश्यकता महसूस की।
The **size of the U.S. government, measured by public expenditure as a percentage of GDP, on average, was 36.49% from 2001 to 2024.**
2001 से 2024 के बीच औसतन **जीडीपी** के प्रतिशत के रूप में सार्वजनिक व्यय द्वारा मापी गई अमेरिकी सरकार का आकार **36.49%** था।
- Surprisingly, this was the smallest among the **seven major advanced economies (MAE).** आश्चर्यजनक रूप से, यह सात प्रमुख उन्नत अर्थव्यवस्थाओं (MAE) में सबसे छोटा था।
France (56.53%) had the largest government, followed by **Italy (49.81%), Germany (46.64%), Canada (41.24%), the United Kingdom (41.09%), and Japan (37.56%).**
फ्रांस (56.53%) की सरकार सबसे बड़ी थी, उसके बाद **इटली (49.81%), जर्मनी (46.64%), कनाडा (41.24%), यूनाइटेड किंगडम (41.09%), और जापान (37.56%)** का स्थान था।
- The size of the government in the U.S. has remained the smallest among the MAE for most of the last **25 years.** पिछले **25 वर्षों** में ज्यादातर समय अमेरिका में सरकार का आकार MAE में सबसे छोटा रहा है। Yet, overall **fiscal balance** and **government debt** have been higher in the U.S. when compared to the MAE. फिर भी, MAE की तुलना में अमेरिका में कुल **राजकोषीय संतुलन** और **सरकारी ऋण** अधिक रहा है।



- In the **triennium ending (TE) 2024**, the U.S. had a fiscal balance and debt burden of **(-)6.0%** and **119.5%** of GDP, respectively, compared to the figures of **(-)4.1%** and **108.6%**, respectively, for the MAE.
2024 में समाप्त होने वाले **त्रैवार्षिक (TE)** में, अमेरिका का राजकोषीय संतुलन और ऋण बोझ क्रमशः **(-)6.0%** और **जीडीपी का 119.5%** था, जबकि MAE के लिए ये आंकड़े क्रमशः **(-)4.1%** और **108.6%** थे।
- The underlying reason is the **lower revenue collection** in the U.S.
इसके पीछे का कारण अमेरिका में कम राजस्व संग्रह है।
- The total revenue of the U.S. government as a percentage of GDP on an average was the lowest (**30.55%**) during the period **2001–2022** compared to **France (51.48%)**, **Italy (45.93%)**, **Germany (44.93%)**, **Canada (39.92%)**, and the **U.K. (36.63%)**.
2001–2022 की अवधि में जीडीपी के प्रतिशत के रूप में अमेरिकी सरकार का कुल राजस्व औसतन सबसे कम (**30.55%**) था, जबकि **फ्रांस (51.48%)**, **इटली (45.93%)**, **जर्मनी (44.93%)**, **कनाडा (39.92%)**, और **यूके (36.63%)** के आंकड़े अधिक थे।
- Between **2001 and 2022**, the U.S. has clocked the **lowest tax-GDP ratio of 19.27%** as against **28.59%** for Italy, **28.12%** for France, **27.99%** for Canada, **26.89%** for the U.K., **22.70%** for Germany, and **32.74%** for OECD countries.
2001 और 2022 के बीच, अमेरिका ने सबसे कम **कर-जीडीपी अनुपात (19.27%)** दर्ज किया, जबकि **इटली के लिए 28.59%**, **फ्रांस के लिए 28.12%**, **कनाडा के लिए 27.99%**, **यूके के लिए 26.89%**, **जर्मनी के लिए 22.70%**, और **OECD देशों के लिए 32.74%** था।

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How does satellite internet work?

Why are ground-based internet networks economically unviable? How does the dual nature of satellite internet manifest? What are the three main orbits in which such satellites are deployed? Will it be more expensive than terrestrial broadband?

GS III: S&T

EXPLAINER

Ashwin Prasad

In today's increasingly digitised world, internet connectivity is an absolute necessity, across both military and civilian domains. With Elon Musk's Starlink about to make its debut very soon in India, internet infrastructure is going to fundamentally change.

Why do we need satellite internet?

Ground-based networks use cables and towers. They are the most common form of internet provision, especially in densely populated urban areas. However, they have some limitations. Their reliance on physical infrastructure makes them economically unviable in sparsely populated regions. They are also vulnerable to disruptions from natural disasters such as floods and earthquakes. Furthermore, they often cannot meet the demand for on-the-go connectivity in remote locations or for temporary operations.

Satellite internet emerges as a powerful solution to these challenges. Functioning on a global scale, it provides extensive and resilient coverage. This coverage functions regardless of terrain or the presence of terrestrial infrastructure. It can be deployed rapidly to manage sudden demand surges, and also provides connectivity within moving platforms like airplanes and remote sites such as offshore oil rigs. Thus, satellite internet is not merely a backup system. It is a transformative technology with the potential to reshape the digital economy, civil infrastructure, and military strategy.

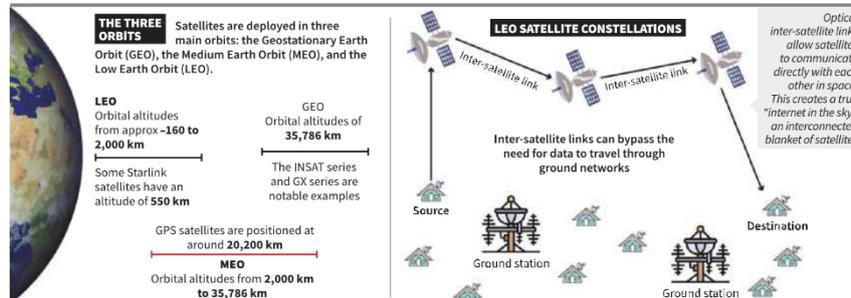
What are the features of satellite internet?

The advent of satellite mega-constellations such as Starlink signals a new era in space-based internet. These comprise hundreds or even thousands of satellites orbiting a few hundred kilometres above Earth. This "internet in the sky" offers a plethora of applications in military operations, disaster response, healthcare, agriculture, and transportation. However, this technology has a dual-use nature, serving both civil and military ends. This introduces complex security dynamics.

Contemporary events underscore this technology's profound impact. When Hurricane Harvey struck the Texas coast in 2017, it knocked out 70% of cell towers in affected regions. Viasat's satellite internet became a lifeline for coordinating rescue operations. Similarly, in the Russia-Ukraine war, SpaceX's Starlink has been pivotal for Ukrainian defence forces. They have relied on it for coordinating troop movements, medical evacuations, and drone operations. Ukrainians even fitted Starlink devices on drones to bypass Russian jamming systems. Satellite internet also enhances operational readiness in isolated conflict zones, as shown by the Indian Army's use of it on the Siachen Glacier. Conversely, its borderless nature facilitates illicit use. Security forces in India have confiscated smuggled Starlink devices from insurgent groups and drug rackets. These instances reveal that control over satellite internet infrastructure is becoming a new dimension of national power.

How does satellite internet work?

A satellite internet network is composed of a space segment and a ground segment. The space segment consists of the satellites in orbit, while the ground



segment includes all equipment on Earth that communicates with them. The satellites are the most capital-intensive component. They carry communication payloads for data transmission and have a service life of five to 20 years. Their deployment requires careful planning, especially concerning orbital altitude, which determines the satellite's capabilities and coverage. Satellites are deployed in three main orbits: the Geostationary Earth Orbit (GEO), the Medium Earth Orbit (MEO), and the Low Earth Orbit (LEO).

What are differences between satellites deployed in different orbits?

GEO satellites orbit at 35,786 km above the equator. They match the Earth's rotation, allowing them to remain stationary relative to a point on the ground. This high altitude allows a single GEO satellite to cover nearly one-third of the Earth's surface, though not the polar regions. Viasat's Global Xpress (GX) system is a notable example. GEO satellites are also typically large. They act as "beant-pipes," simply relaying signals back to Earth without processing them. Their significant drawback is high propagation latency. The long distance signals must travel result in delays, making GEO systems unsuitable for time-sensitive applications like video conferencing or real-time transactions.

MEO satellites operate at altitudes between 2,000 km and 35,786 km. They offer a compromise between GEO and LEO systems. Their latency is lower than that of GEO satellites, but they still require a constellation for global coverage. The O3b MEO constellation, for instance, consists of 20 satellites. However, their latency is often insufficient for many real-time applications, and the satellites remain large and costly to launch.

LEO satellites orbit at altitudes below 2,000 km. Their proximity to Earth results in very low latency. They are also smaller, often table-sized, making them

cheaper and quicker to deploy. Their main disadvantage is their smaller coverage area. A single Starlink LEO satellite's footprint is comparable to an Indian metropolitan city. To achieve global coverage, LEO systems form "mega-constellations". These are networks of hundreds or thousands of satellites working in unison. Starlink has over 7,000 satellites in orbit, with plans for up to 42,000.

How do mega-constellations work?

LEO mega-constellations leverage their numbers to turn limitations into strengths. The smaller satellites are capable of on-board signal processing. This enhances data transmission efficiency, improves signal quality, and allows for greater flexibility. This on-board intelligence simplifies the user terminals on the ground. Terminals become smaller, cheaper, and more accessible to individual households.

A key innovation was the use of optical inter-satellite links. These allow satellites to communicate directly with each other in space. This creates a true "internet in the sky," an interconnected blanket of satellites. This network can route data globally with minimal reliance on ground stations, reducing latency and increasing efficiency. However, maintaining continuous connectivity is a challenge. LEO satellites move at nearly 27,000 km per hour. They stay within a user's line of sight for only a few minutes. To ensure uninterrupted service, the network must seamlessly "hand-off" the connection from one satellite to the next. This is achieved with steerable antennas that can track multiple users and ground stations simultaneously, much like moving spotlights on a stage.

What are the applications of satellite internet?

For the end-user, modern LEO satellite internet is a major advancement. User terminals are now compact and easy to



Amid conflict: Servicemen of the Armed Forces of Ukraine set up a Starlink satellite internet system, amid Russia's attack on Ukraine, near Pokrovsk in the Donetsk region, Ukraine on April 10. REUTERS

Nations now recognise satellite internet as a new dimension of power.

It is imperative for countries like India to develop comprehensive strategies to integrate the technology into national resilience plans. India should also leverage it to bridge the digital divide and foster economic development

set up without professional help. However, the service is still more expensive than terrestrial broadband. While terminals cost around \$500, and monthly services start at about \$50, the cost is often justified for those in remote areas or in industries where connectivity is paramount.

The future promises even greater accessibility. Companies like AST SpaceMobile and Starlink are testing direct-to-smartphone services. This innovation could eliminate the need for separate user terminals altogether. As the technology becomes mainstream, specialised hardware may be integrated directly into devices like smartphones and laptops.

The applications for satellite internet are vast and transformative. In communications, it provides network access to remote areas and enables the Internet of Everything (IoE). In transportation, it will enhance navigation systems, support self-driving cars, and improve logistics. In public administration and disaster management, it can power smart cities, provide early warnings, and coordinate rescue efforts. The healthcare sector can benefit from telemedicine and remote patient monitoring. Agriculture can leverage it for precision farming and crop health analysis. It also has significant applications in environmental monitoring, energy exploration, tourism, and defence.

Therefore, satellite internet presents immense opportunities but also creates complex security and regulatory challenges. Nations now recognise satellite internet as a new dimension of power.

It is imperative for countries like India to develop comprehensive strategies to integrate the technology into national resilience plans. India should also leverage it to bridge the digital divide and foster economic development. Finally, active participation in shaping its international governance is crucial as these mega-constellations will define the next era of global connectivity and strategic advantage.

Ashwin Prasad is with the Takshashila Institution.

THE GIST

Ground-based networks use cables and towers. However, they have some limitations. Their reliance on physical infrastructure makes them economically unviable in sparsely populated regions.

When Hurricane Harvey struck the Texas coast in 2017, it knocked out 70% of cell towers in affected regions. Viasat's satellite internet became a lifeline for coordinating rescue operations.

For the end-user, modern LEO satellite internet is a major advancement. User terminals are now compact and easy to set up without professional help. However, the service is still more expensive than terrestrial broadband.



How does satellite internet work?

सैटेलाइट इंटरनेट कैसे काम करता है?

- In today's increasingly **digitised world**, internet connectivity is an **absolute necessity**, across both military and civilian domains. With **Elon Musk's Starlink** about to make its debut very soon in **India**, internet infrastructure is going to **fundamentally change**.

आज की तेजी से डिजिटाइज्ड दुनिया में, इंटरनेट कनेक्टिविटी सैन्य और नागरिक दोनों क्षेत्रों में एक अत्यावश्यक आवश्यकता है। एलन मस्क के स्टारलिंग के जल्द ही भारत में पदार्पण के साथ, इंटरनेट ढांचा मूलभूत रूप से बदलने वाला है।

Why do we need satellite internet?

हमें सैटेलाइट इंटरनेट की आवश्यकता क्यों है?

- Ground-based networks use cables and towers.** They are the most common form of internet provision, especially in **densely populated urban areas**. However, they have some limitations.
ग्राउंड-आधारित नेटवर्क केबल और टावर का उपयोग करते हैं। ये इंटरनेट प्रदाय का सबसे आम रूप हैं, विशेष रूप से घनी आबादी वाले शहरी क्षेत्रों में। हालांकि, इनमें कुछ सीमाएँ हैं।
- Their reliance on **physical infrastructure** makes them **economically unviable** in **sparsely populated regions**.
इनका भौतिक अवसंरचना पर निर्भर होना, उन्हें कम आबादी वाले क्षेत्रों में आर्थिक रूप से अव्यावहारिक बना देता है।
- They are also **vulnerable** to disruptions from **natural disasters** such as **floods and earthquakes**.
ये प्राकृतिक आपदाओं जैसे बाढ़ और भूकंप से होने वाले व्यवधानों के प्रति भी संवेदनशील होते हैं।
- Furthermore, they often cannot meet the demand for **on-the-go connectivity** in **remote locations** or for **temporary operations**.
इसके अलावा, वे अक्सर दूरस्थ स्थानों या अस्थायी अभियानों में चलते-फिरते कनेक्टिविटी की मांग को पूरा नहीं कर पाते।

Advantages of satellite internet

सैटेलाइट इंटरनेट के लाभ

- Satellite internet emerges as a **powerful solution** to these challenges.
सैटेलाइट इंटरनेट इन चुनौतियों के लिए एक शक्तिशाली समाधान के रूप में उभरता है।
- Functioning on a **global scale**, it provides **extensive** and **resilient coverage** regardless of terrain or terrestrial infrastructure.
यह वैश्विक स्तर पर कार्य करते हुए, भू-भाग या स्थलीय अवसंरचना की परवाह किए बिना विस्तृत और मजबूत कवरेज प्रदान करता है।
- Can be **deployed rapidly** to manage **sudden demand surges**.
इसे अचानक मांग में वृद्धि को संभालने के लिए तेजी से तैनात किया जा सकता है।
- Provides connectivity within moving platforms** like airplanes and **remote sites** such as offshore oil rigs.



यह विमानों जैसे गतिशील प्लेटफॉर्म और ऑफशोर ऑयल रिग जैसे दूरस्थ स्थलों में कनेक्टिविटी प्रदान करता है।

- Not merely a backup system, but a **transformative technology** with potential to reshape the **digital economy**, **civil infrastructure**, and **military strategy**.
यह केवल एक बैकअप सिस्टम नहीं है, बल्कि डिजिटल अर्थव्यवस्था, नागरिक अवसंरचना और सैन्य रणनीति को पुनः आकार देने की क्षमता वाली एक परिवर्तनकारी तकनीक है।

Features of satellite internet

सैटेलाइट इंटरनेट की विशेषताएँ

- Advent of **satellite mega-constellations** such as **Starlink** signals a new era in **space-based internet**.
स्टारलिनक जैसे सैटेलाइट मेगा-कॉन्स्टेलेशन का आगमन अंतरिक्ष-आधारित इंटरनेट के एक नए युग का संकेत देता है।
- **Comprise hundreds or thousands of satellites** orbiting a few hundred kilometres above Earth.
इसमें सैकड़ों या हजारों उपग्रह शामिल होते हैं जो पृथ्वी से कुछ सौ किलोमीटर ऊपर परिक्रमा करते हैं।
- Offers applications in **military operations**, **disaster response**, **healthcare**, **agriculture**, and **transportation**.
यह सैन्य अभियानों, आपदा प्रतिक्रिया, स्वास्थ्य सेवा, कृषि, और परिवहन में उपयोगी है।
- Has a **dual-use nature**, serving both **civil** and **military ends**, introducing **complex security dynamics**.
इसका द्वैध उपयोग है, जो नागरिक और सैन्य दोनों उद्देश्यों की पूर्ति करता है, जिससे जटिल सुरक्षा गतिशीलता उत्पन्न होती है।

Real-world impact examples

वास्तविक दुनिया के प्रभाव के उदाहरण

- **Hurricane Harvey (2017)** in Texas knocked out **70%** of cell towers in affected regions. **Viasat's satellite internet** became a **lifeline** for rescue operations.
हरिकेन हार्वे (2017) में टेक्सास के प्रभावित क्षेत्रों में **70%** सेल टावर ठप हो गए। वायासैट का सैटेलाइट इंटरनेट बचाव अभियानों के लिए जीवनरेखा बन गया।
- In the **Russia-Ukraine war**, **SpaceX's Starlink** was pivotal for Ukrainian defence forces for **troop movements**, **medical evacuations**, and **drone operations**.
रूस-यूक्रेन युद्ध में, स्पेसएक्स का स्टारलिनक यूक्रेनी रक्षा बलों के लिए सैनिकों की आवाजाही, चिकित्सा निकासी, और ड्रोन अभियानों में अहम रहा।
- Ukrainians fitted Starlink devices on drones to **bypass Russian jamming systems**.
यूक्रेनियों ने रूसी जैमिंग सिस्टम को दरकिनार करने के लिए ड्रोन पर स्टारलिनक डिवाइस लगाए।
- **Indian Army used satellite internet on the Siachen Glacier** to enhance **operational readiness in isolated conflict zones**.
भारतीय सेना ने सियाचिन ग्लेशियर पर अलग-थलग संघर्ष क्षेत्रों में संचालन तत्परता बढ़ाने के लिए सैटेलाइट इंटरनेट का उपयोग किया।



Security concerns

सुरक्षा चिंताएँ

- **Borderless nature facilitates illicit use.**
सीमाहीन प्रकृति अवैध उपयोग को आसान बनाती है।
- Security forces in India confiscated **smuggled Starlink devices** from **insurgent groups** and **drug rackets**.
भारत में सुरक्षा बलों ने विद्रोही समूहों और ड्रग रैकेट से तस्करी किए गए स्टारलिंक उपकरण जब्त किए।
- Control over satellite internet infrastructure is becoming a **new dimension of national power**.
सैटेलाइट इंटरनेट अवसंरचना पर नियंत्रण **राष्ट्रीय शक्ति का नया आयाम** बनता जा रहा है।

How does satellite internet work?

सैटेलाइट इंटरनेट कैसे काम करता है?

- **A satellite internet network is composed of a space segment and a ground segment.**
- एक **सैटेलाइट इंटरनेट नेटवर्क** में एक **अंतरिक्ष खंड** और एक **भूमि खंड** होता है।
- The space segment consists of the **satellites in orbit**, while the ground segment includes all **equipment on Earth** that communicates with them.
- अंतरिक्ष खंड में **कक्षा में उपग्रह** होते हैं, जबकि भूमि खंड में पृथ्वी पर सभी **उपकरण** शामिल होते हैं जो उनसे संपर्क करते हैं
- The **satellites** are the most **capital-intensive** component
- **उपग्रह** सबसे **पूंजी-गहन** घटक होते हैं।
- They carry **communication payloads** for **data transmission** and have a service life of **five to 20 years**.
वे **डेटा ट्रांसमिशन** के लिए **कम्युनिकेशन पेल्डोइस** ले जाते हैं और उनकी सेवा अवधि **5 से 20 वर्ष** होती है।
- Their deployment requires careful planning, especially concerning **orbital altitude**, which determines the satellite's **capabilities** and **coverage**.
उनकी तैनाती के लिए सावधानीपूर्वक योजना की आवश्यकता होती है, विशेषकर **कक्षीय ऊंचाई** के संबंध में, जो उपग्रह की **क्षमताओं** और **कवरेज** को निर्धारित करती है।
- Satellites are deployed in three main orbits: the **Geostationary Earth Orbit (GEO)**, the **Medium Earth Orbit (MEO)**, and the **Low Earth Orbit (LEO)**.
उपग्रह तीन मुख्य कक्षाओं में तैनात किए जाते हैं: **जियोस्टेशनरी अर्थ ऑर्बिट (GEO)**, **मीडियम अर्थ ऑर्बिट (MEO)** और **लो अर्थ ऑर्बिट (LEO)**।

What are differences between satellites deployed in different orbits?

विभिन्न कक्षाओं में तैनात उपग्रहों के बीच क्या अंतर है?

- **GEO satellites** orbit at **35,786 km** above the **equator**.
GEO उपग्रह भूमध्य रेखा से **35,786 किमी** ऊपर परिक्रमा करते हैं।
- They match the **Earth's rotation**, allowing them to remain **stationary** relative to a point on the ground.
वे **पृथ्वी के घूर्णन** से मेल खाते हैं, जिससे वे जमीन पर एक बिंदु के सापेक्ष **स्थिर** रहते हैं।



- This high altitude allows a single GEO satellite to cover **nearly one-third of the Earth's surface**, though not the **polar regions**.
यह ऊँचाई एक GEO उपग्रह को लगभग एक-तिहाई पृथ्वी की सतह को कवर करने देती है, हालांकि ध्रुवीय क्षेत्रों को नहीं।
- **Viasat's Global Xpress (GX) system** is a notable example.
वायसैट का ग्लोबल एक्सप्रेस (GX) सिस्टम एक उल्लेखनीय उदाहरण है।
- **GEO satellites are also typically large**. They act as **"bent-pipes"**, simply relaying signals back to Earth without processing them.
GEO उपग्रह आमतौर पर बड़े होते हैं। वे "बेंट-पाइप्स" की तरह कार्य करते हैं, जो केवल संकेतों को बिना संसाधित किए पृथ्वी पर वापस भेजते हैं।
- Their significant drawback is **high propagation latency**. The long distance signals must travel results in **delays**, making GEO systems unsuitable for **time-sensitive applications** like **video conferencing** or **real-time transactions**.
उनकी एक बड़ी कमी उच्च प्रसार विलंब है। संकेतों को लंबी दूरी तय करनी पड़ती है, जिससे देरी होती है, जो GEO सिस्टम को वीडियो कॉन्फ्रेंसिंग या रियल-टाइम लेनदेन जैसी समय-संवेदनशील अनुप्रयोगों के लिए अनुपयुक्त बनाती है।
- **MEO satellites operate at altitudes between 2,000 km and 35,786 km**.
MEO उपग्रह 2,000 किमी से 35,786 किमी के बीच की ऊंचाई पर काम करते हैं।
- They offer a **compromise** between GEO and LEO systems.
वे GEO और LEO सिस्टम के बीच एक समझौता प्रदान करते हैं।
- Their **latency is lower than that of GEO satellites**, but they still require a **constellation for global coverage**.
उनकी विलंबता GEO उपग्रहों से कम होती है, लेकिन वैश्विक कवरेज के लिए उन्हें अभी भी एक नक्षत्र की आवश्यकता होती है।
- The **O3b MEO constellation**, for instance, consists of **20 satellites**.
उदाहरण के लिए, O3b MEO नक्षत्र में 20 उपग्रह होते हैं।
- However, their latency is often **insufficient** for many **real-time applications**, and the satellites remain **large** and **costly to launch**.
हालांकि, उनकी विलंबता कई रियल-टाइम अनुप्रयोगों के लिए अक्सर अपर्याप्त होती है, और उपग्रह बड़े और लॉन्च करने में महंगे बने रहते हैं।
- **LEO satellites orbit at altitudes below 2,000 km**.
LEO उपग्रह 2,000 किमी से कम ऊंचाई पर परिक्रमा करते हैं।
- Their **proximity** to Earth results in **very low latency**.
उनकी पृथ्वी से निकटता के कारण बहुत कम विलंबता होती है।
- They are also **smaller**, often **table-sized**, making them **cheaper** and **quicker to deploy**.
वे छोटे होते हैं, अक्सर टेबल के आकार के, जिससे वे सस्ते और जल्दी तैनात किए जा सकते हैं।
- Their main disadvantage is their **smaller coverage area**.
उनकी मुख्य कमी उनका छोटा कवरेज क्षेत्र है।
- A single **Starlink LEO satellite's footprint** is comparable to an **Indian metropolitan city**.
एक स्टारलिंग LEO उपग्रह का फुटप्रिंट एक भारतीय महानगरीय शहर के बराबर होता है।
- To achieve **global coverage**, LEO systems form **"mega-constellations"** — networks of **hundreds or thousands of satellites** working in unison.



वैश्विक कवरेज प्राप्त करने के लिए, LEO सिस्टम "मेगा-नक्षत्र" बनाते हैं — सैकड़ों या हजारों उपग्रहों के नेटवर्क जो मिलकर काम करते हैं।

- Starlink has over 7,000 satellites in orbit, with plans for up to 42,000. स्टारलिनक के पास कक्षा में 7,000 से अधिक उपग्रह हैं, और 42,000 तक की योजना है।

How do mega-constellations work?

मेगा-कॉन्स्टेलेशन कैसे काम करते हैं?

- **LEO mega-constellations** leverage their numbers to turn **limitations into strengths**.
LEO मेगा-कॉन्स्टेलेशन अपनी संख्या का लाभ उठाकर **सीमाओं को ताकत में बदलते हैं**।
- The smaller satellites are capable of **on-board signal processing**.
छोटे उपग्रह **ऑन-बोर्ड सिग्नल प्रोसेसिंग** करने में सक्षम होते हैं।
- This enhances **data transmission efficiency**, improves **signal quality**, and allows for greater **flexibility**.
यह डेटा ट्रांसमिशन दक्षता बढ़ाता है, सिग्नल गुणवत्ता में सुधार करता है और अधिक लचीलापन प्रदान करता है।
- This **on-board intelligence** simplifies the **user terminals** on the ground, making them **smaller, cheaper**, and more **accessible** to households.
यह **ऑन-बोर्ड इंटेलिजेंस** ज़मीनी **यूजर टर्मिनल** को सरल बनाता है, जिससे वे छोटे, सस्ते और घरों के लिए अधिक सुलभ हो जाते हैं।
- A key innovation was the use of **optical inter-satellite links**, allowing satellites to **communicate directly** in space.
एक प्रमुख नवाचार **ऑप्टिकल इंटर-सैटेलाइट लिंक** का उपयोग था, जो उपग्रहों को अंतरिक्ष में **सीधे संचार** की अनुमति देता है।
- This creates a true **"internet in the sky"**, enabling global **data routing** with minimal reliance on **ground stations**, thus reducing **latency** and increasing **efficiency**.
यह एक वास्तविक **"आसमान में इंटरनेट"** बनाता है, जो **ग्राउंड स्टेशन** पर न्यूनतम निर्भरता के साथ वैश्विक डेटा **रूटिंग** सक्षम करता है, जिससे **विलंब** कम होता है और **दक्षता** बढ़ती है।
- **Continuous connectivity** is a challenge because LEO satellites move at nearly **27,000 km/h**, staying within a user's line of sight for only a **few minutes**.
निरंतर कनेक्टिविटी एक चुनौती है क्योंकि LEO उपग्रह लगभग **27,000 किमी/घंटा** की गति से चलते हैं और उपयोगकर्ता की दृष्टि में केवल **कुछ मिनट** रहते हैं।
- To ensure uninterrupted service, the network must seamlessly **hand-off** the connection from one satellite to another.
निर्बाध सेवा सुनिश्चित करने के लिए, नेटवर्क को एक उपग्रह से दूसरे में कनेक्शन को सहजता से **हैंड-ऑफ** करना चाहिए।
- This is achieved with **steerable antennas** that can track multiple users and ground stations simultaneously, like **moving spotlights** on a stage.
यह **स्टियरेबल एंटेना** के माध्यम से किया जाता है, जो मंच पर **चलते स्पाटलाइट** की तरह, एक साथ कई उपयोगकर्ताओं और ग्राउंड स्टेशनों को ट्रैक कर सकते हैं।

What are the applications of satellite internet?

सैटेलाइट इंटरनेट के अनुप्रयोग क्या हैं?



- For end-users, modern **LEO satellite internet** is a **major advancement**.
अंतिम उपयोगकर्ताओं के लिए, आधुनिक **LEO सैटेलाइट इंटरनेट** एक **बड़ी प्रगति** है।
- User terminals are **compact** and **easy to set up** without professional help.
उपयोगकर्ता टर्मिनल **कॉम्पैक्ट** होते हैं और बिना पेशेवर मदद के **आसानी से स्थापित** किए जा सकते हैं।
- The service is still **more expensive** than terrestrial broadband.
यह सेवा अभी भी स्थलीय ब्रॉडबैंड की तुलना में **महंगी** है।
- **Terminals cost around \$500, and monthly service starts at about \$50.**
टर्मिनल की कीमत लगभग **\$500** है, और मासिक सेवा लगभग **\$50** से शुरू होती है।
- Cost is justified for **remote areas** or industries where **connectivity is paramount**.
यह लागत **दूरस्थ क्षेत्रों** या उन उद्योगों में उचित है जहाँ **कनेक्टिविटी** सर्वोपरि है।
- **Future innovations** like **direct-to-smartphone services** by AST SpaceMobile and Starlink may remove the need for separate terminals.
AST स्पेसमोबाइल और स्टारलिनक जैसी कंपनियों द्वारा **डायरेक्ट-टू-स्मार्टफोन सेवाओं** जैसे भविष्य के नवाचार अलग टर्मिनल की आवश्यकता को समाप्त कर सकते हैं।
- Specialised hardware may be integrated directly into **smartphones** and **laptops**.
विशेष हार्डवेयर सीधे **स्मार्टफोन** और **लैपटॉप** में एकीकृत किया जा सकता है।

Sector-wise applications

क्षेत्रवार अनुप्रयोग

- **Communications:** Provides network access to **remote areas** and enables **Internet of Everything (IoE)**.
संचार: **दूरस्थ क्षेत्रों** में नेटवर्क एक्सेस प्रदान करता है और **इंटरनेट ऑफ एवरीथिंग (IoE)** सक्षम करता है।
- **Transportation:** Enhances **navigation systems**, supports **self-driving cars**, and improves **logistics**.
परिवहन: नेविगेशन सिस्टम को बढ़ाता है, **स्वचालित कारों** को समर्थन देता है और **लॉजिस्टिक्स** में सुधार करता है।
- **Public administration & disaster management:** Powers **smart cities**, provides **early warnings**, and coordinates **rescue efforts**.
लोक प्रशासन और आपदा प्रबंधन: **स्मार्ट शहरों** को शक्ति देता है, **प्रारंभिक चेतावनियाँ** प्रदान करता है और **बचाव कार्यों** का समन्वय करता है।
- **Healthcare:** Enables **telemedicine** and **remote patient monitoring**.
स्वास्थ्य सेवा: **टेलीमेडिसिन** और **दूरस्थ रोगी निगरानी** को सक्षम करता है।
- **Agriculture:** Supports **precision farming** and **crop health analysis**.
कृषि: **सटीक खेती** और **फसल स्वास्थ्य विश्लेषण** का समर्थन करता है।
- Other areas: **Environmental monitoring**, **energy exploration**, **tourism**, and **defence**.
अन्य क्षेत्र: **पर्यावरण निगरानी**, **ऊर्जा अन्वेषण**, **पर्यटन**, और **रक्षा**।

Strategic importance

रणनीतिक महत्व

- Satellite internet offers **immense opportunities** but also **complex security and regulatory challenges**.



सैटेलाइट इंटरनेट असीम अवसर प्रदान करता है लेकिन साथ ही जटिल सुरक्षा और नियामक चुनौतियाँ भी।

- Nations recognise it as a **new dimension of power**.
राष्ट्र इसे शक्ति का नया आयाम मानते हैं।
- Countries like **India** must develop **comprehensive strategies** to integrate it into **national resilience plans**.
भारत जैसे देशों को इसे **राष्ट्रीय लचीलापन योजनाओं** में एकीकृत करने के लिए **व्यापक रणनीतियाँ** विकसित करनी चाहिए।
- Should be leveraged to **bridge the digital divide** and foster **economic development**.
इसे **डिजिटल विभाजन को पाटने** और **आर्थिक विकास** को बढ़ावा देने के लिए उपयोग करना चाहिए।
- Active participation in shaping **international governance** is crucial as **mega-constellations** will define the next era of **global connectivity** and **strategic advantage**.
अंतर्राष्ट्रीय शासन के निर्माण में सक्रिय भागीदारी महत्वपूर्ण है क्योंकि **मेगा-कॉन्स्टेलेशन वैश्विक कनेक्टिविटी** और **रणनीतिक लाभ** के अगले युग को परिभाषित करेंगे।

What are the new rules on chemically contaminated sites?

What were the tasks under the Capacity Building Program for Industrial Pollution Management Project?

GS III: DM

Jacob Koshy

The story so far:

The Environment Ministry has notified new rules under the Environment Protection Act that lays out a process for addressing sites with chemical contamination. Called the Environment Protection (Management of Contaminated Sites) Rules, 2025, they give a legal structure to a process of addressing chemical contamination, that until now was missing despite several such sites already identified across the country.

What are contaminated sites?

Contaminated sites, according to the Central Pollution Control Board, are those where hazardous and other wastes were dumped historically, and which has most likely resulted in contamination of soil, groundwater and surface water that pose a risk to human health and the

environment. Some of the sites were developed when there was no regulation on management of hazardous wastes. In some instances, polluters responsible for contamination have either closed down their operations or the cost of remediation is beyond their capacity. These may include landfills, dumps, waste storage and treatment sites, spill-sites, and chemical waste handling and storage sites. There are 103 such sites identified across the country. Only in seven sites has remedial operation commenced, which involves cleaning the contaminated soil, groundwater, surface water and sediments by adopting appropriate technologies.

Why were these rules necessary?

The Environment Ministry had, in 2010, initiated a Capacity Building Program for Industrial Pollution Management Project to formulate the National Program for Remediation of Polluted Sites. This

consisted of three broad tasks – creating an inventory of probable contaminated sites; developing a guidance document for assessment and remediation of contaminated sites; and developing a legal, institutional and financial framework for the remediation of contaminated sites. While the first two steps have been in place, the last step, regarding a legal codification, remained unfulfilled. The rules that were made public on July 25 were part of this legal codification process.

Under these rules, the district administration would prepare half-yearly reports on “suspected contaminated sites.” A State board, or a ‘reference organisation’ would examine these sites and provide a “preliminary assessment” within 90 days of being thus informed. Following these, it would have another three months to make a detailed survey and finalise if these sites were indeed ‘contaminated.’ This would involve



New Rules on Chemically Contaminated Sites रासायनिक रूप से प्रदूषित स्थलों पर नए नियम

The Environment Ministry has notified new rules under the **Environment Protection Act for addressing chemical contamination sites**. These are called the **Environment Protection (Management of Contaminated Sites) Rules, 2025**, giving a legal structure to handle such contamination, which was missing earlier despite many identified sites in the country.

पर्यावरण मंत्रालय ने पर्यावरण संरक्षण अधिनियम के तहत रासायनिक प्रदूषण स्थलों को संबोधित करने के लिए नए नियम अधिसूचित किए हैं। इन्हें पर्यावरण संरक्षण (प्रदूषित स्थलों का प्रबंधन) नियम, 2025 कहा जाता है, जो ऐसे प्रदूषण को संभालने के लिए कानूनी ढांचा प्रदान करते हैं, जो पहले अनुपस्थित था, जबकि देश में कई ऐसे स्थल पहले से पहचाने गए थे।

What are contaminated sites?

प्रदूषित स्थल क्या हैं?

- As per the **Central Pollution Control Board**, contaminated sites are those where hazardous and other wastes were historically dumped, resulting in contamination of **soil, groundwater, and surface water**, posing a risk to health and the environment. **केंद्रीय प्रदूषण नियंत्रण बोर्ड** के अनुसार, प्रदूषित स्थल वे होते हैं जहां ऐतिहासिक रूप से खतरनाक और अन्य कचरे का निस्तारण किया गया था, जिससे **मिट्टी, भूजल और सतही जल** का प्रदूषण हुआ, जो स्वास्थ्य और पर्यावरण के लिए जोखिम पैदा करता है।
- Some sites were developed before any hazardous waste management regulation existed. In some cases, polluters have shut operations or cannot afford remediation. कुछ स्थल उस समय विकसित किए गए थे जब खतरनाक कचरे के प्रबंधन के नियम नहीं थे। कुछ मामलों में प्रदूषकों ने संचालन बंद कर दिया है या वे सुधार की लागत वहन नहीं कर सकते।
- Such sites include **landfills, dumps, waste storage/treatment sites, spill-sites, and chemical waste handling/storage sites**. 103 such sites exist in India, but remedial work has started only at **seven**. ऐसे स्थलों में **लैंडफिल, डंप, अपशिष्ट भंडारण/उपचार स्थल, रिसाव स्थल और रासायनिक अपशिष्ट प्रबंधन/भंडारण स्थल** शामिल हैं। भारत में ऐसे 103 स्थल मौजूद हैं, लेकिन सुधार कार्य केवल सात पर शुरू हुआ है।

Why were these rules necessary?

ये नियम क्यों आवश्यक थे?

- In 2010, the Environment Ministry launched the **Capacity Building Program for Industrial Pollution Management Project** to create the **National Program for Remediation of Polluted Sites**. 2010 में, पर्यावरण मंत्रालय ने औद्योगिक प्रदूषण प्रबंधन परियोजना के लिए क्षमता निर्माण कार्यक्रम शुरू किया, ताकि प्रदूषित स्थलों के सुधार के लिए राष्ट्रीय कार्यक्रम बनाया जा सके।
- This had **three tasks**:
 - **Create an inventory of probable contaminated sites**. संभावित प्रदूषित स्थलों की सूची बनाना।
 - **Develop a guidance document for assessment and remediation**. आकलन और सुधार के लिए मार्गदर्शक दस्तावेज बनाना।
 - **Develop a legal, institutional, and financial framework**. कानूनी, संस्थागत और वित्तीय ढांचा बनाना।



- While the **first two tasks** were completed, the **legal codification** step was pending. The rules released on **July 25** complete this legal step.
जबकि पहले दो कार्य पूरे हो चुके थे, कानूनी संहिताकरण का चरण लंबित था। 25 जुलाई को जारी किए गए नियम इस कानूनी प्रक्रिया को पूरा करते हैं।
- Under these rules, **district administration will prepare half-yearly reports on suspected contaminated sites**. A **State Board or reference organisation will make a preliminary assessment within 90 days** and then take **three months more for a detailed survey to confirm contamination**.
इन नियमों के तहत, जिला प्रशासन संदिग्ध प्रदूषित स्थलों पर **अर्धवार्षिक रिपोर्ट** तैयार करेगा। एक राज्य बोर्ड या संदर्भ संगठन 90 दिनों में प्रारंभिक आकलन करेगा और फिर प्रदूषण की पुष्टि के लिए विस्तृत सर्वेक्षण करने में **तीन महीने** और लगाएगा।

How artificial intelligence is tackling mathematical problem-solving

Even as it became a popular sensation, **ChatGPT was infamous both for hallucinations (making up facts) and for simple arithmetic mistakes**. However, after many advances, 'reasoning' models have reached the level of **Maths Olympiad Gold medallists**

GS III: S&T

Siddhartha Gadgil

The International Mathematical Olympiad (IMO) is arguably the leading mathematical problem-solving competition. Every year, high school students from around the world attempt six problems over the span of three hours. Students whose scores cross a threshold, roughly corresponding to solving five of the six problems, obtain Gold medals, with Silver and Bronze medals for those crossing other thresholds. The problems do not require advanced mathematical knowledge, but instead test for mathematical creativity. They are always new, and it is ensured that no similar problems are online or in the literature.

The AI gold medallist

IMO 2025 had some unusual participants. Even before the Olympiad closed, OpenAI, the maker of ChatGPT, announced that an experimental reasoning model of theirs had answered the Olympiad at the Gold medal level, following the same time limits as the human participants. Remarkably, this was not a model specifically trained or designed for the IMO, but a general-purpose reasoning model with reasoning powers good enough for an IMO Gold.

The OpenAI announcement raised some issues. Many felt that announcing an AI result while the IMO had not concluded overshadowed the

achievements of the human participants. Also, the Gold medal score was graded and given by former IMO medalists hired by OpenAI, and some disputed whether the grading was correct. However, a couple of days later, another announcement came. Google-DeepMind attempted the IMO officially, with an advanced version of Gemini Deep Think. Three days after the Olympiad, with the permission of the IMO organisers, they announced that they had obtained a score at the level of a Gold medal. The IMO president Prof. Gregor Dolinar stated, "We can confirm that Google DeepMind has reached the much-desired milestone, earning 35 out of a possible 42 points – a gold medal score. Their solutions were astonishing in many respects. IMO graders found them to be clear, precise and most of them easy to follow."

Stages of development

Even as it became a popular sensation, ChatGPT was infamous both for hallucinations (making up facts) and for simple arithmetic mistakes. Both these would make solving even modest mathematical problems mostly impossible.

The first advance that greatly reduced these errors, which came a few months after the launch of ChatGPT, was the use of so-called agents. Specifically, models were now able to use web searches to gather accurate information, and Python interpreters to run programs to perform calculations and check reasoning using

numerical experiments. These made the models dramatically more accurate, and good enough to solve moderately hard mathematical problems. However, as a single error in a mathematical solution makes the solution invalid, these were not yet accurate enough to reach IMO (or research) level.

Greater accuracy can be obtained by pairing language models with formal proof systems such as the Lean prover – a computer software that can understand and check proofs. Indeed, for IMO 2024 such a system from Google-DeepMind called AlphaProof obtained a silver medal score (but it ran for two days).

Finally, a breakthrough came with the so-called reasoning models, such as o3 from OpenAI and Google-DeepMind's Gemini-2.5-pro. These models are perhaps better described as internal monologue models. Before answering a complex question, they generate a monologue considering approaches, carrying them out, revisiting their proposed solutions, sometimes dithering and starting all over again, before finally giving a solution with which they are satisfied. It were such models, with some additional advances, that got Olympiad Gold medal scores.

Analogical reasoning and combining ingredients from different sources gives language models some originality, but probably not enough for hard and novel problems. However, verification either through the internal consistency of reasoning models or, better still, checking

by the Lean prover, allows training by trying a large number of things and seeing what works, in the same way that AI systems became chess champions starting with just the rules.

Such reinforcement learning has allowed recent models to go beyond training data by creating their own synthetic data.

The implications

Olympiad problems, for both humans and AIs, are not ends in themselves but tests of mathematical problem-solving ability. There are other aspects of research besides problem-solving.

Growing anecdotal experiences suggest that AI systems have excellent capabilities in many of these too, such as suggesting approaches and related problems.

However, the crucial difference between problem-solving and research/development is scale. Research involves working for months or years without errors creeping in, and without wandering off in fruitless directions. As mentioned earlier, coupling models with the Lean prover can prevent errors. Indications are that it is only a matter of time before this is successful.

In the meantime, these models can act as powerful collaborators with human researchers, greatly accelerating research and development in all areas involving mathematics. The era of the super-scientist is here.

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How Artificial Intelligence is Tackling Mathematical Problem-Solving

कृत्रिम बुद्धिमत्ता गणितीय समस्या-समाधान को कैसे संभाल रही है

- Even as it became a popular sensation, **ChatGPT was infamous for hallucinations (making up facts) and simple arithmetic mistakes**. However, after many advances, reasoning models have reached the level of **Maths Olympiad Gold medallists**.
लोकप्रिय होने के बावजूद, ChatGPT गलत कल्पनाओं (तथ्यों को गढ़ना) और



साधारण अंकगणितीय गलतियों के लिए कुख्यात था। हालांकि, कई प्रगतियों के बाद, तर्क मॉडल गणित ओलंपियाड स्वर्ण पदक विजेताओं के स्तर तक पहुंच गए हैं।

The International Mathematical Olympiad (IMO)

अंतर्राष्ट्रीय गणितीय ओलंपियाड (IMO)

- The **IMO** is the leading mathematical problem-solving competition. Every year, **high school students** from around the world attempt **six problems** in **three hours**.
IMO अग्रणी गणितीय समस्या-समाधान प्रतियोगिता है। हर साल, दुनिया भर के **हाई स्कूल छात्र तीन घंटे में छह समस्याएं** हल करने का प्रयास करते हैं।
- Students scoring above a threshold (about solving **five of six problems**) get **Gold medals**; others get **Silver** and **Bronze**. Problems test **mathematical creativity**, not advanced knowledge, and are always new.
छात्र जो एक निश्चित सीमा से अधिक अंक (लगभग **छह में से पांच समस्याओं** को हल करके) प्राप्त करते हैं, उन्हें **स्वर्ण पदक** मिलते हैं; अन्य को **रजत** और **कांस्य** मिलते हैं। समस्याएं **गणितीय रचनात्मकता** की परीक्षा लेती हैं, न कि उन्नत ज्ञान की, और हमेशा नई होती हैं।

The AI Gold Medallist

एआई स्वर्ण पदक विजेता

- In **IMO 2025**, before it closed, **OpenAI** announced an experimental **reasoning model** that achieved **Gold medal level** within the same time limits as humans. This was not trained specifically for IMO but was a **general-purpose reasoning model**.
IMO 2025 में, इसके समाप्त होने से पहले, **OpenAI** ने एक प्रायोगिक **तर्क मॉडल** की घोषणा की जिसने मनुष्यों के समान समय सीमा में **स्वर्ण पदक स्तर** हासिल किया। यह विशेष रूप से IMO के लिए प्रशिक्षित नहीं था बल्कि एक **सामान्य प्रयोजन तर्क मॉडल** था।
- Some felt the announcement overshadowed human achievements. Also, grading was done by **former IMO medallists** hired by OpenAI, which some disputed.
कुछ लोगों को लगा कि इस घोषणा ने मानव उपलब्धियों को पीछे छोड़ दिया। साथ ही, ग्रेडिंग **पूर्व IMO पदक विजेताओं** द्वारा की गई थी जिन्हें OpenAI ने नियुक्त किया था, जिस पर कुछ ने आपत्ति जताई।
- A few days later, **Google DeepMind** officially attempted IMO with **Gemini Deep Think**, scoring **35/42 points** (Gold medal score), confirmed by the **IMO president**. Solutions were "clear, precise, and easy to follow."
कुछ दिनों बाद, **गूगल डीपमाइंड** ने आधिकारिक रूप से **जेमिनी डीप थिंक** के साथ IMO में भाग लिया, **35/42 अंक** (स्वर्ण पदक स्कोर) प्राप्त किया, जिसकी पुष्टि **IMO अध्यक्ष** ने की। समाधान "स्पष्ट, सटीक और पालन करने में आसान" थे।

Stages of Development

विकास के चरण

- Early **ChatGPT** had hallucinations and **arithmetic errors**, making serious problem-solving impossible.
प्रारंभिक **ChatGPT** में गलत कल्पनाएं और **अंकगणितीय त्रुटियां** थीं, जिससे गंभीर समस्या-समाधान असंभव हो गया।
- The first big advance came with **agents** (web searches + Python interpreters), allowing accurate info gathering and calculation checks. Good for moderately hard problems but still not IMO level.
पहली बड़ी प्रगति **एजेंट्स** (वेब खोज + पाइथन इंटरप्रेटर) के साथ आई, जिससे सटीक जानकारी एकत्र करना और गणना की जांच संभव हुई। मध्यम कठिन समस्याओं के लिए अच्छा था, लेकिन अभी भी IMO स्तर नहीं था।



- Pairing with **formal proof systems** like **Lean prover** improved accuracy. In **IMO 2024**, **AlphaProof** from Google DeepMind scored a Silver **medal** (but took two days).
Lean prover जैसे औपचारिक प्रमाण प्रणालियों के साथ जोड़ने से सटीकता में सुधार हुआ। **IMO 2024** में, गूगल डीपमाइंड का **अल्फाप्रूफ** ने **रजत पदक** का स्कोर प्राप्त किया (लेकिन इसमें दो दिन लगे)।
- Breakthrough came with **reasoning models** like **o3** (OpenAI) and **Gemini-2.5-pro** (DeepMind) that use an **internal monologue** to think, reconsider, and refine before answering. These reached **Gold medal scores**.
o3 (OpenAI) और **Gemini-2.5-pro** (DeepMind) जैसे **तर्क मॉडल** में सफलता मिली, जो उत्तर देने से पहले सोचने, पुनर्विचार करने और सुधारने के लिए **आंतरिक एकालाप** का उपयोग करते हैं। इनसे **स्वर्ण पदक स्कोर** हासिल हुआ।
- **Analogical reasoning** and combining info from multiple sources gave originality, but verification via **Lean prover** made solutions more reliable.
समानता-आधारित तर्क और कई स्रोतों से जानकारी मिलाने से मौलिकता आई, लेकिन **Lean prover** के माध्यम से सत्यापन ने समाधानों को अधिक विश्वसनीय बना दिया।
- **Reinforcement learning** allowed models to generate their own synthetic data beyond training datasets.
रीइन्फोर्समेंट लर्निंग ने मॉडलों को अपने प्रशिक्षण डेटा से परे स्वयं का सिंथेटिक डेटा बनाने की अनुमति दी।

The Implications प्रभाव

- IMO problems are tests of mathematical problem-solving, not ends in themselves. AI also shows strength in suggesting approaches and related problems.
IMO की समस्याएं गणितीय समस्या-समाधान की परीक्षा हैं, अपने आप में लक्ष्य नहीं। एआई दृष्टिकोण और संबंधित समस्याएं सुझाने में भी मजबूत है।
- Research needs **long-term accuracy** and avoiding fruitless directions. Pairing with **Lean prover** can ensure error-free work.
शोध में **दीर्घकालिक सटीकता** और बेकार दिशाओं से बचना आवश्यक है। **Lean prover** के साथ जोड़ने से त्रुटिरहित कार्य सुनिश्चित हो सकता है।
- Soon, AI could be a **powerful collaborator** with human researchers, accelerating progress in all math-related fields.
जल्द ही, एआई मानव शोधकर्ताओं का **शक्तिशाली सहयोगी** बन सकता है, जो गणित से जुड़े सभी क्षेत्रों में प्रगति को तेज करेगा।