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THE HINDU NEWSPAPER

DAILY CURRENT AFFAIRS

15 APRIL 2025

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15_04_2025 DAILY CURRENT AFFAIRS

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

1. **St. Mary's Basilica in Kochi remains closed for another Holy Week**

   कोच्चि में सेंट मैरी बेसिलिका एक और होली वीक के लिए बंद रहेगा

2. **ASI seeks to shed new light on Dwarka through explorations**

   ASI द्वारा खोजों के माध्यम से द्वारका पर नई रोशनी डालने का प्रयास

3. **History as Battlefield — The Perils of Reversing the Past**

   इतिहास एक युद्धभूमि के रूप में — अतीत को पलटने के ख़तरों पर विचार

4. **Feminism for Polarised Times**

   ध्रुवीकृत समय के लिए नारीवाद

GS Paper I: A&C

A view of the newly constructed Kalighat skywalk which was inaugurated by Chief Minister Mamata Banerjee on the eve of Poila Baishak, the Bengali New Year, in Kolkata on Monday. PTI

Pohela Boishakh
पोहेला बोइशाख

- **Pohela Boishakh**, also known as **Bengali New Year**, is celebrated on **April 14** in **Bangladesh** and on **April 15** in the Indian states of **West Bengal**, **Tripura**, **Jharkhand**, and **Assam**.
  पोहेला बोइशाख, जिसे बांग्ला नववर्ष भी कहा जाता है, 14 अप्रैल को बांग्लादेश में और 15 अप्रैल को भारत के पश्चिम बंगाल, त्रिपुरा, झारखंड, और असम राज्यों में मनाया जाता है।

- It marks the **first day of the Bengali calendar** and is a **significant cultural event** for Bengali communities worldwide.
  यह बांग्ला कैलेंडर का पहला दिन होता है और यह बांग्ला समुदायों के लिए एक महत्वपूर्ण सांस्कृतिक उत्सव है।

- **Origin**: The festival's roots trace back to the **Mughal era**, particularly during the reign of **Emperor Akbar** in the **16th century**.
  उद्गम: इस त्योहार की जड़ें मुगल काल से जुड़ी हैं, विशेषकर 16वीं शताब्दी में सम्राट अकबर के शासनकाल से।

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- He introduced the **Bengali calendar** to streamline **tax collection**, aligning it with the **harvest season** to ease the burden on farmers.

  उन्होंने **बांग्ला कैलेंडर** की शुरुआत **कर वसूली** को आसान बनाने और उसे **फसल कटाई के मौसम** से जोड़ने के लिए की थी, ताकि किसानों पर बोझ कम हो सके।

- Over time, Pohela Boishakh evolved from a **fiscal event** to a **cultural celebration**, symbolizing a **fresh start** and the **unity of Bengali people**, transcending **religious and regional boundaries**.

  समय के साथ, पोहेला बोइशाख **एक वित्तीय आयोजन से सांस्कृतिक उत्सव में** बदल गया, जो **नई शुरुआत और बांग्ला समाज की एकता** का प्रतीक बन गया, जो **धार्मिक और क्षेत्रीय सीमाओं** से परे है।

St. Mary's basilica in Kochi remains closed for another holy week

GS Paper I: History

The Hindu Bureau
KOCHI

The St. Mary's Cathedral Basilica in the heart of Kerala's Kochi, considered the symbol of the Syro-Malabar Church, remains closed for another Holy Week and Easter celebrations as the stand-off between a rebel group of lay people and priests in Ernakulam-Angamaly Archdiocese, and the official hierarchy continues.

The rebels have dug their heels in against the Synod of Bishops of the Church and opposed any action to what they claimed was an "imposition" of unified mass over the Archdiocese. They support a mass in which the priest faces the people for the entire duration, a tradi-tion which they say is more than half-a-century old in the Archdiocese. They want it to be at least recognised as a liturgical variant within a Church in communion with Rome.

It was in December 2022 that the Archdiocese's principal Church was closed for public celebration of Mass and other Sacraments amid fears of the stand-off between rebels and official church hierarchy. Since then the Cathedral has been open to individuals to offer prayers but not to community prayers or public ceremonies.

The Holy Week ceremonies and Easter celebrations will be held at the St. Mary's Convent this year, as per Fr. Varghese Manavalan's announcement ahead of Palm Sunday.

St. Mary's Basilica in Kochi remains closed for another Holy Week

कोच्चि में सेंट मैरी बेसिलिका एक और होली वीक के लिए बंद रहेगा

The St. Mary's Cathedral Basilica, located in the heart of Kochi, Kerala, remains closed for another Holy Week and Easter celebrations.

केरल के कोच्चि के केंद्र में स्थित सेंट मैरी कैथेड्रल बेसिलिका एक और होली वीक और ईस्टर समारोह के लिए बंद रहेगा।

• The church is considered a **symbol** of the **Syro-Malabar Church**.

• यह चर्च **सिरो-मालाबार चर्च** का **प्रतीक** माना जाता है।

• The closure continues due to an ongoing **stand-off** between a **rebel group of lay people and priests** in the **Ernakulam-Angamaly Archdiocese** and the **official hierarchy**.

• यह बंदी **एर्नाकुलम-अंगमाली आर्चडायसिस** में **सामान्य लोगों और पादरियों के विद्रोही समूह** तथा **आधिकारिक पदाधिकारियों** के बीच चल रहे **विवाद** के कारण जारी है।

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• The **rebel group** has strongly opposed the **Synod of Bishops** for what they call the **"imposition" of a unified mass** across the Archdiocese.

• **विद्रोही समूह** ने **बिशपों की धर्मसभा** द्वारा पूरे आर्चडायसिस में एक **स्तोत्रीकृत मास के "थोपे जाने"** का **कड़ा विरोध** किया है।

• They demand the continuation of a **mass** where the **priest faces the people** throughout, a tradition in the Archdiocese for **more than 50 years**.

• वे उस **मास** को बनाए रखने की मांग कर रहे हैं जिसमें **पादरी पूरे समय जनता की ओर मुख करके** प्रार्थना करता है, जो इस आर्चडायसिस में **पिछले 50 वर्षों से अधिक पुरानी परंपरा** है।

• The rebels want this to be recognized as a **liturgical variant** within the **Catholic Church in communion with Rome**.

• विद्रोही चाहते हैं कि इसे **रोम से जुड़े कैथोलिक चर्च** में एक **धार्मिक प्रार्थना की वैकल्पिक विधि** के रूप में मान्यता दी जाए।

• In **December 2022**, the **principal church** of the Archdiocese was **closed** for **public Mass and Sacraments** due to fears of clashes.

• **दिसंबर 2022** में संभावित टकराव के कारण आर्चडायसिस का **मुख्य चर्च जनसमूह के लिए मास और संस्कारों के आयोजन** हेतु **बंद** कर दिया गया था।

• Since then, the Cathedral has remained **open only for individual prayers**, not for **community prayers** or **public ceremonies**.

• तब से यह कैथेड्रल केवल **व्यक्तिगत प्रार्थनाओं** के लिए खुला रहा है, **सामूहिक प्रार्थनाओं** या **सार्वजनिक अनुष्ठानों** के लिए नहीं।

• This year, the **Holy Week ceremonies** and **Easter celebrations** will be held at **St. Mary's Convent**, as announced by **Fr. Varghese Manavalan** before **Palm Sunday**.

• इस वर्ष, **होली वीक के समारोह** और **ईस्टर उत्सव सेंट मैरी कॉन्वेंट** में आयोजित किए जाएंगे, जैसा कि **फादर वर्गीज मनवालन** ने **पाम संडे** से पहले घोषणा की थी।

Holy Week and Easter
पवित्र सप्ताह और ईस्टर

- Holy Week is the **most sacred period** in the Christian liturgical calendar, commemorating the final days of **Jesus Christ's life**, his **crucifixion**, and **resurrection**.

  पवित्र सप्ताह ईसाई धर्म के पूजा-पाठ कैलेंडर का **सबसे पवित्र समय** है, जो **ईसा मसीह के जीवन के अंतिम दिनों**, उनके **क्रूस पर चढ़ाए जाने** और **पुनरुत्थान** की स्मृति में मनाया जाता है।

- It begins on **Palm Sunday** and culminates on **Easter Sunday**, marking the **end of Lent** and the beginning of the **Easter season**.

  यह **पाम संडे** से शुरू होकर **ईस्टर संडे** पर समाप्त होता है, जो **लेंट काल के अंत** और **ईस्टर काल की शुरुआत** को दर्शाता है।

- In **2025**, Holy Week spans from **April 13 to April 20**.

  2025 में पवित्र सप्ताह की अवधि **13 अप्रैल से 20 अप्रैल** तक होगी।

Historical Background
ऐतिहासिक पृष्ठभूमि

- The observance of Holy Week dates back to the **4th century**, evolving from early Christian commemorations of **Jesus' Passion**.

  पवित्र सप्ताह का पालन **चौथी शताब्दी** से शुरू हुआ, जो प्रारंभिक ईसाई काल में **ईसा मसीह के कष्टों** की स्मृति से विकसित हुआ।

- Over time, distinct days within the week gained **specific significance**, each marked by **unique rituals and traditions**.

  समय के साथ, इस सप्ताह के विभिन्न दिनों को **विशेष महत्व** प्राप्त हुआ, जिन्हें **विशिष्ट अनुष्ठानों और परंपराओं** से चिह्नित किया गया।

Key Days of Holy Week
पवित्र सप्ताह के प्रमुख दिन

Palm Sunday (April 13, 2025)
पाम संडे (13 अप्रैल 2025)

- Commemorates Jesus' **triumphant entry** into **Jerusalem**, where followers laid **palm branches** in his path.

  यह ईसा मसीह के **विजयी रूप में यरुशलम प्रवेश** की स्मृति में मनाया जाता है, जहाँ अनुयायियों ने उनके मार्ग में **ताड़ के पत्ते** बिछाए थे।

- Churches distribute **blessed palm fronds** to congregants, symbolizing **peace and victory**.

  गिरजाघरों में श्रद्धालुओं को **आशीषित ताड़ के पत्ते** दिए जाते हैं, जो **शांति और विजय** का प्रतीक होते हैं।

Maundy Thursday (April 17, 2025)
मॉन्डी थर्सडे (17 अप्रैल 2025)

- Marks the **Last Supper**, where Jesus shared a **final meal** with his disciples and instituted the **Eucharist**.
  यह दिन **आखिरी भोज (Last Supper)** की स्मृति में मनाया जाता है, जब ईसा ने अपने शिष्यों के साथ **अंतिम भोजन** किया और **युखरिस्त** की स्थापना की।
- The term **"Maundy"** derives from the Latin **"mandatum"**, meaning **"commandment"**, referencing Jesus' instruction to **love one another**.
  "मॉन्डी" शब्द लैटिन शब्द **"mandatum"** से आया है, जिसका अर्थ है **"आदेश"**, जो ईसा द्वारा दिया गया **एक-दूसरे से प्रेम करने** का निर्देश दर्शाता है।
- Traditions include the **washing of feet**, symbolizing **humility and service**.
  इस दिन की परंपराओं में **पांव धोने की रस्म** शामिल है, जो **विनमता और सेवा** का प्रतीक होती है।

Good Friday (April 18, 2025)
गुड फ्राइडे (18 अप्रैल 2025)

- Observes the **crucifixion and death** of Jesus at **Calvary**.
  यह दिन ईसा मसीह की **क्रूस पर चढ़ाए जाने और मृत्यु** की स्मृति में मनाया जाता है, जो **कैलवरी पर्वत** पर हुई थी।
- Services often include the **Stations of the Cross**, reflecting on Jesus' path to crucifixion.
  इस दिन के उपासना कार्यक्रमों में प्रायः **स्टेशन्स ऑफ द क्रॉस** शामिल होते हैं, जो ईसा के **क्रूस की ओर यात्रा** का स्मरण कराते हैं।

Holy Saturday (April 19, 2025)
होली सैटरडे (19 अप्रैल 2025)

- A day of **waiting and reflection**, commemorating Jesus' **time in the tomb**.
  यह दिन **प्रतीक्षा और आत्मचिंतन** का होता है, जो ईसा के **कब्र में विश्राम** को याद करता है।
- The **Easter Vigil** is held after sunset, featuring the lighting of the **Paschal candle**, symbolizing the **light of Christ**.
  ईस्टर विगिल सूर्यास्त के बाद आयोजित की जाती है, जिसमें **पास्कल मोमबत्ती** जलायी जाती है, जो **ईसा मसीह के प्रकाश** का प्रतीक होती है।

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Easter Sunday (April 20, 2025)
ईस्टर संडे (20 अप्रैल 2025)

- Celebrates the **resurrection of Jesus**, affirming the **core belief** of Christianity in **life after death**.
  यह दिन ईसा मसीह के **पुनरुत्थान** का उत्सव है, जो ईसाई धर्म की **मृत्यु के बाद जीवन** की मुख्य **आस्था** को दर्शाता है।

- Marks the beginning of the **Easter season**, a **50-day period** leading up to **Pentecost**.
  यह **ईस्टर काल** की शुरुआत करता है, जो कि **पचास दिनों** तक चलता है और **पेंटेकोस्ट** पर्व तक चलता है।

Choksi was arrested from Belg hospital, had filed 'freedom re

Fugitive businessman's lawyer in India says plea in Belgium allows investigation to continue without C adds that his client has cancer and was kidnapped, tortured in 2021; whistleblower says early extradit

GS Paper I: Mapping

Vinaya Deshpande Pandit
MUMBAI

Mehul Choksi was undergoing treatment at a hospital in Belgium when he was picked up by the Belgian authorities, his lawyer told *The Hindu* on Monday.

"He has filed for an appeal or a freedom request. It has pleaded that the probe can continue without the need of him being in the custody. The plea has been moved on the grounds that he is not a flight risk and that he is suffering from medical conditions," his lawyer Vijay Agarwal said.

Asked about the details of his medical conditions, Mr. Agarwal said his client was suffering from cancer. "Also, he was tortured and that he has faced physical deformity because of the torture. He is suffering from traumatic PTFD (Proximal Tibiofibular Fracture and Dislocation) because of the torture he had faced when he was picked up from Antigua to Dominica. He was kidnapped at that time. It is our appeal that India had sent henchmen who tortured him," he said.

Sources close to Mr. Choksi's family confirmed to *The Hindu* that he was nabbed from the hospital where he was allegedly undergoing treatment for blood cancer, or leukaemia. His lawyers are likely to plead that there is little possibility of him getting a fair trial in India.

They also confirmed reports in the Belgian media that quoted Mr. Choksi's local lawyer that he was not just tortured and abused, but was also allegedly tasered in 2021 on a boat from Antigua to Dominica.

Hariprasad S.V., a whistleblower based in Bengaluru who had blown the lid off Mr. Choksi's alleged
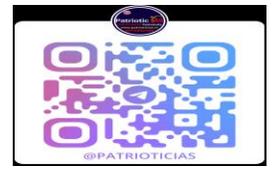

On the run: Mehul Choksi is taken to a police van by a police officer after a court hearing in Roseau, Dominica, in June 2021. AP

scam, told *The Hindu* that he was not very hopeful of the early return of the fugitive businessman to India. "If it was possible, it was much more possible to do it in Antigua. It is more difficult to get it in Belgium now. The European laws are stricter for extradition, human rights. It is not very easy," he told *The Hindu* from Bengaluru.

"In 2011-12, I had a business deal with Mehul Choksi for a franchise of Gitanjali Lifestyle company. He had assured us that there will be minimum guaranteed returns on investment, that there will be profit sharing on the total sale. The entire operation was to be run by him. He was to give the rent on my property. He was also to give 12% per annum minimum guaranteed return. So, I had invested ₹10 crore then. But I soon realised

ASI seeks to shed new light on Dwarka through explorations

A nine-member team of the Underwater Archaeology Wing of the ASI has undertaken onshore and offshore expeditions at Dwarka and Beyt Dwarka to search, document, and study submerged archaeological remains as well as ascertain their age

GS Paper I: A&C

Sreeparna Chakrabarty
NEW DELHI

In an effort to shed new light on Dwarka, an important part of India's "cultural history", the Archaeological Survey of India (ASI) has undertaken a project to ascertain the antiquity of objects recovered during expeditions in Gujarat.

A nine-member team of the Underwater Archaeology Wing of the ASI has undertaken onshore and offshore expeditions at Dwarka and Beyt Dwarka to search, document, and study submerged archaeological remains as well as ascertain the antiquity of the recovered objects through scientific analysis of sediments, archaeological and marine deposits, a senior ASI official said.

Beyt Dwarka, believed to be the home of Lord Krishna, is an island off the coast of Gujarat, where the Dwarkadhish Temple is located.

A five-member team of the ASI had carried out brief fieldwork in February in the south of the Gomati Creek, located on the eastern side of Dwarka. This investigation was aimed at inspecting earlier explored areas and examine their present condition. It also aimed to identify probable areas for further investigations and study. The selected area was explored by archaeologists and important features were photographed.

"Dwarka is an important place from a historical, archaeological and cultural point of view. Dwarka has always been a matter of research being mentioned in ancient literature. It has remained a significant part of cultural history of India.

Important remains
The Underwater Archaeology Wing carried out systematic archaeological investigations from 2005 to 2007 at Dwarka. These investigations, both onshore and offshore, revealed important archaeological remains, including ancient sculptures, stone anchors, and other objects of historical importance.

A large area was scientifically surveyed but underwater archaeological excavations were carried out in a limited area by the archaeologists of the ASI and divers of the Navy. The area for the excavation was duly marked and systematic dives were conducted. During the excavation, scattered submerged remains, which had deposition of vegetation as well as thick calcareous deposit,

Considering its importance, Dwarka has been explored and researched by historians and archaeologists in the past as well," Alok Tripathi, Additional Director-General of the ASI, who is leading the excavation, told *The Hindu*.

were cleaned. The excavation revealed clusters of submerged remains.

In 2007, a small area near the northern gate of the Dwarkadhish temple was chosen for the excavation. The entire excavation was conducted meticulously to document antiquity in situ. A deposit of about 10 metres having 26 layers was excavated. Antiquities recovered from this small excavation included iron objects, beads, copper objects, rings, and on. Pottery recovered during the excavation was also examined and studied thoroughly.

The present study is planned to cover an expanded area in Okhamandal city. Teams of archaeologists are looking for other potential sites in the area to understand the history of the site, Professor Tripathi said.

This study would include archaeological explorations, identification of potential sites and places, scientific study involving diving operations, search and collection of archaeological remains, their proper documentation and study, involving scientific analysis and studies.

A member of the ASI's underwater wing during an expedition in Dwarka from 2005 to 2007. FILE PHOTO

ASI seeks to shed new light on Dwarka through explorations

ASI द्वारा खोजों के माध्यम से द्वारका पर नई रोशनी डालने का प्रयास

A nine-member team of the **Underwater Archaeology Wing of the Archaeological Survey of India (ASI)** has undertaken onshore and offshore expeditions at Dwarka and Beyt Dwarka to search, document, and study submerged archaeological remains and determine their age.

भारतीय पुरातत्व सर्वेक्षण (ASI) के अंडरवाटर आर्कियोलॉजी विंग की नौ-सदस्यीय टीम ने द्वारका और बेत द्वारका में जल और स्थल अभियान शुरू किए हैं ताकि डूबे हुए पुरातात्विक अवशेषों की खोज, दस्तावेज़ीकरण और अध्ययन किया जा सके तथा उनकी प्राचीनता का निर्धारण किया जा सके।

• The project aims to bring **new understanding** to **Dwarka**, which is considered an important part of India's **cultural history**.

• यह परियोजना **द्वारका** को लेकर **नई समझ** विकसित करने का लक्ष्य रखती है, जिसे भारत के **सांस्कृतिक इतिहास** का एक **महत्वपूर्ण हिस्सा** माना जाता है।

• The objective is to determine the **antiquity** of objects recovered from **expeditions in Gujarat** through **scientific analysis** of sediments, archaeological and marine deposits.

• इसका उद्देश्य **गुजरात में अभियानों** से प्राप्त वस्तुओं की **प्राचीनता** को **तलछट, पुरातात्विक और समुद्री जमावों** के **वैज्ञानिक विश्लेषण** के माध्यम से निर्धारित करना है।

• **Beyt Dwarka**, believed to be the **home of Lord Krishna**, is an island off the coast of **Gujarat**, where the **Dwarkadhish Temple** is located.
• **बेत द्वारका**, जिसे **भगवान श्रीकृष्ण का निवास** माना जाता है, **गुजरात** के तट से सटा हुआ एक द्वीप है, जहाँ **द्वारकाधीश मंदिर** स्थित है।

Preliminary Field Work and Survey
प्रारंभिक फील्ड वर्क और सर्वेक्षण

• A **five-member ASI team** conducted **brief fieldwork** in **February** on the **southern side of the Gomati Creek**, located **east of Dwarka**.
• **ASI की पाँच-सदस्यीय टीम** ने फरवरी में **गोमती क्रीक के दक्षिणी हिस्से** में, जो **द्वारका के पूर्व में** स्थित है, **संक्षिप्त फील्डवर्क** किया।

• The investigation aimed to inspect **previously explored areas**, assess their **current condition**, and identify **potential sites** for further research.
• इस जांच का उद्देश्य **पूर्व में खोजे गए क्षेत्रों** की **वर्तमान स्थिति** की जांच करना और आगे की खोज के लिए **संभावित स्थलों** की पहचान करना था।

• **Important features** in the selected areas were **photographed** by archaeologists.
• चयनित क्षेत्रों में **महत्वपूर्ण विशेषताओं** को पुरातत्वविदों द्वारा **फोटोग्राफ किया गया**।

Historical Importance of Dwarka
द्वारका का ऐतिहासिक महत्व

• **Dwarka** is considered important from a **historical, archaeological, and cultural** perspective.
• **द्वारका** को **ऐतिहासिक, पुरातात्विक और सांस्कृतिक दृष्टिकोण** से **महत्वपूर्ण** माना जाता है।

• The city is mentioned in **ancient literature** and has been a subject of research by **historians and archaeologists** in the past.
• इस नगर का उल्लेख **प्राचीन साहित्य** में मिलता है और यह अतीत में **इतिहासकारों और पुरातत्वविदों** के शोध का विषय रहा है।

• **Alok Tripathi**, **Additional Director-General** of the ASI, who is leading the excavation, said Dwarka has always been a **significant part** of **India's cultural history**.
• खुदाई का नेतृत्व कर रहे **ASI के अतिरिक्त महानिदेशक आलोक त्रिपाठी** ने कहा कि द्वारका हमेशा से **भारत के सांस्कृतिक इतिहास** का **एक महत्वपूर्ण हिस्सा** रहा है।

Previous Investigations and Discoveries
पूर्ववर्ती खोजें और निष्कर्ष

• From **2005 to 2007**, the **Underwater Archaeology Wing** of ASI conducted **systematic archaeological investigations** both **onshore and offshore** at **Dwarka**.

• **2005 से 2007** के बीच, ASI की **अंडरवाटर आर्कियोलॉजी विंग** ने द्वारका में जल और स्थल दोनों स्थानों पर **व्यवस्थित पुरातात्विक जांच** की।

• These investigations revealed **important archaeological remains** such as **ancient sculptures, stone anchors**, and other **historically significant objects**.

• इन जांचों में **प्राचीन मूर्तियाँ, पत्थर के लंगर** और अन्य **ऐतिहासिक महत्व की वस्तुएं** प्राप्त हुईं।

• A large area was **scientifically surveyed**, but **underwater excavations** were carried out only in a **limited portion** by ASI archaeologists and **Navy divers**.

• एक बड़े क्षेत्र का **वैज्ञानिक सर्वेक्षण** किया गया, लेकिन **जल के नीचे खुदाई** केवल **सीमित हिस्से** में ASI के पुरातत्वविदों और **नेवी के गोताखोरों** द्वारा की गई।

• **Systematic dives** were conducted, and **submerged remains** with **vegetation and thick calcareous deposits** were cleaned.

• **व्यवस्थित गोता लगाकर** ऐसे **डूबे हुए अवशेषों** को साफ किया गया जिन पर **वनस्पति और मोटे कैल्शियम जमाव** थे।

• The excavation uncovered **clusters of submerged remains**.

• खुदाई में **डूबे हुए अवशेषों के समूह** सामने आए।

• In **2007**, a small area near the **northern gate** of the **Dwarkadhish Temple** was chosen for **excavation**.

• **2007** में, **द्वारकाधीश मंदिर के उत्तरी द्वार** के पास एक **छोटे क्षेत्र** को **खुदाई** के लिए चुना गया।

• About **10 metres of deposits** with **26 layers** were excavated.

• लगभग **10 मीटर मोटी परतों** में फैली **26 स्तरों** की खुदाई की गई।

• Items found included **iron objects, copper items, beads, and rings**.

• खुदाई में **लोहे की वस्तुएं, तांबे की वस्तुएं, मनके और अंगूठियाँ** प्राप्त हुईं।

• **Pottery** recovered from the site was **examined and studied thoroughly**.

• खुदाई में मिली **मिट्टी की बर्तनों** की **गहन जांच और अध्ययन** किया गया।

Current and Future Plans
वर्तमान और आगामी योजनाएं

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• The current study aims to **cover an expanded area** in **Okhamandal city**.
• वर्तमान अध्ययन का उद्देश्य **ओखामंडल शहर** में **विस्तृत क्षेत्र** को कवर करना है।

• Archaeologists are identifying **other potential sites** to understand the **history** of the region.
• पुरातत्वविद **अन्य संभावित स्थलों** की पहचान कर रहे हैं ताकि क्षेत्र के **इतिहास** को समझा जा सके।

• The study involves **archaeological explorations**, **diving operations**, **scientific study**, **collection and documentation** of remains, and their **scientific analysis**.
• इस अध्ययन में **पुरातात्विक खोजें**, **डाइविंग ऑपरेशन**, **वैज्ञानिक अध्ययन**, **अवशेषों का संग्रह और दस्तावेज़ीकरण** तथा उनका **वैज्ञानिक विश्लेषण** शामिल है।

History as battlefield — the perils of reversing the past

GS Paper I: History and Society

In March 2025, a wave of textbook revisions such as omitting or vilifying figures like Babur and Aurangzeb while glorifying select native rulers, coincided with rising public anger demanding the renaming or even destruction of Mughal tombs. There were viral campaigns that called for vandalising historical monuments, driven by narratives that paint centuries of India's past in black and white. While advocates claim that such moves correct colonial or biased portrayals, the selective rewriting of history often fuels polarisation, not clarity. When history becomes a battleground for ideology rather than a source of reflection, it can fracture society and foster hatred instead of understanding.

The discipline of history demands a careful and nuanced discernment of the past. It is not merely a recollection of events but a study of causes, consequences and context. However, when history is weaponised in the form of revisionism, especially with an intent to restore a perceived lost glory or correct historical wrongs by reverting to a "status quo ante", it ceases to be a guide for the present and becomes a tool for division.

Such revisionist exercises are not only dangerous but have been the root of conflicts, wars and prolonged suffering across different parts of the world. The grundnorm of this discussion is that while historical wrongs must be remembered to avoid their repetition, they must not be interpreted as mandates to reclaim past statuses or boundaries. Much of the chaos in today's world arises not because we forget history but because we seek to relive or reverse it.

Revisionism versus reckoning
It is important to distinguish revisionist history from historical reinterpretation. Reinterpretation is a legitimate academic exercise, where new evidence or perspectives reshape our understanding of the past. Revisionist history, however, especially in the political sense, seeks to reinterpret the past to justify present-day political agendas, often tied to nationalism, identity politics, or territorial claims. This has been evident in various religious and political conflicts,

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What is dangerous is a revisionist exercise in history, which is being tied to nationalism, identity politics or territorial claims

such as the Crusades, which were themselves sparked by the belief in the sanctity of Christian control over Jerusalem. The First Crusade (1096-1099) was launched ostensibly to reclaim the Holy Land from Muslim rule, despite the region's diverse religious history. What followed were centuries of bloodshed, occupation, and retaliatory campaigns, none of which restored any meaningful peace but, instead, deepened divisions between civilisations. It is a classic example of trying to correct a perceived historical wrong through a violent reversal – not reconciliation.

The European Wars of Religion in the 16th and 17th centuries, such as the Thirty Years' War, further demonstrate the dangers of historical grievances being revived under the banner of religious or political legitimacy. The Protestant Reformation challenged centuries of Catholic dominance in Europe, leading to a brutal struggle to "restore" previous religious hegemonies. The outcome was catastrophic: millions perished, economies were ruined, and societies were devastated. Here again, the danger was not in recognising the grievances of the past but in weaponising them to reshape the present based on historical constructs. Rather than moving forward with mutual tolerance and understanding, European States plunged backward into a cycle of vengeance, each side justifying its acts through selective memories of the past.

Twentieth century examples
Perhaps the most infamous example of dangerous revisionism is Nazi Germany. Adolf Hitler's ideology rested heavily on the notion of reclaiming the glory of the German Reich and correcting the "humiliation" of the Treaty of Versailles. His rhetoric about the Aryan past, the "stab in the back" theory, and a need for Lebensraum (living space) were all rooted in a highly manipulated version of history. The attempt to reverse the outcome of the First World War by restoring German supremacy led to the Second World War and the Holocaust – a catastrophic result of trying to reengineer history through conquest and genocide.

Similarly, the Partition of India in 1947 was marked by competing historical narratives – Hindu and Muslim nationalists invoked centuries of grievances under previous rulers. What should have been a peaceful transition into two sovereign States turned into one of the worst episodes of communal violence in history, killing over a million and displacing more than 10 million. The violence was not about the future; it was about reclaiming identities and rights rooted in selective versions of the past.

In the contemporary world, Israel-Palestine remains a deeply complex and tragic case of historical grievances clashing with present-day geopolitics. Both Israelis and Palestinians stake claims based on history – often diverging, irreconcilable, and deeply emotional. Efforts to reverse history, whether through settlements, territorial claims, or denial of nationhood, have prolonged a conflict that cannot be resolved by appealing solely to the past.

In Eastern Europe, Russia's invasion of Ukraine in 2022 was partly justified by revisionist arguments about the historical unity of the Russian and Ukrainian people and the invalidity of Ukraine's post-Soviet independence. This attempt to undo post-Cold War borders in the name of historical continuity has led to massive human suffering, economic crises, and a destabilisation of the entire region.

History as a teacher
History should be a teacher, and not a template. The purpose of understanding past wrongs is to ensure they are never repeated – not to demand restitution through acts that recreate the very conflict that they seek to avenge. The obsession with returning to a perceived golden past blinds nations and people to the opportunities of the present and the possibilities of the future. As philosopher George Santayana aptly put it: "Those who cannot remember the past are condemned to repeat it." But equally dangerous are those who remember the past only to relive it, seeking justice through reversal, not reconciliation. The greatest service we can do to history is not to rewrite it, but to learn from it – with humility, not hubris.

History as Battlefield — The Perils of Reversing the Past
इतिहास एक युद्धभूमि के रूप में — अतीत को पलटने के ख़तरों पर विचार

In March 2025, a wave of textbook revisions included omitting or vilifying Babur and Aurangzeb while glorifying select native rulers.
मार्च 2025 में पाठ्यपुस्तकों में संशोधन की एक लहर चली जिसमें बाबर और औरंगज़ेब को हटाया गया या बदनाम किया गया, जबकि कुछ स्थानीय शासकों का महिमामंडन किया गया।

- This coincided with rising **public anger** demanding **renaming or destruction of Mughal tombs**.
  इसी समय **जनता का आक्रोश** भी बढ़ा, जो **मुगल मकबरों के नाम बदलने या उन्हें नष्ट करने** की मांग कर रहा था।

- Viral campaigns encouraged **vandalism of historical monuments**, promoting a **black-and-white narrative** of India's past.
  ऐतिहासिक स्मारकों को क्षति पहुँचाने के लिए **वायरल अभियान** चलाए गए, जो भारत के अतीत को **काले और सफेद दृष्टिकोण** में चित्रित करते हैं।

- Advocates claimed these changes corrected **colonial or biased portrayals**, but **selective rewriting** of history causes **polarisation**, not **clarity**.
  समर्थकों ने कहा कि ये बदलाव **औपनिवेशिक या पक्षपाती चित्रण** को ठीक करते हैं, लेकिन **चयनात्मक रूप से इतिहास को फिर से लिखना स्पष्टता नहीं बल्कि ध्रुवीकरण** को जन्म देता है।

- When **history becomes ideological**, it ceases to be a tool of **reflection** and becomes a source of **division and hatred**.
  जब **इतिहास विचारधारा का हथियार** बन जाता है, तब यह **चिंतन का साधन नहीं** बल्कि **विभाजन और घृणा** का कारण बनता है।

The Discipline of History
इतिहास का अनुशासन

- History is not just about remembering events, but **understanding causes, consequences, and context**.
  इतिहास केवल घटनाओं को याद रखने के लिए नहीं है, बल्कि **कारण, परिणाम और संदर्भ को समझने** के लिए है।

- When used to **restore lost glory** or correct **past wrongs** by returning to a **"status quo ante"**, history becomes **divisive**.
  जब इसका उपयोग **गायब हुई महिमा को पुनः लाने** या **अतीत की गलतियों को सुधारने** के लिए किया जाता है, तो यह इतिहास **विभाजनकारी** बन जाता है।

- Such **revisionism** has historically caused **conflicts, wars, and prolonged suffering** around the world.
  ऐसा **पुनर्लेखन** इतिहास में **संघर्ष, युद्ध और दीर्घकालिक पीड़ा** का कारण रहा है।

- **Historical wrongs** must be remembered to avoid repetition, but not as **mandates to reclaim past statuses or boundaries**.
  ऐतिहासिक गलतियों को दोहराने से बचने के लिए याद रखना चाहिए, पर उन्हें **पुराने अधिकार या सीमाओं को फिर से पाने का आदेश** नहीं मानना चाहिए।

- Today's chaos arises not from **forgetting history**, but from trying to **relive or reverse it**.
  आज की अराजकता का कारण **इतिहास को भूलना नहीं**, बल्कि उसे **फिर से जीना या पलटना** है।

Revisionism versus Reckoning
पुनर्लेखन बनाम आत्ममंथन

- **Historical reinterpretation** is a valid academic practice using **new evidence** to reshape understanding.
  इतिहास की पुनर्व्याख्या एक वैध शैक्षणिक अभ्यास है जो **नए प्रमाणों** से समझ को आकार देता है।

- **Revisionist history**, especially politically driven, aims to **justify present-day agendas** tied to **nationalism or identity politics**.
  राजनीतिक रूप से प्रेरित पुनर्लेखन, वर्तमान की **राजनीतिक योजनाओं को उचित ठहराने** के लिए किया जाता है, जो **राष्ट्रवाद या पहचान की राजनीति** से जुड़ा होता है।

- This pattern is visible in **religious and political conflicts**, like the **Crusades**, which aimed to **reclaim Jerusalem** from Muslim rule.
  यह प्रवृति **धार्मिक और राजनीतिक संघर्षों** में देखी जा सकती है, जैसे कि **क्रूसेड**, जिसका उद्देश्य **मुस्लिम शासन से यरूशलेम को पुनः प्राप्त करना** था।

- The **First Crusade (1096–1099)** led to **centuries of bloodshed**, not peace, deepening **civilisational divides**.

  पहला क्रूसेड (1096–1099) शताब्दियों तक चले रक्तपात का कारण बना, जिससे **सभ्यताओं के बीच विभाजन** और बढ़ा, शांति नहीं आई।

- It was an attempt to **correct perceived wrongs through violent reversal,** not **reconciliation**.

  यह **हिंसात्मक तरीके से अतीत को पलटकर सुधारने** का प्रयास था, न कि **समझौता**।

European Religious Wars and Their Lessons
यूरोपीय धार्मिक युद्ध और उनसे मिलने वाले सबक

- The **European Wars of Religion** in the **16th and 17th centuries** like the **Thirty Years' War** show dangers of **reviving historical grievances**.

  16वीं और 17वीं शताब्दी के **यूरोपीय धार्मिक युद्ध**, जैसे कि **तीस वर्षीय युद्ध**, यह दिखाते हैं कि **ऐतिहासिक शिकायतों को फिर से जीवित करना** कितना खतरनाक हो सकता है।

- The **Protestant Reformation** challenged **Catholic dominance**, leading to a brutal struggle to **restore hegemony**.

  प्रोटेस्टेंट सुधार आंदोलन ने **कैथोलिक प्रभुत्व** को चुनौती दी, जिससे **प्रभुत्व को पुनर्स्थापित करने** का भीषण संघर्ष शुरू हुआ।

- The outcome was **millions of deaths**, ruined economies, and **devastated societies**.

  इसका परिणाम हुआ **लाखों लोगों की मौत**, **आर्थिक तबाही**, और **समाज का विनाश**।

- These events were not about **understanding history**, but about **weaponising memory** for **vengeance and power**.

  ये घटनाएँ **इतिहास को समझने** की नहीं, बल्कि **स्मृति को हथियार बनाकर बदले और सत्ता** के लिए थीं।

- Instead of **mutual tolerance**, Europe fell into **cycles of violence**, justified by **selective memories**.

  आपसी सहिष्णुता के बजाय, यूरोप **हिंसा के चक्र** में डूब गया, जिसे **चयनात्मक स्मृतियों** द्वारा उचित ठहराया गया।

Twentieth Century Examples
बीसवीं सदी के उदाहरण

- The most infamous example of **dangerous revisionism** is **Nazi Germany** under **Adolf Hitler**.

  खतरनाक इतिहास पुनर्लेखन का सबसे कुख्यात उदाहरण **एडॉल्फ हिटलर** के नेतृत्व में **नाजी जर्मनी** है।

- Hitler's ideology was based on **reclaiming the glory of the German Reich** and correcting the **"humiliation" of the Treaty of Versailles**.

  हिटलर की विचारधारा **जर्मन साम्राज्य की महिमा को पुनः प्राप्त करने** और **वर्साय संधि के "अपमान" को ठीक करने** पर आधारित थी।

- His ideas of the **Aryan past**, the **"stab in the back" theory**, and the call for **Lebensraum (living space)** came from a **manipulated version of history**.

  उसका **आर्य अतीत, "पीठ में छुरा घोंपने" का सिद्धांत,** और **लेबेन्सराउम (रहने की जगह)** की मांग **इतिहास की तोड़ी-मरोड़ी गई व्याख्या** से निकली थी।

- The attempt to **reverse the outcome of World War I** by restoring **German supremacy** led to **World War II** and the **Holocaust**.

  प्रथम विश्व युद्ध के परिणाम को पलटने और **जर्मन वर्चस्व को बहाल करने** के प्रयास ने **द्वितीय विश्व युद्ध** और **होलोकॉस्ट** को जन्म दिया।

- It was a **catastrophic result** of using **conquest and genocide** to **reengineer history**.

  यह इतिहास को **फिर से गढ़ने के लिए विजय और नरसंहार** का उपयोग करने का **विनाशकारी परिणाम** था।

Partition of India
भारत का विभाजन

- The **Partition of India in 1947** was shaped by **conflicting historical narratives** from **Hindu and Muslim nationalists**.

  1947 में भारत का विभाजन हिंदू और मुस्लिम राष्ट्रवादियों की विरोधाभासी ऐतिहासिक व्याख्याओं से प्रभावित था।

- These narratives were based on **centuries of grievances under past rulers**.
  ये दृष्टिकोण **पिछले शासकों के अधीन सदियों की शिकायतों** पर आधारित थे।

- What should have been a **peaceful transition** to two **sovereign States** became one of the **worst communal violence episodes** in history.
  जो एक **शांतिपूर्ण रूपांतरण** होना चाहिए था, वह इतिहास की **सबसे भीषण सांप्रदायिक हिंसा की घटनाओं** में से एक बन गया।

- Over **a million were killed**, and **more than 10 million were displaced** during the Partition.
  विभाजन के दौरान **10 लाख से अधिक लोग मारे गए** और **एक करोड़ से अधिक लोग विस्थापित हुए**।

- The violence was not about the **future**, but about **reclaiming past identities and rights**.
  यह हिंसा **भविष्य के बारे में नहीं** थी, बल्कि **अतीत की पहचान और अधिकारों को फिर से हासिल करने** के बारे में थी।

Israel-Palestine Conflict
इज़राइल-फिलिस्तीन संघर्ष

- The **Israel-Palestine conflict** is a modern example of **historical grievances clashing with geopolitics**.
  इज़राइल-फिलिस्तीन संघर्ष ऐतिहासिक शिकायतों और वर्तमान भू-राजनीति के टकराव का आधुनिक उदाहरण है।

- Both **Israelis and Palestinians** claim rights based on **divergent and emotional historical narratives**.
  इज़राइली और फिलिस्तीनी, दोनों ही **भिन्न और भावनात्मक ऐतिहासिक दृष्टिकोणों** के आधार पर अधिकार जताते हैं।

- Efforts to **reverse history** through **settlements**, **territorial claims**, or **denial of nationhood** have prolonged the **conflict**.
  बसाहटों, **क्षेत्रीय दावों**, या **राष्ट्र की मान्यता न देने** के जरिए **इतिहास को पलटने के प्रयासों** ने इस **संघर्ष** को लंबा खींच दिया है।

- The conflict cannot be resolved by **appealing only to the past**.

  यह संघर्ष केवल **अतीत की ओर देखकर** सुलझाया नहीं जा सकता।

Russia-Ukraine War

रूस-यूक्रेन युद्ध

- In **2022**, **Russia invaded Ukraine**, partly justified by **revisionist arguments** about their **shared history**.

  2022 में, **रूस ने यूक्रेन पर आक्रमण** किया, जिसे आंशिक रूप से **उनके साझा इतिहास** पर आधारित **पुनर्लेखनवादी तर्कों** से उचित ठहराया गया।

- Russia questioned the **legitimacy of Ukraine's independence** after the **Soviet Union's collapse**.

  रूस ने **सोवियत संघ के विघटन** के बाद **यूक्रेन की स्वतंत्रता की वैधता** पर सवाल उठाया।

- This attempt to **undo post-Cold War borders** caused **massive human suffering**, **economic crises**, and **regional destabilisation**.

  शीत युद्ध के बाद की सीमाओं को उलटने का यह प्रयास **भारी मानवीय पीड़ा**, **आर्थिक संकट**, और **क्षेत्रीय अस्थिरता** का कारण बना।

History as a Teacher

इतिहास एक शिक्षक के रूप में

- **History should teach**, not serve as a **template to recreate the past**.

  इतिहास को सिखाना चाहिए, न कि **अतीत को फिर से गढ़ने का ढांचा बनना** चाहिए।

- The aim of studying **past wrongs** is to **prevent their repetition**, not to **seek revenge**.

  अतीत की गलतियों को समझने का उद्देश्य उन्हें **दोहराने से रोकना** है, न कि **बदला लेना**।

- The obsession with a **golden past** blinds people to **present opportunities** and **future possibilities**.

  स्वर्णिम अतीत के प्रति जुनून लोगों को **वर्तमान अवसरों** और **भविष्य की संभावनाओं** से अंधा कर देता है।

- As **George Santayana** said: "**Those who cannot remember the past are condemned to repeat it.**"

  जैसा कि **जॉर्ज सेंटायाना** ने कहा: "**जो लोग अतीत को याद नहीं रखते, वे उसे दोहराने के लिए अभिशप्त होते हैं।**"

- Equally dangerous are those who **remember history only to relive it**, seeking **justice through reversal, not reconciliation**.

  उतने ही खतरनाक वे हैं जो **इतिहास को केवल उसे फिर से जीने** के लिए याद रखते हैं, और **समझौते के बजाय पलटकर न्याय** चाहते हैं।

- The greatest service to history is to **learn from it with humility**, not to **rewrite it with arrogance**.

  इतिहास के प्रति सबसे बड़ा सम्मान यह है कि हम **विनमता से उससे सीखें**, न कि **अहंकार से उसे फिर से लिखें**।

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Feminism for polarised times

While current debates on delimitation focus on its impact on the federal balance of power, another historic rebalancing is contingent on it – the implementation of the Women's Reservation Bill, 2023. The Bill marked a watershed moment: gender equity moved from the margins of political discourse to its centre. No institution can now afford to dismiss it. Yet, this very mainstreaming has paradoxically made it harder, at times, to engage with the discourse critically.

As a woman, I often find myself on the edges of the feminist discourse. It's not because I'm "not a feminist" in the way some young women say. But I understand that clumsily expressed discomfort. Today's mainstream feminist discourse can feel like a minefield – demanding disclaimers and caveats before one can step in.

Two terrains

There are two distinct terrains when we talk about women's issues. The first is the structural – the way the design of our society can keep women at the margins. The second is the realm of interpersonal relationships. These overlap, but imposing the structural lens too heavily on the personal risks distorting both. It flattens the richness of human relationships, turning every minor conflict into a battle for power – even when the relationship may be undergirded by love, care, and a willingness to negotiate.

It is true that the personal is political, shaped by deeper hierarchies. But interpersonal relationships are often not reducible to oppression or domination. In India, many men labour quietly – denying themselves comfort, enduring difficult work environments – to support their families. That implicit sense of love and duty creates space for give and take. A husband may expect dinner on the table, but also give his monthly earnings to his wife. Men

Ruchi Gupta

Executive Director of the Future of India Foundation

depending on their wives – emotionally and practically – inevitably reshapes the balance in those relationships. These are not straightforward expressions of patriarchy; they are messy, contradictory, deeply human.

Problematic behaviours exist. But they need to be addressed on their own terms – not simply labelled as misogyny or evidence of oppressive intent. After all, social change comes from public protest and policy reform but also from millions of daily negotiations – quiet shifts in family routines, small acts of solidarity, the rethinking of roles within daily lives. Often, the stories of women from marginalised backgrounds who have achieved unexpected successes include unexpected allies, such as a father who insists on sending his daughter to college. These accounts are part of the real story of progress.

Of course, where women's agency is denied forcibly, we need to address that, through societal change and state power. For instance, daughters who are murdered for pursuing love, or the grassroots elected representative who is made her own proxy by her husband. To empower women we must address multiple interlocking factors: economic independence, legal protections, education, social networks, and cultural shifts. To address these structural issues, we must build state capacity to ensure that institutions actually deliver the protections they promise on paper. However, the most effective interventions work at multiple levels simultaneously – the state and society – and are context-sensitive.

Blurring of inequities

The nature of constraints on a financially independent urban woman who is negotiating household responsibilities is not the same as that of a village woman fearing rape as she steps out at night to access a toilet. Yet, too often, feminist discourse collapses these into a single narrative. It moves too seamlessly between the structural and the

interpersonal, the privileged and the vulnerable – sometimes masking inequity more than illuminating it.

This blurring of vastly different inequities – some life-threatening, others negotiable – risks alienating people, especially if they themselves feel embattled as many men do. And while that embattlement is sometimes overstated or misdirected, it is not always imagined. A man earning a lower income who goes to work may endure public humiliation. While his wife may be doing unpaid work at home, she may also be insulated from some of those public indignities. These are not arguments against feminism, but calls for a feminism that acknowledges multiple forms of suffering and responsibility.

Writing this may seem like one is being unnecessarily moderate, complicit in patriarchal structures of power. However, this is also a response to the current moment which is rife with antagonism across all fronts. A more compassionate feminism may be tactically right in this moment, to engender support instead of backlash. When feminist discourse recognises the emotional and economic pressures that shape the lives of men, particularly those at the margins, it invites solidarity rather than defensiveness.

Perhaps what we need now is a feminism that can hold complexity not just within its own ranks but across society. One that can confront injustice without antagonism. One that can distinguish between structure and sentiment, between cultural patterns and individual acts. A feminism that can accommodate contradiction without becoming complicit. This is especially because unlike other battles for rights, within the terrain of male-female relationships, there is no way to segregate the personal from the public. Thus if we adopt an antagonistic framework, we will bring the battle home. That may ultimately be necessary in some cases, but it need not be the starting point.

A more compassionate feminism may be tactically right in this moment, to engender support instead of backlash

Feminism for Polarised Times
ध्रुवीकृत समय के लिए नारीवाद

The current debates on delimitation mainly focus on its effect on the federal balance of power, but it also impacts the implementation of the Women's Reservation Bill, 2023.

वर्तमान समय में सीमांकन पर चल रही बहस मुख्य रूप से संघीय सत्ता संतुलन पर इसके प्रभाव पर केंद्रित है, लेकिन इसका प्रभाव महिला आरक्षण विधेयक 2023 के क्रियान्वयन पर भी है।

- The Bill marked a **watershed moment**, bringing **gender equity** to the centre of political discourse.
  यह विधेयक एक **ऐतिहासिक मोड़** था, जिससे **लैंगिक समानता** को राजनीतिक विमर्श के केंद्र में लाया गया।
- No institution can now afford to ignore **gender equity**.
  अब कोई भी संस्था **लैंगिक समानता** को नजरअंदाज नहीं कर सकती।
- However, the **mainstreaming** of feminism has made it **harder to engage critically** with the discourse.
  हालांकि, नारीवाद के **मुख्यधारा** में आने से इसके साथ **गंभीर आलोचनात्मक रूप से जुड़ना कठिन** हो गया है।

Two Terrains of Feminist Discourse
नारीवादी विमर्श की दो दिशाएं

- There are two terrains in women's issues: the **structural** (societal design keeping women at margins), and the **interpersonal** (personal relationships).
  महिला मुद्दों के दो क्षेत्र हैं: **संरचनात्मक** (समाज की बनावट जो महिलाओं को हाशिये पर रखती है) और **व्यक्तिगत** (निजी रिश्ते)।
- Over-imposing a **structural lens** on the **personal** can distort the **richness of human relationships**.
  संरचनात्मक दृष्टिकोण को **निजी जीवन** पर अत्यधिक लागू करना **मानव संबंधों की गहराई** को विकृत कर सकता है।
- While the personal is **political**, not all interpersonal issues are about **oppression** or **domination**.

हालांकि निजी जीवन **राजनीतिक** होता है, लेकिन सभी व्यक्तिगत समस्याएं **उत्पीड़न** या **दमन** से नहीं जुड़ी होतीं।

- Many Indian men silently endure **difficult conditions** to support their families, driven by **love and duty**.

  कई भारतीय पुरुष अपने परिवार के लिए **कठिन परिस्थितियों** को चुपचाप सहते हैं, जो **प्रेम और कर्तव्य** की भावना से प्रेरित होता है।

- Such dynamics show that **relationships** can involve **negotiation**, not just **power struggles**.

  इस तरह के संबंध दिखाते हैं कि रिश्तों में सिर्फ **सत्ता संघर्ष** नहीं बल्कि **समझौता** भी होता है।

- **Need for Nuanced Feminism**

  सूक्ष्म दृष्टिकोण वाला नारीवाद आवश्यक

- Problematic behaviours must be addressed on their own terms, not just labelled as **misogyny**.

  समस्याग्रस्त व्यवहारों को उनके **स्वतः संदर्भ** में देखा जाना चाहिए, न कि केवल **स्त्रीद्वेष** कहकर।

- **Social change** happens through public protest and **daily negotiations** — like **changes in family routines** or **rethinking gender roles**.

  सामाजिक बदलाव सार्वजनिक आंदोलनों और **दैनिक समझौतों** से आता है — जैसे **परिवार के नियमों में बदलाव** या लैंगिक भूमिकाओं की पुनर्व्याख्या।

- Many women from **marginalised backgrounds** succeed due to unexpected **allies**, like supportive fathers.

  हाशिए पर रहने वाली कई महिलाएं अपने **सहायक पिता** जैसे **अप्रत्याशित सहयोगियों** की वजह से सफल होती हैं।

- When **women's agency** is forcibly denied, **state power and social reform** are needed.

  जब महिलाओं की **स्वायत्तता** को बलपूर्वक छीना जाता है, तब **राज्य शक्ति और सामाजिक सुधार** की आवश्यकता होती है।

- To empower women, we need **economic independence**, **legal protections**, **education**, **social networks**, and **cultural change**.

  महिलाओं को सशक्त बनाने के लिए हमें **आर्थिक स्वतंत्रता, कानूनी सुरक्षा, शिक्षा, सामाजिक नेटवर्क,** और **सांस्कृतिक बदलाव** की आवश्यकता है।

- Effective reforms work at **multiple levels** — the **state**, **society**, and **context-specific solutions**.

  प्रभावी सुधार **कई स्तरों** पर काम करते हैं — **राज्य, समाज,** और **परिस्थिति के अनुसार समाधान।**

Blurring of Inequities
असमानताओं का धुंधलापन

- An urban, financially independent woman's issues differ vastly from a rural woman's fear of **sexual violence**.

एक शहरी, आर्थिक रूप से स्वतंत्र महिला की समस्याएं एक ग्रामीण महिला की **यौन हिंसा के डर** से काफी भिन्न हैं।

- Feminist discourse often collapses **different experiences** into a **single narrative**, hiding **real inequities**.

  नारीवादी विमर्श अक्सर **विभिन्न अनुभवों** को **एक ही कहानी** में बदल देता है, जिससे **वास्तविक असमानताएं** छिप जाती हैं।

- This approach can **alienate people**, especially men who already feel **embattled**.

  यह दृष्टिकोण लोगों को **दूर** कर सकता है, खासकर वे पुरुष जो पहले से ही **संकटग्रस्त** महसूस करते हैं।

- For example, a man who suffers **public humiliation** at work might feel more burdened than a wife doing **unpaid domestic work**.

  उदाहरण के लिए, एक पुरुष जो **सार्वजनिक अपमान** सहता है, उसे घर पर **अवैतनिक कार्य** कर रही पत्नी से अधिक तनाव हो सकता है।

- This is not a rejection of **feminism**, but a call for one that includes **multiple sufferings and responsibilities**.

  यह **नारीवाद** का विरोध नहीं है, बल्कि ऐसा नारीवाद अपनाने की अपील है जो **विविध पीड़ाओं और जिम्मेदारियों** को स्वीकार करे।

Towards a Compassionate Feminism
दयालु नारीवाद की ओर

- Acknowledging complexity is not **complicity**, but a strategic way to **avoid backlash** in polarised times.

  जटिलता को स्वीकार करना **समझौता** नहीं, बल्कि **विरोध प्रतिक्रिया से बचने** की रणनीति है।

- A compassionate feminism invites **solidarity**, not **defensiveness**, especially from **marginalised men**.

  एक **दयालु नारीवाद** विशेषकर **हाशिए पर पड़े पुरुषों** से एकजुटता मांगता है, **रक्षात्मकता** नहीं।

- We need a feminism that can recognise **injustice** without becoming **antagonistic**.

  हमें ऐसा नारीवाद चाहिए जो **अन्याय** को पहचाने, पर **विरोधात्मक** न बने।

- It should distinguish between **structure and sentiment**, **cultural norms** and **individual acts**.

  यह **संरचना और भावना**, **सांस्कृतिक मान्यताओं** और **व्यक्तिगत कृत्यों** के बीच भेद कर सके।

- Since personal and public life are **inseparable** in **gender relations**, an antagonistic start may bring conflict home.

  चूंकि **लैंगिक संबंधों** में निजी और सार्वजनिक जीवन **अलग नहीं** होते, इसलिए **विरोधात्मक शुरुआत** घर में संघर्ष ला सकती है।

Sometimes, confrontation is necessary — but it should not be the **starting point**. कभी-कभी संघर्ष आवश्यक होता है — लेकिन यह **प्रारंभिक बिंदु** नहीं होना चाहिए

BUDAPEST

Hungary passes legislation to ban public events by LGBTQ+

GS Paper I: Mapping

AFP

Hungary's Parliament on Monday passed an amendment to the constitution that allows the government to ban public events by LGBTQ+ communities. The amendment, which required a two-thirds vote, passed along party lines with 140 votes for and 21 against. AP

New tensions flare as Algeria tells 12 French officials to leave in 48 hours

GS Paper I: Mapping

Agence France-Presse
PARIS

Fresh tensions flared between France and Algeria on Monday as the French Foreign Minister said its former colony had ordered 12 French officials to leave in 48 hours.

The announcement was linked to the arrest of three Algerian nationals in France, Foreign Minister Jean-Noel Barrot said.

For decades, ties between France and Algeria have gone through diplomatic upheavals, and Monday's announcement comes at a delicate time in relations and underscores the difficulties in repairing ties.

"I am asking Algerian authorities to abandon these expulsion measures," Mr. Barrot said, adding: "If the decision to send back our officials is maintained, we will have no other choice but to respond immediately."

The 12 authorities include some members of the French Interior Ministry, a diplomatic source said.

Despite the new tensions, French diplomatic sources said that "contacts are being maintained" and that Paris would like to "return to an easing of ten-

Jean-Noel Barrot

sions" with Algeria.

Earlier this month, Mr. Barrot visited Algeria on a fence-mending trip after months of tensions that had brought the two countries to the brink of a diplomatic breakdown.

On Friday, French pro-

secutors indicted three Algerians, including a consular official, on suspicion of involvement in the 2024 abduction of an opponent of the Algerian regime, Amir Boukhors, in a Paris suburb.

The men, who are also being prosecuted for "terrorist" conspiracy, were placed in pre-trial detention.

On Saturday, the Algerian Foreign Ministry denounced "rotten arguments" by the French interior ministry and criticised an "unacceptable judicial conspiracy", referring to the arrest of its consular agent.

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

1. **Choksi arrested in Belgium as India seeks extradition**

   भारत द्वारा प्रत्यर्पण की मांग के बीच चोकसी बेल्जियम में गिरफ्तार

2. **Loans now cheaper as major banks cut rates**

   अब ऋण सस्ते हुए क्योंकि प्रमुख बैंकों ने दरें घटाईं

3. **Indian agencies approached Belgium for Mehul Choksi's extradition in October 2024**

   भारतीय एजेंसियों ने अक्टूबर 2024 में मेहुल चोकसी के प्रत्यर्पण के लिए बेल्जियम से संपर्क किया

4. **Forensic samples can soon be analysed by private labs too: Shah**

   जल्द ही निजी लैब्स में भी फोरेंसिक नमूनों का परीक्षण किया जा सकेगा: शाह

5. **Unnecessary Change**

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Choksi arrested in Belgium as India seeks extradition
भारत द्वारा प्रत्यर्पण की मांग के बीच चोकसी बेल्जियम में गिरफ्तार

Choksi arrested in Belgium as India seeks extradition

GS Paper II

Fraud fallout
An overview of the Mehul Choksi case

Bank fraud:
Mehul Choksi and Nirav Modi defrauded Punjab National Bank of ₹13,578 crore using fake credit instruments and shell companies

Tactical escape:
The accused fled India in January 2018, just before

the CBI registered its first case in the banking scam

Arrest in Dominica:
Choksi was arrested in Dominica in 2021; he claimed abduction. Interpol withdrew its Red Notice in March 2023

Mehul Choksi. ANI

Latest arrest:
On April 12, 2025, Belgian authorities arrested Choksi after India renewed extradition efforts

Suhasini Haidar
Devesh K. Pandey
NEW DELHI

Belgian authorities confirmed on Monday that they have Mehul Choksi, the fugitive diamond businessman, in custody after he was arrested over the weekend.

He is wanted, along with his nephew Nirav Modi, in a case by Punjab National Bank alleging loan frauds worth more than ₹13,578 crore. The Central Bureau of Investigation (CBI) has been pursuing his extradition since 2018, when he left the country.

Mr. Choksi was arrested by the Belgium enforcement agency on April 12, months after India moved a request seeking his extradition.

Mr. Choksi is an Antiguan citizen now, and had moved to Belgium a few years ago, reportedly for cancer treatment. He was arrested near his home in Antwerp. As per reports, he secured a Belgian residency permit in November 2023, as his wife is a Belgian citizen.

Extradition request
"[Mr. Choksi] is being detained in anticipation of further judicial proceedings. Access to his legal counsel has been assured," the Belgian Federal Public

Service of Justice or Justice department told *The Hindu* in a written statement. "We can confirm that the Indian authorities have introduced an extradition request for Mr. Choksi," it added. Mr. Choksi's case is due to come up in Belgian courts next week.

In 2021, a court in Dominica had dismissed a CBI petition for his extradition after he alleged that he had been kidnapped and beaten up by "henchmen" working for the Indian government.

International agency Interpol had subsequently withdrawn its Red Notice for Mr. Choksi after his lawyers had claimed human rights violations and "political targeting" by the Modi government.

"It goes without saying that we will fight that extradition, we have serious questions about the course of events," Mr. Choksi's Belgian lawyer Simon Bekaert told the newspaper *De Standaard*, adding that he intended to argue that Mr. Choksi would not receive a "fair trial" in India.

Mr. Choksi is currently appealing a decision by the Antiguan government to revoke his citizenship

(Inputs from Sandeep Phukan)

'FREEDOM REPORT'
» PAGE 4

Belgian authorities confirmed that they have Mehul Choksi, the fugitive diamond businessman, in custody after his arrest over the weekend.
बेल्जियम अधिकारियों ने पुष्टि की कि उन्होंने हीरा व्यापारी भगोड़े मेहुल चोकसी को सप्ताहांत में गिरफ्तार कर हिरासत में लिया है।

• Choksi is wanted, along with his nephew **Nirav Modi**, in the **Punjab National Bank fraud case** worth more than **₹13,578 crore**.
• चोकसी अपने भतीजे **नीरव मोदी** के साथ **पंजाब नेशनल बैंक धोखाधड़ी मामले** में वांछित है, जिसकी रकम **₹13,578 करोड़** से अधिक है।

• The **CBI** has been pursuing his **extradition** since **2018**, when he **left India**.
• **सीबीआई** तब से उनका **प्रत्यर्पण** चाह रही है जब उन्होंने **2018 में भारत छोड़ा** था।

• Choksi was arrested by the **Belgian enforcement agency** on **April 12**, months after India submitted the **extradition request**.
• चोकसी को **12 अप्रैल** को **बेल्जियम प्रवर्तन एजेंसी** ने गिरफ्तार किया, कई महीने बाद जब भारत ने **प्रत्यर्पण की मांग** रखी थी।

• Choksi is currently an **Antiguan citizen**, and had moved to **Belgium a few years ago**, reportedly for **cancer treatment**.
• चोकसी वर्तमान में **एंटीगुआ के नागरिक** हैं और कुछ वर्ष पहले **कैंसर के इलाज** के लिए **बेल्जियम चले गए थे।**

• He was arrested near his home in **Antwerp**.
• उन्हें **एंटवर्प** में अपने घर के पास गिरफ्तार किया गया।

• He reportedly obtained a **Belgian residency permit** in **November 2023**, as his **wife is a Belgian citizen**.

• उन्होंने कथित रूप से **नवंबर 2023** में **बेल्जियम निवास परमिट** प्राप्त किया था, क्योंकि उनकी **पत्नी बेल्जियम नागरिक** हैं।

Extradition Request and Legal Proceedings
प्रत्यर्पण की मांग और कानूनी कार्यवाही

• Belgian Justice Department confirmed that Choksi is being **detained** in anticipation of **further judicial proceedings**.
• बेल्जियम न्याय विभाग ने पुष्टि की कि चोकसी को **आगे की न्यायिक प्रक्रिया** की प्रतीक्षा में **हिरासत में** रखा गया है।

• The department also stated that **access to legal counsel** has been assured.
• विभाग ने यह भी बताया कि उन्हें **कानूनी सलाहकार तक पहुंच** सुनिश्चित कराई गई है।

• Belgian authorities confirmed that **India has officially introduced an extradition request**.
• बेल्जियम अधिकारियों ने पुष्टि की कि **भारत ने औपचारिक रूप से प्रत्यर्पण की मांग** की है।

• His case is expected to come up in **Belgian courts next week**.
• उनका मामला **अगले सप्ताह बेल्जियम की अदालतों** में पेश होने की संभावना है।

• In **2021**, a **Dominican court** had dismissed India's petition for extradition, after Choksi claimed he was **kidnapped and assaulted** by "henchmen" of the Indian government.
• **2021** में, **डोमिनिका की एक अदालत** ने भारत की प्रत्यर्पण याचिका को खारिज कर दिया था, जब चोकसी ने आरोप लगाया था कि उन्हें भारतीय सरकार के "गुर्गों" ने **अपहरण कर पीटा** था।

• **Interpol** had later **withdrawn its Red Notice** for Choksi after his lawyers cited **human rights violations** and **political targeting** by the **Modi government**.
• बाद में **इंटरपोल** ने चोकसी के खिलाफ अपना **रेड नोटिस वापस ले लिया**, जब उनके वकीलों ने **मानवाधिकार उल्लंघन** और **राजनीतिक निशाना बनाए जाने** का आरोप लगाया।

• Choksi's Belgian lawyer **Simon Bekaert** stated that they will **fight the extradition**, citing concerns about a **fair trial in India**.
• चोकसी के बेल्जियम वकील **साइमन बेकार्ट** ने कहा कि वे **प्रत्यर्पण के खिलाफ लड़ेंगे**, क्योंकि उन्हें **भारत में निष्पक्ष सुनवाई** को लेकर संदेह है।

• Choksi is also **appealing against** the **revocation of his Antiguan citizenship**.
• चोकसी **अपने एंटीगुआ नागरिकता रद्द करने** के निर्णय के खिलाफ भी **अपील कर रहे हैं**

Telangana becomes first State to notify sub-categorisation of Scheduled Castes

GS Paper II: Sub-categorization of SCs

M. Rajeev
HYDERABAD

A. Revanth Reddy

The Telangana government has notified the implementation of the Telangana Scheduled Castes (Rationalisation of Reservations) Act 2025. The State has issued a gazette notification with April 14, 2025 as the appointed day for categorisation of Scheduled Castes (SC) into three groups.

Telangana has become the first State into the country to operationalise the classification of the Scheduled Castes after the Supreme Court's land mark judgment on August 1 last year upholding the constitutionality of sub-classifying the Scheduled Castes (SCs) and Scheduled Tribes (STs) to grant separate quotas for the most marginalised groups within these communities.

Multiple factors
The government took into consideration the contents of the top court's verdict, empirical data, social, economic, educational, employment, and political status of the communities in the categorisation of SCs into three groups for implementation of the rule of reservation. Accordingly, 15 sub-castes categorised as most backward had been classified as Group-I with 1% reservation. Though these groups constituted 0.5% of the population, the government had decided to provide them with 1% reservation with a view to provide educational and employment opportunities to the most marginalised groups within these communities. In all, 18 sub-castes of the total 59 which received marginal benefits have been placed under Group-II with 9% reservation while 26 sub-castes that were relatively better placed in terms of opportunities had been placed in Group III with 5% reservation.

The Cabinet sub-committee headed by Minister for Irrigation N. Uttam Kumar Reddy and co-chaired by Minister for Health C. Damodar Rajanarsimha handed over the first copy of the gazette notification to Chief Minister A. Revanth Reddy on Monday.

Mr. Rajanarsimha said 33 of the 59 sub-castes were continuing in the same group in which they were placed in the past and there was shuffling of only 26 sub-castes constituting 3.43% of SC population.

Recruitment to government jobs would forthwith be based on the categorisation of the SC communities, Mr. Rajanarsimha said, adding the categorisation would not be applicable to the vacancies already notified.

Loans now cheaper as major banks cut rates

अब ऋण सस्ते हुए क्योंकि प्रमुख बैंकों ने दरें घटाईं

Major banks have reduced their lending and deposit rates following the Reserve Bank of India (RBI) cutting the repo rate by 50 basis points in 2025.

2025 में भारतीय रिज़र्व बैंक (RBI) द्वारा रेपो रेट में 50 बेसिस प्वाइंट की कटौती के बाद प्रमुख बैंकों ने अपने ऋण और जमा दरों में कटौती की है।

• **State Bank of India (SBI)** reduced its **repo rate-linked lending rates** by **25 basis points** to **8.25%**, and its **external benchmark lending rate** to **8.65%**.

• **स्टेट बैंक ऑफ इंडिया (SBI)** ने **रेपो रेट से जुड़ी ऋण दरों** को **25 बेसिस प्वाइंट** घटाकर **8.25%** कर दिया है, और **बाहरी बेंचमार्क ऋण दर** को **8.65%** कर दिया है।

• **HDFC Bank**, a **private sector bank**, also cut its **deposit interest rates** by **25 basis points**.

• **निजी क्षेत्र के एचडीएफसी बैंक** ने भी **जमा पर ब्याज दरों** में **25 बेसिस प्वाइंट** की कटौती की है।

Indian agencies approached Belgium for Mehul Choksi's extradition in October 2024

GS Paper II: Extradition

Devesh K. Pandey
NEW DELHI

The Indian agencies had initially approached the Belgian authorities for Mehul Choksi's extradition between August and October 2024.

"In July 2024, information was received from the National Central Bureau, Brussels that Mr. Choksi was undergoing some medical treatment in Belgium. Basis that information, several documents related to him were shared with NCB, Brussels. Thereafter, on consultations with the officials of the CBI and Ministry of External Affairs, a precise extradition request dated October 25, 2024, as per the desired model of Belgium authorities, was sent to the Government of Kingdom of Belgium," said a senior official.

The Enforcement Directorate has so far attached assets worth ₹2,566 crore in connection with the investigation against the PNB

The ED has so far attached assets worth ₹2,566 crore in connection with the investigation

scam case "mastermind".

The properties, attached through nine separate orders, include 105 immovable assets worth more than ₹1,600 crore - flats, office units, land parcels, commercial buildings and factory units in Mumbai, Raigad, Nashik, and Nagpur in Maharashtra, Kolkata in West Bengal, Surat in Gujarat, Villupuram in Tamil Nadu, and Ranga Reddy district in Telangana. Jewellery, diamonds and precious metals worth about ₹230 crore have been attached. Properties worth close to ₹85 crore have been attached in the UAE, U. S., Thailand, and Japan, whereas movable properties valued at ₹598 crore have been seized following search operations

at 136 locations across India.

As part of the initiatives for recovery and restitution of assets, the ED has facilitated the handover of properties worth about 150 crore to the liquidator of Mr. Choksi's company Gitanjali Gems Limited.

The remaining assets secured to banks are being handed over as per the court order dated September 10, 2024. In February this year, the court also allowed the handover of non-mortgaged properties to the liquidator for monetisation.

In this case, so far 15 Letters Rogatory (letter of request) have been sent to Hong Kong, Singapore, Thailand, the U.S., Belgium, China, Italy, Japan, the United Kingdom, and the UAE for details of the companies, assets, bank accounts, execution of provisional asset attachment orders, and other information related to Mr. Choksi and his companies.

• In **July 2024**, information was received from the **National Central Bureau (NCB), Brussels** that Mr. Choksi was undergoing **medical treatment** in **Belgium**.

• जुलाई 2024 में नेशनल सेंट्रल ब्यूरो (ब्रसेल्स) से सूचना प्राप्त हुई कि चोकसी बेल्जियम में चिकित्सीय उपचार करवा रहे थे।

• Based on this information, several **documents** related to him were shared with **NCB, Brussels**.

• इस सूचना के आधार पर उनसे संबंधित कई **दस्तावेज एनसीबी, ब्रसेल्स** के साथ साझा किए गए।

• Following consultations with the **CBI** and **Ministry of External Affairs**, a **precise extradition request** was sent on **October 25, 2024**, as per the **Belgian authorities' model**.

• **सीबीआई** और **विदेश मंत्रालय** के अधिकारियों से परामर्श के बाद, **25 अक्टूबर 2024** को **बेल्जियम के अधिकारियों के अनुसार** एक **सटीक प्रत्यर्पण अनुरोध** भेजा गया।

Enforcement Directorate's Action on Choksi's Assets
चोकसी की संपत्तियों पर प्रवर्तन निदेशालय की कार्रवाई

• The **Enforcement Directorate (ED)** has so far **attached assets worth ₹2,566 crore** in the **PNB scam** case.

• **प्रवर्तन निदेशालय (ईडी)** ने अब तक **पीएनबी घोटाले** में **₹2,566 करोड़ मूल्य की संपत्तियां** जब्त की हैं।

• These include **105 immovable assets** worth over **₹1,600 crore** – such as **flats, office units, land parcels, commercial buildings**, and **factory units**.

• इनमें **₹1,600 करोड़ से अधिक मूल्य की 105 अचल संपत्तियां** शामिल हैं – जैसे कि **फ्लैट्स, ऑफिस यूनिट्स, जमीन, वाणिज्यिक भवन** और **फैक्ट्री यूनिट्स**।

• These properties are located in **Mumbai, Raigad, Nashik, Nagpur (Maharashtra); Kolkata (West Bengal); Surat (Gujarat); Villupuram (Tamil Nadu); and Ranga Reddy (Telangana)**.

• ये संपत्तियां **मुंबई, रायगढ़, नासिक, नागपुर (महाराष्ट्र); कोलकाता (पश्चिम बंगाल); सूरत (गुजरात); विल्लुपुरम (तमिलनाडु); और रंगा रेड्डी (तेलंगाना)** में स्थित हैं।

• **Jewellery, diamonds, and precious metals** worth about **₹230 crore** have also been attached.

• लगभग **₹230 करोड़ मूल्य के गहने, हीरे और कीमती धातुएं** भी जब्त की गई हैं।

• Properties worth around **₹85 crore** have been attached in the **UAE, U.S., Thailand, and Japan**.

• **यूएई, अमेरिका, थाईलैंड और जापान** में लगभग **₹85 करोड़ मूल्य की संपत्तियां** जब्त की गई हैं।

• **Movable properties** worth **₹598 crore** have been seized during searches at **136 locations across India**.

• भारत भर के **136 स्थानों** पर छापों के दौरान **₹598 करोड़ मूल्य की चल संपत्तियां** जब्त की गई हैं।

Recovery and Handover of Assets
संपत्तियों की वसूली और सौंपना

• The ED facilitated the **handover of assets worth ₹150 crore** to the **liquidator of Gitanjali Gems Ltd**, owned by Mr. Choksi.

• ईडी ने **मेहुल चोकसी की कंपनी गीतांजलि जेम्स लिमिटेड** के **लिक्विडेटर को ₹150 करोड़ मूल्य की संपत्तियां** सौंपने में मदद की।

• Remaining assets secured to banks are being handed over **as per court order dated September 10, 2024**.

• शेष संपत्तियां **10 सितंबर 2024 की अदालत के आदेश** के अनुसार बैंकों को सौंपी जा रही हैं।

• In **February 2024**, the court also allowed **handover of non-mortgaged properties** to the **liquidator** for **monetisation**.

• **फरवरी 2024** में अदालत ने **गैर-बंधक संपत्तियों** को **मुद्रीकरण** के लिए **लिक्विडेटर को सौंपने** की अनुमति दी।

International Legal Assistance

अंतरराष्ट्रीय कानूनी सहायता

• So far, **15 Letters Rogatory (requests)** have been sent to **Hong Kong, Singapore, Thailand, U.S., Belgium, China, Italy, Japan, United Kingdom, and UAE**.

• अब तक **हांगकांग, सिंगापुर, थाईलैंड, अमेरिका, बेल्जियम, चीन, इटली, जापान, यूनाइटेड किंगडम और यूएई** को **15 लेटर्स रोगेटरी (अनुरोध पत्र)** भेजे जा चुके हैं।

• These letters sought **details of companies, assets, bank accounts**, and execution of **provisional asset attachment orders** related to Mr. Choksi and his companies.

• इन पत्रों में **कंपनियों, संपत्तियों, बैंक खातों** और **प्रोविजनल एसेट अटैचमेंट आदेशों** से संबंधित विवरण मांगा गया है, जो **चोकसी और उनकी कंपनियों** से जुड़े हैं।

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Forensic samples can soon be analysed by private labs too: Shah

GS Paper II: Governance

The
NEW DELHI

Union Home Minister Amit Shah on Monday said that the Ministry is working on an agreement to allow certain samples received by government-owned forensic science laboratories (FSL) to also be analysed by private laboratories.

Mr. Shah said there is a need for 30,000 trained professionals to visit every scene of crime for which the punishment is more than seven years in prison under the new criminal laws. He noted that each year, 36,000 students will graduate from the National Forensic Sciences University (NFSU), many of whom will go on to work in private forensic laboratories as well.

The Minister said that due to the farsightedness of Prime Minister Narendra Modi, the government established he NFSU in 2020, while three new criminal laws came into force in 2024. While seven campuses have been esta-

Amit Shah

blished so far, nine more will be set up in the next six months, he said. Apart from these, the establishment of 10 more campuses is also proposed, he added.

Addressing the All India Forensic Science Summit 2025 organised by the NFSU, he emphasised the need to categorise offenders into habitual criminals, those driven to crime by circumstances, and those who committed crimes out of necessity.

He stressed the importance of providing psychological counselling to such individuals within jails, with the goal of encouraging them to become responsible citizens.

Forensic samples can soon be analysed by private labs too: Shah

जल्द ही निजी लैब्स में भी फोरेंसिक नमूनों का परीक्षण किया जा सकेगा: शाह

Union Home Minister Amit Shah said that the Ministry of Home Affairs is working on an agreement to allow certain forensic samples received by government-owned FSLs to also be analysed by private laboratories.

केंद्रीय गृह मंत्री अमित शाह ने कहा कि गृह मंत्रालय एक समझौते पर काम कर रहा है, जिसके तहत सरकारी फोरेंसिक विज्ञान प्रयोगशालाओं (FSL) को प्राप्त कुछ नमूनों का परीक्षण निजी प्रयोगशालाओं में भी किया जा सकेगा।

• He said there is a need for **30,000 trained professionals** to visit **every crime scene** where the punishment is more than **seven years** under the **new criminal laws**.

• उन्होंने कहा कि **नए आपराधिक कानूनों** के तहत, जिन अपराधों की सजा **सात वर्ष से अधिक** है, वहां हर **अपराध स्थल** पर जाने के लिए **30,000 प्रशिक्षित पेशेवरों** की आवश्यकता है।

• He informed that **36,000 students** will graduate each year from the **National Forensic Sciences University (NFSU)**,

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and many of them will also work in **private forensic laboratories**.

• उन्होंने जानकारी दी कि हर वर्ष **राष्ट्रीय फोरेंसिक विज्ञान विश्वविद्यालय (NFSU)** से **36,000 छात्र** स्नातक होंगे और उनमें से कई **निजी फोरेंसिक प्रयोगशालाओं** में भी काम करेंगे।

Expansion of Forensic Science Education
फोरेंसिक विज्ञान शिक्षा का विस्तार

• Mr. Shah said that due to the **foresight of Prime Minister Narendra Modi**, the government established **NFSU** in **2020**, and **three new criminal laws** came into effect in **2024**.

• श्री शाह ने कहा कि **प्रधानमंत्री नरेंद्र मोदी की दूरदृष्टि** के कारण सरकार ने **2020** में **NFSU** की स्थापना की और **2024** में **तीन नए आपराधिक कानून** लागू किए गए।

• So far, **seven campuses** of NFSU have been established, and **nine more** will be set up in the **next six months**.

• अब तक **NFSU** के **सात कैंपस** स्थापित किए जा चुके हैं और **अगले छह महीनों** में **नौ और कैंपस** स्थापित किए जाएंगे।

• Additionally, the establishment of **10 more campuses** is also **proposed**.

• इसके अलावा **10 और कैंपसों** की स्थापना का भी **प्रस्ताव** है।

Reformative Approach to Crime and Criminals
अपराध और अपराधियों के प्रति सुधारात्मक दृष्टिकोण

• While addressing the **All India Forensic Science Summit 2025** organized by **NFSU**, Mr. Shah emphasized the need to **categorise offenders** into **habitual criminals**, **those driven by circumstances**, and **those who committed crimes out of necessity**.

• **NFSU** द्वारा आयोजित **अखिल भारतीय फोरेंसिक विज्ञान सम्मेलन 2025** को संबोधित करते हुए श्री शाह ने अपराधियों को **आदतन अपराधी**, **परिस्थितियों के कारण अपराध करने वाले** और **मजबूरी में अपराध करने वाले** के रूप में **वर्गीकृत** करने की आवश्यकता पर बल दिया।

• He stressed the importance of providing **psychological counselling** to such individuals **within jails**, with the goal of encouraging them to become **responsible citizens**.

• उन्होंने **जेलों में** ऐसे व्यक्तियों को **मनोवैज्ञानिक परामर्श** देने की **महत्ता** पर ज़ोर दिया ताकि उन्हें **जिम्मेदार नागरिक** बनने के लिए प्रेरित किया जा सके।

GS Paper II: RTI

Unnecessary change

Amending the RTI Act through the Data Protection Bill is unwarranted

That the Right to Information Act and the use of RTIs have enhanced the accountability of those in governance in India goes without saying. In the last few years there have been attempts to dilute the provisions of the Act, a landmark one that was passed 20 years ago. Clearly, some in governance and administration have treated the Act and its provisions on transparency and disclosure to be encumbrances. A significant threat has now emerged in the amendment to Section 8(1)(j) of the Act, which has been introduced in Section 44(3) of the Digital Personal Data Protection (DPDP) Act, 2023. The Act itself is an outcome of *K.S. Puttaswamy* (2017), a judgment that upheld the right of privacy as a fundamental right under Article 21 of the Constitution. Section 8(1)(j) of the RTI Act allows government bodies to withhold "information which relates to public information" provided its disclosure is not related to public interest or results in an unnecessary invasion of privacy. While doing so, it provides the safeguard that if the Public Information Officer or an appellate authority finds public interest in disclosing such information, it could still be available. This safeguard is important. Some information related to public servants, such as college degrees or caste certificates, might be private, but as a recent and controversial case of a bureaucrat using a fake caste certificate showed, such information could be released in public interest. Section 44(3) of the DPDP act amends Section 8(1)(j) by allowing government bodies to simply withhold "personal information" without the safeguard provisions on public interest or other such exceptions.

In a letter to Congress leader Jairam Ramesh, Union Minister of Information and Broadcasting, Ashwini Vaishnaw defended the amendment, saying that Section 44(3) was aimed at preventing the RTI Act's "misuse" and was to harmonise the requirement of right to privacy and the right to information. He also said that information such as salaries of public officials would still remain accessible through Section 3 of the DPDP Act. But by amending the RTI Act itself – an outcome that was never the intention of *K.S. Puttaswamy* – and by defining "personal information" vaguely in Section 44(3) of the DPDP Act, authorities could deny RTI requests of previously public data by classifying them as "personal" – and lessen public scrutiny. The RTI Act already harmonises concerns related to the right to information and privacy by subjecting them to the question of public interest. Therefore, the amendment using the DPDP Act is unnecessary and unwarranted. The government must take the concerns of civil society and transparency activists and remove the provision amending the RTI Act, in the DPDP Act.

Unnecessary
अनावश्यक बदल

Amending the RTI Act through the Data Protection Bill is unwarranted
डेटा प्रोटेक्शन बिल के माध्यम से सूचना का अधिकार अधिनियम में संशोधन अनुचित है

• The **Right to Information (RTI) Act** and the use of **RTI applications** have significantly enhanced the **accountability** of people in governance in India.
भारत में **सूचना का अधिकार (RTI) अधिनियम** और **RTI आवेदनों** के उपयोग ने शासन में लोगों की **जवाबदेही** को काफी बढ़ाया है।

• In recent years, there have been efforts to **weaken** the provisions of this **20-year-old landmark law**.
हाल के वर्षों में, इस **20 साल पुराने ऐतिहासिक कानून** के प्रावधानों को **कमजोर** करने के प्रयास हुए हैं।

• Some in governance and administration view the **transparency and disclosure provisions** of the Act as **hindrances**.
शासन और प्रशासन में कुछ लोग इस अधिनियम की **पारदर्शिता और खुलासे की धाराओं** को **रुकावट** मानते हैं।

• A major threat has emerged with the **amendment to Section 8(1)(j)** of the RTI Act, introduced through **Section 44(3)** of the **Digital Personal Data Protection (DPDP) Act, 2023**.
एक बड़ा खतरा तब सामने आया जब RTI अधिनियम की **धारा 8(1)(j)** में संशोधन को **डिजिटल व्यक्तिगत डेटा संरक्षण अधिनियम, 2023** की **धारा 44(3)** के माध्यम से पेश किया गया।

• The **DPDP Act** was brought in as a result of the **K.S. Puttaswamy judgment (2017)**, which upheld **privacy as a fundamental right** under **Article 21** of the Constitution.
DPDP अधिनियम को **के.एस. पुट्टस्वामी निर्णय (2017)** के बाद लाया गया, जिसमें **संविधान के**

अनुच्छेद 21 के तहत **गोपनीयता को एक मौलिक अधिकार** के रूप में मान्यता दी गई थी।

- Section 8(1)(j) of the RTI Act allows withholding of **personal information**, unless its **disclosure is in public interest** or does not cause **unwarranted invasion of privacy**.
  RTI अधिनियम की **धारा 8(1)(j) निजी जानकारी** को रोकने की अनुमति देती है, जब तक कि उसका **प्रकटन जनहित में** न हो या वह **अनावश्यक गोपनीयता का उल्लंघन** न करता हो।

- It includes a safeguard that if the **Public Information Officer** or **Appellate Authority** finds **public interest**, the information can still be disclosed.
  इसमें यह सुरक्षा उपाय शामिल है कि यदि **जन सूचना अधिकारी** या **अपील प्राधिकरण** को **जनहित** दिखाई देता है, तो जानकारी फिर भी प्रदान की जा सकती है।

- This safeguard is essential in cases like that of a **bureaucrat using a fake caste certificate**, where such information may appear private but is important for **public scrutiny**.
  यह सुरक्षा उपाय ऐसे मामलों में जरूरी है जैसे कि एक **नौकरशाह द्वारा फर्जी जाति प्रमाण पत्र** का उपयोग, जहाँ जानकारी निजी लग सकती है परंतु **जनहित के लिए जरूरी** है।

- Section 44(3) of the DPDP Act amends Section 8(1)(j) to **remove these safeguards**, allowing authorities to withhold **any personal information** without considering public interest.
  DPDP अधिनियम की **धारा 44(3)** RTI की **धारा 8(1)(j)** को संशोधित करके ये **सुरक्षा उपाय हटा देती है**, जिससे **किसी भी व्यक्तिगत जानकारी** को बिना जनहित पर विचार किए रोका जा सकता है।

- In response to concerns, **Union Minister Ashwini Vaishnaw** stated in a letter to **Jairam Ramesh** that the amendment prevents RTI misuse and balances **privacy** and **information rights**.
  इन चिंताओं के जवाब में **केंद्रीय मंत्री अश्विनी वैष्णव** ने **जयराम रमेश** को पत्र में कहा कि यह संशोधन RTI के **दुरुपयोग को रोकता है** और **गोपनीयता** तथा **सूचना के अधिकार** के बीच संतुलन बनाता है।

- He added that **salary details of public officials** would still be accessible under **Section 3** of the DPDP Act.
  उन्होंने यह भी कहा कि **लोक सेवकों के वेतन विवरण** अब भी **DPDP अधिनियम की धारा 3** के तहत उपलब्ध रहेंगे।

- However, by amending the **RTI Act directly**, which was **never intended** in the **K.S. Puttaswamy** judgment, the government may reduce **public access** to previously accessible data.

  हालांकि, **RTI अधिनियम में सीधे संशोधन** करना, जो **के.एस. पुट्टस्वामी निर्णय** में **कभी इरादा नहीं** था, सरकार को पहले से उपलब्ध डेटा तक **जन पहुंच** कम करने की अनुमति दे सकता है।

- The amendment could allow **vague definitions of personal information** to **deny RTI requests**, thus reducing **transparency and accountability**.

  यह संशोधन **व्यक्तिगत जानकारी की अस्पष्ट परिभाषा** के माध्यम से **RTI अनुरोधों को अस्वीकार** करने की अनुमति दे सकता है, जिससे **पारदर्शिता और जवाबदेही** कम हो सकती है।

- The RTI Act already provides a **balance between right to information and privacy** by assessing the **public interest** involved.

  RTI अधिनियम पहले से ही **सूचना के अधिकार और गोपनीयता** के बीच संतुलन प्रदान करता है, जिसमें **जनहित** का आकलन किया जाता है।

- Therefore, the amendment via the **DPDP Act** is **unnecessary and unjustified**.

  इसलिए, **DPDP अधिनियम** के माध्यम से किया गया संशोधन **अनावश्यक और अनुचित** है।

The government should consider the concerns of **civil society and transparency advocates**, and **remove the amendment to the RTI Act** from the DPDP law.

सरकार को **नागरिक समाज और पारदर्शिता कार्यकर्ताओं** की चिंताओं को ध्यान में रखते हुए, **RTI अधिनियम में संशोधन को DPDP कानून** से हटाना चाहिए।

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

1. **Loans now cheaper as major banks cut rates**

   अब ऋण सस्ते हुए क्योंकि प्रमुख बैंकों ने दरें घटाईं

2. **Stocks surge after U.S. tariff exemptions even as Trump doubles down on China**

अमेरिका द्वारा टैरिफ छूट के बाद शेयरों में तेजी, लेकिन ट्रंप चीन पर सख्त रुख बनाए हुए हैं

3. **Amid 'GPS spoofing' claims, IAF says Myanmar 'missions were achieved' as planned**

   'GPS स्पूफिंग' के दावों के बीच IAF ने कहा कि म्यांमार में 'मिशन योजना के अनुसार पूरे हुए'

4. **Miniature laser grown onto silicon chip could revolutionise computing**

   सिलिकॉन चिप पर उगाया गया लघु लेज़र कंप्यूटिंग में क्रांति ला सकता है

5. **Land-holding Farmers Doing Non-Farming Activities Helps Efficiency**

   भूमि धारक किसानों द्वारा गैर-कृषि गतिविधियों में भागीदारी से दक्षता में वृद्धि होती है

6. **How is spaceflight safety ensured?**

   अंतरिक्ष यात्रा की सुरक्षा कैसे सुनिश्चित की जाती है?

7. **How Governmentality Exacerbates the Problem of Farmers' Stubble Burning**

   कैसे सरकारीकरण किसानों के पराली जलाने की समस्या को बढ़ाता है

8. **How RBI is proposing to streamline rules of lending against yellow metal**

   रिजर्व बैंक ऑफ इंडिया सोने के खिलाफ उधारी के नियमों को सुव्यवस्थित करने का प्रस्ताव कैसे कर रहा है

Paradox of Youth
युवा विरोधाभास

· The **"Paradox of Youth"** refers to the presence of **young, massive stars** in close proximity to the **supermassive black hole** at the center of the **Milky Way**, known as **Sagittarius A***.
 "युवा विरोधाभास" उस स्थिति को दर्शाता है जिसमें **युवा और भारी तारे मिल्की वे के केंद्र** में स्थित **महाविशाल ब्लैक होल** (**सैजिटेरियस A*** के नाम से जाना जाता है) के बेहद पास पाए जाते हैं।

· This is paradoxical because the **intense gravitational forces** near the black hole should **inhibit star formation**, making the existence of these young stars **unexpected**.
 यह विरोधाभासी है क्योंकि ब्लैक होल के पास की **तीव्र गुरुत्वीय शक्ति** को देखकर यह माना जाता है कि वहां **तारों का निर्माण नहीं हो सकता**, इसलिए इन **युवा तारों की उपस्थिति अप्रत्याशित** है।

· **Infrared observations** have revealed a **cluster of young stars**, termed the **"S-stars,"** orbiting very close to **Sagittarius A***.
 इंफ्रारेड प्रेक्षणों में यह पाया गया है कि **"S-तारों"** के नाम से पहचाने गए **युवा तारों का एक समूह**, **सैजिटेरियस A*** के बहुत पास **कक्षा में घूम रहा है।**

Nitric Acid Corrosion of Steel When Diluted
नाइट्रिक अम्ल द्वारा स्टील का क्षरण जब उसे पतला किया जाता है

· **Concentrated nitric acid** is **less corrosive** to **stainless steel** than **diluted nitric acid**.
 एकाग्र नाइट्रिक अम्ल, **स्टेनलेस स्टील** के लिए **कम संक्षारक** होता है, जबकि **पतला नाइट्रिक अम्ल** अधिक संक्षारक होता है।

· **Concentrated nitric acid** forms a **passive oxide layer** on steel, which **protects** it from corrosion.

एकाग्र नाइट्रिक अम्ल, स्टील की सतह पर **निष्क्रिय ऑक्साइड परत** बनाता है, जो उसे **संक्षारण से बचाती** है।

· **Diluted nitric acid** lacks this property, leading to **increased corrosion rates**.

पतले नाइट्रिक अम्ल में यह गुण नहीं होता, जिससे **संक्षारण की दर अधिक** हो जाती है।

· Understanding this behavior is **crucial** in **industries** where **nitric acid is used**, to ensure the **longevity** and **safety** of **steel equipment**.

जहां **नाइट्रिक अम्ल का उपयोग** होता है, उन **उद्योगों** के लिए इस व्यवहार को समझना **महत्वपूर्ण** है, ताकि **स्टील उपकरणों की लंबी उम्र** और **सुरक्षा** सुनिश्चित की जा सके।

Moravec's Paradox: AI and Human Sensorimotor Skills
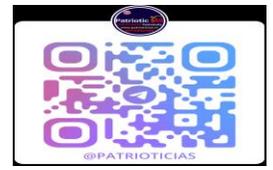# मोरावेक का पैरेडॉक्स: एआई और मानव संवेदी-मोटर कौशल

· **Moravec's Paradox** highlights the **difficulty** AI systems have in **replicating human sensorimotor skills**, despite **excelling** at **logical reasoning tasks**.

मोरावेक का पैरेडॉक्स यह दर्शाता है कि एआई प्रणालियाँ **तार्किक तर्क कार्यों** में **उत्कृष्ट** होने के बावजूद, **मानव संवेदी-मोटर कौशल** की **नकल करने में कठिनाई** महसूस करती हैं।

· Tasks humans perform **effortlessly**, like **walking** or **recognizing faces**, require **complex computations** that are **challenging for AI**.

मानव जिन कार्यों को **सरलता से करते हैं**, जैसे **चलना** या **चेहरे पहचानना**, उनके लिए **जटिल गणनाएँ** आवश्यक होती हैं, जो **एआई के लिए चुनौतीपूर्ण** होती हैं।

· This paradox underscores the **need** for **advanced algorithms** and **learning methods** to improve **AI's interaction** with the **physical world**.

यह पैरेडॉक्स इस बात को उजागर करता है कि **भौतिक दुनिया में एआई की सहभागिता** सुधारने के लिए **उन्नत एल्गोरिद्म** और **सीखने की विधियों** की **आवश्यकता** है।

Second Wind
सेकंड विंड

"Second wind" refers to a period of **increased alertness** experienced by individuals after **prolonged wakefulness**, often occurring **late at night**.

''सेकंड विंड'' उस अवधि को दर्शाता है जब व्यक्ति **लंबे समय तक जागे रहने** के बाद **अधिक सतर्कता** महसूस करते हैं, और यह अक्सर **देर रात** में होता है।

This is linked to the **circadian rhythm**, where the body temporarily **suppresses sleep signals**, leading to a feeling of **renewed energy**.

यह **सर्कैडियन रिदम** से जुड़ा होता है, जिसमें शरीर अस्थायी रूप से **नींद के संकेतों को दबा देता है**, जिससे **नई ऊर्जा** का अनुभव होता है।

- हालांकि यह **अस्थायी सतर्कता** दे सकता है, लेकिन यह **नींद के पैटर्न को बाधित** कर सकता है और आगे **नींद की कमी** को बढ़ा सकता है।

Water Strider: Walking on Water
वॉटर स्ट्राइडर: पानी पर चलना

- Water striders can walk on water due to the **surface tension** of water and their **hydrophobic legs**.
वॉटर स्ट्राइडर पानी की **सतही तनाव** और उनकी **हाइड्रोफोबिक टांगों** के कारण पानी पर चल सकते हैं।
- Their legs **distribute weight evenly** and **repel water**, preventing them from **breaking the surface tension**.
उनकी टांगें **वज़न को समान रूप से वितरित** करती हैं और **पानी को प्रतिकर्षित** करती हैं, जिससे वे **सतही तनाव को तोड़ने से बचती हैं।**
- Studying water striders aids in understanding **fluid mechanics** and inspires the design of **water-walking robots**.
वॉटर स्ट्राइडर का अध्ययन **तरल यांत्रिकी** को समझने में मदद करता है और **पानी पर चलने वाले रोबोटों** के डिज़ाइन के लिए प्रेरणा देता है।

Tardigrades
टार्डिग्रेड्स

- The micro-animal renowned for **surviving extreme conditions**, including **outer space**, and having evolved around **500 million years ago**, is the **Tardigrade**, commonly known as the **Water Bear** or **Moss Piglet**.
वह सूक्ष्म प्राणी जो **अत्यंत कठोर परिस्थितियों** जैसे कि **अंतरिक्ष** में भी जीवित रह सकता है और जिसकी उत्पत्ति लगभग **500 मिलियन वर्ष पहले** हुई थी, उसे **टार्डिग्रेड** कहा जाता है, जिसे सामान्यतः **वाटर बियर** या **मॉस पिग्लेट** के नाम से जाना जाता है।
- Tardigrades belong to the **phylum Tardigrada**.
टार्डिग्रेड्स **फाइलम टार्डिग्राडा** से संबंधित होते हैं।
- They typically range from **0.3 to 0.5 millimeters** in length, making them **nearly microscopic**.
इनकी लंबाई आमतौर पर **0.3 से 0.5 मिलीमीटर** होती है, जिससे ये **लगभग सूक्ष्मदर्शीय** हो जाते हैं।
- They are found globally in diverse environments including **mosses**, **lichens**, **leaf litter**, **soil**, **freshwater**, and **marine ecosystems**.
ये पूरी दुनिया में **काई**, **शैवाल**, **गिरी हुई पत्तियों**, **मिट्टी**, **मीठे पानी** और **समुद्री पारिस्थितिक तंत्रों** में पाए जाते हैं।
- Tardigrades are believed to have originated during the **Cambrian Period**, approximately **500 million years ago**, a time marked by rapid diversification of life forms.

माना जाता है कि टार्डिग्रेड्स की उत्पत्ति **कैंब्रियन काल** में लगभग **500 मिलियन वर्ष पहले** हुई थी, जो जीवन रूपों के **तेजी से विविधीकरण** का समय था।

- Fossils of tardigrades are rare due to their **minute size** and lack of **hard parts**. However, specimens preserved in **Cretaceous amber** (around **72 to 83 million years ago**) have provided insights into their ancient morphology.

  टार्डिग्रेड्स के **सूक्ष्म आकार** और **कठोर भागों की अनुपस्थिति** के कारण इनके जीवाश्म दुर्लभ हैं। हालांकि, **क्रिटेशियस ऐम्बर** में संरक्षित (लगभग **72 से 83 मिलियन वर्ष पुराने**) नमूनों ने इनकी **प्राचीन संरचना** पर प्रकाश डाला है।

Survival Mechanisms
जीवित रहने के तंत्र

- Tardigrades can enter a state called **cryptobiosis**, wherein they lose almost all **body water** and reduce **metabolic activity** to near zero.

  टार्डिग्रेड्स **क्रिप्टोबायोसिस** नामक स्थिति में प्रवेश कर सकते हैं, जिसमें वे लगभग पूरा **शरीर का जल** खो देते हैं और उनका **चयापचय सक्रियता** लगभग शून्य हो जाती है।

In this state, they can withstand:
इस स्थिति में वे सह सकते हैं:

- **Extreme Temperatures**: From just above **absolute zero** to over **150°C**.
  अत्यधिक तापमान: एब्सोल्यूट ज़ीरो से थोड़ा ऊपर से लेकर **150 डिग्री सेल्सियस** से अधिक तक।
- **Radiation**: Levels far exceeding what most life forms can endure.
  विकिरण: वह स्तर जो अधिकांश जीवों के लिए सहनीय नहीं होता है।
- **Vacuum of Space**: Surviving the absence of **atmosphere** and exposure to **cosmic radiation**.
  अंतरिक्ष का निर्वात: वायुमंडल की अनुपस्थिति और **कॉस्मिक रेडिएशन** में भी जीवित रहना।
- **High Pressure**: Up to **six times** the pressure of the **deepest ocean trenches**.
  अत्यधिक दबाव: समुद्र की सबसे गहरी खाइयों के दबाव से **छह गुना अधिक** तक सहन करना।
- They possess efficient **DNA repair mechanisms** and produce **protective proteins** that shield their genetic material from damage.
  इनमें प्रभावी **डीएनए मरम्मत तंत्र** होते हैं और ये **रक्षात्मक प्रोटीन** उत्पन्न करते हैं, जो इनके **आनुवंशिक पदार्थ** को क्षति से बचाते हैं।

Loans now cheaper as major banks cut rates

GS Paper III: Money Supply

MUMBAI

Major banks have cut their lending and deposit rates following the Reserve Bank of India's (RBI) 50-basis point reduction in repo rate in 2025.

State Bank of India (SBI) cut the repo rate-linked lending rates by 25 basis points to 8.25% and external benchmark lending rates to 8.65%. Private sector bank HDFC Bank cut its deposit interest rates by 25 basis points.

FULL REPORT ON
» PAGE 4

Loans now cheaper as major banks cut rates
अब ऋण सस्ते हुए क्योंकि प्रमुख बैंकों ने दरें घटाईं

Major banks have reduced their lending and deposit rates following the Reserve Bank of India (RBI) cutting the repo rate by 50 basis points in 2025.

• 2025 में भारतीय रिज़र्व बैंक (RBI) द्वारा रेपो रेट में 50 बेसिस प्वाइंट की कटौती के बाद प्रमुख बैंकों ने अपने ऋण और जमा दरों में कटौती की है।

• **State Bank of India (SBI)** reduced its **repo rate-linked lending rates** by **25 basis points** to **8.25%**, and its **external benchmark lending rate** to **8.65%**.

• **स्टेट बैंक ऑफ इंडिया (SBI)** ने **रेपो रेट से जुड़ी ऋण दरों** को **25 बेसिस प्वाइंट** घटाकर **8.25%** कर दिया है, और **बाहरी बेंचमार्क ऋण दर** को **8.65%** कर दिया है।

• **HDFC Bank**, a **private sector bank**, also cut its **deposit interest rates** by **25 basis points**.

• **निजी क्षेत्र के एचडीएफसी बैंक** ने भी **जमा पर ब्याज दरों** में **25 बेसिस प्वाइंट** की कटौती की है।

Stocks surge after U.S. tariff exemptions even as Trump doubles down on China

GS Paper III: Capital Market

WASHINGTON

Stock markets on Monday welcomed U.S. tariff exemptions for electronics, but President Donald Trump signalled the reprieve would be temporary and warned no country would get "off the hook" in his trade war – especially China.

Mr. Trump's trade war has raised fears about an economic downturn as the dollar has tumbled and investors have dumped U.S. government bonds, normally considered a safe haven investment.

But Asian and European stock markets rose firmly on Monday, after days of extreme volatility over several tariff twists and turns since Mr. Trump presented his "Liberation Day" levies on April 2.

The Paris and Frankfurt stock exchanges were up around 2% after midday, and London gained 1.7%, while Tokyo finished 1.2% higher and Hong Kong rose 2.4%.

The world's two largest economies have been locked in a fast-moving game of brinkmanship since Mr. Trump launched a global tariff assault.

The U.S. side had appeared to dial down the pressure slightly on Friday, listing tariff exemptions for smartphones, laptops, semiconductors, and other electronic products for which China is a major source.

But Mr. Trump and some of his top aides said on Sunday that the exemp-

Donald Trump

tions had been misconstrued and would only be temporary as his team pursued fresh tariffs against many items on the list.

"NOBODY is getting 'off the hook'... especially not China which, by far, treats us the worst!" the U.S. President posted on his Truth Social platform.

The Chinese Commerce Ministry said Friday's move was only "a small step" and all tariffs should be cancelled.

Beijing has sought to present itself as a stable alternative to an erratic Washington, courting countries spooked by the global economic storm.

The White House says Mr. Trump remains optimistic about securing a deal with China, although administration officials have made it clear they expect Beijing to reach out first. The White House insists the aggressive policy is bearing fruit, saying dozens of countries have already opened trade negotiations to secure deals before the 90-day pause ends.

CHINA'S TRANSFORMATION

 अमेरिका द्वारा टैरिफ छूट के बाद शेयरों में तेजी, लेकिन ट्रंप चीन पर सख्त रुख बनाए हुए हैं

 Stock markets on Monday responded positively to U.S. tariff exemptions for electronics.

 सोमवार को शेयर बाजारों ने अमेरिका द्वारा इलेक्ट्रॉनिक्स पर दी गई टैरिफ छूट का सकारात्मक स्वागत किया।

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• However, **President Donald Trump** warned that the relief would be **temporary** and emphasized that **no country**, especially **China**, would be exempt from his **trade war**.

• हालांकि, **राष्ट्रपति डोनाल्ड ट्रंप** ने चेतावनी दी कि यह राहत **अस्थायी** होगी और स्पष्ट किया कि **कोई भी देश**, विशेष रूप से **चीन**, उनके **व्यापार युद्ध** से नहीं बचेगा।

• Mr. Trump's trade policies have sparked fears of an **economic downturn**, with the **dollar falling** and investors **selling U.S. government bonds**, traditionally seen as **safe investments**.

• **ट्रंप की व्यापार नीतियों** ने **आर्थिक मंदी** की आशंका को जन्म दिया है, क्योंकि **डॉलर कमजोर** हुआ है और निवेशकों ने **अमेरिकी सरकारी बांड** बेचना शुरू कर दिया है, जिन्हें आम तौर पर **सुरक्षित निवेश** माना जाता है।

• Despite the volatility, **Asian and European stock markets** surged on Monday after days of instability due to **tariff uncertainties**.

• **टैरिफ अनिश्चितताओं** के कारण कई दिनों की अस्थिरता के बाद, **सोमवार को एशियाई और यूरोपीय शेयर बाजारों** में मजबूती देखी गई।

• **Paris** and **Frankfurt** stock exchanges rose around **2%**, **London** gained **1.7%**, **Tokyo** closed **1.2% higher**, and **Hong Kong** jumped **2.4%**.

• **पेरिस** और **फ्रैंकफर्ट** के शेयर बाजारों में लगभग **2%**, **लंदन** में **1.7%**, **टोक्यो** में **1.2%** और **हांगकांग** में **2.4%** की तेजी आई।

• The **U.S. and China**, the **world's two largest economies**, have been locked in a **tense trade standoff** since **April 2**, when Trump announced new tariffs.

• **अमेरिका और चीन**, जो कि **दुनिया की दो सबसे बड़ी अर्थव्यवस्थाएं** हैं, **2 अप्रैल** से **तनावपूर्ण व्यापार टकराव** में उलझे हुए हैं, जब ट्रंप ने नए टैरिफ की घोषणा की थी।

• On **Friday**, the **U.S.** granted **tariff exemptions** for items like **smartphones, laptops, and semiconductors**, many of which are sourced from **China**.

• **शुक्रवार को अमेरिका** ने **स्मार्टफोन, लैपटॉप, और सेमीकंडक्टर** जैसे सामानों पर **टैरिफ छूट** दी, जो कि बड़ी संख्या में **चीन से आयात** किए जाते हैं।

• However, **Trump** and his aides clarified on **Sunday** that these exemptions were **temporary**, and new tariffs on these products were still being considered.

• हालांकि, **रविवार को ट्रंप** और उनके सहयोगियों ने स्पष्ट किया कि ये छूट **अस्थायी** हैं और इन वस्तुओं पर नए टैरिफ लगाने पर अभी भी विचार किया जा रहा है।

• Trump posted that "**NOBODY is getting off the hook... especially not China**," on his **Truth Social** platform.

• ट्रंप ने अपने **ट्रूथ सोशल** प्लेटफॉर्म पर लिखा, "**कोई नहीं बचेगा... विशेष रूप से चीन नहीं।**"

• The **Chinese Commerce Ministry** called the U.S. exemptions only "**a small step**" and demanded that **all tariffs** be removed.

• **चीनी वाणिज्य मंत्रालय** ने अमेरिकी छूट को केवल "**एक छोटा कदम**" कहा और मांग की कि **सभी टैरिफ** हटा दिए जाएं।

• **Beijing** is attempting to portray itself as a **stable alternative** to an **unpredictable Washington**, reaching out to countries worried about the **global economic instability**.

• **बीजिंग** खुद को **अस्थिर वाशिंगटन** के मुकाबले **स्थिर विकल्प** के रूप में पेश कर रहा है, और **वैश्विक आर्थिक अस्थिरता** से चिंतित देशों से संपर्क कर रहा है।

• The **White House** has maintained that **Trump** is still **hopeful** of a deal with **China**, but expects **Beijing** to take the **first step**.

• **व्हाइट हाउस** ने कहा है कि **ट्रंप** अभी भी **चीन के साथ समझौते** को लेकर **आशावादी** हैं, लेकिन वह चाहते हैं कि **बीजिंग पहले कदम** उठाए।

• The administration believes that the **aggressive trade stance** is yielding results, as **dozens of countries** have started **trade talks** to secure deals before the **90-day pause** ends.

TELEGRAM CHANNEL: https://t.me/patrioticIAS
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• प्रशासन का मानना है कि उनकी **आक्रामक व्यापार नीति** सफल हो रही है, क्योंकि **कई देशों** ने **90-दिन की मोहलत** खत्म होने से पहले **व्यापार वार्ताएं** शुरू कर दी हैं।

Amid 'GPS spoofing' claims, IAF says Myanmar 'missions were achieved' as planned

GS Paper III: Internal Security

Press Trust of India
NEW DELHI

A day after sources in the military establishment suggested that the Indian Air Force's transport aircraft carrying relief materials to earthquake-hit Myanmar late last month faced "GPS spoofing", the IAF on Monday said its crew were capable of handling such situations, and "every mission was achieved as planned".

GPS (global positioning system) spoofing can be considered to be a form of cyberattack that includes generating false GPS signals to mislead an aircraft. The false signals result in misleading the navigation equipment, posing a significant risk to the aircraft.

"The possibility of degraded GPS availability was published by the Mandalay International airport as

India sent a total of six military transport aircraft to Myanmar with relief materials.

NOTAM and all due precautions were put in place to cater for such conditions," the IAF said in a post on X.

NOTAM or 'Notice to Airmen' is a notice filed with an aviation authority that seeks to alert pilots of an aircraft to potential hazards.

"IAF crew are well capable to handle such unavailability, while ensuring safe-

ty of flight and achievement of the designated task or mission. Accordingly, every mission was achieved as planned," the post added.

India sent the first consignment of relief materials to Myanmar on March 29 in a C-130J aircraft and its pilots reported that the plane's GPS signal was tampered with when it was in Myanmar's airspace, sources said on Sunday.

New Delhi sent a total of six military transport aircraft to Myanmar, transporting relief materials, field hospitals and rescue teams, with a majority of them experiencing GPS spoofing, they said.

India had launched 'Operation Brahma' to extend assistance to Myanmar after the country was hit by a major earthquake on March 28.

Myanmar faced **GPS spoofing**, the **Indian Air Force (IAF)** said that its crew was capable of handling such situations and "every mission was achieved as planned."

• **सैन्य प्रतिष्ठान** से यह संकेत मिलने के एक दिन बाद कि **भूकंप-पीड़ित म्यांमार** में राहत सामग्री ले जा रहे **IAF के परिवहन विमान** को **GPS स्पूफिंग** का सामना करना पड़ा, **भारतीय वायुसेना (IAF)** ने कहा कि उसके दल ऐसे हालात को संभालने में सक्षम हैं और "हर मिशन योजना के अनुसार पूरा किया गया।"

• **GPS spoofing** is a form of **cyberattack** that involves generating **false GPS signals** to mislead aircraft.

• **GPS स्पूफिंग** एक प्रकार का **साइबर हमला** है जिसमें **झूठे GPS सिग्नल** बनाकर विमान को भ्रमित किया जाता है।

• These false signals mislead **navigation equipment**, posing a **significant risk** to the aircraft.

• ये झूठे सिग्नल **नेविगेशन उपकरणों** को गुमराह करते हैं, जिससे विमान को **गंभीर खतरा** होता है।

• The IAF said that **Mandalay International Airport** had already published the **possibility of degraded GPS availability** through a **NOTAM**, and **due precautions** were taken in advance.

• IAF ने कहा कि **मांडले अंतरराष्ट्रीय हवाई अड्डे** ने पहले ही एक **NOTAM** के माध्यम से **कमज़ोर GPS सिग्नल की संभावना** प्रकाशित कर दी थी और इसके लिए **पूर्व सावधानियां** बरती गई थीं।

• **NOTAM** (Notice to Airmen) is a notice filed with aviation authorities to **alert pilots** about **potential hazards**.

• **NOTAM** (नोटिस टू एयरमैन) एक ऐसा नोटिस होता है जिसे विमानन प्राधिकरण के पास **पायलटों को संभावित खतरों** से सचेत करने के लिए दायर किया जाता है।

• The IAF added that its crew is capable of handling **GPS unavailability** while ensuring **flight safety** and the **success of missions**.

• IAF ने आगे कहा कि उसका दल **GPS अनुपलब्धता** की स्थिति में भी **उड़ान की सुरक्षा** और **मिशन की सफलता** सुनिश्चित करने में सक्षम है।

• The IAF confirmed that **every mission was achieved as planned**.

• IAF ने पुष्टि की कि **हर मिशन योजना के अनुसार पूरा हुआ।**

Relief Operations to Myanmar
म्यांमार में राहत अभियान

• India sent the **first consignment** of **relief materials** to Myanmar on **March 29** via a **C-130J aircraft**, whose pilots reported **GPS signal tampering** in **Myanmar's airspace**.

• भारत ने **29 मार्च** को **C-130J विमान** के माध्यम से म्यांमार को **पहली राहत सामग्री की खेप** भेजी, जिसके पायलटों ने **म्यांमार के हवाई क्षेत्र** में **GPS सिग्नल से छेड़छाड़** की रिपोर्ट दी।

• **New Delhi** sent a total of **six military transport aircraft** to Myanmar, carrying **relief supplies, field hospitals, and rescue teams**.

• **नई दिल्ली** ने **छह सैन्य परिवहन विमान** म्यांमार भेजे, जिनमें **राहत सामग्री, फील्ड अस्पताल और बचाव दल** शामिल थे।

• A **majority** of these aircraft experienced **GPS spoofing**, sources said.

• सूत्रों के अनुसार, इन विमानों में से **अधिकांश** को **GPS स्पूफिंग** का सामना करना पड़ा।

• India launched **'Operation Brahma'** to provide **assistance** to Myanmar after the **major earthquake** on **March 28**.

• भारत ने **28 मार्च** को आए **भूकंप** के बाद म्यांमार को सहायता प्रदान करने के लिए **'ऑपरेशन ब्रह्मा'** शुरू किया।

Miniature laser grown onto silicon chip could revolutionise computing

Computing may be set for the next great breakout, with scientists growing lasers directly onto a standard silicon chip, making it easy to integrate with current manufacturing infrastructure; information will be carried by photons, which are particles of light, that will replace electrons

Tejasri Gururaj **GS Paper III: S&T**

The invention of silicon chips revolutionised communications. Even today they are the cornerstone of the technologies we use to move information around the world.

The way they work has changed significantly, however. They have become better: for a long time this was because experts improved the hardware to operate as efficiently as possible. But more recently, researchers have started to replace the electrons with photons, the particles of light, as the agents responsible for storing and manipulating information.

Thus today we have silicon photonics with valuable applications in data centres and sensors as well as potential ones in quantum computing.

Silicon photonics is quickly gaining traction due to the many advantages it offers over traditional semiconductor chips.

In a study in *Nature*, scientists from the US and Europe reported that they had successfully fabricated the first miniaturised lasers directly on silicon wafers, marking a significant advance in silicon photonics.

Photons carry information faster, with greater data capacity and lower energy losses than electrons.

But photons aren't silver bullets. A significant challenge associated with using photons is integrating the source of these particles – a light source – with the silicon chip itself.

Currently, engineers' best bet is to attach a separate laser light source to the chip.

The resulting device operates more slowly than a chip with an integrated light source because of the small but significant mismatches that arise due to being manufactured independently. Separately manufacturing and attaching the lasers is also more expensive.

In the new study, the researchers surmounted this problem by "growing" the laser directly on a silicon chip, in a process that is also more scalable.

The research team also conducted its entire process in a standard complementary metal-oxide-semiconductor (CMOS) manufacturing line, which the technology industry currently uses to manufacture electronic chips.

Thus, the new technique could be compatible with existing manufacturing methods.
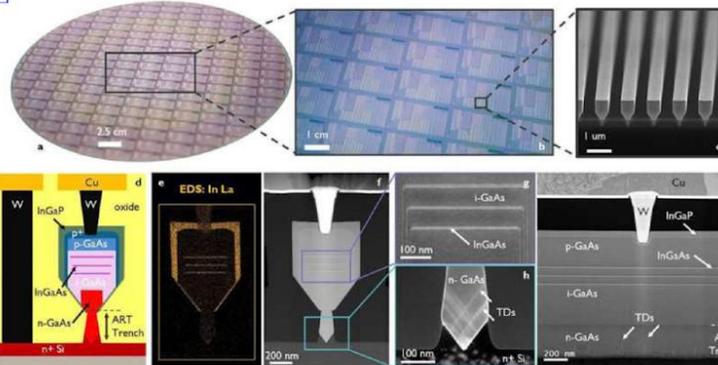
Getting on the chip

A typical silicon chip has four components: a source to produce the electrons or photons, waveguides, modulators, and photodetectors.

In a photonic chip, a laser is the light source. This is the hardest part to make on the silicon chip itself.

The waveguides act as paths for the photons, similar to how wires are paths for electrons.

Modulators are devices that encode information onto light (or decode information from a light signal).

They do this by transcribing the information in some physical property of the light, like varying its intensity, wavelength, or phase. (Similarly, they extract information by "reading" these variations in an incoming carrier signal.)

Finally, photodetectors convert light

Top, L-R: photograph of a fabricated 300-mm silicon wafer containing thousands of GaAs devices; close-up view of a fabricated 300 mm wafer showing multiple dies; and scanning electron micrograph of a GaAs nano-ridge array before encapsulation. The bottom row shows various components of chip. ARXIV:2309.04473V1

into electrical signals.

Switching the laser on

In its simplest form, a laser – an acronym of 'light amplification by stimulated emission of radiation' – works by amplifying light in a process called stimulated emission.

Here, an electron in a higher energy level is "kicked" by an incoming photon to lose some energy and drop to a lower energy level. This energy lost is in the form of another photon whose energy matches that of the incident photon. When this process occurs repeatedly, the population of electrons generates a coherent beam of light. This is a laser.

Silicon itself can't emit light efficiently as it has an indirect bandgap. In other words, in a silicon atom, an electron in a higher energy level cannot drop to a lower one on its own; instead, it requires an additional particle to help release the electron's energy and drop down.

Most lasers use semiconductor materials like gallium arsenide to produce the light. These materials have a direct band gap, meaning that electrons inside the material can drop from a higher energy level to a lower one by emitting a photon.

Direct band-gap materials allow electrons to directly emit photons without requiring them to be kicked, converting more electrical energy into light without additional interactions. Thus, the laser is more energy-efficient.

Integrating gallium arsenide with silicon is a major challenge because of the different arrangement of atoms in each of the elements. When gallium arsenide is grown layer by layer on silicon, the

The photonic silicon chip is novel because it's the first demonstration of a fully monolithic laser diode on a silicon wafer. The team's process is also scalable and cost-effective

mismatch in the crystal structure of the materials causes imperfections where the atomic patterns don't line up properly.

Imagine trying to fit two puzzle pieces together when they are not part of the same puzzle.

When electrons encounter these defects, they lose energy as heat rather than as light, rendering the laser less efficient.

In the trenches

In their study, the researchers successfully created a chip that consisted of a silicon wafer base, nanometre-sized ridges through which photons travelled, and a small region that produced these photons.

The idea of the ridges came from a 2007 study, in which researchers from AmberWave Systems Corp. found that if gallium arsenide is deposited on silicon at the bottom of a narrow, deep trench surrounded by an insulating material, the defects become 'trapped,' meaning they don't interfere with the laser's ultimate operation.

So the researchers carved nanometre-wide ridges in a 300-mm-long silicon wafer and applied silicon dioxide as the insulating material. Any defects were confined to the bottom of these trenches, allowing a defect-free gallium arsenide crystal to grow above.

Next, on the same wafer, the researchers deposited three few-atoms-thick layers of indium gallium arsenide (i.e., gallium arsenide where 20% of gallium atoms had been replaced with indium to achieve optimal light emission). These layers together functioned as the laser.

Finally, the team deposited a layer of indium gallium phosphide on top of the whole setup for protection.

To make the laser work, the researchers added electrical contacts connected to an external current source. When a current flowed into the indium gallium arsenide region, the latter emitted photons that flowed through the waveguides.

Solving a long-standing problem

The researchers were able to embed 300 functional lasers on a single 300-mm silicon wafer. The size of the wafer is important because it's the industry standard in modern semiconductor manufacturing and can thus be integrated without demanding significant changes.

The laser produced light with a wavelength of 1,020 nm, which is well-suited for short-ranged transmissions between computer chips.

Thus, the researchers expect their chip could lead to a substantial improvement in computing performance and reduce energy consumption in data centres.

The threshold current required to run the laser was as little as 5 mA, comparable to that required for an LED in a computer mouse. The laser's output was around 1MW.

The laser could continuously operate for 500 hours at room temperature (25° C). At around 55°C, its efficiency dropped.

While this duration is promising, recent research on optical silicon chips has demonstrated continuous operation at temperatures up to 120°C, highlighting ongoing challenges in developing stable semiconductor lasers.

In sum, the photonic silicon chip is novel because it's the first demonstration of a fully monolithic laser diode on a silicon wafer of this size. The team's process is also scalable and cost-effective.

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A 3D drawing of a wafer-scale test configuration depicting light radiated upwards by the left facet and collected by a multimode fibre and three electrical probes driving the nano-ridge laser and monitoring the ridge photodiode. ARXIV:2309.04473V1

computing

सिलिकॉन चिप पर उगाया गया लघु लेज़र कंप्यूटिंग में क्रांति ला सकता है

Computing may be entering a new era as scientists have successfully grown lasers directly onto a standard silicon chip, making it easy to integrate with current manufacturing systems.

कंप्यूटिंग एक नए युग में प्रवेश कर सकती है क्योंकि वैज्ञानिकों ने मानक सिलिकॉन चिप पर सीधे लेज़र विकसित करने में सफलता प्राप्त की है, जिससे इसे वर्तमान विनिर्माण प्रणाली में आसानी से जोड़ा जा सकता है।

• Information will now be carried by **photons (particles of light)** instead of **electrons**.
• अब जानकारी को **इलेक्ट्रॉनों** की बजाय **फोटॉनों (प्रकाश के कणों)** द्वारा ले जाया जाएगा।

Importance of Silicon Chips
सिलिकॉन चिप्स का महत्व

• The invention of **silicon chips** revolutionised global **communication** and remains a **cornerstone** of modern technology.
• **सिलिकॉन चिप्स** के आविष्कार ने वैश्विक **संचार** में क्रांति ला दी और यह आज भी आधुनिक तकनीक की **मूल आधारशिला** बने हुए हैं।

• Their working has evolved significantly over time due to **hardware improvements** and recent shift from **electrons to photons**.
• समय के साथ इनके कार्य करने के तरीके में काफी बदलाव आया है, जो पहले **हार्डवेयर सुधारों** और अब **इलेक्ट्रॉनों से फोटॉनों** की ओर बदलाव के कारण हुआ है।

Rise of Silicon Photonics
सिलिकॉन फोटोनिक्स का विकास

• **Silicon photonics** has found valuable applications in **data centres, sensors**, and potential use in **quantum computing**.
• **सिलिकॉन फोटोनिक्स** का उपयोग **डेटा सेंटरों, सेंसरों** और संभावित रूप से **क्वांटम कंप्यूटिंग** में किया जा रहा है।

• It is gaining popularity due to benefits like **faster data transfer**, **greater capacity**, and **lower energy loss** compared to traditional semiconductors.
• यह पारंपरिक सेमीकंडक्टर्स की तुलना में **तेज डेटा ट्रांसफर**, **अधिक क्षमता**, और **कम ऊर्जा हानि** जैसी खूबियों के कारण लोकप्रिय हो रहा है।

Breakthrough Study
महत्वपूर्ण शोध उपलब्धि

• A study published in *Nature* reported the successful **fabrication of miniature lasers directly on silicon wafers**, marking a significant step in silicon photonics.

• *नेचर* पत्रिका में प्रकाशित एक अध्ययन में बताया गया कि वैज्ञानिकों ने **सिलिकॉन वेफर पर सीधे लघु लेज़र तैयार** करने में सफलता प्राप्त की है, जो सिलिकॉन फोटोनिक्स में एक **महत्वपूर्ण कदम** है।

• **Photons** transmit information **faster**, with **higher data capacity** and **lower energy losses** than electrons.

• **फोटॉन** सूचना को **इलेक्ट्रॉनों** की तुलना में **तेज़ी से**, **अधिक डेटा क्षमता** के साथ और **कम ऊर्जा हानि** के साथ संप्रेषित करते हैं।

Challenge of Light Integration
प्रकाश को चिप में जोड़ने की चुनौती

• A major challenge has been integrating a **light source** (for photons) into the **silicon chip** itself.

• एक बड़ी चुनौती **प्रकाश स्रोत** (फोटॉनों के लिए) को **सिलिकॉन चिप** में जोड़ने की रही है।

• Currently, a **separate laser** is attached to the chip, which leads to **slower performance** and **higher costs** due to mismatches and separate manufacturing.

• वर्तमान में, चिप से **अलग लेज़र** जोड़ा जाता है, जिससे **धीमा प्रदर्शन** और **अधिक लागत** आती है क्योंकि यह अलग से बनाया जाता है।

• The new study overcame this issue by **growing the laser directly on the chip**, and the process is **scalable**.

• नए अध्ययन में इस समस्या को **चिप पर सीधे लेज़र विकसित** करके हल किया गया है और यह प्रक्रिया **स्केलेबल** भी है।

Compatibility with Existing Technology
मौजूदा तकनीक के साथ अनुकूलता

• The entire process was conducted using **standard CMOS (Complementary Metal-Oxide-Semiconductor)** manufacturing lines.

• पूरा प्रक्रिया **मानक सीएमओएस (कॉम्प्लीमेंटरी मेटल-ऑक्साइड-सेमीकंडक्टर)** निर्माण प्रणाली में की गई।

• This makes the new technique **compatible with existing chip manufacturing methods**.

• यह नई तकनीक को **वर्तमान चिप निर्माण विधियों के साथ अनुकूल** बनाता है।

Components of a Photonic Chip
फोटोनिक चिप के घटक

• A standard **silicon chip** has four main parts: **source**, **waveguides**, **modulators**, and **photodetectors**.
  • एक सामान्य **सिलिकॉन चिप** में चार मुख्य भाग होते हैं: **स्रोत**, **वेवगाइड्स**, **मॉड्यूलेटर**, और **फोटोडिटेक्टर**।

• In a **photonic chip**, the **laser** acts as the light source and is the **most difficult** part to fabricate.
  • एक **फोटोनिक चिप** में **लेज़र** प्रकाश स्रोत का कार्य करता है और इसे बनाना सबसे **कठिन** होता है।

• **Waveguides** carry photons like wires carry electrons.
  • **वेवगाइड्स** फोटॉनों को उसी तरह ले जाते हैं जैसे तारों में इलेक्ट्रॉन प्रवाहित होते हैं।

• **Modulators** encode and decode information onto the light by changing its **intensity, wavelength, or phase**.
  • **मॉड्यूलेटर** प्रकाश की **तीव्रता, तरंगदैर्ध्य या चरण** को बदलकर उस पर सूचना को एन्कोड और डीकोड करते हैं।

• **Photodetectors** convert **light into electrical signals**.
  • **फोटोडिटेक्टर** प्रकाश को **विद्युत संकेतों** में परिवर्तित करते हैं।

How a Laser Works
लेज़र कैसे कार्य करता है

• **Laser** stands for "**Light Amplification by Stimulated Emission of Radiation**".
  • **लेज़र** का अर्थ है "**प्रेरित विकिरण उत्सर्जन द्वारा प्रकाश प्रवर्धन**"।

• It amplifies light through **stimulated emission**, where an electron drops to a lower energy level and emits a **photon**.
  • यह **प्रेरित उत्सर्जन** के माध्यम से प्रकाश को बढ़ाता है, जहाँ एक इलेक्ट्रॉन **निचले ऊर्जा स्तर** पर गिरता है और एक **फोटॉन** उत्सर्जित करता है।

• **Silicon** cannot emit light efficiently because it has an **indirect bandgap**.
  • **सिलिकॉन** प्रभावी रूप से प्रकाश नहीं उत्सर्जित कर सकता क्योंकि इसमें **इनडायरेक्ट बैंडगैप** होता है।

Material Challenges and Efficiency
सामग्री संबंधी चुनौतियाँ और दक्षता

• Most lasers use materials like **gallium arsenide**, which have a **direct bandgap**, allowing electrons to emit photons directly.

• अधिकांश लेज़र **गैलियम आर्सेनाइड** जैसे **डायरेक्ट बैंडगैप** वाली सामग्रियों का उपयोग करते हैं, जिससे इलेक्ट्रॉन सीधे **फोटॉन** उत्सर्जित कर सकते हैं।

• **Direct bandgap materials** are more **energy-efficient** as they don't require additional particles for photon emission.
• **डायरेक्ट बैंडगैप सामग्री** अधिक **ऊर्जा-कुशल** होती है क्योंकि इन्हें फोटॉन उत्सर्जन के लिए अतिरिक्त कणों की आवश्यकता नहीं होती।

• Integrating **gallium arsenide** with **silicon** is challenging due to **crystal structure mismatches**, causing **defects** and **energy loss as heat**.
• **गैलियम आर्सेनाइड** को **सिलिकॉन** के साथ जोड़ना कठिन होता है क्योंकि उनके **क्रिस्टल संरचना में असंगति** होती है, जिससे **दोष** और **ऊर्जा की गर्मी के रूप में हानि** होती है।

• These mismatches make the laser **less efficient**, similar to **misaligned puzzle pieces**.
• ये असंगतियाँ लेज़र को **कम दक्षतापूर्ण** बनाती हैं, जैसे कि **ग़लत ढंग से जुड़े पज़ल टुकड़े**।

In the Trenches
गहराई में शोध कार्य

- The researchers successfully created a chip consisting of a **silicon wafer base**, **nanometre-sized ridges** for photon travel, and a **small photon-generating region**.
  शोधकर्ताओं ने एक चिप सफलतापूर्वक बनाई जिसमें **सिलिकॉन वेफर आधार**, **नैनोमीटर आकार की उभरी हुई रेखाएं** (जिनमें से फोटॉन गुजरते हैं), और **एक छोटा फोटॉन-उत्पन्न क्षेत्र** शामिल था।
- The idea of the ridges came from a **2007 study** where **defects** were trapped in deep trenches surrounded by an insulating material, reducing interference with the laser's performance.
  इन रेखाओं का विचार **2007 के एक अध्ययन** से आया, जिसमें गहराई वाले खांचे और इन्सुलेटिंग पदार्थ के प्रयोग से **त्रुटियाँ फंस जाती थीं**, जिससे लेज़र की कार्यक्षमता में हस्तक्षेप नहीं होता।
- Researchers carved **nanometre-wide ridges** on a **300-mm-long silicon wafer** and applied **silicon dioxide** as the insulator.
  शोधकर्ताओं ने **300 मिमी लंबे सिलिकॉन वेफर** पर **नैनोमीटर चौड़ी रेखाएं** बनाई और उसमें इन्सुलेटर के रूप में **सिलिकॉन डाइऑक्साइड** लगाया।
- Defects were confined to the trench bottoms, allowing **defect-free gallium arsenide crystals** to grow above.
  इन खांचों में त्रुटियाँ सीमित रहीं, जिससे ऊपर **त्रुटि-रहित गैलियम आर्सेनाइड क्रिस्टल** विकसित हो सका।
- The researchers deposited **three ultra-thin layers of indium gallium arsenide** (with 20% indium) to achieve **optimal light emission**.

शोधकर्ताओं ने इंडियम गैलियम आर्सेनाइड की तीन अति-पतली परतें (जिसमें **20% इंडियम** शामिल था) जमा कीं ताकि **उत्तम प्रकाश उत्सर्जन** हो सके।

- A layer of **indium gallium phosphide** was added on top for protection.
  संरक्षण के लिए ऊपर **इंडियम गैलियम फॉस्फाइड** की एक परत जोड़ी गई।

- Electrical contacts were added, and when **current** flowed through the indium gallium arsenide region, it **emitted photons**.
  बिजली संपर्क जोड़े गए, और जब **धारा** इंडियम गैलियम आर्सेनाइड क्षेत्र से गुजरी, तो इसने **फोटॉन उत्सर्जित** किए।

- These photons traveled through the **waveguides** embedded in the chip.
  ये फोटॉन चिप में मौजूद **वेवगाइड्स** से होकर गुजरे।

- **Solving a Long-standing Problem**
  एक लंबे समय से चली आ रही समस्या का समाधान

- The team embedded **300 functional lasers** on a **single 300-mm silicon wafer**, matching the **industry standard** size.
  टीम ने **300 कार्यात्मक लेज़र** को एक **300 मिमी सिलिकॉन वेफर** पर स्थापित किया, जो कि **उद्योग में मानक आकार** है।

- The **wavelength** of the laser light was **1,020 nm**, ideal for **short-range data transmission** between computer chips.
  लेज़र द्वारा उत्पादित प्रकाश की **तरंगदैर्ध्य 1,020 नैनोमीटर** थी, जो **कंप्यूटर चिप्स के बीच अल्प दूरी की डेटा ट्रांसमिशन** के लिए उपयुक्त है।

- The chip could significantly improve **computing performance** and reduce **energy consumption** in data centres.
  यह चिप **कंप्यूटिंग प्रदर्शन** को बढ़ा सकती है और **डेटा केंद्रों में ऊर्जा की खपत** को घटा सकती है।

- The laser required only **5 mA threshold current**, similar to an **LED in a computer mouse**.
  लेज़र को चालू करने के लिए केवल **5 mA की प्रारंभिक धारा** की आवश्यकता थी, जो कि **कंप्यूटर माउस की एलईडी** जैसी है।

- The laser's **output power** was around **1 milliwatt (1 mW)**.
  लेज़र का **आउटपुट पावर** लगभग **1 मिलीवाट (1 mW)** था।

- It could **continuously operate for 500 hours** at **room temperature (25°C)**.
  यह लेज़र **कमरे के तापमान (25°C)** पर **लगातार 500 घंटे** तक काम कर सकता था।

- At around **55°C**, the laser's **efficiency dropped**.
  लगभग **55°C** तापमान पर लेज़र की **प्रभावशीलता घट गई।**

- Other studies have shown that **optical silicon chips** can operate up to **120°C**, which shows that **thermal stability** remains a challenge.
  अन्य शोधों में यह पाया गया है कि **ऑप्टिकल सिलिकॉन चिप्स 120°C** तक कार्य कर सकते हैं, जो दर्शाता है कि **ताप स्थिरता** अब भी एक चुनौती है।

- This is the **first demonstration** of a **fully monolithic laser diode** on a **300-mm silicon wafer**.

  यह **300 मिमी सिलिकॉन वेफर** पर **पूर्ण रूप से मोनोलीथिक लेज़र डायोड** का **पहला प्रदर्शन** है।

- The fabrication process is **scalable** and **cost-effective**, making it suitable for **mass production**.

  इस निर्माण प्रक्रिया को **बड़े पैमाने पर अपनाया जा सकता है** और यह **लागत प्रभावी** भी है, जिससे यह **व्यावसायिक उत्पादन** के लिए उपयुक्त बनती है।

Women transplant paddy at Pathukannu near Puducherry, on April 09, 2020. KUMAR S.S.

'Land-holding farmers doing non-farming activities helps efficiency'

GS Paper III: Agriculture

Land-holding farmers who engage in non-farming activity tend to improve labour efficiency on their farms, a recent study has found.

The study aimed to understand the impact of multiple job holding on farm labour use efficiency. The researchers used data from the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) of farmers from States such as Odisha, Maharashtra, Telangana, Andhra Pradesh, Bihar, Jharkhand, Karnataka, and Madhya Pradesh for the period between 2010 and 2014.

"This is important as participation in non-farm activities alters farmers' labour allocation decisions between farm and non-farm activities," the researchers said in their paper.

The data came from the Village Dynamics in South Asia Project. The researchers adopted data envelopment analysis to estimate labour use efficiency. This is a mathematical technique that compares the efficiency of multiple workers doing the same kind of task without having to get into exactly how they do it.

Anviksha Drall, assistant professor of economics at the National Law School of India University, Bengaluru; and Sabuj Kumar Mandal, associate professor in the Department of Humanities and Social Sciences at IIT-Madras, conducted the study.

Their article, 'Does multiple job holding raise labour use efficiency of farm operators? Evidence from rural India?'

When farmers migrated, either within their State or outside, they gained new knowledge about farming practices that they applied to their own farms when they returned

was published in the peer-reviewed journal *Applied Economics*.

The researchers found that when farmers migrated, either within their State or outside, they gained new knowledge about farm practices that they applied to their farms when they returned. Often, farmers had time on their hands after sowing seeds. In the intervening months, their family carried on the agricultural work. Large farmers with financial wherewithal hired labour to work in their absence, Mr. Mandal said.

Ms. Drall said, "The study recommends promoting structured non-farm employment opportunities in rural areas to maximise positive spillover effects on farming."

Mr. Mandal added: "Farming is becoming riskier because of climatic shock and price fluctuation. Farmers are diversifying into non-farm activities, either by starting a family occupation such as carpentry, craftsmanship, or a salon, or they migrate. When they migrate, they learn how those in other states conduct their farming activities and the use of technology."

The migration and multiple job holding help in two ways: to invest in new farming practices and improve labour efficiency. "We argue that instead of concentrating only on farming, you can diversify into non-farming activities," Mr. Mandal explained.

"But to start a business, you need money. Farmers face credit constraints. Therefore, we suggest that governments should come in and help farmers to diversify into non-farming activity," he added.

The researchers said they deliberately selected data from villages in semi-arid and humid tropics in the country. Households were chosen randomly based on village listing in each selected village.

Land-holding Farmers Doing Non-Farming Activities Helps Efficiency

भूमि धारक किसानों द्वारा गैर-कृषि गतिविधियों में भागीदारी से दक्षता में वृद्धि होती है

Land-holding farmers who engage in non-farming activities tend to improve labour efficiency on their farms, according to a recent study.

हालिया अध्ययन के अनुसार, गैर-कृषि गतिविधियों में भाग लेने वाले भूमि धारक किसान, अपने खेतों पर श्रम दक्षता को बेहतर बनाते हैं।

• The study aimed to assess the **impact of multiple job holding** on **farm labour use efficiency**.

इस अध्ययन का उद्देश्य **एक से अधिक कार्य करने** के **कृषि श्रम उपयोग की दक्षता** पर प्रभाव का मूल्यांकन करना था।

• Researchers used data from **2010 to 2014** collected by the **International Crop Research Institute for Semi-Arid Tropics (ICRISAT)**.

शोधकर्ताओं ने **2010 से 2014** तक के आंकड़े **अंतरराष्ट्रीय अर्ध-शुष्क उष्णकटिबंधीय फसल अनुसंधान**

संस्थान **(ICRISAT)** से लिए।

- Data was collected from farmers in **Odisha, Maharashtra, Telangana, Andhra Pradesh, Bihar, Jharkhand, Karnataka, and Madhya Pradesh**.
  आंकड़े **ओडिशा, महाराष्ट्र, तेलंगाना, आंध्र प्रदेश, बिहार, झारखंड, कर्नाटक और मध्य प्रदेश** के किसानों से लिए गए।

- Researchers said participation in **non-farm activities** changes how farmers **allocate labour** between farm and non-farm tasks.
  शोधकर्ताओं ने कहा कि **गैर-कृषि गतिविधियों** में भागीदारी, किसानों के **श्रम आवंटन के निर्णयों** को प्रभावित करती है।

- Data came from the **Village Dynamics in South Asia Project**, and **data envelopment analysis** was used to estimate efficiency.
  आंकड़े **साउथ एशिया में ग्राम गतिशीलता परियोजना** से लिए गए, और दक्षता का अनुमान **डेटा एनवलपमेंट एनालिसिस** के माध्यम से लगाया गया।

- This mathematical technique compares the **efficiency** of multiple people doing the same task, without considering their exact method.
  यह गणितीय तकनीक एक जैसे कार्य कर रहे कई लोगों की **दक्षता की तुलना** करती है, बिना यह देखे कि वे काम कैसे करते हैं।

- The study was conducted by **Anviksha Drall**, assistant professor at **National Law School of India University, Bengaluru**, and **Sabuj Kumar Mandal**, associate professor at **IIT-Madras**.
  यह अध्ययन **नेशनल लॉ स्कूल ऑफ इंडिया यूनिवर्सिटी, बेंगलुरु** की सहायक प्रोफेसर **अन्विक्षा ड्राल** और **आईआईटी मद्रास** के एसोसिएट प्रोफेसर **सबुज कुमार मंडल** ने किया।

- The study was titled **'Does multiple job holding raise labour use efficiency of farm operators? Evidence from rural India'** and was published in the journal **Applied Economics**.
  अध्ययन का शीर्षक था **'क्या एक से अधिक नौकरी करने से कृषि श्रमिकों की श्रम उपयोग दक्षता बढ़ती है? भारत के ग्रामीण क्षेत्रों से साक्ष्य'** और इसे **एप्लाइड इकनॉमिक्स** पत्रिका में प्रकाशित किया गया।

- Researchers found that farmers who **migrated** (within or outside the State) learned **new agricultural practices** which they applied on return.

  शोधकर्ताओं ने पाया कि जो किसान **प्रवासन** करते हैं (राज्य के भीतर या बाहर), वे **नई कृषि पद्धतियाँ** सीखते हैं, जिन्हें वे लौटने पर लागू करते हैं।

- After sowing, many farmers had free time and during that period, **family members continued the agricultural work**.

  बीज बोने के बाद, कई किसानों के पास समय होता है और उस अवधि में **परिवार के सदस्य कृषि कार्य जारी रखते हैं**।

- **Large farmers** with **financial resources** were able to **hire labourers** in their absence.

  बड़े किसान, जिनके पास **आर्थिक संसाधन** होते हैं, वे अपनी अनुपस्थिति में **मजदूरों को नियुक्त** कर सकते हैं।

- Ms. Drall recommended creating **structured non-farm employment opportunities** in rural areas to boost **positive spillover effects** in farming.

  सुश्री ड्राल ने ग्रामीण क्षेत्रों में **संरचित गैर-कृषि रोजगार अवसरों** को बढ़ावा देने की सिफारिश की, जिससे खेती में **सकारात्मक प्रभाव** पड़ सके।

- Mr. Mandal said that farming is becoming **riskier** due to **climatic shocks** and **price fluctuations**, pushing farmers to diversify.

  श्री मंडल ने कहा कि **जलवायु झटकों** और **कीमतों में उतार-चढ़ाव** के कारण खेती **अधिक जोखिम भरी** होती जा रही है, जिससे किसान विविधता अपना रहे हैं।

- Farmers are turning to **family occupations** like **carpentry, craftsmanship, or salon work**, or **migrating** to other places.

  किसान **बढ़ईगीरी, हस्तशिल्प या सैलून कार्य** जैसे **पारिवारिक व्यवसायों** की ओर बढ़ रहे हैं या **प्रवासन** कर रहे हैं।

- Through migration, they learn about **modern farming techniques** and **technology use** from other States.

  प्रवास के दौरान वे अन्य राज्यों से **आधुनिक कृषि तकनीकों** और **प्रौद्योगिकी के उपयोग** को सीखते हैं।

- **Migration** and **multiple job holding** help in both **investing in new farming practices** and **improving labour efficiency**.

प्रवासन और **एक से अधिक कार्य** करना **नई कृषि तकनीकों में निवेश** और **श्रम दक्षता बढ़ाने** में सहायक होता है।

- Mr. Mandal suggested that instead of focusing only on farming, **farmers should diversify** into non-farming work.
  श्री मंडल ने सुझाव दिया कि केवल खेती पर ध्यान केंद्रित करने के बजाय, **किसानों को गैर-कृषि कार्यों की ओर भी बढ़ना चाहिए।**

- However, starting a **business requires capital**, and farmers face **credit constraints**.
  हालांकि, **व्यवसाय शुरू करने के लिए पूंजी की आवश्यकता होती है**, और किसान **ऋण संबंधी बाधाओं** का सामना करते हैं।

- Therefore, the study suggests **government support** to help farmers **diversify into non-farm activities**.
  इसलिए, अध्ययन **सरकारी सहायता** की सिफारिश करता है ताकि किसान **गैर-कृषि गतिविधियों में विविधता** ला सकें।

- Researchers deliberately chose **villages from semi-arid and humid tropics** of India.
  शोधकर्ताओं ने जानबूझकर भारत के **अर्ध-शुष्क और आर्द्र उष्ण कटिबंधीय क्षेत्रों के गाँवों** को चुना।

- **Households** were selected **randomly** based on a **village listing** in each selected village.
  प्रत्येक चयनित गाँव में **ग्राम सूची** के आधार पर **परिवारों का यादृच्छिक चयन** किया गया।

How is spaceflight safety ensured?

The Indian Space Research Organisation is currently placing tried and tested protocols in place as it prepares for its maiden human spaceflight mission, Gaganyaan. While Gaganyaan isn't expected to dock with any space station, its crew will be familiarised with the established procedures for docking

GS Paper III: S&T

FULL CONTEXT

T.V.Venkateswaran

The recent safe return of NASA astronauts Sunita Williams and Barry Wilmore after a nine-month stay onboard the International Space Station (ISS) underscored the importance of following safety protocols. While these protocols were hidden from view, they allowed NASA to make sure that the astronauts were not harmed physically or mentally in the course of their unpredictable Starliner test mission. The Indian Space Research Organisation (ISRO) is currently putting similar protocols in place as it prepares for its maiden human spaceflight mission, Gaganyaan. In this endeavour, its scientists and engineers are drawing from both the latest in research and incidents and accidents of the past.

Human spaceflight has three key phases: launch, orbit, and reentry. Let's explore safety protocols in each phase.

Before and during launch
On the launchpad: In 1967, three members of NASA's Apollo-1 crew met with tragedy when the crew capsule they were testing on a launchpad in Florida – even before the rocket took off – caught fire, killing all of them. Should a similar incident recur today, the crew will need to flee the area quickly. Thus, ISRO has installed ziplines and a fireproof bubble lift at its second launch pad at SHAR in Sriharikota.

After ignition until orbital insertion: A human-rated launch vehicle includes an emergency exit device, like the back door of a bus, to be activated in case a life-threatening incident occurs after the rocket has lifted off. In contrast to the Launch Vehicle Mark-3 (LVM3), ISRO's medium-lift launch vehicle that lifts satellites, the human-rated version will feature a tower-like structure on top.

The crew module is fastened to this tower-like structure. In case of a launch vehicle malfunction, the crew module and its escape mechanism will first disengage from the main rocket, then, the escape tower's solid fuel engines – designed to ignite quickly – will produce a tremendous amount of thrust in a short period of time, propelling the space capsule upwards and away from the rocket.

This is the Crew Escape System. On the human-rated LVM3, it is tractor-type, meaning a powerful engine will pull the crew module away from harm. The SpaceX Crew Dragon capsule utilises a pusher-type system where the system is located beneath the crew module and pushes it away from the main rocket.

During launch: The crew escape mechanism operates in three modes depending on the altitude obtained during the emergency. ISRO's Crew Escape System has two types of motors: the Low-altitude Escape Motor (LEM), which can generate enough thrust to propel the crew module away from the launch vehicle during the initial phase of the flight, and the High-altitude Escape Motor (HEM), which will kick in at high altitude to provide enough pull to yank the crew module quickly to a safe distance from the rocket.

Pad abort: This is when the emergency escape has to take place moments after ignition. Both the HEM and LEM motors of the Crew Escape System are activated to rapidly transport the whole crew escape assembly and capsule to a safe distance in the shortest amount of time. In low-altitude abort

Space trouble

As of January, space accidents have killed 17 astronauts and 4 cosmonauts in five separate incidents out of around 676 people who have flown to space

The model of the Gaganyaan crew module, a spacecraft that will carry a crew of three astronauts into orbit and back to Earth, displayed at the HAL stall, at the 8th edition of Bengaluru Space Expo 2024 (BSX), in Bengaluru on September 18, 2024. MURALI KUMAR. K

January 27, 1967: Three crew of Apollo-1 died at the launch pad when the electrical spark from a faulty wire ignited the pure oxygen in the crew cabin casing, raging fire

April 24, 1967: The parachute of Soyuz -1 did not open properly after the reentry, and the capsule hit the ground at high speed, tragically killing Soviet cosmonaut Vladimir Komarov

June 30, 1971: Three soviet cosmonauts, Georgy Dobrovolsky, Viktor Patsayev and Vladislav Volkov, completed their intended three-week stay aboard the Soviet space station Salyut-1 and undocked for reentry. Unfortunately, the cabin vent valve malfunctioned, and the whole crew quarters decompressed, and the crew were found dead inside the craft that safely landed

January 28, 1986: The Space Shuttle Challenger was destroyed 73 seconds after liftoff at an altitude of 15 kilometres, killing seven U.S. astronauts: Gregory Jarvis, Christa McAuliffe, Ronald McNair, Ellison Onizuka, Judith Resnik, Michael J. Smith and Dick Scobee

February 1, 2003: The Space Shuttle Columbia disintegrated when the shuttle's thermal protection system (TPS) failed during reentry at an altitude of just under 65 kms to its destination killing six U.S. astronauts and one from Israel: Rick D. Husband, William C. McCool, Michael P. Anderson, David M. Brown, Kalpana Chawla, Laurel Clark and Israel's Ilan Ramon

NASA astronauts Butch Wilmore and Sunita Williams. REUTERS

Labels on rocket diagram: Crew escape system (CES); Orbital module (Inside); Cryogenic stage (C25-G); Liquid stage (L110-G); Solid propulsion (HS200); ISRO GSLV INDIA

scenarios, both motors are triggered; however, now, the crew module will splash down at a designated spot in the sea. In normal conditions, the Crew Escape System is effectively dead weight. Therefore the LEM – which is the pencil-like element of the tower – is jettisoned at a specific height to reduce weight while the HEM remains attached to the crew module.

The Soyuz T-10 rocket caught fire on the launchpad just before liftoff in 1983. The crew could evacuate safely thanks to the Crew Escape System. Similarly, one minute into the Blue Origin New Shepard flight NS-23 on September 12, 2022, a launch engine failed and the launch escape device worked as intended, allowing the capsule to detach and land safely.

Entering and staying in orbit
ISRO's Gaganyaan crew capsule, which will transport humans, consists of a pair of interconnected modules. The crew module serves as the living quarters for the crew and passengers if any while the service module carries the fuel, engines, control systems, etc.

By the time the capsule gets close to its intended orbit, all components of the crew escape systems will have been released into space. In this case, the capsule's onboard propulsion system, in the service module, will launch the crew module onto a sub-orbital trajectory if

emergency evacuation is required.

In the event of an emergency after the spacecraft is in orbit, the service module's propulsion system and the crew module's thrusters will together attempt to reenter the earth's atmosphere, towards the ground.

At the ISS
Gaganyaan isn't expected to dock with any space station, but its crew will nonetheless be familiarised with the established procedures for docking.

After docking, the first step is to keep the capsule docked as a 'lifeboat' in the event of an emergency aboard the station. When the capsule that carried Williams and Wilmore to the ISS malfunctioned, NASA launched another with two vacant seats and docked it to the ISS during their mission. There were two capsules at any time – one SpaceX Crew Dragon and one Russian Soyuz – with passenger capacity to fly them back.

The space station is also to have a 'safe refuge' space where its occupants could go to escape any danger, such as a fire, collision with space debris, or higher doses of radiation released in a solar flare. This area can be airlocked and kept apart from the rest of the module.

Returning to the earth
The most challenging part of spaceflight is reentry. Orbiting the earth is like riding a bicycle: in order to keep from falling

down, you need to keep moving forward. Any capsule not firing its thrusters in orbit will slowly be pulled back by gravity and atmospheric drag. When reentry is desirable, the capsule will fire its thrusters accordingly to begin its descent, controlling its speed while also trying to ensure it lands in a particular region on the ground.

Once reentry has begun, atmospheric friction will heat the capsule's outer heat shield to up to 1,800° C. The crew in the crew module will be protected by the shield. Once the capsule has descended to a particular altitude, the crew will slow its descent using retrograde thrusters and deploy parachutes.

The Gaganyaan crew capsule will decelerate throughout reentry using a 10-parachute system. Its apex cover separation parachutes will deploy when it is 15.3 km from the ground and travelling at 276 m/s, After that, a pilot chute will deploy drogue parachutes, stabilising and decelerating the capsule to 70 m/s up to a height of 3 km. Then pilot parachutes will deploy and open the three primary canopies, reducing the drop speed to 10-12 m/s. The parachute will be disconnected once the capsule has splashed down using a pyrotechnic release mechanism.

T.V. Venkateswaran is a science communicator and visiting faculty member at the Indian Institute of Science Education and Research, Mohali.

THE GIST

◆ In 1967, three members of NASA's Apollo-1 crew met with tragedy when the crew capsule they were testing on a launchpad in Florida — even before the rocket took off — caught fire, killing all of them.

◆ ISRO's Gaganyaan crew capsule, which will transport humans, consists of a pair of interconnected modules. The crew module serves as the living quarters for the crew and passengers if any while the service module carries the fuel, engines, control systems, etc.

◆ The most challenging part of spaceflight is reentry. Orbiting the earth is like riding a bicycle in order to keep from falling down, you need to keep moving forward.

spaceflight safety ensured?

अंतरिक्ष यात्रा की सुरक्षा कैसे सुनिश्चित की जाती है?

ISRO's Preparations for Human Spaceflight
मानव अंतरिक्ष यात्रा के लिए इसरो की तैयारियाँ

- ISRO is currently implementing **tested safety protocols** for its first human spaceflight mission, **Gaganyaan**.
  इसरो वर्तमान में अपने पहले मानव अंतरिक्ष मिशन **गगनयान** के लिए **परीक्षित सुरक्षा प्रोटोकॉल** लागू कर रहा है।

- Gaganyaan will not dock with a space station, but the crew will be trained in **docking procedures**.
  गगनयान किसी स्पेस स्टेशन से नहीं जुड़ेगा, लेकिन चालक दल को **डॉकिंग प्रक्रियाओं** में प्रशिक्षित किया जाएगा।

Importance of Safety Protocols
सुरक्षा प्रोटोकॉल का महत्व

- NASA astronauts **Sunita Williams** and **Barry Wilmore** returned safely after a **nine-month** stay on the **International Space Station (ISS)**.
  नासा के अंतरिक्ष यात्री **सुनीता विलियम्स** और **बैरी विलमोर** ने **अंतरराष्ट्रीय अंतरिक्ष स्टेशन (ISS)** पर **नौ महीने** बिताने के बाद सुरक्षित वापसी की।

- Safety protocols protected their **physical and mental health** during the **Starliner test mission**.
  स्टारलाइनर परीक्षण मिशन के दौरान सुरक्षा प्रोटोकॉल ने उनके **शारीरिक और मानसिक स्वास्थ्य** की रक्षा की।

- ISRO is learning from both **recent research** and **past accidents** to design Gaganyaan protocols.
  इसरो **हालिया अनुसंधान** और **पुरानी दुर्घटनाओं** से सीख लेकर गगनयान के प्रोटोकॉल तैयार कर रहा है।

Phases of Human Spaceflight
मानव अंतरिक्ष यात्रा के चरण

- Human spaceflight includes three phases: **launch**, **orbit**, and **reentry**.
  मानव अंतरिक्ष यात्रा में तीन चरण होते हैं: **लॉन्च**, **कक्षा**, और **पुनः प्रवेश**।

Safety Before and During Launch
लॉन्च से पहले और उसके दौरान सुरक्षा

- In **1967**, the Apollo-1 crew died in a fire during testing on the launchpad.
  1967 में, **अपोलो-1** मिशन के चालक दल की लॉन्चपैड पर परीक्षण के दौरान आग लगने से मृत्यु हो गई थी।

- To handle such emergencies, ISRO has installed **ziplines** and a **fireproof bubble lift** at Sriharikota.
  ऐसी आपात स्थितियों से निपटने के लिए इसरो ने **श्रीहरिकोटा** में **ज़िपलाइन** और **फायरप्रूफ बबल लिफ्ट** लगाई है।

Emergency Exit After Ignition
प्रज्वलन के बाद आपातकालीन निकास

- Human-rated launch vehicles include an **emergency escape system** to save the crew.
  मानव-उपयुक्त प्रक्षेपण यानों में चालक दल की सुरक्षा के लिए **आपातकालीन एस्केप सिस्टम** होता है।

- ISRO's human-rated **LVM3** has a **tower-like structure** on top of the rocket.
  इसरो के मानव संस्करण **LVM3** में रॉकेट के ऊपर **मीनार जैसी संरचना** होती है।

- The **crew module** is attached to this tower for rapid separation if a failure occurs.
  विफलता की स्थिति में **क्रू मॉड्यूल** इस मीनार से जुड़ा होता है जिससे उसे तेजी से अलग किया जा सके।

How the Crew Escape System Works
क्रू एस्केप सिस्टम कैसे काम करता है

- Solid fuel engines on the **escape tower** provide high **thrust** to move the crew capsule away.

  एस्केप टॉवर के ठोस ईंधन इंजन **तेज़ बल (thrust)** प्रदान करते हैं जिससे क्रू कैप्सूल को दूर ले जाया जा सके।

- ISRO uses a **tractor-type** escape system that **pulls** the module.

  इसरो एक **ट्रैक्टर-प्रकार** के एस्केप सिस्टम का उपयोग करता है जो मॉड्यूल को **खींचता** है।

- **SpaceX's Crew Dragon** uses a **pusher-type** system that **pushes** the module.

  स्पेसएक्स का क्रू ड्रैगन एक **पुशर-प्रकार** का सिस्टम उपयोग करता है जो मॉड्यूल को **धकेलता** है।

Altitude-based Escape Modes
ऊँचाई पर आधारित निकास मोड

- The escape system works in three modes based on the rocket's **altitude**.

  एस्केप सिस्टम रॉकेट की **ऊँचाई** के आधार पर तीन मोड में काम करता है।

- It includes two motors: **Low-altitude Escape Motor (LEM)** and **High-altitude Escape Motor (HEM)**.

  इसमें दो मोटर होती हैं: **निम्न ऊँचाई एस्केप मोटर (LEM)** और **उच्च ऊँचाई एस्केप मोटर (HEM)**।

- **LEM** works during early flight, and **HEM** activates at higher altitudes.

  LEM उड़ान की शुरुआत में काम करता है, जबकि **HEM** ऊँचाई पर सक्रिय होता है।

Pad Abort Scenario
पैड एबॉर्ट स्थिति

- If an emergency occurs just after ignition, **both LEM and HEM** motors activate.

  यदि प्रज्वलन के तुरंत बाद आपात स्थिति होती है तो **LEM और HEM दोनों मोटर** सक्रिय हो जाती हैं।

- The **crew capsule** is separated quickly and **splashes down** in a designated sea location.

  क्रू कैप्सूल को तेजी से अलग कर दिया जाता है और यह **निर्धारित समुद्री स्थान** में उतरता है।

- To reduce dead weight, **LEM** is detached at a specific height; **HEM** stays attached.
  मृत भार को कम करने के लिए **LEM** को एक निश्चित ऊँचाई पर अलग कर दिया जाता है; **HEM** जुड़ा रहता है।

Historical Examples of Escape System Success
एस्केप सिस्टम की सफलता के ऐतिहासिक उदाहरण

- In **1983**, a fire on the **Soyuz T-10** launchpad was survived thanks to the escape system.
  1983 में, **सोयूज़ टी-10** लॉन्चपैड पर आग लगने के बाद एस्केप सिस्टम की मदद से चालक दल को बचा लिया गया।

- On **12 September 2022**, during **Blue Origin's NS-23** flight, an engine failure occurred, but the capsule landed safely.
  12 सितंबर 2022 को, **ब्लू ओरिजिन की NS-23** उड़ान के दौरान इंजन फेल हो गया, लेकिन कैप्सूल सुरक्षित रूप से उतरा।

Entering and staying in orbit
कक्षा में प्रवेश और रहना

- The **Gaganyaan crew capsule** consists of two interconnected modules: the **crew module** (living quarters) and the **service module** (carrying fuel, engines, and control systems).
  गगनयान क्रू कैप्सूल दो जुड़े हुए मॉड्यूल्स से बना है: **क्रू मॉड्यूल** (रहने का स्थान) और **सर्विस मॉड्यूल** (ईंधन, इंजन, और नियंत्रण प्रणालियाँ लेकर)।

- As the capsule nears its **intended orbit**, the **crew escape systems** will be released into space.
  जैसे ही कैप्सूल अपनी **नियोजित कक्षा** के पास पहुंचेगा, **क्रू एस्केप सिस्टम्स** को अंतरिक्ष में छोड़ दिया जाएगा।

- In case of an emergency, the **onboard propulsion system** in the **service module** will launch the **crew module** onto a **sub-orbital trajectory**.
  आपात स्थिति में, **सर्विस मॉड्यूल** में स्थित **ऑनबोर्ड प्रोपल्शन सिस्टम क्रू मॉड्यूल** को **सबसॉर्बिटल ट्रैजेक्टरी** पर लॉन्च करेगा।

At the ISS
आईएसएस पर

- Gaganyaan is not intended to dock with any space station, but the crew will be trained in established **docking procedures**.
  गगनयान किसी भी अंतरिक्ष स्टेशन से डॉक करने के लिए नहीं है, लेकिन चालक दल को स्थापित **डॉकिंग प्रक्रियाओं** में प्रशिक्षित किया जाएगा।

- After docking, the first step is to keep the capsule as a **'lifeboat'** for emergencies aboard the station.
  डॉकिंग के बाद, पहला कदम कैप्सूल को स्टेशन पर आपात स्थितियों के लिए **'लाइफबोट'** के रूप में रखना है।

- NASA launched another capsule with two **vacant seats** to dock with the ISS when the capsule carrying Williams and Wilmore malfunctioned.
  जब विलियम्स और विलमोर को लेकर जाने वाली कैप्सूल में खराबी आई, तो नासा ने **दो खाली सीटों** वाली एक और कैप्सूल लॉन्च की और उसे आईएसएस से जोड़ा।

- The space station also has a **'safe refuge'** space where occupants can escape dangers like fire, space debris, or solar flare radiation.
  अंतरिक्ष स्टेशन में एक **'सुरक्षित शरण'** स्थान भी है जहां चालक दल आग, अंतरिक्ष मलबा, या सौर फ्लेयर रेडिएशन जैसे खतरों से बचने के लिए जा सकते हैं।

Returning to Earth
पृथ्वी पर लौटना

- The most challenging part of spaceflight is **reentry**.
  अंतरिक्ष यात्रा का सबसे चुनौतीपूर्ण हिस्सा है **पुनः प्रवेश**।
- Orbiting Earth is like riding a bicycle; without thrust, a capsule will be pulled back by **gravity** and **atmospheric drag**.
  पृथ्वी की कक्षा में चक्कर लगाना साइकिल चलाने जैसा है; बिना थ्रस्ट के, एक कैप्सूल **गुरुत्वाकर्षण** और **वायुमंडलीय खींचाव** से वापस खींचा जाएगा।
- To initiate reentry, the capsule will fire its **thrusters** and control its descent speed, aiming to land in a designated area.
  पुनः प्रवेश शुरू करने के लिए, कैप्सूल अपने **थ्रस्टर्स** को फायर करेगा और अपनी गिरावट की गति को नियंत्रित करेगा, ताकि इसे एक निर्धारित क्षेत्र में लैंड किया जा सके।

- **Atmospheric friction** will heat the capsule's outer **heat shield** to **1,800°C** during reentry.

  वायुमंडलीय घर्षण पुनः प्रवेश के दौरान कैप्सूल की बाहरी **हीट शील्ड** को **1,800°C** तक गर्म कर देगा।

- The crew in the crew module will be protected by the **heat shield**.

  क्रू मॉड्यूल में चालक दल **हीट शील्ड** द्वारा सुरक्षित रहेगा।

- Once the capsule reaches a particular altitude, it will slow down using **retrograde thrusters** and deploy **parachutes**.

  एक निश्चित ऊँचाई तक पहुँचने के बाद, कैप्सूल **रेट्रोग्रेड थ्रस्टर्स** का उपयोग करके अपनी गति धीमा करेगा और **पैराशूट्स** खोल देगा।

Gaganyaan Crew Capsule's Deceleration System
गगनयान क्रू कैप्सूल का धीमी गति प्रणाली

- The **Gaganyaan crew capsule** will decelerate using a **10-parachute system** during reentry.

  गगनयान क्रू कैप्सूल पुनः प्रवेश के दौरान **10-पैराशूट सिस्टम** का उपयोग करके धीमा होगा।

- The **apex cover separation parachutes** will deploy when the capsule is **15.3 km** from the ground, traveling at **276 m/s**.

  एपेक्स कवर सेपरेशन पैराशूट्स तब खुलेंगे जब कैप्सूल पृथ्वी से **15.3 किमी** की दूरी पर होगा और **276 मी/स** की गति से यात्रा कर रहा होगा।

- A **pilot chute** will deploy **drogue parachutes** to stabilize and decelerate the capsule to **70 m/s** up to **3 km** in height.

  एक **पायलट चूट ड्रोग पैराशूट्स** को खोलेगा जिससे कैप्सूल को स्थिर किया जाएगा और उसकी गति को **70 मी/स** तक धीमा किया जाएगा, जब तक कि वह **3 किमी** की ऊँचाई तक नहीं पहुँचता।

- Afterward, **pilot parachutes** will deploy and open the **three primary canopies**, reducing the speed to **10-12 m/s**.

  इसके बाद, **पायलट पैराशूट्स** खोले जाएंगे और **तीन प्रमुख कैनोपीज़** को खोलेंगे, जिससे गिरने की गति **10-12 मी/स** तक कम हो जाएगी।

- The parachute will disconnect once the capsule has splashed down using a **pyrotechnic release mechanism**.

पैरोशूट तब डिस्कनेक्ट हो जाएगा जब कैप्सूल **पाइरोटेक्निक रिलीज़ मेकॅनिज़म** का उपयोग करके जल में लैंड कर जाएगा।

Toxic fumes: Stubble is burned to remove paddy crop residues from a field on the outskirts of Sangrur district in Punjab on November 2, 2024. SHASHI SHEKHAR KASHYAP

How governmentality exacerbates the problem of farmers' stubble burning

A new study by researchers Sujit Raghunathrao Jagadale and Javed M. Shaikh at the Indian Institute of Management, Amritsar analyses the problem of stubble burning from the lens of 'governmentality' and market failure

GS Paper III: Environment

Jacob P Koshy

Come November, the Indo-Gangetic Plain is often clouded in a pall of pollution. The cessation of monsoon winds from the preceding four months and a drop in temperatures lead to pollutants from year-round sources, such as vehicles, power plants, construction dust and other suspended particulate matter, persisting as a black shroud because of the formation of an 'inversion layer'. This means that these particles aren't 'flushed out' from the region by the stronger winds at the higher atmospheric reaches. Add to this the contribution of stubble burning. Particulate matter from the burning of farm stubble – rice chaff – by farmers in Punjab, and to a smaller extent Haryana, Rajasthan and Uttar Pradesh – is added to this haze, worsening the already noxious air quality in Delhi and several other north Indian cities. Farm stubble is burnt in October and November because it is the cheapest method employed by farmers to prepare their soil for Rabi wheat.

A wealth of correlational studies in the last two decades have linked particulate matter from stubble burning and winds originating from Punjab and Haryana to pollution levels in Delhi. In the case of Punjab, during winter, 54% of the time the wind from the State blew towards Delhi, it led to a spike in air pollution; when the wind originated from Haryana, the figure stood at 27%. Every additional fire incident was correlated with an increase in PM2.5 levels of 12.44 units. Studies over the years, most recently in 2023 by a consortium of IIT Kanpur, IIT Delhi, TERI, and Airshed, Kanpur, found that from mid-October to the end of November 2022, the role of stubble burning to air quality was on average 22% and peaked to as much as 35%. This is fairly consistent with previous studies that have estimated the contribution of stubble burning to range from 20%-40%. Many studies have also examined causes for farmers actions. The prescriptions also often analyse what may be changed that could incentivise farmers to cease from such burning.

How policy affects pollution

A new study by researchers Sujit Raghunathrao Jagadale and Javed M. Shaikh at the Indian Institute of Management, Amritsar analyses the problem from the lens of 'governmentality' and market failure. 'Governmentality' is a concept by French sociologist and philosopher, Michel Foucault that refers to how institutions of power – in this case the government – rather than employing explicitly coercive measures induce citizens to adopt self-policing or self-regulating behaviour to govern themselves.

Their study shows that governmentality can end up being counterproductive. The state's implicit directive to farmers to keep increasing grain output ends up promoting "suboptimal behaviours, like stubble burning, among farmers within India's struggling agricultural marketing system."

India's "neoliberal policies," such as the Minimum Support Price (MSP) system, paradoxically exacerbates the issue. While MSP guarantees procurement prices for staple crops like wheat and rice, it ends up incentivising mono-cropping, leaving farmers dependent on short-term, unsustainable methods. The study argues that state and market forces create a cycle of marginalisation, pushing farmers toward stubble burning as a survival tactic.

The authors relied on semi-structured interviews with 18 farmers across three Punjab districts (Amritsar, Gurdaspur, Tarn Taran) and an analysis of national newspaper articles. The farmers interviewed ranged from smallholders (2-5 acres) to larger landowners, capturing diverse economic backgrounds. Interviews focused on farmers' decision-making, perceptions of state policies, and interactions with market actors. What they found was that the Union government's MSP policy prioritises wheat and rice production, discouraging crop diversification. Farmers face contradictory signals: the state penalises stubble burning but also offers no affordable alternatives. Farmers also viewed the state as favouring urban-industrial interests ("India") over rural communities ("Bharat"). For example, while stubble burning is vilified, industrial pollution is overlooked. The farmers saw themselves as reliant on middlemen (*arhatias*) who control crop prices, credit access, and market linkages. Farmers sell produce at artificially low prices set by *arhtias*, who profit by reselling at market rates. Debt bondage is common: farmers borrow from *arhtias* for seeds or emergencies, cementing dependency. One farmer noted, "Commission agents deduct expenses from our next income, trapping us in cycles of debt." Stagnant MSP rates (for example, wheat prices rose only 5% over a decade) fail to cover rising cultivation costs, including labour and equipment. The study's novel contribution is to reposition stubble burning not as individual negligence but as a systemic outcome of distorted marketing systems and neo-liberal governance.

Plausible remedies

As solutions, they suggest that remedial interventions primarily focus on developing a market for stubble and stubble-based products, such as fodder, energy products like pellets and packaging materials, aiming to boost farmers' income while simultaneously addressing climate change challenges. For this approach to be successful, efforts are needed to strengthen the value chain through diverse technologies within an enabling ecosystem. Currently, there is a significant lack of an efficient market mechanism for farm-waste, underscoring the need for policy and market interventions to bridge this gap. Although such interventions may require time to be implemented effectively, they necessitate the involvement of stakeholders, including state and market actors, across the value chain.

Regulatory interventions could be conceptualised at three levels: prohibiting stubble burning, managing it through selective permits, and promoting stubble usage by incentivising stubble-based products. Here, active participation from state actors is critical.

A key intervention involves ensuring that farmers receive fair prices for their produce by addressing existing inefficiencies within the market system. The commodities market in India is deeply embedded in socio-political structures, as previously discussed, and requires state-led efforts to enhance price transparency and fairness to support farm incomes.

Moreover, the socio-economic pressure on farmers to engage in aspirational consumption – often detrimental due to limited income –should be acknowledged. Addressing this issue may benefit from fostering cultural change, where socio-cultural organisations, including religious groups, could play a role in de-marketing non-essential aspirational consumption, the authors conclude.

How Governmentality Exacerbates the Problem of Farmers' Stubble Burning

कैसे सरकारीकरण किसानों के पराली जलाने की समस्या को बढ़ाता है

A new study by Sujit Raghunathrao Jagadale and Javed M. Shaikh at the Indian Institute of Management, Amritsar analyzes the problem of stubble burning through the lens of 'governmentality' and market failure.

सुजित रघुनाथराव जगदाले और जावेद एम. शेख द्वारा इंडियन इंस्टीट्यूट ऑफ

मैनेजमेंट, अमृतसर में किए गए एक नए अध्ययन में पराली जलाने की समस्या का विश्लेषण 'सरकारीकरण' और बाजार विफलता के दृष्टिकोण से किया गया है।

The Indo-Gangetic Plain's Pollution
इंडो-गैंगेटिक प्लेन की प्रदूषण

- Come **November**, the **Indo-Gangetic Plain** is often covered in a thick layer of **pollution**.
  नवंबर आते ही **इंडो-गैंगेटिक प्लेन** अक्सर **प्रदूषण** की मोटी परत से ढक जाता है।

- The cessation of **monsoon winds** from the preceding months and a drop in **temperatures** cause pollutants from various sources like **vehicles, power plants, construction dust**, and other suspended particulate matter to remain in the air.
  पिछले महीनों की **मानसूनी हवाओं** का बंद होना और **तापमान** में गिरावट के कारण विभिन्न स्रोतों से प्रदूषक जैसे **वाहन, पावर प्लांट्स, निर्माण धूल**, और अन्य निलंबित कण पदार्थ हवा में बने रहते हैं।

- These pollutants persist as a **black shroud** due to the formation of an **'inversion layer'**, preventing the particles from being flushed out by stronger winds.
  ये प्रदूषक **ब्लैक श्राउड** के रूप में बने रहते हैं, जो एक **'इन्वर्शन लेयर'** के निर्माण के कारण होता है, जो कणों को मजबूत हवाओं द्वारा बाहर निकलने से रोकता है।

The Contribution of Stubble Burning
पराली जलाने का योगदान

- The burning of **farm stubble** — particularly **rice straw** — by farmers in **Punjab**, and to a lesser extent in **Haryana**, **Rajasthan**, and **Uttar Pradesh**, adds to the pollution, worsening air quality in cities like **Delhi**.
  पंजाब में किसानों द्वारा **कृषि पराली** — विशेष रूप से **चावल की पराली** — जलाने से प्रदूषण बढ़ता है, और **हरियाणा**, **राजस्थान**, और **उत्तर प्रदेश** में भी इसका प्रभाव कुछ हद तक पड़ता है, जिससे **दिल्ली** जैसे शहरों में वायु गुणवत्ता खराब होती है।

- **Farmers burn stubble** in **October and November** as it is the cheapest method for preparing the soil for **Rabi wheat**.
  किसान अक्टूबर और नवम्बर में पराली जलाते हैं क्योंकि यह **रबी गेहूं** के लिए मिट्टी तैयार करने का सबसे सस्ता तरीका है।

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Impact of Stubble Burning on Air Quality
पराली जलाने का वायु गुणवत्ता पर प्रभाव

- Studies have shown that **particulate matter** from stubble burning and winds from **Punjab** and **Haryana** significantly affect pollution levels in **Delhi**.
  अध्ययन बताते हैं कि **पार्टीकुलेट मैटर** जो पराली जलाने से उत्पन्न होता है और **पंजाब** और **हरियाणा** से आने वाली हवाएं **दिल्ली** में प्रदूषण स्तर को महत्वपूर्ण रूप से प्रभावित करती हैं।

- In **Punjab**, during winter, **54%** of the time, winds blowing from the state contribute to a spike in air pollution in Delhi.
  पंजाब में, सर्दियों के दौरान, **54%** समय में राज्य से आ रही हवाएं दिल्ली में वायु प्रदूषण में वृद्धि करती हैं।

- Winds originating from **Haryana** contribute to **27%** of the pollution in Delhi during winter.
  हरियाणा से आ रही हवाएं सर्दियों के दौरान दिल्ली में **27%** प्रदूषण का कारण बनती हैं।

- Every additional fire incident is correlated with a **12.44 unit** increase in **PM2.5 levels**.
  हर अतिरिक्त आग की घटना **PM2.5 स्तर** में **12.44 यूनिट** की वृद्धि से संबंधित है।

Role of Stubble Burning in Air Quality (2022)
2022 में पराली जलाने का वायु गुणवत्ता पर भूमिका

- Studies in **2023** by a consortium of **IIT Kanpur**, **IIT Delhi**, **TERI**, and **Airshed Kanpur** found that from mid-October to the end of November 2022, stubble burning contributed **22%** to the pollution, peaking at **35%**.
  2023 में **IIT कानपुर**, **IIT दिल्ली**, **TERI**, और **Airshed कानपुर** के एक संघ द्वारा किए गए अध्ययन में पाया गया कि 2022 के मध्य अक्टूबर से नवम्बर के अंत तक, पराली जलाने का प्रदूषण में **22%** योगदान था, जो **35%** तक पहुंच गया।

- Previous studies have estimated the contribution of stubble burning to be between **20%-40%**.
  पिछले अध्ययनों में पराली जलाने का योगदान **20%-40%** के बीच अनुमानित किया गया है।

Causes and Incentives for Stubble Burning
पराली जलाने के कारण और प्रोत्साहन

- Various studies have also explored the **causes** of farmers' actions and analyzed ways to **incentivize** them to stop burning stubble.
   विभिन्न अध्ययन किसानों के कार्यों के **कारणों** का भी पता लगाते हैं और उन्हें पराली जलाने से रोकने के लिए **प्रोत्साहित** करने के तरीकों का विश्लेषण करते हैं।

How Policy Affects Pollution
नीति प्रदूषण को कैसे प्रभावित करती है

- A new study by **Sujit Raghunathrao Jagadale** and **Javed M. Shaikh** at the **Indian Institute of Management, Amritsar** analyzes the problem of pollution through the lens of **'governmentality'** and **market failure**.
   सुजित रघुनाथराव जगदाले और **जावेद एम. शेख** द्वारा **इंडियन इंस्टीट्यूट ऑफ मैनेजमेंट, अमृतसर** में किए गए एक नए अध्ययन में प्रदूषण की समस्या का विश्लेषण **'सरकारीकरण'** और **बाजार विफलता** के दृष्टिकोण से किया गया है।

- **'Governmentality'** is a concept by French sociologist and philosopher **Michel Foucault**, referring to how institutions of power — in this case, the **government** — influence citizens to adopt **self-policing** or **self-regulating behavior** rather than employing explicitly coercive measures.
   'सरकारीकरण' एक अवधारणा है जिसे फ्रांसीसी समाजशास्त्री और दार्शनिक **मिशेल फूको** ने प्रस्तुत किया था, जो यह बताती है कि शक्ति के संस्थान — इस मामले में **सरकार** — नागरिकों को **स्व-नियंत्रण** या **स्व-नियमन व्यवहार** अपनाने के लिए प्रेरित करते हैं, बजाय इसके कि वे स्पष्ट रूप से बलात्कारी उपायों का प्रयोग करें।

Counterproductive Effects of Governmentality

सरकारीकरण के प्रतिकूल प्रभाव

- The study shows that **governmentality** can end up being counterproductive.
   अध्ययन में दिखाया गया है कि **सरकारीकरण** अंततः प्रतिकूल परिणाम दे सकता है।

- The **state's implicit directive** to farmers to increase grain output promotes **"suboptimal behaviors,"** like stubble burning, among farmers within India's struggling **agricultural marketing system**.
   राज्य का अप्रत्यक्ष निर्देश किसानों को अनाज उत्पादन बढ़ाने के लिए प्रेरित करता है, जिससे भारत की संघर्षरत **कृषि विपणन प्रणाली** में किसानों में **"अविकसित व्यवहार"** जैसे पराली जलाने को बढ़ावा मिलता है।

Neoliberal Policies and Market Failures
नियो-लिबरल नीतियां और बाजार की विफलताएं

- India's **neoliberal policies**, such as the **Minimum Support Price (MSP)** system, paradoxically exacerbate the issue of stubble burning.
  भारत की **नियो-लिबरल नीतियां**, जैसे **न्यूनतम समर्थन मूल्य (MSP)** प्रणाली, विरोधाभास रूप से पराली जलाने की समस्या को बढ़ाती हैं।

- While **MSP** guarantees procurement prices for staple crops like **wheat** and **rice**, it incentivizes **mono-cropping**, making farmers dependent on short-term, unsustainable methods.
  जबकि **MSP** staple फसलों जैसे **गेहूं** और **चावल** के लिए खरीद मूल्य की गारंटी देता है, यह **मोनो-क्रॉपिंग** को प्रोत्साहित करता है, जिससे किसान दीर्घकालिक, अस्थिर तरीकों पर निर्भर हो जाते हैं।

- The study argues that **state** and **market forces** create a cycle of **marginalisation**, pushing farmers toward stubble burning as a survival tactic.
  अध्ययन का कहना है कि **राज्य** और **बाजार की शक्तियां** एक **हाशियाकरण** का चक्र उत्पन्न करती हैं, जो किसानों को जीवित रहने के लिए पराली जलाने की ओर धकेलता है।

Farmers' Perceptions and Interviews
किसानों की धारणाएं और साक्षात्कार

- The authors relied on **semi-structured interviews** with **18 farmers** across **three districts in Punjab** (Amritsar, Gurdaspur, Tarn Taran) and an analysis of national newspaper articles.
  लेखकों ने **पंजाब के तीन जिलों** (अमृतसर, गुरदासपुर, तरन तारण) में **18 किसानों** के साथ **अर्ध-संरचित साक्षात्कार** और राष्ट्रीय समाचार पत्र लेखों का विश्लेषण किया।

- The farmers interviewed ranged from **smallholders (2–5 acres)** to larger landowners, capturing diverse economic backgrounds.
  जिन किसानों से साक्षात्कार लिया गया, वे **छोटे किसानों (2–5 एकड़)** से लेकर बड़े ज़मींदारों तक थे, जो विभिन्न आर्थिक पृष्ठभूमियों का प्रतिनिधित्व करते हैं।

- Interviews focused on **farmers' decision-making**, perceptions of **state policies**, and interactions with **market actors**.

  साक्षात्कारों में **किसानों के निर्णय-निर्माण**, **राज्य नीतियों** के प्रति उनकी धारणाएं, और **बाजार अभिनेताओं** के साथ उनके संवाद पर ध्यान केंद्रित किया गया।

Contradictions in State Policy
राज्य नीति में विरोधाभास

- The **Union government's MSP policy** prioritizes **wheat** and **rice production**, discouraging **crop diversification**.

  संघ सरकार की MSP नीति गेहूं और **चावल** उत्पादन को प्राथमिकता देती है, जो **फसल विविधीकरण** को हतोत्साहित करती है।

- Farmers receive **contradictory signals**: the state penalizes **stubble burning** but offers no **affordable alternatives**.

  किसानों को **विरोधाभासी संकेत** मिलते हैं: राज्य **पराली जलाने** पर जुर्माना लगाता है, लेकिन कोई **सस्ती वैकल्पिक उपाय** प्रदान नहीं करता।

- Farmers also feel that the state favors **urban-industrial interests** ("India") over **rural communities** ("Bharat").

  किसानों को यह भी महसूस होता है कि राज्य **शहरी-औद्योगिक हितों** ("भारत") को **ग्रामीण समुदायों** ("भारत") पर प्राथमिकता देता है।

- For example, while **stubble burning** is vilified, **industrial pollution** is overlooked.

  उदाहरण के लिए, जबकि **पराली जलाना** निंदा का पात्र है, **औद्योगिक प्रदूषण** की अनदेखी की जाती है।

Market and Debt Dependency
बाजार और ऋण निर्भरता

- Farmers rely on **middlemen (arhatias)** who control **crop prices**, **credit access**, and **market linkages**.

  किसान **मध्यस्थों (अर्थातियों)** पर निर्भर रहते हैं, जो **फसल कीमतों**, **ऋण तक पहुँच** और **बाजार कनेक्शन** को नियंत्रित करते हैं।

- Farmers sell produce at **artificially low prices**, and **arhatias** profit by reselling at **market rates**.

  किसान अपनी उपज **कृत्रिम रूप से कम कीमतों** पर बेचते हैं, और **अर्थातियाँ** इसे **बाजार दरों** पर फिर से बेचकर मुनाफा कमाती हैं।

- **Debt bondage** is common: farmers borrow from **arhatias** for seeds or emergencies, cementing their dependency.

  ऋण बंधन सामान्य है: किसान **अर्थातियों** से बीज या आपातकाल के लिए उधार लेते हैं, जिससे उनकी निर्भरता मजबूत होती है।

Inefficiencies in MSP and Market System
MSP और बाजार प्रणाली में अक्षमता

- **Stagnant MSP rates** (for example, **wheat prices** rose only **5%** over a decade) fail to cover rising cultivation costs, including **labor** and **equipment**.

  ठहरे हुए MSP दरें (उदाहरण के लिए, **गेहूं की कीमतों** में एक दशक में केवल **5%** वृद्धि हुई) बढ़ती कृषि लागतों को कवर करने में विफल रहती हैं, जिसमें **मजदूरी** और **उपकरण** शामिल हैं।

- The study's contribution is to reposition **stubble burning** not as individual negligence but as a **systemic outcome** of distorted marketing systems and **neo-liberal governance**.

  अध्ययन का योगदान **पराली जलाने** को व्यक्तिगत लापरवाही के रूप में नहीं, बल्कि विकृत विपणन प्रणालियों और **नियो-लिबरल शासन** के एक **सांविधानिक परिणाम** के रूप में पुनः स्थापित करना है।

Plausible Remedies for Stubble Burning
पराली जलाने के लिए संभावित उपाय

- The study suggests focusing on developing a **market for stubble** and **stubble-based products**, such as **fodder**, **energy products** like **pellets**, and **packaging materials**.

  अध्ययन सुझाव देता है कि **पराली** और **पराली-आधारित उत्पादों** के लिए एक **बाजार** विकसित करने पर ध्यान केंद्रित किया जाए, जैसे **चारा**, **ऊर्जा उत्पाद** जैसे **पेलट्स**, और **पैकेजिंग सामग्री**।

- Efforts should be made to strengthen the **value chain** through diverse **technologies** within an **enabling ecosystem**.

  सक्षम पारिस्थितिकी तंत्र के भीतर विविध **प्रौद्योगिकियों** के माध्यम से **मूल्य श्रृंखला** को मजबूत करने

के प्रयास किए जाने चाहिए।

- Currently, there is a significant **lack of efficient market mechanisms** for **farm waste**, requiring policy and market interventions.

  वर्तमान में **कृषि कचरे** के लिए एक प्रभावी **बाजार तंत्र** की महत्वपूर्ण **कमी** है, जिसके लिए नीति और बाजार हस्तक्षेप की आवश्यकता है।

- **Regulatory interventions** could be conceptualized at three levels: **prohibiting stubble burning**, managing it through **selective permits**, and promoting **stubble usage** by incentivizing stubble-based products.

  नियामक हस्तक्षेप को तीन स्तरों पर परिकल्पित किया जा सकता है: **पराली जलाने पर प्रतिबंध**, इसे **चयनात्मक अनुमति** के माध्यम से प्रबंधित करना, और **पराली-आधारित उत्पादों** को प्रोत्साहित करके **पराली उपयोग** को बढ़ावा देना।

How RBI is proposing to streamline rules of lending against yellow metal

The RBI, in the past, has flagged concerns relating to improper valuation of gold being kept as collateral and lack of transparency in norms and procedures; the apex banking regulator also had concerns about entities not having verified the end use of the loans against their stated purpose

GS Paper III: Investment

NEWS ANALYSIS

Saptaparno Ghosh

The story so far: The Reserve Bank of India (RBI) on April 9 put out draft guidelines for consultation on how lending against gold jewellery and ornaments as collateral should be conducted. The norms strive to harmonise the overall regulatory framework which may differ for entities with varied risk-taking capabilities and address concerns relating to their present conduct.

The banking regulator is soliciting comments on the draft until May 12.

Standard framework
The central objective of the proposed norms is to enable a standardised framework which would help address issues emanating from lack of proper due diligence in the realm and improper assessment of the value of gold.

The apex banking regulator in September last year had expressed its disquiet about how loans were being disbursed through business models that had regulated entities partnering fintech platforms and/or other financial service providers. Concerns existed about the value of the metal being assessed in the absence of the borrower and out-

Adding sheen: The norms strive to harmonise overall regulatory framework. GETTY IMAGES/ISTOCK

sourcing of essential procedures as credit appraisal, valuation and KYC of customers to the partner entity, among other things.

Gold loans essentially provide money to interested borrowers for their immediate or long-term needs by pledging the yellow metal. Its essential value makes it an ideal collateral which is auctioned off in case the loan is not repaid. However, the regulator observed instances wherein the average realisation from auctioning the gold was lower than the initially estimated value of the precious metal when the loan was disbursed. This was because of an incorrect assessment of net purity and/or weight. Furthermore, the Finance Ministry informed Parliament earlier this year that gross non-

"Gold loan GNPAs in Scheduled Commercial Banks and upper- and middle-layer non NBFCs rose by 18.14% between March and June last year"

having verified the end use of the loans against their stated purpose thus being unable to correctly assess associated risk and place proportionate risk weights.

Imperative to note here that loans against gold jewellery have increased more than 87% on a year-over-year basis at the end of February. Furthermore, the Finance Ministry informed Parliament earlier this year that gross non-

performing assets (GNPAs) cocerning gold loans in Scheduled Commercial Banks and upper- and middle-layer non-banking financial companies have increased by 18.14% between March and June last year.

Addressing lacuna
The proposed norms introduce specific yardsticks for valuing the gold and disbursing the loan.

Firstly, the yellow metal would have to be valued against the price of 22-carat gold. The reference price could be the average of the preceding 30 days or the closing price of the preceding day as quoted by the Indian Bullion and Jewellers Association Ltd., or the spot price of gold in SEBI-regulated commodity exchanges. The RBI also

proposes hallmarked gold be given preferential treatment with margin and interest rates set accordingly.

Also, the RBI proposes aggregate weight of silver and gold ornaments and jewellery must not exceed 1 kg per borrower. As for coins, the aggregate weight cannot exceed 50 gm for gold coins for a single borrower and 500 gm for silver coins. Coins sold only by banks will be considered for valuation. Finally, the RBI proposes to mandate lenders do not extend loans where ownership of metal is doubtful.

Multiple loans?
No, the RBI specified eligible gold collateral irrespective of value cannot be used concurrently for extending loans meant for income generating purposes and for personal consumption. In fact, the regulator also proposes to specify that lender do not extend loans against re-pledged collateral. RBI seeks the borrowed money must be utilised for the purpose for which it was sought.

According to Anand Mihir, financial services risk consulting leader at EY India, this would help improve the paradigm for risk assessment for lenders and avert borrowers' over-leveraging of same collateral.

Loan size framework
Yes, the more notable specification introduced in

the framework entail that the loan to value ratio (LTV) against gold collateral cannot exceed 75% of its value. LTV ratio refers to the quantum of money a borrower can receive based on their pledged gold. This would apply to all NBFCs.

The RBI has sought that the ratio be maintained on an ongoing basis throughout the tenor of the loan.

More importantly, the draft seeks if the breach exists at date of maturity, no renewal would be allowed.

Bad news for NBFCs?
Shares of all major NBFCs, such as Muthoot Finance, IIFL Finance and Manappuram Finance slid when the draft proposal was published last Wednesday.

Concerns primarily emanated on two fronts, viz. increased cost of compliance and impact on assets under management (AUMs). For perspective, as per brokerage platform Groww, gold loans constitute a significant portion of the firms" AUMs. For Muthoot Finance, it stands at 98%, Manappuram Finance 50% and IIFL Finance 21%. Mr. Mihir maintains the LTV threshold is unlikely to significantly impact the sector.

George Alexander Muthoot, MD, Muthoot Finance welcomed the "thoughtful and timely step" towards creating a robust framework for the sector.

How RBI is proposing to streamline rules of lending against yellow metal

रिजर्व बैंक ऑफ इंडिया सोने के खिलाफ उधारी के नियमों को सुव्यवस्थित करने का प्रस्ताव कैसे कर रहा है

The RBI has previously raised concerns about improper valuation of gold as collateral and lack of transparency in procedures. The RBI is also concerned about entities not verifying the end use of loans

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against their stated purpose.

आरबीआई ने पहले सोने के गिरवी रखने पर मूल्यांकन और प्रक्रियाओं में पारदर्शिता की कमी को लेकर चिंताएं जताई हैं। आरबीआई को यह भी चिंता है कि संस्थाएं उधारी के उद्देश्य के बारे में सत्यापन नहीं करतीं।

The story so far:
अब तक की कहानी:

- On April 9, 2025, the **Reserve Bank of India (RBI)** released **draft guidelines** for consultation regarding **lending against gold** jewellery and ornaments as collateral. These norms aim to harmonize the overall **regulatory framework** to address concerns about varying conduct of entities.

  9 अप्रैल 2025 को **भारतीय रिजर्व बैंक (RBI)** ने **सोने** की गहनों और आभूषणों के गिरवी रखने पर उधारी के संबंध में **ड्राफ्ट दिशा-निर्देश** जारी किए। ये नियम विभिन्न संस्थाओं के आचरण को संबोधित करने के लिए समग्र **नियामक ढांचे** को समान बनाने का लक्ष्य रखते हैं।

Standard framework
मानक ढांचा

- The main objective of the proposed norms is to establish a **standardized framework** that addresses the issues of improper due diligence and incorrect assessment of **gold value**.

  प्रस्तावित नियमों का मुख्य उद्देश्य एक **मानकीकृत ढांचा** स्थापित करना है जो गलत मूल्यांकन और **सोने के मूल्य** के गलत आकलन की समस्याओं को संबोधित करता है।

- The RBI raised concerns last year about how loans were being given through business models involving **fintech platforms** and other **financial service providers**. There were issues with the **valuation** of gold in the absence of the borrower.

  आरबीआई ने पिछले साल इस पर चिंता जताई थी कि किस प्रकार उधारी दी जा रही थी, जिसमें **फिनटेक प्लेटफॉर्म्स** और अन्य **वित्तीय सेवा प्रदाताओं** के व्यवसाय मॉडल शामिल थे। उधारीकर्ता के बिना **सोने का मूल्यांकन** में समस्याएं थीं।

- **Gold loans** provide money to borrowers for immediate or long-term needs by pledging gold as collateral. The value of the gold is assessed and auctioned off if the loan is not repaid. However, there have been instances where the **auction value** was lower than the **initial estimate**.

  सोने के ऋण उधारकर्ताओं को तत्काल या दीर्घकालिक जरूरतों के लिए **सोने** को गिरवी रखकर धन प्रदान

करते हैं। यदि उधारी नहीं चुकाई जाती है, तो सोने का मूल्य आंका जाता है और नीलाम कर दिया जाता है। हालांकि, कुछ मामलों में **नीलामी मूल्य प्रारंभिक अनुमान** से कम था।

Addressing lacuna
खामियों को संबोधित करना

- The proposed norms include **specific yardsticks** for valuing gold and disbursing the loan. Gold must be valued based on **22-carat gold**. The price reference could be the average of the previous 30 days or the **closing price** of the previous day.

  प्रस्तावित नियमों में सोने का मूल्यांकन करने और ऋण वितरण के लिए **विशिष्ट मापदंड** शामिल हैं। सोने का मूल्य **22-कैरेट सोने** के आधार पर आंका जाएगा। मूल्य संदर्भ पिछले 30 दिनों का औसत हो सकता है या पिछले दिन का **समाप्ति मूल्य** हो सकता है।

- The RBI suggests **hallmarked gold** be given **preferential treatment**, with **margin** and **interest rates** adjusted accordingly.

  आरबीआई का सुझाव है कि **हॉलमार्क सोने** को **प्राथमिकता दी जाए**, और इसके लिए **मार्जिन** और **ब्याज दरें** तदनुसार समायोजित की जाएं।

- The RBI proposes that the **aggregate weight** of gold and silver jewellery should not exceed **1 kg** per borrower. For **gold coins**, the total weight cannot exceed **50 gm**, and for **silver coins**, it should not exceed **500 gm**.

  आरबीआई का प्रस्ताव है कि **सोने और चांदी के आभूषणों का कुल वजन** प्रति उधारकर्ता **1 किलोग्राम** से अधिक नहीं होना चाहिए। **सोने के सिक्कों** का कुल वजन **50 ग्राम** से अधिक नहीं होना चाहिए, और **चांदी के सिक्कों** का वजन **500 ग्राम** से अधिक नहीं होना चाहिए।

Multiple loans?
कई उधारी?

- The RBI specifies that the same gold collateral cannot be used for both **income-generating loans** and **personal consumption loans**.

  आरबीआई यह निर्दिष्ट करता है कि एक ही सोने के गिरवी को **आय उत्पन्न करने वाले ऋण** और **व्यक्तिगत उपभोग ऋण** दोनों के लिए उपयोग नहीं किया जा सकता है।

- The RBI also proposes that loans should not be extended against **re-pledged collateral**. The borrowed money must be used for the **purpose** it was intended.

  आरबीआई यह भी प्रस्तावित करता है कि **पुनः गिरवी रखे गए संपार्श्विक** के खिलाफ उधारी नहीं दी जानी चाहिए। उधार लिया गया धन उस **उद्देश्य** के लिए इस्तेमाल होना चाहिए जिसके लिए यह लिया गया था।

Loan size framework
ऋण आकार ढांचा

- The loan-to-value (LTV) ratio against **gold collateral** should not exceed **75%**. This will apply to all **NBFCs** (Non-Banking Financial Companies).

  सोने के गिरवी के खिलाफ ऋण-से-मूल्य (LTV) अनुपात **75%** से अधिक नहीं होना चाहिए। यह सभी **एनबीएफसी** (गैर-बैंकिंग वित्तीय कंपनियों) पर लागू होगा।

- The RBI seeks that the LTV ratio be maintained throughout the **loan tenure**. If the LTV ratio breaches at **maturity**, the loan cannot be renewed.

  आरबीआई यह चाहता है कि LTV अनुपात पूरे **ऋण की अवधि** में बनाए रखा जाए। यदि **परिपक्वता** पर LTV अनुपात उल्लंघन होता है, तो ऋण का नवीनीकरण नहीं किया जा सकता।

Bad news for NBFCs?
एनबीएफसी के लिए बुरी खबर?

- Shares of major NBFCs like **Muthoot Finance**, **IIFL Finance**, and **Manappuram Finance** dropped after the draft proposal was published.

  जैसे ही ड्राफ्ट प्रस्ताव प्रकाशित हुआ, प्रमुख एनबीएफसी कंपनियों जैसे **मुथूट फाइनेंस**, **IIFL फाइनेंस**, और **मणप्पुरम फाइनेंस** के शेयर गिर गए।

- The main concerns for these NBFCs were the **increased compliance costs** and the potential impact on their **assets under management (AUM)**.

  इन एनबीएफसी के लिए मुख्य चिंता **अधिक अनुपालन लागत** और उनके **प्रबंधनाधीन संपत्ति (AUM)** पर संभावित प्रभाव था।

- However, Anand Mihir, financial services risk consulting leader at **EY India**, believes that the LTV threshold will not significantly affect the sector.

  हालाँकि, **EY इंडिया** के वित्तीय सेवाएँ जोखिम परामर्श नेता आनंद मिहिर का मानना है कि LTV सीमा का क्षेत्र पर महत्वपूर्ण प्रभाव नहीं पड़ेगा।

George Alexander Muthoot, MD of **Muthoot Finance**, welcomed the move, calling it a **"thoughtful and timely step"** towards creating a robust framework for the sector.

मुथूट फाइनेंस के MD जॉर्ज अलेक्जेंडर मुथूट ने इस कदम का स्वागत किया, इसे क्षेत्र के लिए एक मजबूत ढांचा बनाने की **"सोच-समझ और समय पर उठाया गया कदम"** बताया।

(PCS Special)

1. **U.P. govt.'s 'Zero Poverty' mission to be now named after Ambedkar, says CM**

   यूपी सरकार के 'ज़ीरो पावर्टी' मिशन का नाम अब अंबेडकर के नाम पर रखा जाएगा: मुख्यमंत्री

2. **Logo, mascot of Khelo India Youth Games 2025 unveiled**

   खेलो इंडिया यूथ गेम्स 2025 का लोगो और शुभंकर लॉन्च किया गया

3. **A Reminder of the 'Beauty' of Life in Death**

   मृत्यु में जीवन की 'सुंदरता' की एक याद दिलाना

U.P. govt.'s 'Zero Poverty' mission to be now named after Ambedkar, says CM

Leaders across the political spectrum pay tributes to the Dalit icon on his 134th birth anniversary; while Adityanath says BJP fulfilled his vision, Akhilesh resolves to establish 'rule of social justice'

PCS

Mayank Kumar
LUCKNOW

Leaders across the political spectrum in Uttar Pradesh paid tributes to Dalit icon B.R. Ambedkar on his 134th birth anniversary on Monday, with Chief Minister Yogi Adityanath announcing that the 'Zero Poverty' mission in the State will be named after him. The initiative, whose pilot project was launched on Gandhi Jayanti (October 2) last year, aims to lift all underprivileged individuals above the poverty line. It will now be launched later this month, he said.

Bahujan Samaj Party (BSP) president Mayawati and Samajwadi Party chief Akhilesh Yadav (SP) also paid tributes to the architect of India's Constitution at events in Lucknow separately.

Mr. Adityanath, while lauding Ambedkar at a State government event in Lucknow, accused the Congress and SP of consis-

U.P. CM Yogi Adityanath, Deputy CM Brajesh Pathak and others during a function to pay tribute to B.R. Ambedkar in Lucknow on Monday. PTI

tently disrespecting him. "While he was alive, they insulted him, and even after his death, they tried to suppress his values and ideals," said the CM. He alleged that the Congress blocked the construction of Ambedkar's memorial in Delhi and the SP said they would demolish it if it were built.

Mr. Adityanath said while other parties did politics in the name of Ambedkar, it is the BJP that fulfilled his vision of lifting the downtrodden. "Both the State and Union governments took various steps to realise his legacy," he said.

The CM also released a commemorative souvenir, the U.P. government said in a statement.

Mayawati's criticism
Ms. Mayawati hailed the late leader's contribution as the architect of the Constitution and a champion of social justice. Accusing both the Bharatiya Janata

Party (BJP) and Congress of neglecting the Dalits and marginalised sections, she wrote on X, "... The social, economic and political condition of the Bahujans in the country is as pathetic in BJP rule as during the Congress's. Due to a planned attack on their Constitutional right to reservation, their situation is now... sad and worrying."

Extolling the Dalit icon, Mr. Yadav on Monday resolved to "establish the rule of social justice". "Babasaheb Dr. Bhimrao Ambedkar drafted the Constitution and worked as a hero of social justice for the rights of every exploited, Dalit and deprived [person]. He protected the fundamental rights of citizens through the Constitution and limited the powers of the government," he said.

The SP chief said Ambedkar's 'social justice' is predicated upon the true establishment of the spirit of equality and principle of parity of the Constitution.

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U.P. govt.'s 'Zero Poverty' mission to be now named after Ambedkar, says CM

यूपी सरकार के 'ज़ीरो पावर्टी' मिशन का नाम अब अंबेडकर के नाम पर रखा जाएगा: मुख्यमंत्री

Leaders across the political spectrum in Uttar Pradesh paid tributes to B.R. Ambedkar on his 134th birth anniversary on Monday.

उत्तर प्रदेश में विभिन्न राजनीतिक दलों के नेताओं ने सोमवार को डॉ. बी.आर. अंबेडकर की 134वीं जयंती पर उन्हें श्रद्धांजलि अर्पित की।

• **Chief Minister Yogi Adityanath** announced that the **'Zero Poverty' mission** will now be named after **Ambedkar**.

• **मुख्यमंत्री योगी आदित्यनाथ** ने घोषणा की कि **'ज़ीरो पावर्टी' मिशन** का नाम अब **अंबेडकर** के नाम पर रखा जाएगा।

• The mission's **pilot project** was launched on **Gandhi Jayanti (October 2)** last year and aims to **uplift all underprivileged individuals above the poverty line**.

• इस मिशन का **पायलट प्रोजेक्ट** पिछले साल **2 अक्टूबर (गांधी जयंती)** को शुरू हुआ था और इसका उद्देश्य **सभी वंचित लोगों को गरीबी रेखा से ऊपर उठाना** है।

• The **Statewide launch** of the mission will take place **later this month**, the CM said.

• मुख्यमंत्री ने बताया कि यह मिशन **इस महीने के अंत में** पूरे प्रदेश में शुरू किया जाएगा।

• **BSP president Mayawati and SP chief Akhilesh Yadav** also paid tribute to the **architect of the Constitution** in **separate events in Lucknow**.

• **बसपा प्रमुख मायावती** और **सपा अध्यक्ष अखिलेश यादव** ने भी **लखनऊ में अलग-अलग कार्यक्रमों में** संविधान निर्माता को श्रद्धांजलि दी।

• At a **State event**, CM Adityanath praised **Ambedkar** and accused the **Congress and SP** of **disrespecting him** during and after his lifetime.

• एक **राज्य स्तरीय कार्यक्रम** में मुख्यमंत्री आदित्यनाथ ने **अंबेडकर** की सराहना की और **कांग्रेस व सपा** पर उनके **जीवनकाल और मृत्यु के बाद उनका अपमान** करने का आरोप लगाया।

• He said **Congress blocked** Ambedkar's **memorial** in **Delhi**, and **SP threatened** to **demolish it** if it was built.

• उन्होंने कहा कि **कांग्रेस ने दिल्ली में अंबेडकर स्मारक** के निर्माण को **रोक दिया**, और **सपा ने इसे तोड़ने की धमकी** दी।

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• Adityanath claimed that while other parties used Ambedkar for **politics**, the **BJP** has truly worked to **fulfil his vision** by uplifting the **downtrodden**.

• आदित्यनाथ ने दावा किया कि जहां अन्य दलों ने अंबेडकर को **राजनीति** के लिए इस्तेमाल किया, वहीं **भाजपा** ने **वंचित वर्गों** को उठाकर उनके **दृष्टिकोण को साकार** किया।

• He added that **both State and Union governments** took **concrete steps** to realise **Ambedkar's legacy**.

• उन्होंने यह भी कहा कि **राज्य और केंद्र सरकारों** ने मिलकर **अंबेडकर की विरासत को साकार करने के लिए ठोस कदम उठाए हैं।**

• A **commemorative souvenir** was also released by the CM, according to a **government statement**.

• **सरकारी बयान** के अनुसार, मुख्यमंत्री ने एक **स्मृति-संवर्धन स्मारिका** भी जारी की।

Mayawati's criticism
मायावती की आलोचना

• **Mayawati** praised **Ambedkar** as the **Constitution's architect** and a **champion of social justice**.

• **मायावती** ने **अंबेडकर** को **संविधान निर्माता** और **सामाजिक न्याय के पैरोकार** के रूप में सराहा।

• She accused both **BJP and Congress** of neglecting **Dalits** and the **marginalised sections**.

• उन्होंने **भाजपा और कांग्रेस** दोनों पर **दलितों** और **वंचित वर्गों** की **उपेक्षा** करने का आरोप लगाया।

• On **X**, she wrote that **Bahujans** remain in a **pathetic condition** under **BJP rule**, similar to **Congress rule**.

• उन्होंने **एक्स (X)** पर लिखा कि **बहुजनों** की स्थिति **भाजपा शासन** में भी उतनी ही **दयनीय** है जितनी **कांग्रेस शासन** में थी।

• She highlighted **planned attacks** on their **Constitutional right to reservation**, calling the situation **sad and worrying**.

• उन्होंने **आरक्षण के संवैधानिक अधिकार** पर **सुनियोजित हमलों** को उजागर करते हुए स्थिति को **दुखद और चिंताजनक** बताया।

Akhilesh Yadav's stand
अखिलेश यादव का रुख

• **Akhilesh Yadav** vowed to **establish the rule of social justice**, inspired by **Ambedkar**.

• **अखिलेश यादव** ने **अंबेडकर** से प्रेरणा लेकर **सामाजिक न्याय की स्थापना** का संकल्प लिया।

• He called **Ambedkar** a **hero of social justice**, who fought for the rights of the **exploited, Dalits, and the deprived**.

• उन्होंने **अंबेडकर** को **सामाजिक न्याय के नायक** बताया, जिन्होंने **शोषितों, दलितों और वंचितों** के अधिकारों के लिए संघर्ष किया।

• Akhilesh stated that **Ambedkar** limited the **government's powers** and **protected citizens' fundamental rights** through the **Constitution**.

• अखिलेश ने कहा कि **अंबेडकर** ने **संविधान** के माध्यम से **सरकार की शक्तियों को सीमित** किया और **नागरिकों के मौलिक अधिकारों की रक्षा** की।

• He said that **true social justice** can only be achieved through the **Constitution's spirit of equality and parity**.

• उन्होंने कहा कि **वास्तविक सामाजिक न्याय** केवल **संविधान की समानता और समता की भावना** से ही प्राप्त किया जा सकता है।

Logo, mascot of Khelo India Youth Games 2025 unveiled

PCS

The Hindu Bureau
PATNA

Bihar Chief Minister Nitish Kumar unveiled the official logo of the Khelo India Youth Games 2025 in Patna on Monday.

Union Sports Minister Mansukh Mandaviya unveiled the Games mascot during the programme organised at the Samvad hall of the Chief Minister's Secretariat.

Mr. Kumar and Mr. Mandaviya jointly released the theme song of the Youth Games, which will be held in the State for the first time from May 4 to 15.

Mr. Kumar said that it was a matter of great happiness that the Khelo India Youth Games is being organised in Bihar and that Prime Minister Narendra Modi will inaugurate the event in Patna on May 4.

Logo, mascot of Khelo India Youth Games 2025 unveiled

खेलो इंडिया यूथ गेम्स 2025 का लोगो और शुभंकर लॉन्च किया गया

Bihar Chief Minister Nitish Kumar unveiled the official logo of the Khelo India Youth Games 2025 in Patna on Monday.

बिहार के मुख्यमंत्री नीतीश कुमार ने सोमवार को पटना में खेलो इंडिया यूथ गेम्स 2025 का आधिकारिक लोगो लॉन्च किया।

• **Union Sports Minister Mansukh Mandaviya** unveiled the **mascot** of the Games during the programme held at the **Samvad Hall** of the **Chief Minister's Secretariat**.

• **केंद्रीय खेल मंत्री मनसुख मंडाविया** ने मुख्यमंत्री सचिवालय के संवाद हॉल में आयोजित कार्यक्रम के दौरान **खेलों का शुभंकर** लॉन्च किया।

• **Nitish Kumar** and **Mansukh Mandaviya** jointly released the **theme song** of the **Youth Games**.

• **नीतीश कुमार** और **मनसुख मंडाविया** ने संयुक्त रूप से **यूथ गेम्स का थीम सॉन्ग** जारी किया।

• The **Khelo India Youth Games 2025** will be held in **Bihar** for the **first time** from **May 4 to 15**.

TELEGRAM CHANNEL: https://t.me/patrioticIAS
YOUTUBE CHANNEL: https://www.youtube.com/@PatrioticIAS
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• खेलो इंडिया यूथ गेम्स 2025 का आयोजन **बिहार** में **पहली बार 4 मई से 15 मई** तक किया जाएगा।

• **Nitish Kumar** expressed that it is a matter of **great happiness** that the **Khelo India Youth Games** is being organised in **Bihar**.

• **नीतीश कुमार** ने कहा कि यह **बड़ी खुशी** की बात है कि **खेलो इंडिया यूथ गेम्स** का आयोजन **बिहार** में हो रहा है।

• **Prime Minister Narendra Modi** will **inaugurate** the event in **Patna** on **May 4**.

• **प्रधानमंत्री नरेंद्र मोदी** इस कार्यक्रम का **उद्घाटन 4 मई** को **पटना** में करेंगे।

A reminder of the 'beauty' of life in death

PCS

Sudipta Datta

In a COVID-19 anthology, *And We Came Outside and Saw the Stars Again*, in which 50 writers from around the world responded to the rampaging virus, Mario Vargas Llosa wondered why it is difficult for mankind "to accept that all of life's beauty belong ultimately to death, and that at any moment it may all come to an end". For the Peruvian master of letters, the end came on April 13. He was 89 years old.

Journalist, essayist, novelist, politician, controversial commentator - Llosa wore many hats, but he is best known for some of the great novels of the 20th and early 21st century *The Time of the Hero*, *Aunt Julia and the Scriptwriter*, *Conversations in the Cathedral*, *The War of the End of the World* and *The Feast of*
the Goat. His works, totalling more than 50, chronicled the myriad social, cultural and political strands of Latin American life with rich imagery and language. His protagonists often stood up to authoritarianism, and faced defeat despite the resistance. In many of his novels, fiction was rooted in facts. For his first novel, *The Time of the Hero* (1963), he mined his experiences at the Leoncio Prado Military Academy where he was sent by his father. The book ruffled feathers and at least a 1,000 copies were burnt by officers of the Leoncio Prado.

His attempts to marry while still a minor got a hilarious makeover in *Aunt Julia and the Scriptwriter*. Llosa wrote about 'Aunt Julia', 13 years his senior and a divorcee, whom he married – and later divorced –

MARIO VARGAS LLOSA (1936-2025)

in his memoir, *A Fish in the Water*, translated by Helen Lane. When he proposed marriage to Julia, she began by "telling me just what I expected she would: that this was madness". But in the same breath, she also said "she loved me and that if I were that mad, she was too. And that we should get married right away".

After their marriage in
1955, he moved to Paris in 1959 to pursue a career as a language teacher, journalist and writer. After his return to Lima in the 1970s, he began teaching at universities all over the Americas. In 1990, Llosa decided to run for the presidency of Peru, leading a campaign for economic reform and a vow to end the ways of the Shining Path rebels.

He lost to Alberto Fujimori and he candidly summed it up thus in his memoir: "I don't believe I succeeded in putting across" the ideas of the Freedom Movement that took shape in painter Fernando de Szyszlo's studio. Critics didn't mince words about Llosa's neo-liberal political "misadventure".

Nobel Prize awarded
In 2010, the Nobel Prize in Literature was awarded to Llosa "for his cartography
of structures of power and his trenchant images of the individual's resistance, revolt, and defeat".

Though an intensely private person, he often raked up controversy with his remarks, be it on Latin American politics or women. He famously fell out with Gabriel García Marquez in the mid-1970s, with a punch, before making up with the writer years later. The story goes, perhaps not apocryphal, that a lady was involved, though Llosa once said it was to do with his disenchantment with Fidel Castro's brand of politics in Cuba. Marquez was a lifelong Castro supporter.

With Llosa's passing, the last of the triumvirate of Latin America's literary new wave that included Marquez and the Mexican great Carlos Fuentes, is gone.

A Reminder of the 'Beauty' of Life in Death
मृत्यु में जीवन की 'सुंदरता' की एक याद दिलाना

COVID-19 Anthology Contribution
कोविड-19 संकलन में योगदान

• In the COVID-19 anthology *And We Came Outside and Saw the Stars Again*, which included **50 writers from around the world**, **Mario Vargas Llosa** reflected on why it's

difficult for mankind to accept that all of life's beauty ultimately belongs to **death**, and that it may all end **at any moment**.

कोविड-19 संकलन *And We Came Outside and Saw the Stars Again*, जिसमें **दुनिया भर के 50 लेखक** शामिल थे, में **मारियो वर्गास योसा** ने यह विचार किया कि मनुष्य के लिए यह स्वीकार करना क्यों कठिन है कि जीवन की सारी सुंदरता अंततः **मृत्यु** की होती है और यह **कभी भी समाप्त** हो सकती है।

Passing of a Literary Giant
एक साहित्यिक महापुरुष का निधन

The Peruvian literary legend **Mario Vargas Llosa** passed away on **April 13** at the age of **89**.
पेरू के साहित्यिक दिग्गज **मारियो वर्गास योसा** का निधन **13 अप्रैल** को **89 वर्ष** की आयु में हो गया।

Multifaceted Personality
बहुआयामी व्यक्तित्व

- Llosa was a **journalist**, **essayist**, **novelist**, **politician**, and **controversial commentator**, but he is best known for his iconic novels such as **The Time of the Hero**, **Aunt Julia and the Scriptwriter**, **Conversations in the Cathedral**, **The War of the End of the World**, and **The Feast of the Goat**.
  योसा एक **पत्रकार**, **निबंधकार**, **उपन्यासकार**, **राजनीतिज्ञ** और **विवादास्पद टिप्पणीकार** थे, लेकिन उन्हें सबसे ज्यादा उनकी प्रसिद्ध रचनाओं जैसे **The Time of the Hero**, **Aunt Julia and the Scriptwriter**, **Conversations in the Cathedral**, **The War of the End of the World**, और **The Feast of the Goat** के लिए जाना जाता है।
- His works — more than **50** — explored the **social**, **cultural**, and **political** life of Latin America through vivid language and imagery.
  उनकी कृतियाँ — **50 से अधिक** — लैटिन अमेरिका के **सामाजिक**, **सांस्कृतिक**, और **राजनीतिक** जीवन की जटिलताओं को जीवंत भाषा और चित्रण के माध्यम से प्रस्तुत करती हैं।

Themes of Resistance and Authoritarianism
प्रतिरोध और सत्तावाद की थीम

- Many of his protagonists resisted **authoritarianism**, even though they often faced **defeat**.
  उनके कई पात्रों ने **सत्तावाद** का विरोध किया, हालांकि उन्हें अक्सर **हार** का सामना करना पड़ा।
- His fiction was often **rooted in facts**. For example, his first novel, **The Time of the Hero (1963)**, drew from his experience at **Leoncio Prado Military Academy**.
  उनकी कल्पना अक्सर **तथ्यों पर आधारित** होती थी। उदाहरण के लिए, उनका पहला उपन्यास **The Time of the Hero (1963)** उनके **Leoncio Prado सैन्य अकादमी** के अनुभवों पर आधारित था।

- The novel created controversy and led to the **burning of over 1,000 copies** by academy officers.

  इस उपन्यास से विवाद हुआ और अकादमी के अधिकारियों ने **1,000 से अधिक प्रतियाँ जला** दीं।

Personal Life in Literature
साहित्य में निजी जीवन

His youthful attempt to marry while still a **minor** inspired the humorous novel **Aunt Julia and the Scriptwriter**.

उनके **नाबालिग** रहते विवाह के प्रयास ने हास्यपूर्ण उपन्यास **Aunt Julia and the Scriptwriter** को जन्म दिया।

- He married **Aunt Julia**, who was **13 years older** and a **divorcee**, in **1955**.

  उन्होंने 1955 में **13 वर्ष बड़ी** और **तलाकशुदा** 'आंटी जूलिया' से विवाह किया।

- In his memoir **A Fish in the Water**, he recalled proposing to her, and she said, "this was madness", but also said "she loved me" and agreed to marry him "right away".

  अपनी आत्मकथा **A Fish in the Water** में उन्होंने प्रस्ताव के समय 'जूलिया' के शब्द याद किए –

  "यह पागलपन है", लेकिन साथ ही कहा "मैं तुमसे प्यार करती हूँ" और तुरंत शादी के लिए राजी हो गईं।

- **Move to Paris and Academic Career**
  पेरिस में जीवन और शैक्षणिक करियर

- In **1959**, he moved to **Paris** to work as a **language teacher**, **journalist**, and **writer**.

  1959 में वे **पेरिस** चले गए जहाँ उन्होंने **भाषा शिक्षक**, **पत्रकार**, और **लेखक** के रूप में काम किया।

- In the **1970s**, he returned to **Lima** and taught at universities across the **Americas**.

  1970 के दशक में वे **लीमा** लौटे और **अमेरिका के विभिन्न विश्वविद्यालयों** में पढ़ाने लगे।

Political Foray
राजनीति में प्रवेश

- In **1990**, Llosa contested the **Peruvian presidency**, promoting **economic reform** and a firm stand against the **Shining Path rebels**.

  1990 में योसा ने **पेरू के राष्ट्रपति चुनाव** में भाग लिया, उन्होंने **आर्थिक सुधारों** और **शाइनिंग पाथ विद्रोहियों** के खिलाफ कठोर रुख का समर्थन किया।

- He lost to **Alberto Fujimori**, and later wrote in his memoir that he failed to communicate the ideas of the **Freedom Movement**.

  वे **अल्बर्टो फुजीमोरी** से हार गए, और बाद में अपनी आत्मकथा में लिखा कि वे **फ्रीडम मूवमेंट** के विचारों को स्पष्ट नहीं कर पाए।

- Critics called this a **neo-liberal political misadventure**.

  आलोचकों ने इसे एक **नई-उदारवादी राजनीतिक भूल** बताया।

- **Nobel Prize Recognition**
  नोबेल पुरस्कार सम्मान
- In **2010**, Llosa was awarded the **Nobel Prize in Literature** for his portrayal of **power structures** and vivid depictions of **resistance, revolt, and defeat**.
  2010 में योसा को **साहित्य का नोबेल पुरस्कार** दिया गया, जिसमें उनके **सत्ता संरचनाओं** और **प्रतिरोध, विद्रोह और पराजय** के सशक्त चित्रण को मान्यता मिली।

Controversies and Clashes
विवाद और टकराव

- Though private in nature, Llosa stirred **controversy** with his opinions on **Latin American politics** and **women**.
  हालाँकि वह स्वभाव से निजी व्यक्ति थे, लेकिन उन्होंने **लैटिन अमेरिकी राजनीति** और **महिलाओं** पर अपनी टिप्पणियों से **विवाद** पैदा किए।
- He had a public fallout with **Gabriel García Márquez** in the **1970s**, involving a **punch**, and they reconciled **years later**.
  उनकी **1970 के दशक** में **गैब्रिएल गार्सिया मार्केज़** से झगड़ा हुआ जिसमें **मुक्का** भी चला, और **कई वर्षों बाद** उन्होंने सुलह की।
- One story suggests it was over a **woman**, though Llosa later claimed it was his **disappointment with Fidel Castro's politics**, which Márquez supported.
  एक कहानी के अनुसार यह **एक महिला** को लेकर था, हालांकि योसा ने बाद में कहा कि यह **फिदेल कास्त्रो की राजनीति** से उनके **निराशा** के कारण था, जिसका **मार्केज़ समर्थन** करते थे।
- **End of a Literary Era**
  एक साहित्यिक युग का अंत
- With Llosa's death, the last member of Latin America's literary new wave — alongside **Gabriel García Márquez** and **Carlos Fuentes** — is gone.
  योसा की मृत्यु के साथ, लैटिन अमेरिका की साहित्यिक नई लहर के अंतिम सदस्य — **गैब्रिएल गार्सिया मार्केज़** और **कार्लोस फुएंतेस** के साथ — अब नहीं रहे।