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THE HINDU NEWSPAPER

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PCS Special: 06 October 2025

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Address : 3rd Floor, KV Tower, Padleyganj Road, Gorakhpur
Email Id : info@patrioticias.in
Contact Number : 9971932488
Website : patrioticias.in



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PCS

Kaziranga elephant calf named Mayabini in honour of Zubeen

A female calf born to one of the oldest elephants in the Kaziranga National Park and Tiger Reserve has been named Mayabini to honour Zubeen Garg, the Assamese cultural icon who died in Singapore on September 19. Kuwari gave birth to Mayabini, her second offspring, on October 4. Announcing the birth, Assam Forest Minister Chandra Mohan Patowary said her name, chosen with "immense affection and public goodwill", would convey "new life, hope, and harmony in the wild". It has been derived from *Mayabini raatir bukut*, one of Garg's favourite songs that became an anthem for his fans after his death.

Kaziranga elephant calf named Mayabini in honour of Zubeen काजीरंगा हाथी के बछड़े का नाम जुबीन के सम्मान में मायाबिनी रखा गया

- A female calf born to one of the oldest elephants in the Kaziranga National Park and Tiger Reserve has been named Mayabini to honour Zubeen Garg, the Assamese cultural icon who died in Singapore on September 19. काजीरंगा नेशनल पार्क और टाइगर रिजर्व के सबसे पुराने हाथियों में से एक के जन्मी मादा बछड़े का नाम मायाबिनी रखा गया है, जुबीन गर्ग के सम्मान में, जो असमिया सांस्कृतिक प्रतीक थे और 19 सितंबर को सिंगापुर में निधन हो गया।
- Kuwari gave birth to Mayabini, her second offspring, on October 4. कुवारी ने मायाबिनी को जन्म दिया, जो उसका दूसरा संतान है, 4 अक्टूबर को।
- Announcing the birth, Assam Forest Minister Chandra Mohan Patowary said her name, chosen with "immense affection and public goodwill", would convey "new life, hope, and harmony in the wild". जन्म की घोषणा करते हुए, असम वन मंत्री चंद्र मोहन पाटोवारी ने कहा कि उसका नाम, जिसे "गहरी स्नेह और जन सद्भाव" के साथ चुना गया है, वह "नई जिंदगी, आशा और जंगली वातावरण में सामंजस्य" का संदेश देगा।
- It has been derived from *Mayabini raatir bukut*, one of Garg's favourite songs that became an anthem for his fans after his death. यह नाम मायाबिनी रातीर बुकुट से लिया गया है, जो गर्ग का पसंदीदा गीतों में से एक था और उनके फैंस के लिए मृत्यु के बाद एक गान बन गया।



Zookeepers intensify search for 'missing' lion at Vandalur Zoo

PCS

Geetha Srimathi

CHENNAI

A five-year-old lion named Sheryaar gave zookeepers at the Arignar Anna Zoological Park in Vandalur (AAZP) near Chennai an unexpected challenge this week, when he failed to return from the safari area a few days ago to the night shelter, sparking rumours in the neighbourhood of a "missing" lion.

Sheryaar, one of about half-a-dozen lions in the zoo's 50-acre lion safari, had been reportedly roaming within the safari zone, which is a fully fenced area designed to mimic natural habitat conditions.

Dismissing reports of the lion going 'missing', zoo officials said that it's not unusual for lions to wander within the safari area for a short time. However, Sheryaar's extended absence has prompted a more focused effort to monitor and locate the animal. The incident led to temporary closure of the lion safari as a precautionary measure.

'Lion is not missing'

Ritto Cyriac, Director, AAZP, stated that the lion did not go missing. "The area is completely compounded and fenced and there's no way the animal could get out. The lion could be moving around inside." He noted that similar incidents have occurred in the past, the most recent being five years ago, and in such cases, the lion typically returns on its own, once it gets hungry.



Elusive to eyes: The lion must be within the safari zone, which is fully fenced, say officials.

On October 4, a zoo staff member along with two other workers spotted Sheryaar deep within the safari zone. "He appeared normal, healthy, and calm," Mr. Cyriac said. "But before we could approach, he ran back into the bushes."

Fresh pugmarks spotted again on October 5 confirmed Sheryaar's continued presence within the safari enclosure. A press release said that to ensure the safety and well-being of the lion within the lion safari zone, five dedicated teams have been formed. The entire perimeter of the safari zone is secured by both a boundary wall and chain-link mesh fencing, ensuring that the animal remains within the safari area, the release said.

High surveillance

The safari area is being monitored for the safety of the lion with the help of normal drones during day time and thermal imaging drones during night time. In addition, 10 camera traps have also been installed.

Zookeepers intensify search for 'missing' lion at Vandalur Zoo वांडालूर चिड़ियाघर में 'गायब' शेर की खोज तेज

A five-year-old lion named Sheryaar gave zookeepers at the Arignar Anna Zoological Park (AAZP) in Vandalur near Chennai an unexpected challenge this week, when he failed to return from the safari area a few days ago to the night shelter, sparking rumours in the neighbourhood of a "missing" lion.

पाँच वर्षीय शेर जिसका नाम शेर्यार है, ने वांडालूर के अरिग्रार अन्ना चिड़ियाघर (AAZP) में चिड़ियाघर कर्मचारियों के लिए इस सप्ताह अप्रत्याशित चुनौती पेश की, जब वह कुछ दिन पहले सफारी क्षेत्र से रात्री आश्रय में लौटने में विफल रहा, जिससे पड़ोस में "गायब" शेर की अफवाहें फैल गईं।

Sheryaar, one of about half-a-dozen lions in the zoo's 50-acre lion safari, had been reportedly roaming within the safari zone, which is a fully fenced area designed to mimic natural habitat conditions.

शेर्यार, जो चिड़ियाघर के 50 एकड़ के शेर सफारी के लगभग छह शेरों में से एक है, कथित रूप से सफारी क्षेत्र में घूम रहा था, जो पूरी तरह से बाड़ वाले क्षेत्र है और प्राकृतिक आवास की स्थिति को दोहराने के लिए डिजाइन किया गया है।

Dismissing reports of the lion going 'missing', zoo officials said that it's not unusual for lions to wander within the safari area for a short time. However, Sheryaar's extended absence has prompted a more focused effort to monitor and locate the animal. The incident led to temporary closure of the lion safari as a precautionary measure.

शेर के 'गायब' होने की रिपोर्टों को खारिज करते हुए, चिड़ियाघर अधिकारियों ने कहा कि शेरों का सफारी क्षेत्र में थोड़ी देर के लिए घूमना असामान्य नहीं है। हालांकि, शेर्यार की लंबी गैरहाज़िरी ने जानवर को निगरानी और खोजने के लिए अधिक केंद्रित प्रयास शुरू किए। इस घटना के कारण सफारी क्षेत्र को अस्थायी रूप से बंद कर दिया गया।

'Lion is not missing' 'शेर गायब नहीं है'

Ritto Cyriac, Director, AAZP, stated that the lion did not go missing. "The area is completely compounded and fenced and there's no way the animal could get out. The lion could be moving around inside." He noted that similar incidents have occurred in the past, the most recent being five years ago, and in such cases, the lion typically returns on its own, once it gets



hungry.

रिटो सायरियक, निदेशक, AAZP, ने कहा कि शेर गायब नहीं हुआ। “यह क्षेत्र पूरी तरह से बाड़ और संरक्षित है और जानवर का बाहर निकलना संभव नहीं है। शेर अंदर ही घूम रहा होगा।” उन्होंने बताया कि ऐसी घटनाएं पहले भी हुई हैं, सबसे हालिया पाँच साल पहले, और ऐसे मामलों में शेर आमतौर पर भूखा होने पर अपने आप लौट आता है।

- On **October 4**, a **zoo staff member** along with two other workers spotted **Sheryaar** deep within the **safari zone**. “He appeared **normal, healthy, and calm**,” Mr. Cyriac said. “But before we could approach, he ran back into the **bushes**.”
4 अक्टूबर को, एक **चिड़ियाघर कर्मचारी** और दो अन्य कर्मचारियों ने **शेर्यर** को **सफारी क्षेत्र** के अंदर देखा। “वह **सामान्य, स्वस्थ और शांत** लग रहा था,” श्री सायरियक ने कहा। “लेकिन हम पास पहुँचने से पहले वह झाड़ियों में वापस भाग गया।”
- Fresh **pugmarks** spotted again on **October 5** confirmed **Sheryaar's continued presence** within the **safari enclosure**. A press release said that to ensure the **safety and well-being** of the lion within the **lion safari zone**, **five dedicated teams** have been formed.
5 अक्टूबर को फिर से पाए गए नए **पगचिन्ह** ने **शेर्यर की लगातार उपस्थिति** की पुष्टि की **सफारी एंक्लोजर** में। एक प्रेस विज्ञप्ति में कहा गया कि **शेर सफारी क्षेत्र** में शेर की **सुरक्षा और भलाई** सुनिश्चित करने के लिए **पाँच समर्पित टीमों** बनाई गई हैं।
- The entire perimeter of the **safari zone** is secured by both a **boundary wall** and **chain-link mesh fencing**, ensuring that the animal remains within the **safari area**, the release said.
प्रेस विज्ञप्ति में कहा गया कि पूरे **सफारी क्षेत्र** की सीमा को **सीमापर दीवार** और **चेन-लिंक जाली बाड़** दोनों द्वारा सुरक्षित किया गया है, जिससे जानवर **सफारी क्षेत्र** में ही रहे।

High surveillance

उच्च निगरानी

- The **safari area** is being monitored for the **safety of the lion** with the help of **normal drones** during **day time** and **thermal imaging drones** during **night time**. In addition, **10 camera traps** have also been installed.
शेर की सुरक्षा के लिए **सफारी क्षेत्र** की निगरानी **दिन में सामान्य ड्रोन** और **रात में थर्मल इमेजिंग ड्रोन** की मदद से की जा रही है। इसके अलावा, **10 कैमरा ट्रैप** भी लगाए गए हैं।



A. Ramachandran Museum to celebrate renowned painter inaugurated in Kollam

PCS

The Hindu Bureau
THIRUVANANTHAPURAM

Hailing A. Ramachandran as an artist who stood for secular values, Kerala Chief Minister Pinarayi Vijayan has said that his art works are a link that connects contemporary Indian painting to its traditional past as well as its future. He was speaking through video-conferencing after inaugurating the A. Ramachandran Museum, dedicated to the renowned painter, set up at the Sree Narayana Guru Cultural Complex in Kollam on Sunday.

He said that Ramachandran's works, which fo-



Brush strokes: Ministers Saji Cherman and K.N. Balagopal with Chameli Ramachandran at the museum in Kollam. C. SURESHKUMAR

cused on social transformation, were worthier than their market value. The gallery would become a space where art lovers and students could do research. The interventions of the State government

would help connect painting to the masses.

Minister for Cultural Affairs Saji Cherman said as part of the government's attempts to bring about changes in the cultural sector, cultural complexes

and learning centres were being established in all 14 districts. Finance Minister K.N. Balagopal and Minister for Animal Husbandry and Dairy Development Minister J. Chinchurani were present.

CPI(M) general secretary M.A. Baby honoured A. Ramachandran's wife and painter Chameli Ramachandran and their children Rahul Ramachandran and Sujatha Ramachandran. The museum would showcase the artist's complete body of work. Along with his paintings, the exhibits will feature his celebrated sculptures, ceramics, stamp designs, and children's books.

A. Ramachandran Museum to celebrate renowned painter inaugurated in Kollam

कोल्लम में प्रसिद्ध चित्रकार A. रामचंद्रन के सम्मान में संग्रहालय का उद्घाटन

- Hailing A. Ramachandran as an artist who stood for **secular values**, Kerala Chief Minister Pinarayi Vijayan has said that his **artworks** are a **link that connects contemporary Indian painting** to its **traditional past** as well as its **future**.

A. रामचंद्रन को एक ऐसे कलाकार के रूप में सराहते हुए जो **धार्मिक विविधता के मूल्य** के लिए खड़ा था, केरल के मुख्यमंत्री पिनाराई विजयन ने कहा कि उनके **कलाकृतियाँ एक सेतु हैं जो समकालीन भारतीय चित्रकला को इसके पारंपरिक अतीत और भविष्य से जोड़ती हैं।**

- He was speaking through **video-conferencing** after inaugurating the **A. Ramachandran Museum**, dedicated to the renowned painter, set up at the **Sree Narayana Guru Cultural Complex** in Kollam on Sunday.

उन्होंने **वीडियो-कॉन्फ्रेंसिंग** के माध्यम से कहा, जब उन्होंने **A. रामचंद्रन संग्रहालय** का उद्घाटन किया, जो प्रसिद्ध चित्रकार को समर्पित है, और **कोल्लम के श्री नारायण गुरु सांस्कृतिक परिसर** में रविवार को स्थापित किया गया।

- He said that **Ramachandran's works**, which focused on **social transformation**, were worthier than their **market value**.

उन्होंने कहा कि **रामचंद्रन की कलाकृतियाँ**, जो **सामाजिक परिवर्तन पर केंद्रित हैं**, उनकी **बाजार मूल्य** से अधिक **महत्वपूर्ण** हैं।

- The **gallery** would become a space where **art lovers and students** could do **research**. यह **गैलरी** एक ऐसा स्थान बनेगी जहाँ **कला प्रेमी और छात्र अनुसंधान** कर सकते हैं।

- The interventions of the **State government** would help connect **painting to the masses**. **राज्य सरकार** के प्रयास **चित्रकला को आम जनता से जोड़ने** में मदद करेंगे।

- Minister for Cultural Affairs Saji Cherman** said as part of the government's attempts to bring about changes in the cultural sector, **cultural complexes and learning centres** were



being established in all 14 districts.

सांस्कृतिक मामलों के मंत्री साजी चेरियन ने कहा कि सरकार के सांस्कृतिक क्षेत्र में बदलाव लाने के प्रयासों के हिस्से के रूप में, सभी 14 जिलों में सांस्कृतिक परिसर और शिक्षण केंद्र स्थापित किए जा रहे हैं।

- Finance Minister K.N. Balagopal and Minister for Animal Husbandry and Dairy Development J. Chinchurani were present.
वित्त मंत्री K.N. बालगोपाल और पशुपालन और दुग्ध विकास मंत्री J. चिन्चुरानी उपस्थित थे।
- CPI(M) general secretary M.A. The baby honoured A. Ramachandran's wife and painter Chameli Ramachandran and their children Rahul Ramachandran and Sujatha Ramachandran.
CPI(M) महासचिव M.A. बेबी ने A. रामचंद्रन की पत्नी और चित्रकार चमेली रामचंद्रन और उनके बच्चों राहुल रामचंद्रन और सुजाता रामचंद्रन का सम्मान किया।
- The museum would showcase the artist's complete body of work. Along with his paintings, the exhibits will feature his celebrated sculptures, ceramics, stamp designs, and children's books.

यह संग्रहालय कलाकार के पूर्ण कार्यों को प्रदर्शित करेगा। उनके चित्रों के साथ, प्रदर्शनी में उनके प्रसिद्ध मूर्तियां, सिरेमिक, डाक टिकट डिज़ाइन और बच्चों की किताबें भी शामिल होंगी।

E. Santhosh Kumar chosen for Vayalar literary award

PCS

The Hindu Bureau
THIRUVANANTHAPURAM

Writer E. Santhosh Kumar has been chosen as the winner of the 49th Vayalar Ramavarma Memorial Literary Award for his novel *Tapomayiyude Achan*.

The award, instituted by the Vayalar Ramavarma Memorial Trust, carries a cash prize of ₹1 lakh, a sculpture designed by Kanayi Kunhiraman, and a citation. The judging committee announced the award on Sunday.

In its screening process, around 300 books were considered for the award.

E. Santhosh Kumar chosen for Vayalar literary award ई. संतोष कुमार को वायालर साहित्यिक पुरस्कार के लिए चुना गया

- Writer E. Santhosh Kumar has been chosen as the winner of the 49th Vayalar Ramavarma Memorial Literary Award for his novel *Tapomayiyude Achan*.

लेखक ई. संतोष कुमार को उनके उपन्यास *तपोमयियुदे अचन* के लिए 49वाँ वायालर रामवर्मा स्मारक साहित्यिक पुरस्कार जीतने के लिए चुना गया है।

- The award, instituted by the Vayalar Ramavarma Memorial Trust, carries a cash prize of ₹1 lakh, a sculpture designed by Kanayi Kunhiraman, and a citation.

यह पुरस्कार, जो वायालर रामवर्मा स्मारक ट्रस्ट द्वारा स्थापित किया गया है, में ₹1 लाख का नकद पुरस्कार, कनाई कुन्हिरामन द्वारा डिजाइन की गई मूर्ति, और एक प्रशस्ति पत्र शामिल है।

- The judging committee announced the award on Sunday.
निर्णायक समिति ने यह पुरस्कार रविवार को घोषित किया।

- In its screening process, around 300 books were considered for the award.

अपने स्क्रीनिंग प्रक्रिया में, लगभग 300 किताबों पर इस पुरस्कार के लिए विचार किया गया।



British and Indian warships begin four-day maritime exercise Konkan in Indian Ocean

PCS

The Hindu Bureau
NEW DELHI

The United Kingdom's Carrier Strike Group (CSG), led by the aircraft carrier *HMS Prince of Wales*, on Sunday commenced Exercise Konkan with the Indian Navy in the Western Indian Ocean.

The four-day maritime drill aims to enhance combined maritime and air capabilities between the two navies. First held in 2004, Exercise Konkan has traditionally been a biennial engagement. This edition, however, marks the first-ever exercise involving the CSG of both nations — the U.K.'s *HMS Prince of Wales* and India's *INS Vikrant*.

The U.K. CSG, currently



Security drills: Indian Navy and Royal Navy personnel participate in the inaugural day of Exercise KONKAN-25 on Sunday. PTI

on an eight-month global deployment dubbed Operation Highmast, has linked up with the Indian Navy's carrier task force for complex multi-domain operations, including anti-submarine warfare, cross-deck flying opera-

tions, and air defence drills.

Following the exercise, the British warships will make port calls in Mumbai and Goa, highlighting deepening defence ties while showcasing British trade and industry and the

strong "living bridge" of people and culture between the U.K. and India.

British High Commissioner to India Lindy Cameron said, "The U.K. and India believe in an Indo-Pacific that is free and open. We share an ambition for a modern defence and security partnership, a fundamental pillar of U.K.-India Vision 2035, agreed by our Prime Ministers this year. The engagements between the CSG of our two navies demonstrate our commitment to maintaining the rules-based international order in the region and lay the groundwork for future cooperation."

Commodore James Blackmore, Commander of the U.K. CSG, added that

the partnership reinforces shared commitments to security and stability in the Indo-Pacific.

Aerial defence exercise

Upon completion of the port visits, the U.K. CSG will conduct an aerial defence exercise with the Indian Air Force, allowing both forces to test tactics and strengthen interoperability.

Operation Highmast is a multinational deployment led by the U.K. CSG, providing an opportunity for the U.K.'s Armed Forces to conduct a major global deployment and exercise complex operations alongside allies in the region, with 12 other nations supporting the deployment with ships or personnel.

British and Indian warships begin four-day maritime exercise Konkan in Indian Ocean

ब्रिटिश और भारतीय युद्धपोतों ने भारतीय महासागर में चार दिवसीय समुद्री अभ्यास कॉन्कन शुरू किया

- The United Kingdom's Carrier Strike Group (CSG), led by the aircraft carrier *HMS Prince of Wales*, on Sunday commenced Exercise Konkan with the Indian Navy in the Western Indian Ocean.
यूनाइटेड किंगडम का कैरियर स्ट्राइक ग्रुप (CSG), जिसका नेतृत्व हवाई जहाज वाहक *HMS प्रिंस ऑफ वेल्स* कर रहा है, ने रविवार को पश्चिमी भारतीय महासागर में भारतीय नौसेना के साथ अभ्यास कॉन्कन शुरू किया।
- The four-day maritime drill aims to enhance combined maritime and air capabilities between the two navies.
यह चार दिवसीय समुद्री अभ्यास दोनों नौसेनाओं के बीच संयुक्त समुद्री और वायु क्षमताओं को बढ़ाने का उद्देश्य रखता है।
- First held in 2004, Exercise Konkan has traditionally been a biennial engagement. This edition, however, marks the first-ever exercise involving the CSG of both nations — the U.K.'s *HMS Prince of Wales* and India's *INS Vikrant*.
2004 में पहली बार आयोजित, अभ्यास कॉन्कन पारंपरिक रूप से द्विवार्षिक कार्यक्रम रहा है। हालांकि, इस संस्करण में यह दोनों देशों के CSG — यू.के. के *HMS प्रिंस ऑफ वेल्स* और भारत के *INS विक्रान्त* — के बीच पहली बार अभ्यास का प्रतीक है।
- The U.K. CSG, currently on an eight-month global deployment dubbed Operation Highmast, has linked up with the Indian Navy's carrier task force for complex multi-domain operations, including anti-submarine warfare, cross-deck flying operations, and air defence drills.
यू.के. CSG, जो वर्तमान में आठ महीने की वैश्विक तैनाती ऑपरेशन हाईमास्ट पर है, ने भारतीय नौसेना के कैरियर टास्क फोर्स के साथ जटिल बहु-डोमेन संचालन, जैसे एन्टी-सबमरीन युद्ध, क्रॉस-डेक उड़ान संचालन और वायु रक्षा अभ्यास के लिए सहयोग किया।
- Following the exercise, the British warships will make port calls in Mumbai and Goa, highlighting deepening defence ties while showcasing British trade and industry and the



strong “living bridge” of people and culture between the U.K. and India.

अभ्यास के बाद, ब्रिटिश युद्धपोत मुंबई और गोवा में बंदरगाह दौरा करेंगे, जिससे गहरे होते रक्षा संबंध उजागर होंगे और साथ ही ब्रिटिश व्यापार और उद्योग और यू.के. और भारत के बीच लोगों और संस्कृति का मजबूत “जीवित पुल” प्रदर्शित होगा।

- **British High Commissioner to India Lindy Cameron** said, “The U.K. and India believe in an Indo-Pacific that is free and open. We share an ambition for a **modern defence and security partnership**, a fundamental pillar of **U.K.-India Vision 2035**, agreed by our Prime Ministers this year. The engagements between the CSG of our two navies demonstrate our **commitment to maintaining the rules-based international order** in the region and lay the groundwork for **future cooperation**.”

भारत में ब्रिटिश उच्चायुक्त लिंडी कैमरून ने कहा, “यू.के. और भारत एक मुक्त और खुले इंडो-पैसिफिक में विश्वास रखते हैं। हम आधुनिक रक्षा और सुरक्षा साझेदारी की आकांक्षा साझा करते हैं, जो यू.के.-भारत विजन 2035 का एक मूल स्तंभ है, जिस पर हमारे प्रधानमंत्री ने इस वर्ष सहमति दी। हमारी दोनों नौसेनाओं के CSG के बीच सहयोग क्षेत्र में नियम-आधारित अंतरराष्ट्रीय व्यवस्था बनाए रखने की हमारी प्रतिबद्धता को दर्शाता है और भविष्य के सहयोग के लिए आधार तैयार करता है।”

- **Commodore James Blackmore**, Commander of the **U.K. CSG**, added that the **partnership reinforces shared commitments to security and stability** in the **Indo-Pacific**.

कर्नल जेम्स ब्लैकमोर, यू.के. CSG के कमांडर, ने कहा कि यह साझेदारी इंडो-पैसिफिक में सुरक्षा और स्थिरता के साझा प्रतिबद्धताओं को मजबूत करती है।

Aerial defence exercise

वायु रक्षा अभ्यास

- Upon completion of the **port visits**, the **U.K. CSG** will conduct an **aerial defence exercise** with the **Indian Air Force**, allowing both forces to test **tactics** and strengthen **interoperability**.

बंदरगाह दौरों के पूर्ण होने पर, यू.के. CSG भारतीय वायु सेना के साथ वायु रक्षा अभ्यास करेगा, जिससे दोनों सेनाओं को रणनीति का परीक्षण करने और इंटरऑपरेबिलिटी मजबूत करने का अवसर मिलेगा।

- **Operation Highmast** is a **multinational deployment** led by the **U.K. CSG**, providing an opportunity for the **U.K.’s Armed Forces** to conduct a **major global deployment** and exercise **complex operations alongside allies** in the region, with **12 other nations supporting the deployment with ships or personnel**.

ऑपरेशन हाईमास्ट एक बहुराष्ट्रीय तैनाती है, जिसका नेतृत्व यू.के. CSG कर रहा है, जो यू.के. सशस्त्र बलों को महत्वपूर्ण वैश्विक तैनाती करने और क्षेत्र में साझेदारों के साथ जटिल संचालन का अभ्यास करने का अवसर प्रदान करता है, जिसमें 12 अन्य देश जाहाजों या कर्मियों के साथ तैनाती का समर्थन कर रहे हैं।



PCS

Japan's Iron Lady

Takaichi is a polarising figure leading a fractious coalition

Even before she faces a parliament vote to become Japan's first woman Prime Minister, Sanae Takaichi has set a record as the first woman to lead Japan's dominant Liberal Democratic Party (LDP). After defeating her more centrist rival Shinjiro Koizumi in party elections on Friday, Ms. Takaichi, a 64-year-old protégée of former Prime Minister Shinzo Abe, is seen as a socially conservative right-winger. If she wins the parliamentary vote, as expected, she faces more difficult challenges than breaking the decades-old glass ceiling. To begin with, Ms. Takaichi is the latest in a series of Japanese Prime Ministers ousted from office, even as the LDP and its partner Komeito have lost majorities in both houses, and will need to lead a fractious coalition by reaching out to the opposition. Her predecessor Shigeru Ishiba stepped down after the LDP lost its majority, after serving for less than a year. It remains to be seen how Ms. Takaichi, who has spoken of her admiration for former British Prime Minister Margaret Thatcher, is able to emulate the "Iron Lady's" successes in holding the party and government together. While clearly the most popular party leader at the moment, she is a polarising politician who is known for strong views against immigration, and in favour of revising Japan's pacifist constitution. She does not project a feminist agenda and has been criticised for refusing to review archaic Japanese laws on married women keeping surnames or on the more contentious issue of female succession in Japanese royalty. The second challenge is geopolitical – Japan's public confidence in the United States has been shaken by the Trump administration's actions, including driving a hard bargain on the Free Trade Agreement. Ms. Takaichi is a hardliner on China, which could put her on a collision course with Beijing. Her rise has also been seen with some concern in South Korea, which had begun to warm up to Japan, as her visits to the Yasukuni shrine to venerate Japanese war heroes, and her tough line against war reparations, may be a red flag. Finally, Ms. Takaichi, a former Economic Security Minister, will have to contend with Japan's long-term economic challenges and demographic decline.

In India, her win will be largely seen positively, given her association with Shinzo Abe, whose tenures saw rapid improvements in India-Japan ties. The government will seek to continue its cooperation on many fronts, especially in technology and critical mineral processing. Above all, amidst uncertainty over the Quad summit and Mr. Trump's commitment to the Indo-Pacific policy, New Delhi will hope to see a strong leader in Tokyo, who will help shore up the geopolitical turbulence that the region now faces.

Japan's Iron Lady जापान की आयरन लेडी

• Takaichi is a **polarising figure** leading a **fractious coalition**.

Takaichi एक विवादास्पद नेता हैं जो एक विभाजित गठबंधन का नेतृत्व कर रही हैं।

Sanae Takaichi and Japan's Political Landscape साने ताका इची और जापान का राजनीतिक परिदृश्य

• Even before she faces a **parliament vote** to become **Japan's first woman Prime Minister**, **Sanae Takaichi** has set a record as the **first woman to lead Japan's dominant Liberal Democratic Party (LDP)**.

जापान की पहली महिला प्रधानमंत्री बनने के लिए संसद के मतदान का सामना करने से पहले ही, साने ताका इची ने जापान की प्रमुख लिबरल डेमोक्रेटिक पार्टी (LDP) का नेतृत्व करने वाली पहली महिला के रूप में रिकॉर्ड स्थापित किया है।

• After defeating her more **centrist rival Shinjiro Koizumi** in party elections on Friday, Ms. Takaichi, a **64-year-old protégée of former Prime Minister Shinzo Abe**, is seen as a **socially conservative right-winger**.

शुक्रवार को पार्टी चुनावों में अपने अधिक केंद्रधर्मी प्रतिद्वंद्वी शिनजिरो कोइजुमी को हराने के बाद, 64 वर्षीय पूर्व प्रधानमंत्री शिंजो आबे की protegée साने ताका इची को सामाजिक रूप से रूढ़िवादी दक्षिणपंथी माना जाता है।

• If she wins the **parliamentary vote**, as expected, she faces more **difficult challenges** than breaking the **decades-old glass ceiling**.

यदि वह अपेक्षित रूप से संसद के मतदान में जीतती हैं, तो उन्हें दशकों पुराने ग्लास सीलिंग को तोड़ने से भी अधिक कठिन चुनौतियों का सामना करना पड़ेगा।

• Ms. Takaichi is the latest in a series of **Japanese Prime Ministers ousted from office**, even as the **LDP and its partner Komeito have lost majorities in both houses**, and will need to lead a **fractious coalition by reaching out to the opposition**.

साने ताका इची जापानी प्रधानमंत्रियों की उस श्रृंखला में नवीनतम हैं जिन्हें पद से हटाया गया, भले ही LDP और उसके सहयोगी कोमेतो ने दोनों सदनों में बहुमत खो दिया हो, और उन्हें विपक्ष तक पहुँचकर एक विवादास्पद गठबंधन का नेतृत्व करना होगा।

• Her predecessor **Shigeru Ishiba** stepped down after the **LDP lost its majority**, after serving for **less than a year**. उनके पूर्ववर्ती शिगेरु इशिबा ने एक साल से भी कम समय तक सेवा करने के बाद LDP का बहुमत खोने के बाद पद छोड़ दिया।

• It remains to be seen how Ms. Takaichi, who has spoken of her **admiration for former British Prime Minister Margaret Thatcher**, is able to emulate the **"Iron Lady's" successes** in holding the party and government together.

देखना बाकी है कि साने ताका इची, जिन्होंने पूर्व ब्रिटिश प्रधानमंत्री मार्गरेट थैचर की प्रशंसा व्यक्त की है, पार्टी और सरकार को एक साथ रखने में "आयरन लेडी" की सफलताओं की नकल कितनी कर पाती हैं।



- While clearly the **most popular party leader** at the moment, she is a **polarising politician** who is known for **strong views against immigration**, and in favour of **revising Japan's pacifist constitution**.
वर्तमान में स्पष्ट रूप से सबसे लोकप्रिय पार्टी नेता होते हुए भी, वह एक विभाजनकारी राजनेता हैं, जो आत्रजन के खिलाफ और जापान के शांतिवादी संविधान में संशोधन के पक्ष में मजबूत विचारों के लिए जानी जाती हैं।
- She does not project a **feminist agenda** and has been criticised for refusing to **review archaic Japanese laws on married women keeping surnames** or on the **more contentious issue of female succession in Japanese royalty**.
वह नारीवादी एजेंडा पेश नहीं करतीं और उनके खिलाफ यह आलोचना की गई है कि उन्होंने विवाहित महिलाओं के लिए उपनाम रखने या जापानी राजशाही में महिला उत्तराधिकार जैसे पुराने कानूनों की समीक्षा करने से इनकार किया।
- The second challenge is **geopolitical** — Japan's **public confidence in the United States** has been shaken by the **Trump administration's actions**, including driving a hard bargain on the **Free Trade Agreement**.
दूसरी चुनौती भू-राजनीतिक है — ट्रम्प प्रशासन की कार्रवाइयों, विशेषकर फ्री ट्रेड एग्रीमेंट पर कड़ी सौदेबाजी ने जापान में अमेरिका पर जनता का भरोसा हिला दिया है।
- Ms. Takaichi is a **hardliner on China**, which could put her on a **collision course with Beijing**.
साने ताका इची चीन के प्रति कठोर रुख रखती हैं, जो उन्हें बीजिंग के साथ टकराव की स्थिति में ला सकता है।
- Her rise has also been seen with some concern in **South Korea**, which had begun to warm up to Japan, as her visits to the **Yasukuni shrine** to venerate **Japanese war heroes**, and her **tough line against war reparations**, may be a **red flag**.
उनका उदय दक्षिण कोरिया में भी कुछ चिंता के साथ देखा गया है, जिसने जापान की ओर रुख करना शुरू किया था, क्योंकि जापानी युद्ध नायकों की पूजा के लिए यासुकुनी मंदिर की उनकी यात्राएं और युद्ध मुआवजे के खिलाफ उनका कठोर रुख एक चेतावनी संकेत हो सकता है।
- Finally, Ms. Takaichi, a former **Economic Security Minister**, will have to contend with Japan's **long-term economic challenges** and **demographic decline**.
अंत में, पूर्व आर्थिक सुरक्षा मंत्री साने ताका इची को जापान की दीर्घकालिक आर्थिक चुनौतियों और जनसांख्यिकीय गिरावट से निपटना होगा।
- In India, her win will be largely seen **positively**, given her association with **Shinzo Abe**, whose tenures saw rapid improvements in **India-Japan ties**.
भारत में, उनकी जीत को अधिकांशतः सकारात्मक रूप में देखा जाएगा, उनके शिंजो आबे के साथ संबंध के कारण, जिनके कार्यकाल में भारत-जापान संबंधों में तेजी से सुधार हुआ।
- The government will seek to continue its **cooperation on many fronts**, especially in **technology and critical mineral processing**.
सरकार कई मोर्चों पर सहयोग जारी रखने का प्रयास करेगी, विशेष रूप से प्रौद्योगिकी और महत्वपूर्ण खनिज प्रसंस्करण में।
- Above all, amidst **uncertainty over the Quad summit** and **Mr. Trump's commitment to the Indo-Pacific policy**, New Delhi will hope to see a **strong leader in Tokyo**, who will help **shore up the geopolitical turbulence** that the region now faces.
सबसे बढ़कर, क्वाड शिखर सम्मेलन और श्री ट्रम्प की इंडो-पैसिफिक नीति की प्रतिबद्धता के बीच अनिश्चितता के बीच, नई दिल्ली टोक्यो में एक मजबूत नेता देखने की आशा करेगी, जो क्षेत्र में वर्तमान भू-राजनीतिक अशांति को संभालने में मदद करेगा।



People evacuating in China ahead of typhoon landfall

PCS

3.47 Typhoon Matmo strengthened ahead of making landfall

Sunday in China, prompting the government to evacuate some 347,000 people from the southern provinces of Guangdong and Hainan. PTI

People evacuating in China ahead of typhoon landfall
चीन में तूफान के आने से पहले लोग पलायन कर रहे हैं

- Typhoon Matmo strengthened ahead of making landfall on Sunday in China, prompting the government to evacuate some 347,000 people from the southern provinces of Guangdong and Hainan.

- तूफान मैटमो ने रविवार को चीन में भूमि पर उतरने से पहले ताकत बढ़ाई, जिससे सरकार ने 347,000 लोगों का दक्षिणी प्रांतों गुआंगडोंग और हेनान से पलायन करने का आदेश दिया।



Vidarbha wins despite Dhull's heroics

The team continues its streak of Ranji and Irani double every time it has won the premier domestic competition; Harsh returns a four-wicket haul

PCS

IRANI CUP

Amol Karhadkar
NAGPUR

Yash Dhull found allies in all-rounders Saransh Jain and Manav Suthar. But the Delhi youngster's counterattack only delayed the inevitable for Rest of India (RoI) as a well-oiled Vidarbha unit maintained its supremacy by winning a third Irani Cup title here on Sunday.

All five Vidarbha bowlers chipped in with crucial breakthroughs. Yash Thakur claimed the prized scalp of Dhull (92, 117b, 8x4, 1x6) and was involved in an exchange of words with the latter. Vidarbha bowled RoI out for 267, three minutes before the

tea break, on the fifth and final day.

The 93-run victory maintained Vidarbha's streak of Ranji and Irani double every time it has won the premier domestic competition.

RoI captain Rajat Patidar and Ishan Kishan started the day with the team reeling at 30 for two in pursuit of 361. An hour into the day's proceedings, however, the writing was on the wall, with Vidarbha having reduced the fancied RoI line-up to 80 for five.

While Patidar offered a regulation return catch to lanky Aditya Thakare in the fifth over of the morning, Ruturaj Gaikwad returned with his second single-digit score in the match, poking at one in the perfect channel by pacer Darshan Nalkande. Ishan



Cock-a-hoop: The Vidarbha players celebrate their third Irani Cup triumph. PTI

then holed out in the deep off Harsh Dubey's spin and Vidarbha was sensing a comfortable win.

Dhull then started a

counterattack with leftie Saransh Jain for company. Dhull's cut shots off pacers and spinners alike were a treat to watch until Jain

missed one that turned into him by Parth Rekhade, the other left-arm spinner.

Dhull started taking calculated risks and with the

ball turning softer, it worked in his favour. Suthar (56 n.o., 113b, 4x4, 1x6), too batted effortlessly.

Just when the partnership had crossed the three-digit mark and Dhull had entered the 90s, he tried to upper cut a short one outside off for a six. But Atharva Taide at deep third ran a few steps to his right and judged the ball to perfection inches inside the rope to tilt the game in Vidarbha's favour again.

Taide was soon back in action – running backward from the slip – to catch a top edge off last-man Gurnoon Brar off Dubey and spark celebrations in the Vidarbha camp.

The scores: Vidarbha 342 & 232 bt Rest of India 214 & 267 in 73.5 overs (Yash Dhull 92, Manav Suthar 56 n.o., Harsh Dubey 4/73). PoM: Taide.

Vidarbha wins despite Dhull's heroics धुल की वीरता के बावजूद विदर्भ ने जीता मैच

- The team continues its streak of **Ranji and Irani double** every time it has won the **premier domestic competition**; **Harsh returns a four-wicket haul**.
टीम हर बार **प्रधान घरेलू प्रतियोगिता** जीतने पर **रणजी और इरानी डबल** की अपनी श्रृंखला को जारी रखती है; **हर्ष ने चार विकेट की बढ़िया गेंदबाजी** की।
- **Yash Dhull** found allies in all-rounders **Saransh Jain** and **Manav Suthar**. But the **Delhi youngster's counterattack** only delayed the inevitable for **Rest of India (RoI)** as a well-oiled **Vidarbha unit** maintained its supremacy by winning a **third Irani Cup title** here on **Sunday**.
यश धुल को ऑलराउंडर्स **सारांश जैन** और **मनव सुथार** में सहयोग मिला। लेकिन **दिल्ली के युवा की जबरदस्त प्रतिकार** केवल **रेस्ट ऑफ इंडिया (RoI)** के लिए अनिवार्य हार को टालने का काम कर पाया क्योंकि **सुव्यवस्थित विदर्भ टीम** ने **तीसरी इरानी कप** की जीत से अपनी श्रेष्ठता कायम रखी **रविवार** को।
- All five **Vidarbha bowlers** chipped in with **crucial breakthroughs**. **Yash Thakur** claimed the prized scalp of **Dhull (92, 117b, 8x4, 1x6)** and was involved in an exchange of words with the latter. **Vidarbha bowled RoI out for 267**, three minutes before the **tea break**, on the **fifth and final day**.



सभी पाँच विदर्भ गेंदबाजों ने महत्वपूर्ण सफलता हासिल की। यश ठाकुर ने धुल (92, 117 गेंद, 8x4, 1x6) का महत्वपूर्ण विकेट लिया और इसके साथ बातचीत भी हुई। विदर्भ ने RoI को 267 पर ऑल आउट किया, चाय के ब्रेक से तीन मिनट पहले, पाँचवें और अंतिम दिन।

- The **93-run victory** maintained Vidarbha's streak of **Ranji and Irani double** every time it has won the **premier domestic competition**.
93 रन की जीत ने विदर्भ की **रणजी और इरानी डबल** की श्रृंखला को कायम रखा, हर बार जब उसने **प्रधान घरेलू प्रतियोगिता** जीती।
- **RoI captain Rajat Patidar** and **Ishan Kishan** started the day with the team reeling at **30 for two** in pursuit of **361**. An hour into the day's proceedings, however, the writing was on the wall, with **Vidarbha** having reduced the fancied **RoI line-up to 80 for five**.
RoI कप्तान राजत पाटिदार और **इशान किशन** ने दिन की शुरुआत टीम को **30/2** पर रखते हुए की, जब **361 रन** का पीछा था। एक घंटे में ही स्थिति स्पष्ट हो गई, क्योंकि **विदर्भ** ने प्रतिष्ठित **RoI टीम को 80/5** पर समेट दिया।
- While **Patidar** offered a regulation **return catch** to lanky **Aditya Thakare** in the fifth over of the morning, **Ruturaj Gaikwad** returned with his second **single-digit score** in the match, poking at one in the perfect channel by pacer **Darshan Nalkande**. **Ishan** then holed out in the deep off **Harsh Dubey's spin** and **Vidarbha** was sensing a comfortable win.
जबकि **पाटिदार** ने सुबह के पाँचवे ओवर में लंबे **आदित्य ठाकरे** को **साधारण कैच** दिया, **रुतुराज गैिकwad** ने मैच में अपना दूसरा **सिंगल-डिजिट स्कोर** बनाया, **पेसर दर्शन नलकांडे** के परफेक्ट चैनल में गेंद खेली। फिर **इशान** ने **हर्ष दुबे की स्पिन** पर गहरे क्षेत्र में कैच दे दिया और **विदर्भ** को आसान जीत का अंदेशा हुआ।
- **Dhull** then started a **counterattack** with leftie **Saransh Jain** for company. **Dhull's cut shots off pacers and spinners alike** were a treat to watch until **Jain** missed one that turned into him by **Parth Rekhade**, the other left-arm spinner.
धुल ने फिर **सारांश जैन** के साथ **प्रतिकार की शुरुआत** की। **धुल के कट शॉट्स पेसर्स और स्पिनर्स पर समान रूप से** देखने में शानदार थे, जब तक **जैन** ने एक गेंद मिस की जो दूसरे लेफ्ट-आर्म स्पिनर **पार्थ रेखड़े** द्वारा उनके पास घुम गई।
- **Dhull** started taking **calculated risks** and with the ball turning softer, it worked in his favour. **Suthar (56 n.o., 113b, 4x4, 1x6)**, too batted effortlessly.
धुल ने **सावधानीपूर्वक जोखिम** लेना शुरू किया और गेंद का धीमा घूमना उनके पक्ष में गया। **सुथार (56, 113 गेंद, 4x4, 1x6)*** ने भी सहज बल्लेबाजी की।
- Just when the partnership had crossed the **three-digit mark** and **Dhull** had entered the **90s**, he tried to **upper cut a short one outside off** for a six. But **Atharva Taide** at deep third ran a few steps to his right and judged the ball to perfection **inches inside the rope** to tilt the game in **Vidarbha's favour** again.
जब साझेदारी ने **तीन अंकों का आंकड़ा** पार किया और **धुल** ने **90 के दशक** में प्रवेश किया, उन्होंने **ऑफ साइड की छोटी गेंद पर अपर कट** करके छक्का लगाने की कोशिश की। लेकिन **अथर्व तैदे** ने डीप थर्ड में कुछ कदम दाईं ओर दौड़े और गेंद को **रस्सी के भीतर इंचों तक सही ढंग से कैच** कर लिया और फिर से खेल को **विदर्भ के पक्ष में मोड़** दिया।
- **Taide** was soon back in action — running backward from the **slip** — to catch a **top edge off last-man Gurnoon Brar off Dubey** and spark celebrations in the **Vidarbha camp**.
तैदे जल्द ही फिर से सक्रिय हुए — **स्लिप** से पीछे की ओर दौड़ते हुए — **अंतिम बल्लेबाज गुरनून ब्रार की टॉप एज कैच** पकड़ी और **विदर्भ कैम्प** में जश्न शुरू कर दिया।



India signs off with four medals on final day

PARA ATHLETICS

PCS

Uthra Ganesan
NEW DELHI

India won four medals on Sunday to wrap up its most successful outing ever at the World Para Athletics Championships, finishing with 22 medals on a dramatic final day that saw medals being upgraded and a sprint run again because of technical faults.

Simran Sharma got silver in the 200m T12 clocking 24.46 seconds for a new Asian record.

Upgraded

Simran, who initially finished third, was upgraded after winner Venezuela's Alejandra Lopez was disqualified for violation of rule 7.10.4, which prohibits the guide from giving any undue advantage to the athlete.

In javelin throw F41, Pa-



Podium finishes: Navdeep and Preeti claimed silver in their events. SHIV KUMAR PUSHPAKAR



ris Paralympics gold medallist Navdeep Singh finished second behind Iran's Sadegh Beit Sayah, who avenged his Paris disqualification with a new PB of 48.86m.

Sandeep took bronze in the 200m T44 but there was drama in the 100m T35 when the starting gun fired twice but the race

was completed. Technical officials took more than an hour to decide it would be re-run, Preeti clocking 14.33 seconds to place second.

Meanwhile Saturday's silver medallist Soman Rana was pushed to bronze after Brazil's appeal to consider Thiago Dos Santos' best throw as legal was

upheld, giving him silver.

The results:

Men: 100m T63: Puseletso Mabote (RSA, 12.03s); **200m T44:** Marco Cichetti (Ita, 23.00s), Sandeep (third, 23.60s); **200m T51:** Peter Genyn (Bel, 37.95s); **200m T64:** Felix Streng (Ger, 21.60s); **800m T34:** Yang Wang (Chn, 1:40.24); **800m T54:** Jin Hua (Chn, 1:27.04); **1500m T38:** Nate Tucker (Can, 3:57.98);

1500m T52: Tomoki Sato (Jpn, 3:30.19); **Long jump T36:** Evgenii Torsunov (NPA, 6.14m); **javelin F41:** Sadegh Beit Sayah (Iri, 48.86m), Navdeep Singh (second, 45.46m); **shot put F33:** Deni Cerni (12.17m); **shot put F34:** Mehran Nikoeimajid (Iri, 12.27m); **shot put F63:** Aled Davies (GBR, 16.44m).

Women: 100m T35: Qianqian Guo (Chn, 14.24s), Preeti Pal (second, 14.33s); **200m T11:** Jerusa Geber (Bra, 24.88s); **200m T12:** Clara Da Silva (Bra, 24.42s), Simran Sharma (second, 24.46s); **200m T37:** Xiaoyan Wen (Chn, 26.70s); **200m T44:** Annie Carey (USA, 27.31s); **200m T47:** Kiara Rodriguez (Ecu, 24.34s); **200m T64:** Marlene Van Gansewinkel (Ned, 26.16s); **400m T13:** Carolina Duarte (Por, 57.08s); **400m T38:** Karen Moreno (Col, 59.45s); **400m T62:** Johannes Floors Ger, 45.39); **long jump T20:** Zileide Da Silva (Bra, 5.88m); **discus throw F55:** Diana Krumina (Lat, 26.51m), Sakshi Kasana (sixth, 22.47m), Karamjyoti (seventh, 21.12m), Pooja (eighth, 19.45m); **discus throw F38:** Simone Kruger (RSA, 37.39); **shot put F40:** Lara Baars (Ned, 9.77m).

India signs off with four medals on final day

भारत ने अंतिम दिन चार पदक जीतकर सफल अभियान पूरा किया

- India won **four medals** on **Sunday** to wrap up its most **successful outing ever** at the **World Para Athletics Championships**, finishing with **22 medals** on a dramatic final day that saw **medals being upgraded** and a **sprint run re-held** because of **technical faults**.
भारत ने रविवार को चार पदक जीतकर वर्ल्ड पैरालंपिक एथलेटिक्स चैम्पियनशिप में अपनी अब तक की सबसे सफल उपस्थिति पूरी की, ड्रामा भरे अंतिम दिन में कुल 22 पदक हासिल किए, जिसमें पदक अपग्रेड और स्प्रिंट दौड़ का दोबारा आयोजन तकनीकी त्रुटियों के कारण किया गया।
- Simran Sharma** got **silver** in the **200m T12** clocking **24.46 seconds** for a **new Asian record**.
सिमरन शर्मा ने 200 मीटर T12 में सिल्वर जीतकर 24.46 सेकंड का समय बनाया और नया एशियाई रिकॉर्ड स्थापित किया।
- Upgraded अपग्रेडेड**
- Simran, who initially finished **third**, was upgraded after winner **Venezuela's Alejandra Lopez** was **disqualified** for violation of **rule 7.10.4**, which prohibits the **guide from giving any undue advantage** to the athlete.
सिमरन, जो शुरू में तीसरे स्थान पर थीं, उन्हें अपग्रेड किया गया जब विजेता **वेनेजुएला की अलेजांद्रा लोपेज** को **डिसकालिफाई** कर दिया गया **नियम 7.10.4** के उल्लंघन के लिए, जो **गाइड को एथलीट को अनुचित लाभ देने से रोकता है**।
- In **javelin throw F41**, **Paris Paralympics gold medallist Navdeep Singh** finished **second** behind **Iran's Sadegh Beit Sayah**, who avenged his **Paris disqualification** with a **new PB of 48.86m**.
जैवलिन थ्रो F41 में, **पेरिस पैरालंपिक गोल्ड मेडलिस्ट नवदीप सिंह** ने **ईरान के सादेग बीट सायाह** के पीछे **दूसरा स्थान** हासिल किया, जिन्होंने अपने **पेरिस डिसकालिफिकेशन** का बदला **48.86 मीटर** के नए **PB** के साथ लिया।



- Sandeep took bronze in the 200m T44 but there was drama in the 100m T35 when the starting gun fired twice but the race was completed. Technical officials took more than an hour to decide it would be re-run, Preeti clocking 14.33 seconds to place second.
संदीप ने 200 मीटर T44 में ब्रॉन्ज जीता, लेकिन 100 मीटर T35 में ड्रामा हुआ जब स्टार्टिंग गन दो बार चली, लेकिन दौड़ पूरी हुई। तकनीकी अधिकारी ने एक घंटे से अधिक समय लिया यह तय करने में कि इसे दोबारा चलाया जाएगा, और प्रीति ने 14.33 सेकंड में दौड़कर दूसरा स्थान प्राप्त किया।
- Meanwhile, Saturday's silver medallist Soman Rana was pushed to bronze after Brazil's appeal to consider Thiago Dos Santos' best throw as legal was upheld, giving him silver.
वहीं, शनिवार के सिल्वर मेडलिस्ट सोमन राणा को ब्रॉन्ज में धकेल दिया गया जब ब्राजील का अपील कि थियागो डॉस सैंटोस की सर्वश्रेष्ठ थ्रो वैध मानी जाए, मंजूर कर लिया गया, जिससे उसे सिल्वर मिला।
- Men's Results:
पुरुषों के परिणाम:
- 100m T63: Puseletso Mabote (RSA, 12.03s)
200m T44: Marco Cichetti (Ita, 23.00s), Sandeep (third, 23.60s)
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- 100m T35: Qianqian Guo (Chn, 14.24s), Preeti Pal (second, 14.33s)
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Shot put F40: Lara Baars (Ned, 9.77m)

GS Paper 1: History, Society and Geography

TOPICS COVERED 06 October 2025

1. Georgia PM vows sweeping crackdown after 'foiled coup'
जॉर्जिया के पीएम ने 'असफल तख्तापलट' के बाद व्यापक कार्रवाई का वादा किया



2. **Seven Al-Shabaab militants killed in Mogadishu suicide attack: govt.**
मोगादिशु आत्मघाती हमले में सात अल-शबाब आतंकवादी मारे गए: सरकार

TBILISI

Georgia PM vows sweeping crackdown after 'foiled coup'



GS I: Mapping

AFP

Georgia's Prime Minister Irakli Kobakhidze vowed opposition arrests on Sunday after police used force against opposition protesters who tried to enter the presidential palace in what he termed was a coup bid during a controversial election. The protest prompted riot police to use tear gas and water cannons to repel the crowd. AFP

cannons to repel the crowd.

इस प्रदर्शन के कारण दंगा पुलिस ने भीड़ को भड़काने के लिए आंसू गैस और पानी की तोपों का इस्तेमाल किया।

Georgia PM vows sweeping crackdown after 'foiled coup'
जॉर्जिया के पीएम ने 'असफल तख्तापलट' के बाद व्यापक कार्रवाई का वादा किया

• Georgia's Prime Minister Irakli Kobakhidze vowed opposition arrests on Sunday after police used force against opposition protesters who tried to enter the presidential palace in what he termed was a coup bid during a controversial election.

जॉर्जिया के प्रधानमंत्री इराकली कोबाकहिजे ने रविवार को विपक्ष के गिरफ्तारियों का वादा किया, जब पुलिस ने बल का प्रयोग किया उन विपक्षी प्रदर्शनकारियों के खिलाफ जो राष्ट्रपति महल में प्रवेश करने की कोशिश कर रहे थे, जिसे उन्होंने विवादास्पद चुनाव के दौरान तख्तापलट प्रयास कहा।

• The protest prompted riot police to use tear gas and water



MOGADISHU

Seven Al-Shabaab militants killed in Mogadishu suicide attack: govt.



GS I: Mapping

AP

Seven Al-Shabaab militants were killed in a suicide attack carried out by the Islamist group in the heart of Mogadishu on Saturday, the Somali government said on Sunday. The attack at a detention facility holding some militants epitomises a worsening situation for Somalia, a poor and unstable country in the Horn of Africa. AFP

का एक गरीब और अस्थिर देश है।

Seven Al-Shabaab militants killed in Mogadishu suicide attack: govt.

मोगादिशु आत्मघाती हमले में सात अल-शबाब आतंकवादी मारे गए: सरकार

• Seven Al-Shabaab militants were killed in a suicide attack carried out by the Islamist group in the heart of Mogadishu on Saturday, the Somali government said on Sunday.

सात अल-शबाब आतंकवादी को आत्मघाती हमले में मारा गया, जो इस्लामिक समूह द्वारा मोगादिशु के केंद्र में शनिवार को किया गया, सोमाली सरकार ने रविवार को कहा।

• The attack at a detention facility holding some militants epitomises a worsening situation for Somalia, a poor and unstable country in the Horn of Africa.

कुछ आतंकवादियों को रखने वाली हिरासत सुविधा पर हमला सोमालिया के लिए बढ़ती हुई स्थिति को दर्शाता है, जो हॉर्न ऑफ अफ्रीका



Book listing 'set of 21 copper plate inscriptions' to be brought out soon

To be released by the Prime Minister on October 16; Archaeological Survey of India says it will contain inscriptions belonging to Vijayanagara, Reddi, Gajapati, Recharla chiefs, Reddis of Rajamahendravarma, and Chengalva dynasties, and Nawabs of Kurnool



Sri Bhramaramba Mallikarjuna Swamy temple in Srisailem. U. SUBRAMANYAM

GS I: A&C

Hareesh P

hareesh.p@thehindu.co.in

NANDYAL

A book describing the "set of 21 copper plate inscriptions" discovered by the Archaeological Survey of India (ASI) at Ghanta Matham near Sri Bhramaramba Mallikarjuna Swamy temple in Srisailem will be released by Prime Minister Narendra Modi on October 16.

According to the ASI, these inscriptions belong to Vijayanagara, Reddi, Gajapati, Recharla Chiefs, Reddis of Rajamahendravarma, and Chengalva dynasties and also Nawabs of Kurnool and are in Sanskrit, Kannada, Telugu and Odiya languages.

Dr. K. Munirathnam Reddy, Director (Epigraphy), ASI Mysuru, said that the scripts used in these inscriptions are Odiya, Telugu, Nagari, and Nandinagari. The inscriptions recorded the gifts given by the kings to villages, gifting a village for maintenance of 'anna-satra'

Book listing 'set of 21 copper plate inscriptions' to be brought out soon '21 तांबे की पट्टियों के शिलालेखों के सेट' वाली पुस्तक जल्द जारी की जाएगी

- To be released by the Prime Minister on October 16; Archaeological Survey of India (ASI) says it will contain inscriptions belonging to Vijayanagara, Reddi, Gajapati, Recharla chiefs, Reddis of Rajamahendravarma, Chengalva dynasties, and Nawabs of Kurnool. प्रधानमंत्री द्वारा 16 अक्टूबर को जारी की जाने वाली यह पुस्तक; भारतीय पुरातत्व सर्वेक्षण (ASI) के अनुसार इसमें विजयनगर, रेड्डी, गजपति, रेचर्ला प्रमुख, राजमहेंद्रवर्मा के रेड्डी, चेंगलवा राजवंश और कुरनूल के नवाबों के शिलालेख शामिल होंगे।
- A book describing the "set of 21 copper plate inscriptions" discovered by the ASI at Ghanta Matham near Sri Bhramaramba Mallikarjuna Swamy temple in Srisailem will be released by Prime Minister Narendra Modi on October 16. एक पुस्तक जिसमें "21 तांबे की पट्टियों के शिलालेखों का सेट" वर्णित है, जो Srisailem में श्री भ्रामरांबा मल्लिकार्जुन स्वामी मंदिर के पास घंटा माथम में ASI द्वारा खोजा गया था, इसे प्रधानमंत्री नरेंद्र मोदी द्वारा 16 अक्टूबर को जारी किया जाएगा।
- According to the ASI, these inscriptions belong to Vijayanagara, Reddi, Gajapati, Recharla Chiefs, Reddis of Rajamahendravarma, Chengalva dynasties and also Nawabs of Kurnool and are in Sanskrit, Kannada, Telugu, and Odiya languages. ASI के अनुसार, ये शिलालेख विजयनगर, रेड्डी, गजपति, रेचर्ला प्रमुख, राजमहेंद्रवर्मा के रेड्डी, चेंगलवा राजवंश और कुरनूल के नवाबों के हैं और ये संस्कृत, कन्नड़, तेलुगु और उड़िया भाषाओं में हैं।
- Dr. K. Munirathnam Reddy, Director (Epigraphy), ASI Mysuru, said that the scripts used in these inscriptions are Odiya, Telugu, Nagari, and Nandinagari. डॉ. के. मुनिरत्नम रेड्डी, निदेशक (लेखाशास्त्र), ASI मैसूरु, ने कहा कि इन शिलालेखों में प्रयुक्त लिपियाँ उड़िया, तेलुगु, नागरी और नंदिनागरी हैं।
- The inscriptions recorded the gifts given by the kings to villages, gifting a village for maintenance of 'anna-satra'. इन शिलालेखों में राजाओं द्वारा गाँवों को दिए गए उपहारों का विवरण है, जिसमें 'अन्न-सत्र' के रखरखाव के लिए एक गाँव दान किया गया।



GS Paper II: Polity, Governance, And International Relations

TOPICS COVERED 06 October 2025

1. **Syria holds first elections since Assad's ouster**
सीरिया में असद के हटने के बाद पहले चुनाव
2. **Marshland trap**
दलदली जाल
3. **Why is ADR crucial for India's courts?**
भारत की अदालतों के लिए ADR क्यों महत्वपूर्ण है?
4. **What is the SC order on local polls in Maharashtra?**
महाराष्ट्र में स्थानीय चुनावों पर SC का आदेश क्या है?

Syria holds first elections since Assad's ouster

GS II: West Asia

Associated Press
DAMASCUS

Syria on Sunday held its first parliamentary elections, nearly a year after a rebel-led offensive unseated longtime autocratic leader Bashar al-Assad.

The People's Assembly will be tasked with passing a new elections law and constitution as the country moves through its post-Assad political transition after more than a decade of civil war. Across the country, security forces were deployed around polling stations.



New course: Syria's interim President Ahmed al-Sharaa, left, visits a polling station in Damascus on Sunday. AFP

Inside, electoral college members entered polling booths to fill out their ballot papers with lists of names that were then placed in a sealed box until they were pulled out and counted in front of candi-

dates, journalists and observers from the Syrian bar association.

No direct vote

There was no direct popular vote in this election. Two-thirds of the 210-member Assembly seats will be elected through province-based electoral colleges, while one-third will be appointed directly by interim President Ahmed al-Sharaa. The new parliament will serve a 30-month term while preparing for future elections.

In theory, 7,000 electoral college members across

60 districts are eligible to vote for 140 seats, but elections were postponed indefinitely in Sweida province and in areas controlled by the Kurdish-led Syrian Democratic Forces due to tensions with Damascus.

"There are many pending laws that need to be voted on so that we move forward with the process of building and prosperity," Mr. Sharaa said in a speech after he was briefed on the election process at the National Library Center, where the polling took place in Damascus.

Syria holds first elections since Assad's ouster सीरिया में असद के हटने के बाद पहले चुनाव

- **Syria** on Sunday held its first **parliamentary elections**, nearly a year after a **rebel-led offensive unseated longtime autocratic leader Bashar al-Assad**.
सीरिया ने रविवार को अपना पहला **संसदीय चुनाव** आयोजित किया, लगभग एक साल बाद जब **विद्रोही-नेतृत्व वाले अभियान ने लंबे समय तक सत्ताधारी तानाशाह बशर अल-असद को हटाया**।
- The **People's Assembly** will be tasked with passing a **new elections law** and **constitution** as the country moves through its **post-Assad political transition** after more than a decade of **civil war**.
जनसभा को यह कार्य सौंपा जाएगा कि वह **नए चुनाव कानून** और **संविधान** को पास करे, क्योंकि देश **असद के बाद की राजनीतिक संक्रमण** से गुजर रहा है, जो **दस से अधिक वर्षों के गृहयुद्ध** के बाद है।



- Across the country, **security forces** were deployed around **polling stations**. पूरे देश में, मतदान केंद्रों के आसपास सुरक्षा बल तैनात किए गए।
- Inside, **electoral college members** entered **polling booths** to fill out their **ballot papers** with lists of names that were then placed in a **sealed box** until they were pulled out and counted in front of **candidates, journalists and observers from the Syrian bar association**. अंदर, चुनावी मंडल के सदस्य मतदान बूथ में जाकर अपने मतपत्र भर रहे थे, जिनमें नामों की सूची थी, जिसे बाद में सील किए गए बॉक्स में रखा गया जब तक कि उन्हें बाहर निकालकर उम्मीदवारों, पत्रकारों और सीरियाई बार एसोसिएशन के पर्यवेक्षकों के सामने गिना न गया।

No direct vote

कोई प्रत्यक्ष मतदान नहीं

- There was no **direct popular vote** in this election. इस चुनाव में कोई प्रत्यक्ष जनमत नहीं था।
- Two-thirds of the **210-member Assembly seats** will be elected through **province-based electoral colleges**, while one-third will be appointed directly by **interim President Ahmed al-Sharaa**. 210-सदस्यीय सभा की दो-तिहाई सीटें प्रांत-आधारित चुनाव मंडलों के माध्यम से चुनी जाएंगी, जबकि एक-तिहाई अंतरिम राष्ट्रपति अहमद अल-शारा द्वारा सीधे नियुक्त की जाएगी।
- The new **parliament** will serve a **30-month term** while preparing for future elections. नई संसद 30 महीने की अवधि के लिए कार्य करेगी जबकि भविष्य के चुनावों की तैयारी होगी।
- In theory, **7,000 electoral college members** across **60 districts** are eligible to vote for **140 seats**, but elections were **postponed indefinitely** in **Sweida province** and in areas controlled by the **Kurdish-led Syrian Democratic Forces** due to tensions with **Damascus**. सैद्धांतिक रूप से, 60 जिलों में फैले 7,000 चुनाव मंडल सदस्य 140 सीटों के लिए मतदान करने के पात्र हैं, लेकिन चुनाव अनिश्चित काल के लिए स्थगित कर दिए गए हैं स्वेदा प्रांत और कुर्द-नेतृत्व वाले सीरियाई डेमोक्रेटिक फोर्स के नियंत्रित क्षेत्रों में, दमिश्क के साथ तनाव के कारण।
- “There are many **pending laws** that need to be voted on so that we move forward with the process of **building and prosperity**,” **Mr. Sharaa** said in a speech after he was briefed on the **election process** at the **National Library Center**, where the polling took place in **Damascus**. “बहुत से लंबित कानून हैं जिन पर मतदान किया जाना चाहिए ताकि हम निर्माण और समृद्धि की प्रक्रिया में आगे बढ़ सकें,” श्री शारा ने कहा, जब उन्हें मतदान प्रक्रिया की जानकारी दी गई राष्ट्रीय पुस्तकालय केंद्र में, जहां मतदान दमिश्क में हुआ।



GS II: India-Pakistan

Marshland trap

India must address its concerns about Pakistan's activities with care

Alluding to intelligence reports of Pakistan's heavy military activity in areas adjoining Sir Creek, Defence Minister Rajnath Singh has warned Pakistan against any adventurism. Mr. Singh's statement that "a route to Karachi passes through Sir Creek" is both puzzling and disconcerting, considering the lingering tensions and the absence of diplomacy between India and Pakistan. His remarks drew a parallel with the 1965 India-Pakistan war, when the Indian Army advanced to the outskirts of Lahore. Sir Creek is an uninhabited, largely inaccessible marshland between Gujarat and Sindh in Pakistan, with a complex web of waterways and shifting tidal patterns. It remains a dispute between the two countries. Navigation is extremely challenging and requires expert knowledge of the terrain. On the Indian side, the estuarine region is already under layered security, with the Border Security Force, the Indian Army, the Indian Coast Guard and the Indian Air Force maintaining a strong presence. India considers the area as vital for oil and gas exploration as well as fishing rights. India's major ports, Mundra and Kandla, located in the Gulf of Kutch, are also in close vicinity. Large-scale ground operations are nearly impossible in the region, which lacks roads, a civilian population and administrative infrastructure. However, during Operation Sindoor, Pakistan attempted to strike military infrastructure with close to 400 drones across 36 locations from Leh to Sir Creek. Indian forces neutralised many of them, but it perhaps signalled the expansion of the front between the two countries.

Strategically, opening a front here is disadvantageous for both sides, but conflicts often do not follow reason or logic. Mr. Singh, who was in Kutch to celebrate Vijaydashami with soldiers, had been scheduled to visit Sir Creek but could not due to adverse weather. Addressing troops at the Bhuj military base, he reiterated India's consistent position to resolve the issue through dialogue. He said Pakistan's intentions remain unclear, and went on to say that "any aggression by Pakistan in the Sir Creek area will be met with a resounding response that will change both history and geography". Adding to India's security concerns are Chinese-backed mining and power projects in the Pakistani part of the Rann of Kutch, near Gujarat. These projects, India fears, could evolve into a strategic-military challenge, if leveraged jointly by Beijing and Islamabad. Considering the volatility in geopolitical situations in many corners of the world, India must tread with care and wisdom. Strategy should be disconnected from domestic politics. New Delhi must do everything under its command – but first, diplomacy – to address its security concerns.

Marshland trap दलदली जाल

India must address its concerns about Pakistan's activities with care.

भारत को पाकिस्तान की गतिविधियों के बारे में अपनी चिंताओं को सावधानीपूर्वक संबोधित करना चाहिए।

Sir Creek Tensions and Strategic Concerns सिर क्रीक तनाव और रणनीतिक चिंताएँ

Alluding to intelligence reports of Pakistan's heavy military activity in areas adjoining Sir Creek, Defence Minister Rajnath Singh has warned Pakistan against any adventurism.

सिर क्रीक के पास पाकिस्तान की भारी सैन्य गतिविधियों की खुफिया रिपोर्टों का हवाला देते हुए, रक्षा मंत्री राजनाथ सिंह ने पाकिस्तान को किसी भी साहसिक कदम से सावधान किया है।

Mr. Singh's statement that "a route to Karachi passes through Sir Creek" is both puzzling and disconcerting, considering the lingering tensions and the absence of diplomacy between India and Pakistan.

श्री सिंह का बयान कि "कराची जाने का रास्ता सिर क्रीक से होकर गुजरता है" पहेली और परेशान करने वाला है, क्योंकि भारत और पाकिस्तान के बीच तनाव बना हुआ है और कूटनीति का अभाव है।

His remarks drew a parallel with the 1965 India-Pakistan war, when the Indian Army advanced to the outskirts of Lahore.

उनके बयान ने 1965 के भारत-पाकिस्तान युद्ध के साथ एक समानता खींची, जब भारतीय सेना लाहौर के बाहरी इलाकों तक पहुँची थी।

Sir Creek is an uninhabited, largely inaccessible marshland between Gujarat and Sindh in Pakistan, with a complex web of waterways and shifting tidal patterns.

सिर क्रीक अबाद नहीं, और अधिकतर अक्षम्य दलदल क्षेत्र है, जो गुजरात और पाकिस्तान के सिंध के बीच स्थित है, जिसमें जलमार्गों का जटिल नेटवर्क और बदलते ज्वारीय पैटर्न हैं।

It remains a dispute between the two countries.

यह दोनों देशों के बीच विवाद बना हुआ है।

Navigation is extremely challenging and requires expert knowledge of the terrain.

नेविगेशन अत्यंत चुनौतीपूर्ण है और इसके लिए भूभाग की विशेषज्ञ जानकारी आवश्यक है।

On the Indian side, the estuarine region is already under layered security, with the Border Security Force, Indian Army, Indian Coast Guard, and Indian Air Force maintaining a strong presence.

भारतीय पक्ष पर, मुहाना क्षेत्र पहले ही सुरक्षा की कई परतों के अंतर्गत है, जिसमें सीमा सुरक्षा बल, भारतीय सेना, भारतीय तटरक्षक और भारतीय वायु सेना की मजबूत उपस्थिति है।

India considers the area as vital for oil and gas exploration as well as fishing rights.

भारत इस क्षेत्र को तेल और गैस खोज के लिए महत्वपूर्ण और मछली पकड़ने के अधिकारों के लिए भी महत्वपूर्ण मानता है।

India's major ports, Mundra and Kandla, located in the Gulf of Kutch, are also in close vicinity.



भारत के प्रमुख बंदरगाह, मुंद्रा और कांडला, जो कच्छ के खाड़ी में स्थित हैं, भी निकट ही हैं।

- **Large-scale ground operations** are nearly **impossible** in the region, which lacks roads, a civilian population, and administrative infrastructure.
इस क्षेत्र में बड़े पैमाने पर स्थल ऑपरेशन लगभग असंभव हैं, क्योंकि यहाँ सड़कें, नागरिक आबादी और प्रशासनिक ढांचा नहीं है।
- However, during Operation Sindoor, Pakistan attempted to strike military infrastructure with close to **400 drones** across **36 locations** from Leh to Sir Creek.
हालांकि, ऑपरेशन सिंदूर के दौरान, पाकिस्तान ने सेना की संरचना पर हमला करने का प्रयास किया, लगभग **400 ड्रोन** के साथ **36 स्थानों** पर, लेह से सिर क्रीक तक।
- **Indian forces neutralised many of them**, but it perhaps signalled the **expansion of the front** between the two countries.
भारतीय बलों ने कई ड्रोन निष्क्रिय कर दिए, लेकिन यह शायद दोनों देशों के बीच मोर्चे के विस्तार का संकेत था।
- **Strategically, opening a front here is disadvantageous** for both sides, but **conflicts often do not follow reason or logic**.
रणनीतिक रूप से, यहाँ मोर्चा खोलना दोनों पक्षों के लिए असुविधाजनक है, लेकिन संघर्ष अक्सर तर्क या विवेक के अनुसार नहीं चलते।
- Mr. Singh, who was in **Kutch to celebrate Vijayadashami with soldiers**, had been scheduled to **visit Sir Creek** but could not due to **adverse weather**.
श्री सिंह, जो सैनिकों के साथ विजयादशमी मनाने कच्छ गए थे, सिर क्रीक जाने के लिए निर्धारित थे, लेकिन खराब मौसम के कारण नहीं जा सके।
- Addressing troops at the **Bhuj military base**, he reiterated **India's consistent position to resolve the issue through dialogue**.
भुज सैन्य अड्डे पर सैनिकों को संबोधित करते हुए, उन्होंने समस्या को संवाद के माध्यम से हल करने की भारत की लगातार नीति दोहराई।
- He said **Pakistan's intentions remain unclear**, and went on to say that **"any aggression by Pakistan in the Sir Creek area will be met with a resounding response that will change both history and geography"**.
उन्होंने कहा कि पाकिस्तान के इरादे स्पष्ट नहीं हैं, और आगे कहा कि "सिर क्रीक क्षेत्र में पाकिस्तान का कोई भी आक्रमण गूँजदार प्रतिक्रिया का सामना करेगा जो इतिहास और भूगोल दोनों बदल देगा"।
- Adding to **India's security concerns** are **Chinese-backed mining and power projects** in the **Pakistani part of the Rann of Kutch, near Gujarat**.
भारत की सुरक्षा चिंताओं में चीन समर्थित खनन और ऊर्जा परियोजनाएं भी शामिल हैं, जो गुजरात के पास पाकिस्तानी भाग के रण ऑफ कच्छ में हैं।
- These projects, India fears, could evolve into a **strategic-military challenge**, if leveraged **jointly by Beijing and Islamabad**.
भारत को डर है कि ये परियोजनाएं रणनीतिक-सैन्य चुनौती में बदल सकती हैं, यदि बीजिंग और इस्लामाबाद द्वारा संयुक्त रूप से उपयोग की जाएँ।
- Considering the **volatility in geopolitical situations** in many corners of the world, **India must tread with care and wisdom**.
दुनिया के कई हिस्सों में भू-राजनीतिक स्थितियों की अस्थिरता को देखते हुए, भारत को सावधानी और बुद्धिमानी से कदम उठाना चाहिए।
- **Strategy should be disconnected from domestic politics**.
रणनीति को घरेलू राजनीति से अलग रखा जाना चाहिए।
- **New Delhi must do everything under its command — but first, diplomacy — to address its security concerns**.
नई दिल्ली को अपनी कमान के तहत सब कुछ करना चाहिए — लेकिन पहले, कूटनीति — अपनी सुरक्षा चिंताओं को संबोधित करने के लिए।



Why is ADR crucial for India's courts?

What is Alternative Dispute Resolution and how does it work in India? How long does it take to resolve disputes? What legal provisions support ADR and its processes? How can they reduce delays and court pendency effectively? Which States have the highest backlog of cases?

GS II: Justice System

LETTER&SPIRIT

C.B.P. Srivastava

The story so far:

The Minister of Law and Justice recently reaffirmed the government's commitment to legal reforms rooted in India's civilisational ethos. Citing the doctrine of Panch Parmeshwar, which embodies the principle of collective consensus in dispute resolution, Arjun Ram Meghwal emphasised the need for global cooperation to strengthen Alternative Dispute Resolution (ADR) mechanisms. The India Justice Report 2025 highlights significant challenges in India's justice system, particularly including access, delays, and accountability. According to the National Judicial Data Grid (NJDG), the total number of pending cases in India is 4,57,96,239. In the Supreme Court, the number of pending cases is 81,768, and in the High Courts, it is approximately 62.9 lakh. These delays often result in injustice, increasing the focus on ADR as a faster, cost-effective, and socially inclusive way to deliver justice.

What is the constitutional basis of ADR?

The constitutional basis of ADR in India is enshrined in Article 39A, which mandates the state to provide equal justice and free legal aid. Various ADR processes, such as arbitration, conciliation, mediation, and judicial settlement (Lok Adalat), are recognised under Section 89 of the Code of Civil Procedure, 1908.

To regulate processes, these have been incorporated into law. For example, under the Arbitration and Conciliation Act 1996 (amended in 2021), civil and



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compoundable offences like theft, criminal trespass, and adultery are resolved through a binding award or resolution, respectively. The Arbitration Act, 2021, also mentions the establishment of an Indian Arbitration Council, giving legal backing to arbitration agreements.

The law fixes a maximum period of 180 days for dispute resolution, ensuring faster justice.

On many occasions, even after such a solution, if a party is dissatisfied, they can exit the process after two sessions of mediation. Pre-litigation mediation for resolving civil and commercial disputes will not increase the number of pending cases; it will also strengthen interpersonal relationships by increasing interaction at the social level.

How do Lok Adalats function?

Lok Adalats are governed by the Legal Services Authorities Act, 1987, inspired by Article 39A. Apart from Permanent Lok Adalat (Section 22-B of the Act), provisions of the National Lok Adalat and e-Lok Adalat are directly helpful in strengthening the justice system, provided awareness about such a system is made effective and widespread.

The first Lok Adalat in India was organised in Gujarat in 1999. The biggest feature of Lok Adalats is that their decisions shall be final and there is no possibility of appeal. This does not mean that the powers of these courts are absolute.

The reason for no appeal is that these courts resolve disputes before litigation. In order to prevent any possible

absoluteness, it is provided that the dissatisfied party can file a suit in a court.

Why is strengthening ADR crucial?

According to former Chief Justice of India Justice D.Y. Chandrachud, mediation is a tool for social change, where social norms are brought in line with constitutional values through the exchange of views and flow of information. Solutions arrived at through invaluable discussions during mediation ensure true justice for individuals and groups on their terms, in a language they understand, and provide a platform that protects their sentiments.

The India Justice Report also highlights inter-State disparities in terms of the backlog of cases. The report says that pending cases have exceeded five crore, and High Courts and district courts are facing vacancy rates of 33% and 21% respectively. Judges in Uttar Pradesh, Himachal Pradesh and Kerala have workloads exceeding 4,000 cases.

A substantial number of cases in High Courts and subordinate courts have been pending for over 10 years. The NJDG provides real-time data on case pendency and disposal, offering a comprehensive view of the judicial system's performance across States and courts.

The India Justice Report ranks States based on their performance on various aspects of the justice system, including case pendency, with other factors like court infrastructure and judge availability.

States like Andhra Pradesh, Uttar Pradesh, and Bihar have a considerable number of pending cases. This urgently demands rapid disposal and necessitates the strengthening of the ADR for effective per capita justice delivery.

C.B.P. Srivastava is President, Centre for Applied Research in Governance, Delhi

THE GIST

India's justice system faces significant challenges, including access, delays, and accountability, with over 4.57 crore pending cases, and High Courts and district courts experiencing heavy vacancy rates and workloads.

Strengthening Alternative Dispute Resolution is crucial to address inter-State disparities, reduce court pendency, and ensure true justice through pre-litigation resolution, mediation, and finality of Lok Adalat decisions.

Why is ADR crucial for India's courts? भारत की अदालतों के लिए ADR क्यों महत्वपूर्ण है?

Alternative Dispute Resolution (ADR) in India भारत में वैकल्पिक विवाद समाधान (ADR)

- The **Minister of Law and Justice** recently reaffirmed the government's commitment to **legal reforms** rooted in **India's civilisational ethos**. कानून और न्याय मंत्री ने हाल ही में भारत की सांस्कृतिक धरोहर पर आधारित कानूनी सुधारों के प्रति सरकार की प्रतिबद्धता को पुनः पुष्टि की।
- Citing the doctrine of **Panch Parmeshwar**, which embodies the principle of **collective consensus in dispute resolution**, **Arjun Ram Meghwal** emphasised the need for **global cooperation** to strengthen **ADR mechanisms**. पंच परमेश्वर के सिद्धांत का हवाला देते हुए, जो विवाद समाधान में सामूहिक सहमति के सिद्धांत को दर्शाता है, अर्जुन राम मेघवाल ने ADR तंत्र को मजबूत करने के लिए वैश्विक सहयोग की आवश्यकता पर जोर दिया।
- The **India Justice Report 2025** highlights significant challenges in India's **justice system**, particularly including **access, delays, and accountability**. इंडिया जस्टिस रिपोर्ट 2025 भारत की न्याय प्रणाली में महत्वपूर्ण चुनौतियों को उजागर करती है, विशेष रूप से पहुँच, देरी और जवाबदेही।
- According to the **National Judicial Data Grid (NJDG)**, the total number of **pending cases** in India is **4,57,96,239**. नेशनल ज्यूडिशियल डेटा ग्रिड (NJDG) के अनुसार, भारत में लंबित मामलों की कुल संख्या 4,57,96,239 है।
- In the **Supreme Court**, the number of **pending cases** is **81,768**, and in the **High Courts**, it is approximately **62.9 lakh**. सुप्रीम कोर्ट में लंबित मामलों की संख्या 81,768 है, और हाई कोर्ट में यह लगभग 62.9 लाख है।



- These **delays** often result in **injustice**, increasing the focus on **ADR** as a **faster, cost-effective, and socially inclusive** way to deliver justice.
ये **विलंब** अक्सर **अन्याय** का कारण बनते हैं, जिससे **ADR** पर ध्यान बढ़ता है क्योंकि यह **तेज़, लागत-कुशल और सामाजिक रूप से समावेशी** न्याय प्रदान करने का तरीका है।

Constitutional Basis of ADR ADR का संवैधानिक आधार

- The constitutional basis of **ADR in India** is enshrined in **Article 39A**, which mandates the state to provide **equal justice** and **free legal aid**.
भारत में **ADR का संवैधानिक आधार अनुच्छेद 39A** में निहित है, जो राज्य को **समान न्याय और मुफ्त कानूनी सहायता** प्रदान करने का निर्देश देता है।
- Various **ADR processes**, such as **arbitration, conciliation, mediation, and judicial settlement (Lok Adalat)**, are recognised under **Section 89 of the Code of Civil Procedure, 1908**.
विभिन्न **ADR प्रक्रियाएँ**, जैसे **पारस्परिक समझौता, मध्यस्थता, सुलह, और न्यायिक समाधान (लोक अदालत)**, सिविल प्रॉसीज़र कोड, 1908 के धारा 89 के तहत मान्यता प्राप्त हैं।
- To regulate processes, these have been incorporated into law. For example, under the **Arbitration and Conciliation Act 1996 (amended in 2021)**, **civil and compoundable offences** like **theft, criminal trespass, and adultery** are resolved through a **binding award or resolution**, respectively.
प्रक्रियाओं को नियमित करने के लिए इन्हें कानून में शामिल किया गया है। उदाहरण के लिए, **Arbitration and Conciliation Act 1996 (2021 में संशोधित)** के तहत, **सिविल और सम्मिलित अपराध** जैसे **चोरी, आपराधिक अतिक्रमण और व्यभिचार** को **बाध्यकारी पुरस्कार या समाधान** के माध्यम से हल किया जाता है।
- The **Arbitration Act, 2021** also mentions the establishment of an **Indian Arbitration Council**, giving **legal backing to arbitration agreements**.
Arbitration Act, 2021 में **भारतीय मध्यस्थता परिषद** की स्थापना का भी उल्लेख है, जो **मध्यस्थता समझौतों को कानूनी समर्थन** देता है।
- The law fixes a maximum period of **180 days** for **dispute resolution**, ensuring **faster justice**.
कानून में **विवाद समाधान** के लिए अधिकतम अवधि **180 दिन** तय की गई है, जिससे **तेज़ न्याय** सुनिश्चित होता है।
- On many occasions, even after such a solution, if a party is **dissatisfied**, they can exit the process after **two sessions of mediation**.
कई अवसरों पर, इस समाधान के बाद भी यदि कोई पक्ष **असंतुष्ट** है, तो वे **दो मध्यस्थता सत्रों** के बाद प्रक्रिया से बाहर जा सकते हैं।
- **Pre-litigation mediation** for resolving **civil and commercial disputes** will not increase the number of pending cases; it will also strengthen **interpersonal relationships** by increasing interaction at the social level.
न्यायालय से पहले मध्यस्थता सिविल और वाणिज्यिक विवादों को हल करने के लिए लंबित मामलों की संख्या बढ़ाए बिना, सामाजिक स्तर पर बातचीत बढ़ाकर **अंतरव्यक्तिगत संबंधों** को भी मजबूत करेगी।

Functioning of Lok Adalats लोक अदालतों का कार्यप्रणाली

- **Lok Adalats** are governed by the **Legal Services Authorities Act, 1987**, inspired by **Article 39A**.
लोक अदालतों का संचालन **Legal Services Authorities Act, 1987** के तहत होता है, जो **अनुच्छेद 39A** से प्रेरित है।
- Apart from **Permanent Lok Adalat (Section 22-B)**, provisions of **National Lok Adalat** and **e-Lok Adalat** are directly helpful in strengthening the justice system, provided awareness about such a system is made **effective and widespread**.
स्थायी लोक अदालत (धारा 22-B) के अलावा, **राष्ट्रीय लोक अदालत** और **ई-लोक अदालत** की व्यवस्था न्याय प्रणाली को मजबूत करने में सीधे सहायक है, बशर्ते ऐसी प्रणाली के बारे में जागरूकता **प्रभावी और व्यापक** हो।



- The first **Lok Adalat** in India was organised in **Gujarat in 1999**.
भारत में पहली लोक अदालत गुजरात में 1999 में आयोजित की गई थी।
- The biggest feature of **Lok Adalats** is that their **decisions shall be final** and there is no **possibility of appeal**.
लोक अदालतों की सबसे बड़ी विशेषता यह है कि उनके **निर्णय अंतिम होंगे** और **अपील की कोई संभावना नहीं है**।
- This does not mean that the powers of these courts are absolute. The reason for no appeal is that these courts resolve **disputes before litigation**.
इसका मतलब यह नहीं है कि इन अदालतों के अधिकार पूर्ण हैं। अपील न होने का कारण यह है कि ये अदालतें **विवादों को मुकदमे से पहले** हल करती हैं।
- To prevent any possible absoluteness, it is provided that the **dissatisfied party can file a suit in a court**.
किसी भी संभावित पूर्णता को रोकने के लिए, यह प्रावधान है कि **असंतुष्ट पक्ष अदालत में मुकदमा दायर कर सकता है**।

Importance of Strengthening ADR

ADR को मजबूत करने का महत्व

- According to former Chief Justice of India **Justice D.Y. Chandrachud**, **mediation** is a **tool for social change**, where **social norms** are aligned with **constitutional values** through exchange of views and flow of information.
भारत के पूर्व मुख्य न्यायाधीश **जस्टिस D.Y. चंद्रचूड़** के अनुसार, **मध्यस्थता सामाजिक परिवर्तन का एक उपकरण है**, जहाँ **सामाजिक मानदंड को संवैधानिक मूल्यों** के अनुरूप बनाया जाता है।
- Solutions arrived at through **mediation** ensure **true justice** for individuals and groups **on their terms**, in a **language they understand**, and provide a **platform that protects their sentiments**.
मध्यस्थता के माध्यम से प्राप्त समाधान व्यक्तियों और समूहों के लिए **सच्चा न्याय** सुनिश्चित करते हैं, उनके शर्तों पर, **भाषा में जिसे वे समझते हैं**, और एक **ऐसा मंच प्रदान करते हैं जो उनकी भावनाओं की रक्षा करता है**।
- The **India Justice Report** also highlights **inter-State disparities** in terms of **backlog of cases**.
इंडिया जस्टिस रिपोर्ट राज्यों के बीच असमानताओं को भी **मामलों की लंबित सूची** के संदर्भ में उजागर करती है।
- The report says that **pending cases have exceeded five crore**, and **High Courts** and **district courts** are facing **vacancy rates of 33% and 21%** respectively.
रिपोर्ट के अनुसार, **लंबित मामलों की संख्या पांच करोड़ से अधिक** हो गई है, और **हाई कोर्ट** और **ज़िला अदालतों** में क्रमशः **33% और 21%** की **खाली सीटें** हैं।
- Judges in **Uttar Pradesh**, **Himachal Pradesh**, and **Kerala** have workloads exceeding **4,000 cases**.
उत्तर प्रदेश, **हिमाचल प्रदेश** और **केरल** के न्यायाधीशों का कार्यभार **4,000 मामलों** से अधिक है।
- A substantial number of cases in **High Courts** and **subordinate courts** have been pending for **over 10 years**.
हाई कोर्ट और **अधीनस्थ अदालतों** में पर्याप्त संख्या में मामले **10 वर्ष से अधिक** लंबित हैं।
- The **NJDG** provides **real-time data** on **case pendency and disposal**, offering a **comprehensive view** of the judicial system's performance across **States and courts**.
NJDG मामलों की लंबित स्थिति और निपटान पर **रियल-टाइम डेटा** प्रदान करता है, जो **राज्यों और अदालतों** में न्याय प्रणाली के प्रदर्शन का **समग्र दृश्य** प्रस्तुत करता है।
- The **India Justice Report** ranks **States** based on their performance on various aspects of the justice system, including **case pendency**, court **infrastructure**, and **judge availability**.
इंडिया जस्टिस रिपोर्ट न्याय प्रणाली के विभिन्न पहलुओं, जैसे **मामलों की लंबित स्थिति**, अदालत की **अवसंरचना**, और **न्यायाधीशों की उपलब्धता** के आधार पर **राज्यों** को रैंक करती है।
- States like **Andhra Pradesh**, **Uttar Pradesh**, and **Bihar** have a considerable number of **pending cases**, demanding **rapid disposal** and necessitating the strengthening of **ADR** for **effective per capita justice delivery**.



आंध्र प्रदेश, उत्तर प्रदेश और बिहार जैसे राज्यों में लंबित मामलों की संख्या काफी है, जो तेज़ निपटान की मांग करता है और प्रभावी प्रति व्यक्ति न्याय वितरण के लिए ADR को मजबूत करने की आवश्यकता है।

What is the SC order on local polls in Maharashtra?

Why have elections not been held for several years? Has it affected governance? Who is running the show?

GS II: Polity Local Bodies

Girija Bhosale

The story so far:

The Supreme Court recently directed the Maharashtra State Election Commission to conduct elections of all local bodies by January 31, 2026. It also pulled up the Commission for not complying with its earlier order of May 6, directing it to notify the elections by September 6.

What are the reasons for the delay?

The continuous delay in conducting these elections is attributable not only to the pendency of the OBC (Other Backward Classes) reservation issue, but also the judicial delays, inconsistency, and lack of political will.

Today in Maharashtra, 29 Municipal Corporations, 248 Municipal Councils, along with hundreds of Nagar Panchayats, 32 out of 34 Zilla Parishads, 336 out of 351 Panchayat Samitis are run by administrators. While the biggest municipal corporation in India, the Brihanmumbai Municipal Corporation (BMC), with an annual budget of over ₹74,000 crore, has been functioning without corporators since March 2022, the newly formed Municipal Corporations in the State, at Jalna and Ichalkaranji,

await their corporators since their inception.

What is the issue around OBC reservation?

In 2010, the Supreme Court left it to the States to carry out a 'rigorous investigation' to decide which communities are 'politically backward' and should benefit from OBC reservation in local bodies. In March 2021, the apex court laid down a three-fold test to provide these reservations. As the State of Maharashtra failed to fulfil this test, in March 2022, the Banthia Commission was set up. It submitted its report in July 2022, which is currently under challenge before the Supreme Court. Meanwhile, the court ordered that States should carry out elections without the OBC quota if they fail to fulfil the criteria. Thus, the Commission conducted elections in 106 municipalities after relocating the OBC quota seats to the general category.

On May 6 this year, the apex court directed the State Election Commission to conduct elections with OBC reservation as existed prior to the 2022 Banthia Commission report. It reminded the Commission how local body elections are necessary for keeping democracy alive at the grassroots. While the Court's

sentiment for conducting elections is commendable, it does not absolve the Court from the delay it caused. It will also lead to inconsistent outcomes as the election of 106 municipalities has already taken place without the OBC reservation. Additionally, the current elections are also subject to the outcome of pending litigation, which can potentially disqualify the elected representatives.

Despite the above orders, the State Commission took no steps to conduct elections. It cited insufficient EVM machines, the school education board's examination and an insufficient number of officers to justify the non-compliance with the Court's order.

Is the delay impacting work?

Some may argue that the lack of having elected representatives at local bodies hasn't really harmed anyone, given that bureaucrats are anyway running them. However, in reality, the developmental engine in both urban and rural areas has taken a hit due to democratic damage of weakened local bodies. People do not have a political avenue to voice their concerns. The burden automatically falls on local MPs or MLAs or guardian ministers of the district who are not readily available.

What is the SC order on local polls in Maharashtra? महाराष्ट्र में स्थानीय चुनावों पर SC का आदेश क्या है?

Maharashtra Local Body Elections Delay महाराष्ट्र स्थानीय निकाय चुनाव में देरी

- The **Supreme Court** recently directed the **Maharashtra State Election Commission** to conduct **elections of all local bodies** by **January 31, 2026**.
सुप्रीम कोर्ट ने हाल ही में महाराष्ट्र राज्य निर्वाचन आयोग को सभी स्थानीय निकायों के चुनाव 31 जनवरी, 2026 तक कराने का निर्देश दिया।
- It also pulled up the Commission for **not complying** with its earlier order of **May 6**, directing it to **notify the elections by September 6**.



इसने आयोग को 6 मई के अपने पिछले आदेश का पालन न करने पर भी फटकार लगाई, जिसमें इसे 6 सितंबर तक चुनाव की अधिसूचना जारी करने का निर्देश दिया गया था।

Reasons for Delay देरी के कारण

- The continuous delay in conducting these elections is attributable not only to the **pendency of the OBC (Other Backward Classes) reservation issue**, but also the **judicial delays, inconsistency, and lack of political will**.
इन चुनावों को आयोजित करने में लगातार देरी केवल **OBC (अन्य पिछड़ा वर्ग) आरक्षण मुद्दे** की लंबित स्थिति के कारण नहीं है, बल्कि इसमें **न्यायिक देरी, असंगति और राजनीतिक इच्छा की कमी** भी शामिल है।
- Today in Maharashtra, **29 Municipal Corporations, 248 Municipal Councils**, along with **hundreds of Nagar Panchayats, 32 out of 34 Zilla Parishads, 336 out of 351 Panchayat Samitis** are run by **administrators**.
आज महाराष्ट्र में, **29 नगर निगम, 248 नगर परिषद, और सैकड़ों नगर पंचायत, 34 में से 32 ज़िला परिषद, 351 में से 336 पंचायत समितियाँ** प्रशासकों द्वारा चलाई जा रही हैं।
- The biggest municipal corporation in India, the **Brihanmumbai Municipal Corporation (BMC)**, with an **annual budget of over ₹74,000 crore**, has been functioning **without corporators since March 2022**.
भारत का सबसे बड़ा नगर निगम, **बृहन्मुम्बई नगर निगम (BMC)**, जिसका **वार्षिक बजट ₹74,000 करोड़ से अधिक है, मार्च 2022 से निगम पार्षदों के बिना** कार्य कर रहा है।
- The newly formed Municipal Corporations in **Jalna and Ichalkaranji** await their **corporators since their inception**.
महाराष्ट्र के नए नगर निगम **जलना और इचलकरंजी** अपने **स्थापना के समय से निगम पार्षदों का इंतजार** कर रहे हैं।

Issue Around OBC Reservation OBC आरक्षण को लेकर मुद्दा

- In **2010**, the **Supreme Court** left it to the States to carry out a **'rigorous investigation'** to decide which communities are **'politically backward'** and should benefit from **OBC reservation** in local bodies.
2010 में, **सुप्रीम कोर्ट** ने राज्यों को यह तय करने के लिए **'कठोर जांच'** करने के लिए छोड़ दिया कि कौन सी समुदाय **'राजनीतिक रूप से पिछड़ी'** हैं और स्थानीय निकायों में **OBC आरक्षण** का लाभ प्राप्त करना चाहिए।
- In **March 2021**, the apex court laid down a **three-fold test** to provide these reservations.
मार्च 2021 में, सर्वोच्च न्यायालय ने इन आरक्षणों को देने के लिए **तीन-स्तरीय परीक्षण** निर्धारित किया।
- As the State of Maharashtra failed to fulfill this test, in **March 2022**, the **Banthia Commission** was set up.
महाराष्ट्र राज्य ने इस परीक्षण को पूरा नहीं किया, इसलिए **मार्च 2022** में **बंधिया आयोग** का गठन किया गया।
- It submitted its report in **July 2022**, which is currently **under challenge before the Supreme Court**.
इसने अपनी रिपोर्ट **जुलाई 2022** में सौंपी, जो वर्तमान में **सुप्रीम कोर्ट में चुनौती** के तहत है।
- Meanwhile, the court ordered that **States should carry out elections without the OBC quota** if they fail to fulfill the criteria.
इसी बीच, अदालत ने आदेश दिया कि यदि राज्य मानदंड पूरा करने में विफल रहते हैं तो उन्हें **OBC आरक्षण के बिना चुनाव कराने चाहिए**।
- Thus, the Commission conducted elections in **106 municipalities** after relocating the **OBC quota seats to the general category**.
इस प्रकार, आयोग ने **106 नगरपालिकाओं** में चुनाव कराए, जिसमें **OBC आरक्षण सीटों को सामान्य श्रेणी में स्थानांतरित** किया गया।
- On **May 6** this year, the apex court directed the **State Election Commission** to conduct elections with **OBC reservation as existed prior to the 2022 Banthia Commission report**.
इस वर्ष **6 मई** को, सर्वोच्च न्यायालय ने **राज्य निर्वाचन आयोग** को निर्देश दिया कि वे **2022 बंधिया आयोग की रिपोर्ट से पहले मौजूद OBC आरक्षण** के साथ चुनाव कराएँ।



- It reminded the Commission how **local body elections** are necessary for keeping **democracy alive at the grassroots**.
इसने आयोग को याद दिलाया कि **स्थानीय निकाय चुनाव जनतंत्र को जमीनी स्तर पर जीवित रखने** के लिए आवश्यक हैं।
- While the Court's sentiment for conducting elections is commendable, it does not absolve the Court from the **delay it caused**.
चुनाव कराने के लिए अदालत की भावना सराहनीय है, लेकिन यह अदालत को **इससे हुई देरी** से मुक्त नहीं करता।
- It will also lead to **inconsistent outcomes** as the election of **106 municipalities** has already taken place **without the OBC reservation**.
इससे **असंगत परिणाम** भी उत्पन्न होंगे क्योंकि **106 नगरपालिकाओं** के चुनाव पहले ही **OBC आरक्षण के बिना** हो चुके हैं।
- Additionally, the current elections are also subject to the outcome of **pending litigation**, which can potentially **disqualify the elected representatives**.
इसके अतिरिक्त, वर्तमान चुनाव भी **लंबित मुकदमों** के परिणाम के अधीन हैं, जो संभावित रूप से **चयनित प्रतिनिधियों को अयोग्य** कर सकते हैं।

Non-Compliance by State Commission

राज्य आयोग द्वारा अनुपालन न करना

- Despite the above orders, the **State Commission took no steps** to conduct elections.
ऊपर दिए गए आदेशों के बावजूद, **राज्य आयोग ने चुनाव कराने के लिए कोई कदम नहीं उठाया**।
- It cited **insufficient EVM machines, school education board's examination, and an insufficient number of officers** to justify the **non-compliance** with the Court's order.
इसने अदालत के आदेश का **अनुपालन न करने** का औचित्य देने के लिए **EVM मशीनों की कमी, स्कूल शिक्षा बोर्ड की परीक्षाएं, और अधिकारियों की अपर्याप्त संख्या** का हवाला दिया।

Impact on Work

कार्य पर प्रभाव

- Some may argue that the lack of **elected representatives** at local bodies hasn't really harmed anyone, given that **bureaucrats** are anyway running them.
कुछ लोग तर्क दे सकते हैं कि स्थानीय निकायों में **चयनित प्रतिनिधियों** की कमी से किसी को वास्तव में नुकसान नहीं हुआ, क्योंकि वे **ब्यूरोक्रेट्स** द्वारा संचालित हैं।
- However, in reality, the **developmental engine** in both **urban and rural areas** has taken a hit due to **democratic damage** of weakened local bodies.
हालांकि, वास्तविकता में, कमजोर स्थानीय निकायों के **जनतांत्रिक नुकसान** के कारण **शहरी और ग्रामीण क्षेत्रों में विकास इंजन** प्रभावित हुआ है।
- People do not have a **political avenue** to voice their concerns; the burden falls on **local MPs, MLAs, or guardian ministers** who are not readily available.
लोगों के पास अपनी चिंताओं को व्यक्त करने का कोई **राजनीतिक मार्ग** नहीं है; इसका बोझ **स्थानीय सांसद, विधायक या जिला संरक्षक मंत्री** पर पड़ता है, जो तुरंत उपलब्ध नहीं हैं।
- The bureaucracy is designed to **execute**, not to **make decisions**, creating an **undue burden** on administrators to care for **political issues**.
प्रशासन का डिज़ाइन **निर्णय लेने के लिए** नहीं, बल्कि **कार्यान्वयन के लिए** है, जिससे **राजनीतिक मुद्दों** की देखभाल करने का **अनावश्यक बोझ** प्रशासकों पर पड़ता है।
- Running local bodies through bureaucrats is similar to running a **State through its Governor**, leading to **ignorance of people's demands, policy pendency, lack of local economic development, undue burden on bureaucrats, and weakening of democratic institutions**.
स्थानीय निकायों को प्रशासकों के माध्यम से चलाना राज्य को **राज्यपाल के माध्यम से चलाने** के समान है, जिससे **लोगों की मांगों की अनदेखी, नीतियों की लंबित स्थिति, स्थानीय आर्थिक विकास की कमी, प्रशासकों पर अनावश्यक बोझ, और लोकतांत्रिक संस्थाओं की कमजोरी** होती है।
- Recently, **Maharashtra Chief Minister Devendra Fadnavis** announced that all **29 Municipal Corporations** shall be headed by **IAS officers** due to allegations of **corruption and political interference**.



हाल ही में, महाराष्ट्र के मुख्यमंत्री देवेन्द्र फडनवीस ने घोषणा की कि सभी 29 नगर निगम IAS अधिकारियों द्वारा संचालित होंगे, भ्रष्टाचार और राजनीतिक हस्तक्षेप के आरोपों के कारण।

- This move suggests that **urban local bodies are difficult to handle**, especially when there is a **democratic void**.
यह कदम दर्शाता है कि शहरी स्थानीय निकायों को संभालना कठिन है, विशेष रूप से जब वहाँ जनतांत्रिक शून्यता होती है।
- The issue is not just about the absence of **elected representatives** for a few years; it is **intentional ignorance** of the words and mandate of the **Constitution**.
मुद्दा केवल कुछ वर्षों के लिए **चयनित प्रतिनिधियों** की अनुपस्थिति का नहीं है; यह **संविधान** के शब्दों और आदेश की **जानबूझकर अनदेखी** है।
- Having a strong **self-governance system at the local level**, especially in villages, is part of the law after the **73rd and 74th constitutional amendments**.
स्थानीय स्तर पर मजबूत स्वशासन प्रणाली होना, विशेष रूप से गांवों में, **73वें और 74वें संवैधानिक संशोधनों** के बाद कानून का हिस्सा है।
- An **independent election commission** and **smooth transfer of power** are hallmarks of **constitutional liberal democracy**.
एक **स्वतंत्र निर्वाचन आयोग** और **शक्ति का सुचारू हस्तांतरण संवैधानिक उदार लोकतंत्र** की विशेषताएँ हैं।
- While the **New York Mayoral election** gains worldwide attention, we should inquire why the **lack of an elected local body for Mumbai** is not causing noteworthy discontent.
जबकि **न्यूयॉर्क महापौर चुनाव** विश्व स्तर पर ध्यान आकर्षित करता है, हमें यह पूछना चाहिए कि **मुंबई में चयनित स्थानीय निकाय की कमी** महत्वपूर्ण असंतोष क्यों नहीं पैदा कर रही है।

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

TOPICS COVERED 06_10_2025

1. **23 killed in torrential rain in Bengal**
बंगाल में जोरदार बारिश में 23 की मौत
2. **Indian Navy to commission INS Androth on October 6**
भारतीय नौसेना 6 अक्टूबर को INS एंड्रोथ को कमीशन करेगी
3. **Air India flight lands safely in U.K. after RAT deployment**
एयर इंडिया की उड़ान RAT तैनाती के बाद यू.के. में सुरक्षित लैंड हुई
4. **Philippines pioneers coral larvae cryobank to protect threatened reefs**
खतरनाक हो चुकी प्रवाल भित्तियों की रक्षा के लिए फिलीपींस ने कोरल लार्वा क्रायोबैंक की शुरुआत की
5. **Xenobiology**
जेनोबायोलॉजी
6. **How is AI transforming teaching and learning practices in Indian classrooms?**
भारतीय कक्षाओं में शिक्षण और सीखने की प्रथाओं को AI कैसे बदल रहा है?
7. **QUIZ**

23 killed in torrential rain in Bengal

Road connectivity to Mirik and Darjeeling badly affected by landslides triggered by the heavy rain

Thousands of tourists are stranded; CM Mamata Banerjee asks them to stay put until rescue arrives

Part of the iron bridge across the Balasan river has collapsed; the IMD issues a red alert till October 6

Shiv Sahay Singh
KOLKATA

At least 23 persons were killed as torrential rain lashed Darjeeling and other northern parts of West Bengal on Saturday night and Sunday morning. Landslides triggered by the rain at various places in Mirik and Darjeeling sub-divisions led to the loss of lives.

Officials of the Gorkhaland Territorial Administration, the regional autonomous body that administers the Darjeeling hills, said that 11 people were killed in Mirik and 12 deaths were reported in Darjeeling.

Road connectivity to Mirik and Darjeeling was badly affected. On Saturday night, a part of the Dudiya iron bridge across the Balasan river collapsed, cutting off communication between Siliguri and Mirik. Several roads connecting the Darjeeling hills and Siliguri in the plains were affected.

Arun Sigchi, executive member of the GTA, said that nine bodies were brought from Mirik to a hospital for post-mortem and two more were on the way. According to GTA members, the tragedy has



A portion of the road connecting Siliguri and Darjeeling, was torn from its moorings after heavy rain triggered landslides on Sunday. PTI

struck the hills during the Dasai festival and the casualties include relatives of the local people who had come from outside, including Nepal.

GTA advisory

The GTA has issued an advisory for suspension of all tourism activities in the Darjeeling hills. Thousands of tourists visiting Darjeeling for Puja vacations have been left stranded as the rain has affected road

connectivity.

The India Meteorological Department has issued a red alert for extremely heavy rain in sub-Himalayan West Bengal, including Darjeeling and Kalimpong, till October 6, warning of more landslides and road blockages due to saturated soil conditions.

Chief Minister Mamata Banerjee advised tourists in north Bengal to stay put till they were evacuated safely. "Rescue costs are

ours and tourists need not be anxious," she said.

Ms. Banerjee said that Saturday night, there was sudden rainfall exceeding 300 mm in 12 hours in north Bengal, and there was simultaneously excessive flow of water in the Sankosh river from Bhutan and Sikkim, which caused this disaster.

The Chief Minister said that she, along with the Chief Secretary, will visit north Bengal on Monday to

take stock of the situation and provide relief to affected people.

Prime Minister Narendra Modi also took note of the situation and said that the administration is closely monitoring the situation in Darjeeling and surrounding areas affected by the heavy rain and landslides.

Congress president Mallikarjun Kharge expressed deep concern over the devastating landslides in

West Bengal and Sikkim, and urged the Centre to provide relief assistance to the affected States.

NDRF teams deployed

Three teams of National Disaster Response Force (NDRF) have been deployed in north Bengal, including one in the severely affected Mirik area.

State BJP president Samik Bhattacharya will also visit north Bengal on Monday. State Leader of the Opposition Suvendu Adhikari, who claimed that the death toll was 21, lauded the Union government's commitment to relief efforts amid the heavy rain and landslides. "I urge the State government to coordinate effectively with the NDRF, SDRE, ITBP, and Indian Army for swift aid and relief to the affected families," he said.

Several rivers of north Bengal such as the Teesta, Torsa, Jaldhaka and Balasan are flowing above or near the danger level. Along with the landslides and damage in Darjeeling and Kalimpong districts, the Dooars in the foothills, particularly in Jalpaiguri, Matigara and Alipurdwar, have been severely affected.

Tourists had to be res-

cued using elephants in areas that were submerged. Several national parks in north Bengal were inundated and wild animals were seen reaching higher grounds. Railway connectivity to the region was affected as tracks were submerged.

Bhutan issues alert

Meanwhile, Bhutan's National Centre for Hydrology and Meteorology issued an alert to West Bengal government stating that it has received information from Druk Green Power Corporation (DGPC) that Tala Hydropower Dam Gates failed to open and river water is overflowing the dam. The dam is located on the Wangchu river in Chukha district of Bhutan.

"It is requested to be alert and inform the State government of West Bengal, India to prepare for eventualities. The Office of TMO, flood warning under the National Centre for Hydrology and Meteorology, will continue to update the situation in coordination with DGPC," an alert by NCHM Bhutan said.

On September 23, 12 persons died of electrocution in Kolkata and its adjoining areas when heavy rain lashed the city.

23 killed in torrential rain in Bengal बंगाल में जोरदार बारिश में 23 की मौत

Road connectivity to Mirik and Darjeeling badly affected by landslides triggered by the heavy rain

भारी बारिश से हुई भूस्खलनों के कारण मिरीक और दार्जिलिंग से सड़क संपर्क बुरी तरह प्रभावित

Thousands of tourists are stranded; CM Mamata Banerjee asks them to stay put until rescue arrives

हजारों पर्यटक फंसे हुए हैं; मुख्यमंत्री ममता बनर्जी ने उन्हें बचाव आने तक वहीं बने रहने को कहा

Part of the iron bridge across the Balasan river has collapsed; the IMD issues a red alert till October 6

बालासन नदी पर लोहे के पुल का हिस्सा ध्वस्त; मौसम विभाग ने 6 अक्टूबर तक रेड अलर्ट जारी किया

- At least 23 persons were killed as torrential rain lashed Darjeeling and other northern parts of West Bengal on Saturday night and Sunday morning
कम से कम 23 लोग मारे गए जब जोरदार बारिश ने दार्जिलिंग और पश्चिम बंगाल के अन्य उत्तरी हिस्सों को प्रभावित किया
- Landslides triggered by the rain at various places in Mirik and Darjeeling sub-divisions led to the loss of lives
बारिश से हुई भूस्खलनों ने मिरीक और दार्जिलिंग उप-विभागों में जान-माल का नुकसान किया
- Officials of the Gorkhaland Territorial Administration (GTA) said that 11 people were killed in Mirik and 12 deaths were reported in Darjeeling
GTA अधिकारियों ने कहा कि मिरीक में 11 लोग मारे गए और दार्जिलिंग में 12 मौतें हुईं
- Road connectivity to Mirik and Darjeeling was badly affected
मिरीक और दार्जिलिंग से सड़क संपर्क बुरी तरह प्रभावित हुआ
- A part of the Dudiya iron bridge across the Balasan river collapsed
बालासन नदी पर डुडिया लोहे के पुल का एक हिस्सा ध्वस्त हो गया

GTA advisory

GTA सलाह



- The **GTA** has issued an advisory for suspension of all **tourism activities** in the **Darjeeling hills**
GTA ने दार्जिलिंग पहाड़ियों में सभी पर्यटन गतिविधियों के निलंबन के लिए सलाह जारी की
- Thousands of **tourists** visiting **Darjeeling** for **Puja vacations** have been left stranded as the **rain** has affected **road connectivity**
पुजा की छुट्टियों के लिए दार्जिलिंग आने वाले हजारों पर्यटक फंसे हुए हैं क्योंकि बारिश से सड़क संपर्क प्रभावित हुआ है
- The **India Meteorological Department (IMD)** has issued a **red alert** for extremely heavy rain in **sub-Himalayan West Bengal** till **October 6**, warning of more **landslides** and **road blockages** due to saturated **soil conditions**
भारत मौसम विज्ञान विभाग (IMD) ने उपहिमालयी पश्चिम बंगाल में 6 अक्टूबर तक अत्यंत भारी बारिश के लिए रेड अलर्ट जारी किया, और संतृप्त मिट्टी की स्थिति के कारण अधिक भूस्खलन और सड़क अवरोध की चेतावनी दी
- **Chief Minister Mamata Banerjee** advised **tourists** in **north Bengal** to stay put till they were **evacuated safely**
मुख्यमंत्री ममता बनर्जी ने उत्तर बंगाल के पर्यटकों को सुरक्षित निकाले जाने तक वहीं रहने की सलाह दी
- **Saturday night rainfall exceeded 300 mm in 12 hours in north Bengal**
शनिवार की रात उत्तर बंगाल में 12 घंटे में 300 मिमी से अधिक बारिश हुई
- **Prime Minister Narendra Modi** said the **administration** is closely monitoring the situation in **Darjeeling** and surrounding areas
प्रधान मंत्री नरेंद्र मोदी ने कहा कि प्रशासन दार्जिलिंग और आसपास के क्षेत्रों की स्थिति पर करीबी नजर रख रहा है
- **Congress president Mallikarjun Kharge** urged the **Centre** to provide **relief assistance** to **affected States**
कांग्रेस अध्यक्ष मलिकार्जुन खड़गे ने केंद्र से प्रभावित राज्यों को राहत सहायता देने का आग्रह किया

NDRF teams deployed

NDRF टीम तैनात

- Three teams of **National Disaster Response Force (NDRF)** have been deployed in **north Bengal**, including **Mirik area**
राष्ट्रीय आपदा प्रतिक्रिया बल (NDRF) की तीन टीमों उत्तर बंगाल में तैनात की गई हैं, जिनमें मिरीक क्षेत्र भी शामिल है
- Several **rivers** of north Bengal such as the **Teesta, Torsa, Jaldhaka, and Balasan** are flowing above or near **danger level**
उत्तर बंगाल की कई नदियाँ जैसे तीस्ता, तोरसा, जलधाका और बालासन खतरे के स्तर के ऊपर या पास बह रही हैं
- **Dooars region**, particularly **Jalpaiguri, Matigara, and Alipurduar**, severely affected
दूअर्स क्षेत्र, विशेष रूप से जलपाईगुड़ी, मटीगरा और अलिपुरद्वार, गंभीर रूप से प्रभावित
- **Tourists rescued using elephants** in submerged areas
डूबे हुए क्षेत्रों में पर्यटकों को हाथियों का उपयोग करके बचाया गया

Bhutan issues alert

भूटान ने चेतावनी जारी की

- **Bhutan's National Centre for Hydrology and Meteorology (NCHM)** issued an alert about **Tala Hydropower Dam gates failing to open**
भूटान का NCHM ने टाला हाइड्रोपावर डैम के गेट्स खुलने में असफल होने की चेतावनी दी
- On **September 23**, **12 persons** died of **electrocution** in **Kolkata** and adjoining areas due to **heavy rain**
23 सितंबर को, कोलकाता और आस-पास के क्षेत्रों में भारी बारिश के कारण बिजली की चपेट में आने से 12 लोग मरे



GS III: Defence

Indian Navy to commission *INS Androth* on October 6

The Indian Navy is set to commission *INS Androth*, the second Anti-Submarine Warfare Shallow Water Craft (ASW-SWC), at the Naval Dockyard in Visakhapatnam on Monday. The ceremony will be presided over by Vice Admiral Rajesh Pendharkar, Flag Officer Commanding-in-Chief, Eastern Naval Command. Built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, *INS Androth* signifies a key step in India's pursuit of maritime self-reliance. The commissioning of *Androth* follows the recent induction of warships such as *Arnala*, *Nistar*, *Udaygiri*, and *Nilgiri*, showing the Navy's balanced modernisation across platforms.

Arnala, *Nistar*, *Udaygiri*, and *Nilgiri*, showing the Navy's **balanced modernisation across platforms**.

एंद्रोथ का कमीशन हाल ही में शामिल किए गए युद्धपोतों जैसे अर्नाला, निस्तार, उदयगिरि और नीलगिरी के बाद हो रहा है, जो नौसेना के सभी प्लेटफॉर्म पर संतुलित आधुनिकीकरण को दर्शाता है।

Indian Navy to commission *INS Androth* on October 6

भारतीय नौसेना 6 अक्टूबर को *INS एंड्रोथ* को कमीशन करेगी

- The Indian Navy is set to commission *INS Androth*, the second Anti-Submarine Warfare Shallow Water Craft (ASW-SWC), at the Naval Dockyard in Visakhapatnam on Monday.

भारतीय नौसेना *INS एंड्रोथ*, दूसरा एंटी-सबमरीन वारफेयर शैलो वाटर क्राफ्ट (ASW-SWC), को विशाखापत्तनम के नेवल डॉकयार्ड में सोमवार को कमीशन करने जा रही है।

- The ceremony will be presided over by Vice Admiral Rajesh Pendharkar, Flag Officer Commanding-in-Chief, Eastern Naval Command.

इस समारोह की अध्यक्षता वाइस एडमिरल राजेश पेंडरकर, फ्लैग ऑफिसर कमांडिंग-इन-चीफ, ईस्टर्न नेवल कमांड करेंगे।

- Built by Garden Reach Shipbuilders and Engineers (GRSE), Kolkata, *INS Androth* signifies a key step in India's pursuit of maritime self-reliance.

कोलकाता की गार्डन रीच शिपबिल्डर्स एंड इंजीनियर्स (GRSE) द्वारा निर्मित, *INS एंड्रोथ* भारत की समुद्री आत्मनिर्भरता की दिशा में एक महत्वपूर्ण कदम है।

- The commissioning of *Androth* follows the recent induction of warships such as



Air India flight lands safely in U.K. after RAT deployment

GS III: S&T

Press Trust of India

MUMBAI

The operating crew of Air India's Amritsar-Birmingham flight reported that the Boeing 787's ram air turbine (RAT) unexpectedly deployed during the final approach on Saturday, but the aircraft landed safely, the airline said on Sunday.

RAT deploys automatically in the eventuality of a dual engine failure or total electronic or hydraulic failure. It uses wind speed to generate emergency power.

Sources said that during the landing, at 400 ft, the RAT unlock message came, and it got deployed. They also said that the pilot did not report any abnormality and the aircraft landed safely.

Air India has cancelled its Birmingham-Delhi flight as the aircraft has been grounded for inspection.

Probe ordered

The Directorate General of Civil Aviation (DGCA) on Sunday instituted a detailed investigation into the incident.

The Federation of Indian Pilots (FIP) called on the DGCA to inspect electrical systems of all Boeing



The Federation of Indian Pilots called on the DGCA to inspect electrical systems of all Boeing 787 aircraft in India.

787 aircraft in India.

In its letter to the DGCA, FIP president G.S. Randhawa noted that the aircraft health monitoring system detected a fault in the bus power control unit, which may have caused the RAT to deploy automatically [on the Birmingham flight].

Citing the June crash of an Air India flight, which killed 260 people, the FIP said engine or hydraulic/electrical failures or software malfunctions are among the potential causes being examined. "It is pertinent to note that the incident in Birmingham is another pointer towards the Air India crash of B-787 aircraft. In the interest of air safety, FIP insists that the DGCA must thoroughly check the electrical system of B-787 aircraft in the country," the letter stated.

Air India flight lands safely in U.K. after RAT deployment
एयर इंडिया की उड़ान RAT तैनाती के बाद यू.के. में सुरक्षित लैंड हुई

The operating crew of Air India's Amritsar-Birmingham flight reported that the Boeing 787's ram air turbine (RAT) unexpectedly deployed during the final approach on Saturday, but the aircraft landed safely, the airline said on Sunday.

एयर इंडिया की अमृतसर-बर्मिंघम उड़ान के संचालन दल ने बताया कि बोइंग 787 का रैम एयर टर्बाइन (RAT) अंतिम दृष्टिकोण के दौरान अप्रत्याशित रूप से सक्रिय हो गया, लेकिन विमान सुरक्षित रूप से उतरा, एयरलाइन ने रविवार को कहा।

RAT deploys automatically in the eventuality of a dual engine failure or total electronic or hydraulic failure. It uses wind speed to generate emergency power.

RAT स्वतः सक्रिय होता है जब दोनों इंजन फेल हो जाएं या कुल इलेक्ट्रॉनिक या हाइड्रॉलिक विफलता हो। यह हवा की गति का उपयोग करके आपातकालीन शक्ति उत्पन्न करता है।

Sources said that during the landing, at 400 ft, the RAT unlock message came, and it got deployed. They also said that the pilot did not report any abnormality and the aircraft landed safely.

सूत्रों ने कहा कि लैंडिंग के दौरान, 400 फीट की ऊँचाई पर RAT अनलॉक संदेश आया, और यह सक्रिय हो गया। उन्होंने यह भी कहा कि पायलट ने कोई असामान्यता नहीं बताई और विमान सुरक्षित रूप से उतरा।

Air India has cancelled its Birmingham-Delhi flight as the aircraft has been grounded for inspection.

एयर इंडिया ने अपनी बर्मिंघम-दिल्ली उड़ान रद्द कर दी है क्योंकि विमान को निरीक्षण के लिए ग्राउंड किया गया है।

Probe ordered जांच का आदेश

The Directorate General of Civil Aviation (DGCA) on Sunday instituted a detailed investigation into the incident.



नागर विमानन महानिदेशालय (DGCA) ने रविवार को इस घटना की विस्तृत जांच शुरू की।

- The Federation of Indian Pilots (FIP) called on the DGCA to inspect electrical systems of all Boeing 787 aircraft in India.
फेडरेशन ऑफ़ इंडियन पायलट्स (FIP) ने DGCA से भारत में सभी बोइंग 787 विमानों की इलेक्ट्रिकल सिस्टम की जांच करने का आग्रह किया।
- In its letter to the DGCA, FIP president G.S. Randhawa noted that the aircraft health monitoring system detected a fault in the bus power control unit, which may have caused the RAT to deploy automatically on the Birmingham flight.
अपने पत्र में DGCA को, FIP अध्यक्ष G.S. रंधावा ने कहा कि विमान हेल्थ मॉनिटरिंग सिस्टम ने बस पावर कंट्रोल यूनिट में दोष पाया, जिससे Birmingham उड़ान में RAT स्वतः सक्रिय हो सकता है।
- Citing the June crash of an Air India flight, which killed 260 people, the FIP said engine or hydraulic/electrical failures or software malfunctions are among the potential causes being examined.
FIP ने जून में एयर इंडिया उड़ान दुर्घटना का उल्लेख किया, जिसमें 260 लोग मारे गए थे, और कहा कि इंजन या हाइड्रोलिक/इलेक्ट्रिकल विफलता या सॉफ्टवेयर गड़बड़ी संभावित कारणों में से हैं जिन्हें जांच में लिया जा रहा है।
- "It is pertinent to note that the incident in Birmingham is another pointer towards the Air India crash of B-787 aircraft. In the interest of air safety, FIP insists that the DGCA must thoroughly check the electrical system of B-787 aircraft in the country," the letter stated.
"यह ध्यान देने योग्य है कि बर्मिंघम में यह घटना B-787 विमान दुर्घटना की ओर एक और संकेत है। हवाई सुरक्षा के हित में, FIP जोर देती है कि DGCA को देश में सभी B-787 विमानों की इलेक्ट्रिकल सिस्टम पूरी तरह से जांचनी चाहिए," पत्र में कहा गया।

PATRIOTIC



Philippines pioneers coral larvae cryobank to protect threatened reefs

The facility will freeze and preserve coral larvae — the small, free swimming 'seeds' of corals — at very low temperatures; these larvae can later be used to revive damaged reefs for research, thus protecting genetic diversity that might otherwise be lost. The project is part of an initiative that seeks to create cryobanks across the Coral Triangle

ISS III: Environment

Neelanjana Rai

Known as the "Amazon of the seas" the Coral Triangle is a 5.7 million sq. km expanse across the tropical waters of Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste — and the richest marine ecosystem on the earth.

The Triangle is home to more than three-quarters of the world's coral species, a third of all reef fish, vast mangrove forests, and six of seven marine turtle species. It also sustains the food security and livelihoods of more than 120 million people.

The Coral Triangle is also facing mounting dangers. Growing carbon emissions, destructive fishing, air, water, and soil pollution, and the accelerating effects of climate change are all driving coral bleaching, habitat loss, and species decline, placing both biodiversity and coastal communities at grave risk.

Dangerously exposed

According to the Status of Coral Reefs of the World 2020 report, the planet lost 14% of its corals between 2009 and 2018. Scientists have warned that without drastic action to keep global warming to 1.5°C, 70-90% of live coral cover could be lost by 2050.

According to the UN Environment Programme, ocean temperatures may take decades to stabilise even under the most ambitious climate targets, leaving coral ecosystems dangerously exposed in the interim.

In one form of resistance against these threats, the Philippines is preparing to host Southeast Asia's first coral larvae cryobank to help restore and protect reefs.

Set up by the University of the Philippines Marine Science Institute, the facility will freeze and preserve coral larvae — the small, free swimming "seeds" of corals — at very low temperatures. These larvae can later be used to revive damaged reefs or for research, thus protecting genetic diversity that might otherwise be lost.

The project is part of a wider regional initiative that links research institutions in the Philippines, Taiwan, Indonesia, Malaysia, and Thailand to create a network of cryobanks across the Coral Triangle. Led by Chiahsin Lin of Taiwan's National Museum of Marine Biology and Aquarium and the National Dong Hwa University, the cryobank is supported by the Coral Research & Development Accelerator Platform through the Marine Environment and Resources Foundation, Inc.



A variety of corals form an outcrop on Flynn Reef, part of the Great Barrier Reef near Cairns, Australia. TOBY HUDSON (CC BY-SA)

Delicate process

Experts have said the programme is a significant step in building long-term resilience for one of the world's most threatened marine ecosystems.

"The Philippines is showing other nations how to take a direct, proactive role in fighting the climate crisis and protecting their natural resources. It's an act of hope and a vital investment in our oceans' future," said Preeyanuch Thongpoo, who is working on cryopreservation in Thailand at the Phuket Rajabhat University.

Dr. Lin is guiding the scientists from participating countries to establish the required facilities. At the heart of the effort is the delicate process that preserves coral larvae without damaging their fragile cells.

A study published in *Frontiers* in 2023 described a technique called vitrification, where the larvae are exposed to special protective solutions before being plunged into liquid nitrogen at -196°C. The rapid freezing that ensues turns the larvae into a glass-like state, preventing the formation of ice crystals that would otherwise destroy them.

To revive the samples, scientists use an equally swift method using lasers, which thaw the larvae in a fraction of a second to avoid re-crystallisation. Once warmed, the larvae are gradually rehydrated in seawater and checked for signs of life, such as swimming and settling, before being transferred to tanks for further growth.

This breakthrough method ensures genetic material from corals can be safely stored for years and later used to help restore damaged reefs.



Cryopreservation is a genetic insurance policy for the future. We are essentially building a living seed bank of coral larvae and *Symbiodiniaceae*

PREEYANUCH THONGPOO
Phuket Rajabhat University

'No endangered species'

Cryobanks of coral symbionts — microscopic algae living inside corals — are crucial to reef survival. One is being set up at Phuket Rajabhat University under Dr. Thongpoo's leadership. Her team is working with cauliflower corals (*Pocillopora* sp.), chosen for their abundance and ability to recolonise heat-damaged reefs.

"Unfortunately, due to technical challenges with our coral husbandry system, the corals did not survive in captivity, which has prevented us from collecting the larvae required for our experiments," Dr. Thongpoo said. "We are now working on refining our husbandry protocols and adapting our approach to ensure we can successfully collect and cryopreserve larvae in the near future."

Cryopreserving many coral species is challenging: their larvae and reproductive cells are large, lipid-rich, sensitive to cold, and often contain algae that block cryoprotectants.

Dr. Lin also stressed that preservation isn't confined to endangered species. "For me, there's no endangered species. All

coral species are endangered," he said, warning that most could collapse by 2050. His team began with "model" species such as *Pocillopora*, which directly releases larvae, and spawning corals like *Acropora* and *Galaxia*.

"You need to set up the model coral species and then use those optimal freezing protocols on the endangered species," he explained. This approach, he added, differs from projects that prioritise only the most threatened species.

'Genetic insurance policy'

For now, the scale of reef loss is sobering. Dr. Lin warned that "in the near future, cryobanks may become museums for extinct coral species."

For Dr. Thongpoo, on the other hand, the effort represents hope: "Cryopreservation is a genetic insurance policy for the future. We are essentially building a living seed bank of coral larvae and *Symbiodiniaceae*."

Dr. Lin and Dr. Thongpoo also said that local communities which depend on the reefs for their livelihoods are often unaware of their value. In Southeast Asia, tourism, waste discharge, and destructive fishing have worsened reef decline. Without active community participation, they warned, conservation efforts alone won't save corals.

With regional collaboration between scientists, governments, universities, and local communities, the project aims to strengthen resilience and secure the Coral Triangle's reefs for generations to come.

(Neelanjana Rai is a freelance journalist who writes about indigenous communities, the environment, science, and health. neelanjana189@gmail.com)

THE GIST

The Coral Triangle is home to more than three-quarters of the world's coral species, a third of all reef fish, vast mangrove forests, and six of seven marine turtle species. It faces mounting dangers from carbon emissions, destructive fishing, pollution, and climate change

At the heart of the conservation effort is the process that preserves coral larvae by plunging them into liquid nitrogen at -196°C. The rapid freezing turns the larvae into a glass-like state. To revive the samples, scientists use lasers, which thaw the larvae in a fraction of a second

Communities that depend on reefs are often unaware of their value. Scientists warn that conservation alone won't save corals, and community involvement is vital. With regional collaboration, the project aims to strengthen resilience and secure reefs for generations to come

Philippines pioneers coral larvae cryobank to protect threatened reefs

खतरनाक हो चुकी प्रवाल भित्तियों की रक्षा के लिए फिलीपींस ने कोरल लार्वा क्रायोबैंक की शुरुआत की

- The facility will freeze and preserve **coral larvae** — the small, free swimming 'seeds' of corals — at very low temperatures; these larvae can later be used to **revive damaged reefs** for research, thus protecting **genetic diversity** that might otherwise be lost.

यह सुविधा **कोरल लार्वा** — जो प्रवाल के छोटे, स्वतंत्र रूप से तैरने वाले 'बीज' होते हैं — को बहुत कम तापमान पर **जमाकर संरक्षित** करेगी; इन लार्वा का बाद में **क्षतिग्रस्त प्रवाल भित्तियों को पुनर्जीवित करने** और **अनुसंधान** के लिए उपयोग किया जा सकेगा, जिससे वह **आनुवंशिक विविधता** सुरक्षित रहेगी जो अन्यथा नष्ट हो सकती थी।

- The project is part of an **initiative** that seeks to create **cryobanks** across the **Coral Triangle**. यह परियोजना एक **पहल** का हिस्सा है जिसका उद्देश्य **कोरल ट्राएंगल** क्षेत्र में **क्रायोबैंक** स्थापित करना है।



Coral Triangle and Cryobank Initiative

कोरल त्रिभुज और क्रायोबैंक पहल

- Known as the “Amazon of the seas,” the **Coral Triangle** is a 5.7 million sq. km expanse across the tropical waters of **Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands, and Timor-Leste** — and the richest marine ecosystem on the earth.
“समुद्रों का अमेज़न” कहलाने वाला कोरल त्रिभुज (Coral Triangle) 5.7 मिलियन वर्ग किलोमीटर में फैला एक क्षेत्र है जो इंडोनेशिया, मलेशिया, पापुआ न्यू गिनी, फिलीपींस, सोलोमन द्वीप समूह और तिमोर-लेस्ते के उष्णकटिबंधीय जल क्षेत्रों में फैला हुआ है — और यह पृथ्वी का सबसे समृद्ध समुद्री पारिस्थितिकी तंत्र है।
- The Triangle is home to more than **three-quarters of the world's coral species, a third of all reef fish, vast mangrove forests, and six of seven marine turtle species.** It also sustains the **food security and livelihoods of more than 120 million people.**
यह क्षेत्र विश्व की तीन-चौथाई से अधिक कोरल प्रजातियों, सभी रीफ मछलियों के एक-तिहाई, विशाल मैंग्रोव वनों, और सात में से छह समुद्री कछुआ प्रजातियों का घर है। यह 12 करोड़ से अधिक लोगों की खाद्य सुरक्षा और आजीविका को भी बनाए रखता है।
- The Coral Triangle is also facing **mounting dangers.** Growing **carbon emissions, destructive fishing, air, water, and soil pollution, and the accelerating effects of climate change** are all driving **coral bleaching, habitat loss, and species decline,** placing both **biodiversity and coastal communities at grave risk.**
कोरल त्रिभुज बढ़ते खतरों का सामना कर रहा है। बढ़ते कार्बन उत्सर्जन, विनाशकारी मछली पकड़ने, वायु, जल और मिट्टी प्रदूषण, तथा जलवायु परिवर्तन के तीव्र प्रभावों के कारण कोरल ब्लैचिंग, आवास हानि, और प्रजातियों की गिरावट हो रही है, जिससे जैव विविधता और तटीय समुदाय दोनों गंभीर जोखिम में हैं।

Dangerously Exposed

खतरनाक रूप से उजागर

- According to the **Status of Coral Reefs of the World 2020 report,** the planet lost **14% of its corals between 2009 and 2018.**
विश्व के कोरल रीफ की स्थिति 2020 रिपोर्ट के अनुसार, 2009 से 2018 के बीच ग्रह ने अपने 14% कोरल खो दिए।
- Scientists have warned that without drastic action to keep **global warming to 1.5°C, 70–90% of live coral cover could be lost by 2050.**
वैज्ञानिकों ने चेतावनी दी है कि यदि वैश्विक तापमान वृद्धि को 1.5°C तक सीमित करने के लिए कठोर कदम नहीं उठाए गए, तो 2050 तक 70–90% जीवित कोरल कवर नष्ट हो सकता है।
- According to the **UN Environment Programme (UNEP), ocean temperatures may take decades to stabilise** even under the most ambitious climate targets, leaving **coral ecosystems dangerously exposed** in the interim.
संयुक्त राष्ट्र पर्यावरण कार्यक्रम (UNEP) के अनुसार, महासागर का तापमान स्थिर होने में दशकों लग सकते हैं, भले ही सबसे महत्वाकांक्षी जलवायु लक्ष्य हासिल कर लिए जाएं, जिससे कोरल पारिस्थितिक तंत्र अस्थायी रूप से गंभीर जोखिम में रहेंगे।

Coral Larvae Cryobank Initiative

कोरल लार्वा क्रायोबैंक पहल

- In one form of resistance against these threats, the **Philippines** is preparing to host **Southeast Asia's first coral larvae cryobank** to help **restore and protect reefs.**
इन खतरों के खिलाफ एक कदम के रूप में, फिलीपींस दक्षिण-पूर्व एशिया का पहला कोरल लार्वा क्रायोबैंक स्थापित करने की तैयारी कर रहा है ताकि रीफ की रक्षा और पुनर्स्थापन किया जा सके।
- Set up by the **University of the Philippines Marine Science Institute,** the facility will **freeze and preserve coral larvae** — the small, free-swimming “seeds” of corals — at **very low temperatures.**
इसे यूनिवर्सिटी ऑफ द फिलीपींस मरीन साइंस इंस्टिट्यूट द्वारा स्थापित किया गया है, जो कोरल लार्वा (कोरल के छोटे, स्वतंत्र रूप से तैरने वाले “बीज”) को बहुत कम तापमान पर जमाकर संरक्षित करेगा।



- These larvae can later be used to **revive damaged reefs** or for **research**, thus protecting **genetic diversity** that might otherwise be lost.
इन लार्वा का उपयोग बाद में क्षतिग्रस्त रीफ को पुनर्जीवित करने या अनुसंधान के लिए किया जा सकता है, जिससे आनुवंशिक विविधता संरक्षित रहेगी जो अन्यथा खो सकती थी।
- The project is part of a **wider regional initiative** that links **research institutions** in the **Philippines, Taiwan, Indonesia, Malaysia, and Thailand** to create a **network of cryobanks** across the **Coral Triangle**.
यह परियोजना एक विस्तृत क्षेत्रीय पहल का हिस्सा है जो फिलीपींस, ताइवान, इंडोनेशिया, मलेशिया और थाईलैंड के शोध संस्थानों को जोड़ती है ताकि कोरल त्रिभुज में क्रायोबैंकों का नेटवर्क बनाया जा सके।
- Led by **Chiahsin Lin** of **Taiwan's National Museum of Marine Biology and Aquarium** and the **National Dong Hwa University**, the cryobank is supported by the **Coral Research & Development Accelerator Platform** through the **Marine Environment and Resources Foundation, Inc.**
यह पहल ताइवान के नेशनल म्यूजियम ऑफ मरीन बायोलॉजी एंड एक्वेरियम तथा नेशनल डोंग ह्वा यूनिवर्सिटी के चियाहसिन लिन के नेतृत्व में चलाई जा रही है, और इसे कोरल रिसर्च एंड डेवलपमेंट एक्सेलेरेटर प्लेटफॉर्म तथा मरीन एनवायरनमेंट एंड रिसोर्सिज फाउंडेशन, इंक. द्वारा समर्थन प्राप्त है।

Delicate Process

सूक्ष्म प्रक्रिया

- Experts have said the programme is a **significant step** in building **long-term resilience** for one of the world's most threatened marine ecosystems.
विशेषज्ञों ने कहा है कि यह कार्यक्रम दुनिया के सबसे अधिक खतरे में पड़े समुद्री पारिस्थितिक तंत्रों में से एक के लिए दीर्घकालिक लचीलापन (**resilience**) बनाने में एक महत्वपूर्ण कदम है।
- "The Philippines is showing other nations how to take a **direct, proactive role** in **fighting the climate crisis** and **protecting natural resources**. It's an **act of hope** and a **vital investment** in our oceans' future," said **Preeyanuch Thongpoo**, who is working on **cryopreservation** in Thailand at the **Phuket Rajabhat University**.
"फिलीपींस अन्य देशों को दिखा रहा है कि जलवायु संकट से लड़ने और प्राकृतिक संसाधनों की रक्षा में सीधा और सक्रिय भूमिका कैसे निभाई जा सकती है। यह आशा का प्रतीक और हमारे महासागरों के भविष्य में एक महत्वपूर्ण निवेश है," ऐसा कहना है थाईलैंड की फुकेत राजभाट यूनिवर्सिटी में क्रायोप्रिज़र्वेशन पर कार्य कर रही प्रीयानुच थोंगपू का।
- **Dr. Lin** is guiding the scientists from participating countries to establish the required facilities. At the heart of the effort is the **delicate process** that preserves coral larvae without damaging their **fragile cells**.
डॉ. लिन भाग लेने वाले देशों के वैज्ञानिकों को आवश्यक सुविधाएं स्थापित करने में मार्गदर्शन दे रहे हैं। इस प्रयास का केंद्र वह सूक्ष्म प्रक्रिया है जो कोरल लार्वा को उनके नाजुक कोशिकाओं को क्षति पहुँचाए बिना संरक्षित करती है।
- A study published in **Frontiers (2023)** described a technique called **vitrification**, where the larvae are exposed to **special protective solutions** before being plunged into **liquid nitrogen at -196°C**.
फ्रंटियर्स (2023) में प्रकाशित एक अध्ययन में **विट्रिफिकेशन (vitrification)** नामक तकनीक का वर्णन किया गया है, जिसमें लार्वा को **-196°C तापमान वाले तरल नाइट्रोजन** में डालने से पहले विशेष सुरक्षात्मक घोलों में रखा जाता है।
- The rapid freezing turns the larvae into a **glass-like state**, preventing the formation of **ice crystals** that would otherwise destroy them.
यह तेज़ी से जमाने की प्रक्रिया लार्वा को काँच जैसी अवस्था में बदल देती है, जिससे बर्फ के क्रिस्टल बनने से रोका जा सके, जो अन्यथा उन्हें नष्ट कर देते।
- To **revive the samples**, scientists use an **equally swift method using lasers**, which **thaw the larvae in a fraction of a second** to avoid **re-crystallisation**.
नमूनों को पुनर्जीवित करने के लिए वैज्ञानिक लेज़र का उपयोग करके एक समान तेज़ विधि अपनाते हैं, जो लार्वा को एक सेकंड के अंश में पिघला देती है, जिससे दोबारा क्रिस्टलीकरण न हो सके।
- Once warmed, the larvae are **gradually rehydrated in seawater** and checked for **signs of life**, such as **swimming and settling**, before being transferred to **tanks for further growth**.
पिघलने के बाद, लार्वा को समुद्री जल में धीरे-धीरे पुनः हाइड्रेट किया जाता है और जीवन के संकेतों जैसे



तैरने और बसने की जांच की जाती है, इसके बाद उन्हें अधिक वृद्धि के लिए टैंकों में स्थानांतरित किया जाता है।

- This **breakthrough method** ensures that **genetic material from corals** can be **safely stored for years** and later used to **help restore damaged reefs**.
यह क्रांतिकारी विधि सुनिश्चित करती है कि कोरल से आनुवंशिक सामग्री को वर्षों तक सुरक्षित रूप से संग्रहीत किया जा सकता है और बाद में क्षतिग्रस्त रीफ की पुनर्स्थापना में उपयोग किया जा सकता है।

'No endangered species' 'कोई लुप्तप्राय प्रजाति नहीं'

- Cryobanks of **coral symbionts** — microscopic algae living inside corals — are crucial to **reef survival**.
कोरल सिम्बायोट्स (coral symbionts) — जो कोरल के अंदर रहने वाली सूक्ष्म शैवाल (microscopic algae) होती हैं — **रीफ के अस्तित्व** के लिए अत्यंत आवश्यक हैं।
- One is being set up at **Phuket Rajabhat University** under **Dr. Thongpoo's leadership**.
एक क्रायोबैंक डॉ. थोंगपू के नेतृत्व में फुकेत राजभाट विश्वविद्यालय में स्थापित किया जा रहा है।
- Her team is working with **cauliflower corals (Pocillopora sp.)**, chosen for their **abundance** and **ability to recolonise heat-damaged reefs**.
उनकी टीम कॉलीफ्लावर कोरल (Pocillopora sp.) पर काम कर रही है, जिन्हें उनकी **बहुलता (abundance)** और गर्मी से क्षतिग्रस्त रीफ को पुनः उपनिवेशित करने की क्षमता (recolonise ability) के कारण चुना गया है।
- "Unfortunately, due to **technical challenges** with our **coral husbandry system**, the corals did not survive in captivity, which has prevented us from collecting the larvae required for our experiments," **Dr. Thongpoo** said.
"दुर्भाग्यवश, हमारे **कोरल पालन प्रणाली (coral husbandry system)** में तकनीकी कठिनाइयों (**technical challenges**) के कारण कोरल कैद में जीवित नहीं रह सके, जिससे हमें अपने प्रयोगों के लिए आवश्यक लार्वा एकत्र करने में कठिनाई हुई," डॉ. थोंगपू ने कहा।
- "We are now working on **refining our husbandry protocols** and adapting our approach to ensure we can successfully collect and **cryopreserve larvae** in the near future."
"हम अब अपने **पालन प्रोटोकॉल को परिष्कृत (refining protocols)** करने और अपनी पद्धति को इस प्रकार अनुकूलित करने पर काम कर रहे हैं कि हम निकट भविष्य में **लार्वा को सफलतापूर्वक क्रायोप्रीज़र्व (cryopreserve)** कर सकें।"
- Cryopreserving many **coral species** is **challenging**: their larvae and reproductive cells are **large, lipid-rich, sensitive to cold**, and often contain **algae that block cryoprotectants**.
कई कोरल प्रजातियों को **क्रायोप्रीज़र्व करना कठिन** होता है: उनके लार्वा और प्रजनन कोशिकाएँ **बड़ी, वसा-युक्त (lipid-rich), ठंड के प्रति संवेदनशील** होती हैं, और अक्सर इनमें **ऐसी शैवाल होती हैं जो क्रायोप्रोटेक्टेंट को अवरुद्ध करती हैं**।
- **Dr. Lin** also stressed that preservation isn't confined to **endangered species**. "For me, there's no endangered species. **All coral species are endangered**," he said, warning that most could **collapse by 2050**.
डॉ. लिन ने यह भी जोर दिया कि संरक्षण केवल **लुप्तप्राय प्रजातियों तक सीमित नहीं** है। उन्होंने कहा, "मेरे लिए कोई लुप्तप्राय प्रजाति नहीं है। **सभी कोरल प्रजातियाँ लुप्तप्राय हैं**," और चेतावनी दी कि इनमें से अधिकांश **2050 तक नष्ट हो सकती हैं**।
- His team began with "**model**" species such as **Pocillopora**, which directly releases larvae, and **spawning corals** like **Acropora** and **Galaxsia**.
उनकी टीम ने "**मॉडल प्रजातियों (model species)**" जैसे **Pocillopora** (जो सीधे लार्वा छोड़ती है), और **स्पॉनिंग कोरल्स (spawning corals)** जैसे **Acropora** तथा **Galaxsia** से काम शुरू किया।
- "You need to set up the **model coral species** and then use those **optimal freezing protocols** on the endangered species," he explained.
उन्होंने समझाया, "आपको पहले **मॉडल कोरल प्रजातियों** को स्थापित करना चाहिए और फिर उन पर विकसित **सर्वोत्तम फ्रीज़िंग प्रोटोकॉल (optimal freezing protocols)** को लुप्तप्राय प्रजातियों पर लागू करना चाहिए।"
- This approach, he added, **differs** from projects that prioritise only the **most threatened species**.



उन्होंने कहा कि यह दृष्टिकोण उन परियोजनाओं से **अलग (differs)** है जो केवल **सबसे अधिक संकटग्रस्त प्रजातियों (most threatened species)** को प्राथमिकता देती हैं।

‘Genetic insurance policy’ ‘आनुवंशिक बीमा नीति’

- For now, the **scale of reef loss is sobering**. Dr. Lin warned that “in the near future, **cryobanks may become museums for extinct coral species.**”
वर्तमान में **रीफ हानि का स्तर (scale of reef loss)** चिंताजनक है। डॉ. लिन ने चेतावनी दी कि “निकट भविष्य में **क्रायोबैंक विलुप्त कोरल प्रजातियों के संग्रहालय बन सकते हैं।**”
- For Dr. Thongpoo, on the other hand, the effort represents **hope**: “**Cryopreservation is a genetic insurance policy for the future.** We are essentially building a **living seed bank** of coral larvae and **Symbiodiniaceae.**”
दूसरी ओर, डॉ. थोंगपू के लिए यह प्रयास **आशा का प्रतीक** है: “**क्रायोप्रीज़र्वेशन भविष्य के लिए एक आनुवंशिक बीमा नीति (genetic insurance policy)** है। हम मूल रूप से कोरल लार्वा और **सिम्बायोडिनिएसी (Symbiodiniaceae)** का एक **जीवित बीज बैंक (living seed bank)** बना रहे हैं।”
- Dr. Lin and Dr. Thongpoo also said that **local communities** which depend on reefs for their livelihoods are often **unaware of their value.**
डॉ. लिन और डॉ. थोंगपू ने यह भी कहा कि **स्थानीय समुदाय**, जो अपनी आजीविका के लिए रीफ पर निर्भर हैं, अक्सर उनकी **महत्ता से अनजान (unaware of their value)** हैं।
- In **Southeast Asia**, **tourism, waste discharge, and destructive fishing** have worsened **reef decline.**
दक्षिण-पूर्व एशिया में पर्यटन, कचरे का निर्वहन (waste discharge), और **विनाशकारी मछली पकड़ने (destructive fishing)** ने रीफ की गिरावट (reef decline) को और बढ़ा दिया है।
- Without **active community participation**, they warned, **conservation efforts alone won't save corals.**
उन्होंने चेतावनी दी कि **सक्रिय सामुदायिक भागीदारी (active community participation)** के बिना, केवल **संरक्षण प्रयास (conservation efforts)** कोरल को नहीं बचा पाएंगे।
- With **regional collaboration** between **scientists, governments, universities, and local communities**, the project aims to **strengthen resilience and secure the Coral Triangle's reefs for generations to come.**
वैज्ञानिकों, सरकारों, विश्वविद्यालयों और स्थानीय समुदायों के बीच क्षेत्रीय सहयोग (regional collaboration) के माध्यम से यह परियोजना **लचीलापन बढ़ाने (strengthen resilience)** और आने वाली पीढ़ियों के लिए कोरल त्रिभुज की रीफ को सुरक्षित (secure reefs) करने का लक्ष्य रखती है।



Xenobiology: beyond earth

GS III: S&T

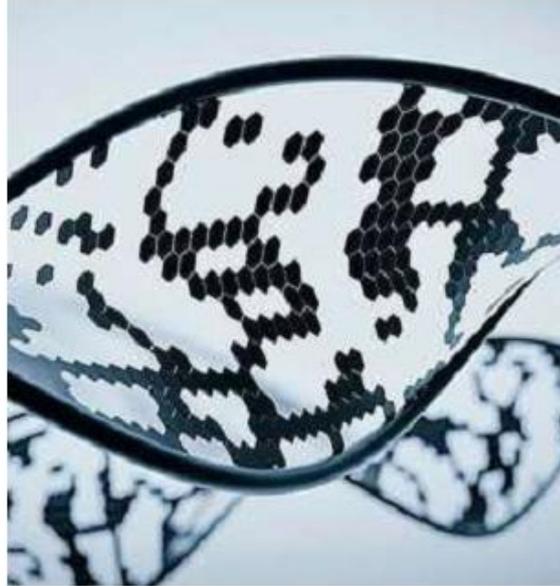
Vasudevan Mukunth

Xenobiology is a new and rapidly growing branch of science that studies how life could exist using biological systems different from those that prevail on earth. The word comes from the Greek for “the study of alien life”.

While ordinary biology examines organisms that depend on DNA, RNA, and proteins made from the same 20 amino acids, xenobiology is concerned with the possibility of something more. Its central questions are whether earthlife is the only possible form of life or whether organisms can be built with alternative genetic codes, unusual chemical bonds, and/or in environments where water is replaced by another solvent such as methane or ammonia.

In laboratories, xenobiologists build and test such possibilities. Some have engineered bacteria whose DNA includes extra letters beyond the natural A, T, C, and G, producing proteins with novel structures and functions.

Others have designed synthetic cells that can store information in artificial molecules or run on new metabolic pathways. These experiments help scientists understand the boundaries of what counts as “life” and reveal which biochemical features are essential for life to evolve and reproduce.



Xenobiology asks whether earthlife is the only possible form of life. WARREN UMOH/UNSPASH

Xenobiology also has practical and ethical value. Scientists hope to use the alien biology it deals with to programme microbes to make drugs or break down toxic waste while remaining biologically contained because they can't survive outside controlled conditions. Ultimately, xenobiology joins chemistry, genetics, and astrobiology in asking how many forms of life the universe can support.

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Xenobiology जेनोबायोलॉजी

- **Xenobiology** is a new and rapidly growing branch of science that studies how life could exist using biological systems different from those that prevail on earth.



जेनोबायोलॉजी विज्ञान की एक नई और तेजी से बढ़ती शाखा है जो यह अध्ययन करती है कि पृथ्वी पर प्रचलित जैविक प्रणालियों से भिन्न प्रणालियों का उपयोग करते हुए जीवन कैसे अस्तित्व में रह सकता है।

- The word comes from the **Greek** for “the study of alien life”.
यह शब्द **ग्रीक भाषा** के शब्द से लिया गया है, जिसका अर्थ है “**परग्रही जीवन का अध्ययन**”।
- While ordinary biology examines organisms that depend on **DNA, RNA, and proteins** made from the same **20 amino acids**, xenobiology is concerned with the possibility of something more.
जहाँ सामान्य जीवविज्ञान उन जीवों का अध्ययन करता है जो **DNA, RNA और 20 अमीनो अम्लों से बने प्रोटीनों** पर निर्भर करते हैं, वहीं **जेनोबायोलॉजी** इससे आगे की संभावनाओं का अध्ययन करती है।
- Its central questions are whether **earthlife** is the only possible form of life or whether organisms can be built with **alternative genetic codes, unusual chemical bonds, and/or in environments where water** is replaced by another solvent such as **methane or ammonia**.
इसका मुख्य प्रश्न यह है कि क्या **पृथ्वी पर जीवन** ही एकमात्र संभव जीवन रूप है या क्या जीवों को **वैकल्पिक आनुवंशिक कोड, असामान्य रासायनिक बंधों**, या ऐसे वातावरणों में बनाया जा सकता है जहाँ **जल** के स्थान पर **मीथेन या अमोनिया** जैसे अन्य विलायकों का प्रयोग होता है।
- In laboratories, **xenobiologists** build and test such possibilities.
प्रयोगशालाओं में, **जेनोबायोलॉजिस्ट** ऐसी संभावनाओं का निर्माण और परीक्षण करते हैं।
- Some have engineered **bacteria** whose **DNA includes extra letters beyond the natural A, T, C, and G**, producing **proteins with novel structures and functions**.
कुछ वैज्ञानिकों ने ऐसे **बैक्टीरिया** बनाए हैं जिनके **DNA में प्राकृतिक A, T, C और G के अतिरिक्त अक्षर** शामिल हैं, जिससे **नई संरचना और कार्य वाले प्रोटीन** बनते हैं।
- Others have designed **synthetic cells** that can **store information in artificial molecules or run on new metabolic pathways**.
अन्य वैज्ञानिकों ने **कृत्रिम कोशिकाएँ (synthetic cells)** विकसित की हैं जो **कृत्रिम अणुओं में जानकारी संग्रहीत** कर सकती हैं या **नई चयापचयी प्रक्रियाओं (metabolic pathways)** पर कार्य कर सकती हैं।
- These experiments help scientists understand the **boundaries of what counts as “life”** and reveal which **biochemical features** are essential for life to evolve and reproduce.
ये प्रयोग वैज्ञानिकों को यह समझने में मदद करते हैं कि “जीवन” की **सीमाएँ** क्या हैं और कौन-से **जैव रासायनिक गुण** जीवन के विकास और प्रजनन के लिए आवश्यक हैं।
- **Xenobiology** also has **practical and ethical value**.
जेनोबायोलॉजी का व्यावहारिक और नैतिक महत्व भी है।
- Scientists hope to use the **alien biology** it deals with to **programme microbes to make drugs or break down toxic waste**, while remaining **biologically contained** because they can't survive outside **controlled conditions**.
वैज्ञानिक इस **परग्रही जीवविज्ञान** का उपयोग **सूक्ष्मजीवों को प्रोग्राम** करने के लिए करना चाहते हैं ताकि वे **दवाएँ बना सकें या विषाक्त कचरे को तोड़ सकें**, और साथ ही **नियंत्रित परिस्थितियों के बाहर जीवित न रह पाने के कारण जैविक रूप से नियंत्रित (contained)** रहें।
- Ultimately, **xenobiology joins chemistry, genetics, and astrobiology** in asking how many forms of life the **universe** can support.
अंततः, **जेनोबायोलॉजी, रसायन विज्ञान, आनुवंशिकी और खगोलजीवविज्ञान** के साथ यह प्रश्न उठाती है कि **ब्रह्मांड** कितने प्रकार के जीवन रूपों का समर्थन कर सकता है।



GETTY IMAGES

How is AI transforming teaching and learning practices in Indian classrooms?

ChatGPT, NVIDIA, and other global business giants are investing heavily in AI in India, with the India AI Mission aiming to build an ecosystem for trusted and inclusive AI; teachers and students use AI tools but ethical dilemmas and the digital divide challenge meaningful classroom interaction

GS III: S&T

Dev Nath Pathak
Avantika Dharmani
Vibha S Bharadwaj

The story so far:

The U.S.-based ChatGPT, developed by OpenAI, announced the opening of its first office in India this year. Union Minister for Electronics & Information Technology Ashwini Vaishnaw remarked that India is uniquely positioned to drive the next wave of AI-led transformation. With OpenAI, the India AI Mission aims to build an ecosystem for trusted and inclusive AI. Besides, another U.S.-based company, NVIDIA, a world leader in artificial intelligence computing, had announced a partnership with India's Reliance company in 2023. The global business giants such as Google and Microsoft have invested heavily in AI manufacturing and marketing in India.

Tech-savvy pedagogy

In contemporary India, teaching and learning are tangled in ethical twists and turns as teachers and students are increasingly inclined to AI. Integration of advanced technology and pedagogy is arguably a new age mantra for the technocratic management of education. A report of the Central Square Foundation that works with the Indian government said that about 70% of school teachers in India are tech-savvy. Teachers use AI solutions to design pedagogy and curricular content. This shall solicit a qualitative evaluation of AI literacy and

the digital divide in India.

The National Sample Survey report this year provided information about the digital divide at the level of quality and skills. Although a large percentage of the population in India uses the Internet, the logic of inclusion requires participation in the digital world. Inclusion is evaluated through meaningful and relevant use of technology rather than merely usage.

How meaningful is the intervention of AI in the educational world? Does ChatGPT enhance the quality of teaching and learning? These are the questions that ought to be asked while classrooms incorporate ever-evolving AI solutions.

Unbridled AI in educational practices

Contrary to the euphoria, the uncritical embrace of AI threatens the philosophical foundations of teaching and learning. Philosophically, pedagogy entails a humanistic dialogue between the teacher and the student that fosters empathy and trust. The ideal pedagogues in the history of education emphasised the evolution of emancipatory understanding in the classroom. Whether it be the feminist pedagogue Bell Hooks in the contemporary world or Rabindranath Tagore in early modern India, they envisaged a pedagogic alchemy that inspired hermeneutic understanding. The ideal teachers ensured that education was not reduced to the accumulation of information. The educational philosophy solicits a natural and organic rather than singular AI smartness of the teacher and the taught.

There are also ethical dilemmas of using AI for pedagogy. According to a survey by the Centre for Teacher Accreditation (CENTA), a high percentage of teachers employ AI tools in the classroom, more for the fulfilment of technical requirements than for dialogic engagement with students. The use of AI by students has become a concern for the Central Board of Secondary Education in India. The CBSE issued an advisory against using ChatGPT in board exams. Unfair use of the technology by both teachers and students has handicapped the pedagogical essence of classroom interaction between teachers and students. Although AI is enabling, the ethical complexity is seldom a consideration for the technocratic management of educational institutes.

The current educational practices with AI are reduced to superficial use of technology. A teacher using audio-visuals through smartphones and computers in the classroom is mistaken for pedagogic smartness. The transformative capacity of teachers, instead, shall be the yardstick for the evaluation of pedagogy. Only then can AI in the classroom bring about a sense of equality along with improved teaching quality.

India AI mission

India AI's mission envisages the opening of the AI Centres for Excellence (CoE) in education. The mission's pillars are India AI Compute Capacity, geared to establish the infrastructure to support AI innovation, and India AI Future Skills is

towards facilitating the talents to utilise the established infrastructure. These pillars can help create accessible cloud-based tools that promote basic digital literacy and equip all teachers with skills to be tech-savvy. However, teachers also require in-service professional training for capacity enhancement to develop an ethical understanding and meaningful integration of AI into pedagogy. Such a training shall enable pedagogues to critically evaluate and employ technology, with a nuanced capacity to transform the educational practices for a just society. The training modules need to prioritise independence and freedom, creativity and imagination, of both teachers and students.

The mission's Application Development Initiative promises impactful AI solutions aimed at large-scale socio-economic transformation. Such promising aspects ought to be emboldened in a context-sensitive manner when it comes to the integration of AI with educational practices. Only then would AI not reproduce the social and digital inequalities through seemingly unquestionable smart pedagogy. Without adequate social, ethical, cultural, and political anchorage, AI may become an anathema defended in rhetoric and abused in practice.

Dev Nath Pathak, Associate Dean, Faculty of Social Sciences, South Asian University; Avantika Dharmani & Vibha S Bharadwaj, Young Scholars, Christ University, Bangalore

How is AI transforming teaching and learning practices in Indian classrooms?

भारतीय कक्षाओं में शिक्षण और सीखने की प्रथाओं को AI कैसे बदल रहा है?



- **ChatGPT, NVIDIA, and other global business giants are investing heavily in AI in India, with the India AI Mission aiming to build an ecosystem for trusted and inclusive AI.**
ChatGPT, NVIDIA और अन्य वैश्विक व्यावसायिक दिग्गज भारत में AI में भारी निवेश कर रहे हैं, जिसमें India AI Mission का लक्ष्य विश्वसनीय और समावेशी AI के लिए एक इकोसिस्टम तैयार करना है।
- **Teachers and students use AI tools but ethical dilemmas and the digital divide challenge meaningful classroom interaction.**
शिक्षक और छात्र AI उपकरणों का उपयोग करते हैं, लेकिन नैतिक दुविधाएं और डिजिटल डिवाइड सार्थक कक्षा इंटरैक्शन में चुनौती पेश करते हैं।

ChatGPT and AI in India भारत में ChatGPT और AI

- The **U.S.-based ChatGPT, developed by OpenAI**, announced the opening of its **first office in India** this year.
अमेरिका स्थित ChatGPT, जिसे OpenAI ने विकसित किया है, ने इस वर्ष भारत में अपना पहला कार्यालय खोलने की घोषणा की।
- **Union Minister for Electronics & Information Technology Ashwini Vaishnaw** remarked that **India is uniquely positioned** to drive the next wave of **AI-led transformation**.
केंद्रीय इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्री अश्विनी वैष्णव ने कहा कि भारत विशेष रूप से सक्षम है अगले चरण के AI-प्रधान परिवर्तन को आगे बढ़ाने के लिए।
- With **OpenAI**, the **India AI Mission** aims to build an ecosystem for **trusted and inclusive AI**.
OpenAI के साथ, India AI Mission का उद्देश्य विश्वसनीय और समावेशी AI के लिए एक इकोसिस्टम बनाना है।
- Another **U.S.-based company, NVIDIA**, a world leader in **artificial intelligence computing**, announced a **partnership with India's Reliance in 2023**.
एक और अमेरिका स्थित कंपनी, NVIDIA, जो कृत्रिम बुद्धिमत्ता कंप्यूटिंग में विश्व नेता है, ने 2023 में भारत की रिलायंस के साथ साझेदारी की घोषणा की।
- Global business giants such as **Google and Microsoft** have invested heavily in **AI manufacturing and marketing in India**.
वैश्विक व्यापार दिग्गज जैसे Google और Microsoft ने भारत में AI निर्माण और विपणन में भारी निवेश किया है।

Tech-savvy Pedagogy तकनीकी रूप से सक्षम शिक्षाशास्त्र

- In contemporary India, teaching and learning are increasingly **inclined to AI**, creating **ethical twists and turns**.
आधुनिक भारत में, शिक्षण और अधिगम AI की ओर झुकाव रखते हैं, जिससे नैतिक जटिलताएँ उत्पन्न होती हैं।
- Integration of **advanced technology and pedagogy** is considered a **new age mantra** for **technocratic management of education**.
उन्नत प्रौद्योगिकी और शिक्षाशास्त्र का एकीकरण शिक्षा के तकनीकी प्रबंधन के लिए नई युग की मंत्र माना जाता है।
- A report by the **Central Square Foundation**, working with the Indian government, stated that about **70% of school teachers in India are tech-savvy**.
Central Square Foundation की रिपोर्ट के अनुसार, जो भारतीय सरकार के साथ काम करती है, भारत के लगभग 70% स्कूल शिक्षक तकनीकी रूप से सक्षम हैं।
- Teachers use **AI solutions** to design **pedagogy and curricular content**, prompting **qualitative evaluation of AI literacy and the digital divide in India**.
शिक्षक AI समाधानों का उपयोग शिक्षाशास्त्र और पाठ्यक्रम सामग्री डिजाइन करने के लिए करते हैं, जिससे भारत में AI साक्षरता और डिजिटल विभाजन का गुणात्मक मूल्यांकन आवश्यक हो जाता है।
- The **National Sample Survey report** this year provided information about the **digital divide** at the level of **quality and skills**.
इस वर्ष की राष्ट्रीय नमूना सर्वेक्षण रिपोर्ट ने गुणवत्ता और कौशल के स्तर पर डिजिटल विभाजन की जानकारी दी।



- Although a large percentage of the population in India uses the **Internet**, inclusion requires **participation in the digital world**.
यद्यपि भारत की बड़ी आबादी इंटरनेट का उपयोग करती है, समावेशन के लिए डिजिटल दुनिया में भागीदारी आवश्यक है।
- Inclusion is evaluated through **meaningful and relevant use of technology** rather than merely usage.
समावेशन का मूल्यांकन केवल उपयोग से नहीं बल्कि तकनीक के सार्थक और प्रासंगिक उपयोग के माध्यम से किया जाता है।
- How meaningful is the **intervention of AI** in the educational world? Does **ChatGPT enhance the quality of teaching and learning**? These are questions for classrooms incorporating AI.
शैक्षिक दुनिया में AI के हस्तक्षेप का महत्व कितना है? क्या ChatGPT शिक्षण और अधिगम की गुणवत्ता बढ़ाता है? ये प्रश्न उन कक्षाओं के लिए हैं जो AI को शामिल करती हैं।

Unbridled AI in Educational Practices

शैक्षिक प्रथाओं में अनियंत्रित AI

- The **uncritical embrace of AI** threatens the **philosophical foundations of teaching and learning**.
AI को बिना आलोचना के अपनाना शिक्षण और अधिगम के दर्शनशास्त्रीय आधार को खतरे में डालता है।
- Philosophically, **pedagogy entails humanistic dialogue** between teacher and student fostering **empathy and trust**.
दार्शनिक दृष्टि से, शिक्षाशास्त्र शिक्षक और छात्र के बीच मानवतावादी संवाद की मांग करता है, जो सहानुभूति और विश्वास को बढ़ावा देता है।
- Ideal pedagogues emphasized **emancipatory understanding** rather than accumulation of information.
आदर्श शिक्षक मुक्तिदायक समझ पर जोर देते थे, न कि केवल जानकारी के संग्रह पर।
- **Bell Hooks** in contemporary world and **Rabindranath Tagore** in early modern India envisaged **pedagogic alchemy** inspiring **hermeneutic understanding**.
आधुनिक दुनिया में Bell Hooks और प्रारंभिक आधुनिक भारत में रवींद्रनाथ टैगोर ने शैक्षिक रसायनशास्त्र की कल्पना की, जो व्याख्यात्मक समझ को प्रेरित करता है।
- Educational philosophy solicits **natural and organic** rather than **singular AI smartness** of teacher and taught.
शैक्षिक दर्शन शिक्षक और छात्र की प्राकृतिक और जैविक बुद्धिमत्ता की मांग करता है, न कि केवल एकल AI स्मार्टनेस।
- There are **ethical dilemmas** of using AI for pedagogy.
शिक्षाशास्त्र के लिए AI के उपयोग में नैतिक दुविधाएँ हैं।
- According to **CENTA**, a high percentage of teachers employ **AI tools** for **technical requirements** rather than **dialogic engagement** with students.
CENTA के अनुसार, उच्च प्रतिशत शिक्षक AI उपकरणों का उपयोग केवल तकनीकी आवश्यकताओं के लिए करते हैं, न कि छात्रों के साथ संवादात्मक सहभागिता के लिए।
- Use of AI by students is a concern for **CBSE**; advisory issued against using **ChatGPT in board exams**.
छात्रों द्वारा AI का उपयोग CBSE के लिए चिंता का विषय है; बोर्ड परीक्षाओं में ChatGPT का उपयोग न करने की सलाह जारी की गई।
- Unfair use by both teachers and students **handicaps the pedagogical essence** of classroom interaction.
शिक्षक और छात्रों द्वारा अनुचित उपयोग कक्षा में शिक्षाशास्त्रीय सार को प्रभावित करता है।
- Although AI is enabling, the **ethical complexity** is seldom considered in **technocratic management** of educational institutes.
यद्यपि AI सक्षम कर रहा है, लेकिन नैतिक जटिलता को शैक्षणिक संस्थाओं के तकनीकी प्रबंधन में शायद ही कभी ध्यान में रखा जाता है।
- Current educational practices with AI are reduced to **superficial use of technology**.
AI के साथ वर्तमान शैक्षिक प्रथाएँ तकनीक के सतही उपयोग तक सीमित हैं।
- Teacher using **audio-visuals via smartphones and computers** is mistaken for **pedagogic smartness**.



शिक्षक द्वारा स्मार्टफोन और कंप्यूटर के माध्यम से ऑडियो-विजुअल का उपयोग को शिक्षाशास्त्रीय चतुराई समझा जाता है।

- The **transformative capacity of teachers** shall be the **yardstick for evaluation of pedagogy**.
शिक्षकों की परिवर्तनीय क्षमता ही शिक्षाशास्त्र के मूल्यांकन का मानदंड होनी चाहिए।
- Only then can AI in the classroom bring **equality** along with improved **teaching quality**.
केवल तभी कक्षा में AI समानता के साथ शिक्षण की गुणवत्ता बढ़ा सकता है।

India AI Mission भारत AI मिशन

- **India AI's mission** envisages the opening of the **AI Centres for Excellence (CoE)** in education.
India AI का मिशन शिक्षा में **AI उत्कृष्टता केंद्र (CoE)** खोलने की योजना बनाता है।
- The mission's pillars are **India AI Compute Capacity**, geared to establish the **infrastructure to support AI innovation**, and **India AI Future Skills**, aimed at **facilitating talents to utilise the established infrastructure**.
मिशन के स्तंभ हैं **India AI Compute Capacity**, जो **AI नवाचार को समर्थन देने वाले बुनियादी ढांचे** को स्थापित करने के लिए है, और **India AI Future Skills**, जो **प्रतिष्ठापित बुनियादी ढांचे का उपयोग करने के लिए प्रतिभाओं को सक्षम बनाने** के लिए है।
- These pillars can help create **accessible cloud-based tools** that promote **basic digital literacy** and equip all teachers with skills to be **tech-savvy**.
ये स्तंभ **सुलभ क्लाउड-आधारित उपकरण** बनाने में मदद कर सकते हैं जो **मूल डिजिटल साक्षरता** को बढ़ावा दें और सभी शिक्षकों को **तकनीकी रूप से सक्षम बनाने** के लिए कौशल प्रदान करें।
- Teachers require **in-service professional training** for **capacity enhancement** to develop an **ethical understanding** and **meaningful integration of AI into pedagogy**.
शिक्षकों को **क्षमता वृद्धि** के लिए **सेवा में पेशेवर प्रशिक्षण** की आवश्यकता है ताकि **AI का नैतिक समझ** और **शिक्षाशास्त्र में सार्थक एकीकरण** विकसित किया जा सके।
- Such training shall enable **pedagogues** to **critically evaluate and employ technology**, with a nuanced capacity to **transform educational practices for a just society**.
ऐसा प्रशिक्षण **शिक्षकों** को सक्षम बनाएगा कि वे **तकनीक का आलोचनात्मक मूल्यांकन और उपयोग** करें, और **न्यायपूर्ण समाज के लिए शैक्षिक प्रथाओं को बदलने** की सूक्ष्म क्षमता विकसित करें।
- The training modules need to prioritise **independence and freedom, creativity and imagination**, of both **teachers and students**.
प्रशिक्षण मॉड्यूल को **स्वतंत्रता और आज़ादी, रचनात्मकता और कल्पना** को प्राथमिकता देनी चाहिए, दोनों **शिक्षक और छात्र** के लिए।
- The mission's **Application Development Initiative** promises **impactful AI solutions** aimed at **large-scale socio-economic transformation**.
मिशन की **Application Development Initiative** **प्रभावशाली AI समाधान** का वादा करती है, जिसका लक्ष्य **वृहद पैमाने पर सामाजिक-आर्थिक परिवर्तन** है।
- Such promising aspects ought to be **emboldened in a context-sensitive manner** when it comes to the **integration of AI with educational practices**.
जब **AI को शैक्षिक प्रथाओं में एकीकृत** किया जाता है, तो ऐसे आशाजनक पहलुओं को **संदर्भ-संवेदी तरीके से सशक्त** किया जाना चाहिए।
- Only then would AI not reproduce **social and digital inequalities** through seemingly **unquestionable smart pedagogy**.
केवल तभी AI दिखावटी **अप्रश्नीय स्मार्ट शिक्षाशास्त्र** के माध्यम से **सामाजिक और डिजिटल असमानताओं** को दोहराएगा नहीं।
- Without adequate **social, ethical, cultural, and political anchorage**, AI may become an **anathema defended in rhetoric and abused in practice**.
पर्याप्त **सामाजिक, नैतिक, सांस्कृतिक और राजनीतिक आधार** के बिना, AI **एक अभिशाप** बन सकता है, जो **वक्तव्य में बचाव और व्यवहार में दुरुपयोग** किया जाता है।



A quiz on interesting and rare happenings in the life of Mahatma Gandhi

GS III: Biology

Soorya Prakash N

QUESTION 1

In which year did the United Nations declare Gandhi's birthday as the International Day of Non-Violence?

QUESTION 2

Mahatma Gandhi was named the Person of the Year by the renowned Time magazine in which year?

QUESTION 3

What is the name of the book written by Mahatma Gandhi on a strict vegetarian food diet?

QUESTION 4

With whom did Mahatma Gandhi have an important friendship that he used to exchange letters to seek his guidance and advice on the principles of non-violence?

QUESTION 5

Who gave the title "Mahatma" and in which year?

QUESTION 6

What was the name of the group volunteered by Mahatma Gandhi in 1900 for the British as stretcher bearers during the Second Boer War?

QUESTION 7

What was the medal bestowed on Mahatma Gandhi for his work during the Second Boer War, which he returned after the Jallianwala Bagh massacre?

QUESTION 8

What was the journal started by Mahatma Gandhi in 1903 in South Africa called that carried news of Indians in South Africa?



Visual Question:

What is the name of this object that is intertwined with Mahatma Gandhi's daily life?
FILE PHOTO

Questions and Answers to the previous day's daily quiz: 1. Name the facility on the banks of Lake Tanganyika, which was the location of her famous long-term study of chimpanzees. **Ans: Gombe Stream National Park**

2. What pivotal discovery made by Goodall in 1960 made her mentor, Louis Leakey, state "...now we must redefine 'tool', redefine 'man', or accept chimpanzees as humans"? **Ans: Chimps modifying grass stems and twigs to 'fish' for termites in their mounds**

3. She did her doctorate. What is the field of study called and where? **Ans: Ethology and Cambridge**

4. Name the two communities of chimpanzee that indulged in the ruthless 'Four-Year War of Gombe', which Goodall documented. **Ans: Kasakela and Kahama**

5. What was the nickname given by Leakey to the trio of Goodall, Dian Fossey, and Birutė Galdikas. **Ans: Trimates**

6. What was the contribution of Hugo van Lawick to the life and work of Goodall? **Ans: Popularised her discoveries through National Geographic**

7. Name the global programme created by Goodall. **Ans: Roots & Shoots**

8. How did the UN honour her in 2002? **Ans: She was made an United Nations Messenger of Peace**

Visual: What was the name of this plush monkey. **Ans: Mr. H Early Birds: Tito Shiladitya | Sonali Das | Mohan Lal Patel | Sukdev Shet**

QUIZ

Gombe Stream National Park: A Legacy of Discovery Location and Significance

- **Gombe Stream National Park** is situated on the eastern shore of **Lake Tanganyika** in **western Tanzania**, covering approximately **52 square kilometers**.
- The park is renowned for being the site of **Jane Goodall's pioneering research on wild chimpanzees**, which began in **1960**.

Jane Goodall's Groundbreaking Research

- In **1960**, at the age of 26, **Jane Goodall** established a camp at Gombe to conduct the first long-term study of wild chimpanzees.
- Her observations led to several groundbreaking discoveries:
 - **Tool Use:** She documented chimpanzees using sticks to extract termites from mounds, challenging the belief that only humans could create and use tools.
 - **Omnivorous Diet:** She observed chimpanzees hunting and consuming meat, particularly colobus monkeys, debunking the notion that they were strictly herbivores.
 - **Complex Social Behaviors:** Goodall noted behaviors such as hugs, kisses, pats on the back, and tickling among chimpanzees, indicating deep emotional bonds and complex social structures.
- Unlike many researchers of her time, Goodall **named the chimpanzees** she studied (e.g., **Fifi, David Greybeard**) instead of assigning them numbers, emphasizing their individual personalities.

Gombe Stream Research Centre

- In **1967**, the **Gombe Stream Research Centre (GSRC)** was established to coordinate ongoing chimpanzee research in the park.
- The GSRC is recognized as the **longest-running field study of an animal species in their natural surroundings**, providing invaluable insights into chimpanzee behavior and ecology.

Conservation Efforts and Recognition

- The research conducted at Gombe has led to significant conservation efforts and has been instrumental in understanding the importance of preserving chimpanzee habitats.
- In **1997**, **Gombe National Park** was added to UNESCO's **Tentative List for World Heritage Sites**, recognizing its outstanding universal value.



Legacy and Ongoing Research

- Jane Goodall's work has inspired generations of researchers and conservationists. Her approach to studying chimpanzees has become a model for ethical and immersive field research.
- The **Jane Goodall Institute**, founded in **1977**, continues to support research and conservation efforts at Gombe, ensuring the longevity of her groundbreaking work.

Jane Goodall's Pioneering Discovery in 1960: Tool Use by Chimpanzees Historical Context

- In **1960**, **Jane Goodall** began her long-term field study at **Gombe Stream National Park**, Tanzania, focusing on the behavior of wild chimpanzees.
- She worked under the mentorship of **Louis Leakey**, a renowned paleoanthropologist, who recognized the revolutionary potential of her observations.

Pivotal Discovery: Tool Use

- Goodall observed chimpanzees **modifying grass stems and twigs** to "fish" termites from their mounds.
- This behavior demonstrated that chimpanzees were capable of **creating and using tools**, a trait previously considered **exclusively human**.
- **Louis Leakey**, impressed by this observation, stated:

"...now we must **redefine 'tool,' redefine 'man,' or accept chimpanzees as humans.**"

- This statement marked a paradigm shift in understanding human uniqueness and the cognitive abilities of primates.

Details of the Tool-Use Behavior

- Chimpanzees would **break twigs or strips of grass**, remove leaves, and insert them into termite mounds to extract insects.
- This required **planning, dexterity, and problem-solving skills**, highlighting their **intelligence and adaptability**.
- The discovery demonstrated **cultural behaviors**, as chimpanzees taught younger members to perform the task.

Significance in Primatology and Anthropology

- Challenged the **human-animal boundary** in cognitive capabilities.
- Provided evidence that **tool-making is not unique to humans**, influencing studies in **evolutionary biology** and **animal cognition**.
- Laid the foundation for **further research on animal intelligence**, social behavior, and ecology.

Conservation and Ethical Implications

- Highlighted the importance of **protecting chimpanzee habitats** and understanding their complex societies.
- Encouraged ethical considerations in **field research**, emphasizing observation without interference.

Visual References

- **Image 1:** Chimpanzee using a twig to extract termites (illustrating tool use).
- **Image 2:** Jane Goodall observing chimpanzees in Gombe Stream National Park.



- **Map:** Location of Gombe Stream National Park on the eastern shore of **Lake Tanganyika**, Tanzania.

Legacy and Continued Research

- The discovery continues to inform **Jane Goodall Institute programs** on conservation, primate research, and education.
- Modern research explores **cultural transmission, intelligence, and tool use** across primate species globally.

Recent Updates

- Ongoing studies at **Gombe** show that **chimpanzee populations still use a variety of tools**, including **stone hammers, leaf sponges, and modified branches**, underscoring the continuity of Goodall's observations.
- **Jane Goodall's work**, now spanning over six decades, remains a cornerstone in primatology and conservation worldwide.

Jane Goodall's Doctorate in Ethology at Cambridge

Field of Study: Ethology

- **Ethology** is the scientific study of animal behavior, particularly in natural environments.
- It focuses on understanding the behavioral patterns, social interactions, and cognitive processes of animals.
- Ethologists observe and analyze how animals interact with each other and their surroundings, aiming to uncover innate behaviors and learned responses.

Academic Journey at Cambridge

- In 1961, **Jane Goodall** was admitted to **Newnham College, University of Cambridge**, as a Ph.D. candidate in ethology.
- Remarkably, she was one of the very few individuals to be accepted into a doctoral program without holding a bachelor's degree, a testament to her exceptional observational skills and the groundbreaking nature of her research.
- Under the supervision of **Dr. Robert Hinde**, Goodall completed her doctoral thesis titled *The Behaviour of Free-living Chimpanzees in the Gombe Stream Reserve* in 1965.
- Her research provided profound insights into the social and familial behaviors of chimpanzees, challenging existing perceptions of animal intelligence and emotional depth.

Significance of Her Work

- Goodall's observations in Gombe Stream National Park revealed that chimpanzees use tools, hunt in groups, and have complex social structures, behaviors previously thought to be uniquely human.
- These findings not only revolutionized the field of primatology but also bridged the gap between humans and other primates, highlighting the shared traits and evolutionary connections.

Legacy

- Jane Goodall's work continues to inspire and influence the fields of ethology, primatology, and conservation.
- Her pioneering research set new standards for behavioral studies and emphasized the importance of ethical considerations in animal research.

The Four-Year War of Gombe: Kasakela and Kahama Chimpanzee Communities Background of the Conflict



- In the 1970s, Jane Goodall documented a violent intergroup conflict among **chimpanzee communities** in **Gombe Stream National Park, Tanzania**.
- The conflict is famously known as the “**Four-Year War of Gombe**”, lasting approximately **1974 to 1978**.
- It involved two neighboring chimpanzee communities: **Kasakela** and **Kahama**.

Kasakela Community

- **Kasakela** was the **larger, dominant community** located in the northern part of the park.
- Led by **alpha males**, they displayed strategic planning, alliances, and territorial defense.
- Goodall observed intricate social dynamics, including hierarchy shifts, grooming alliances, and coalition-building.

Kahama Community

- **Kahama** was a **smaller community** in the southern part of the park.
- Despite their smaller size, they occasionally challenged Kasakela for territory and resources.
- Their interactions included ambushes, territorial skirmishes, and sometimes violent killings.

Nature of the Conflict

- The war was characterized by **strategic attacks, killings, and territorial takeovers**.
- Kasakela eventually **overpowered Kahama**, leading to the **annihilation of the Kahama community**.
- This observation provided groundbreaking insights into chimpanzee **political behavior, aggression, and intergroup warfare**.

Scientific Significance

- The Gombe war challenged the notion that **violence and war were uniquely human behaviors**.
- Goodall's meticulous documentation showed that chimpanzees possess:
 - **Tactical planning abilities**
 - **Coalition and alliance formation**
 - **Long-term memory for rivals and territories**
- It revolutionized **primatology**, illustrating the **complexity of animal societies** and the blurred lines between humans and other primates in terms of social behavior.

The “Trimates”: Jane Goodall, Dian Fossey, and Biruté Galdikas Introduction

- The nickname “**Trimates**” was given by **Louis Leakey**, the renowned paleoanthropologist, to three pioneering primatologists: **Jane Goodall, Dian Fossey, and Biruté Galdikas**.
- Leakey envisioned these three scientists as his protégés who would conduct **long-term field studies of great apes** across the world.
- The idea was to **study human evolution through primate behavior** by observing chimpanzees, gorillas, and orangutans in their natural habitats.

The Three Pioneers

- **Jane Goodall**: Studied **chimpanzees** at **Gombe Stream National Park, Tanzania**. Known for discoveries on tool use, social behavior, and intergroup conflicts.
- **Dian Fossey**: Studied **mountain gorillas** in **Rwanda** and focused on **conservation efforts**, anti-poaching measures, and social structures of gorillas.
- **Biruté Galdikas**: Studied **orangutans** in **Borneo, Indonesia**, focusing on their behavior, ecology, and conservation needs.

Significance of the Trimates Program



- Leakey's initiative highlighted the importance of **long-term field studies** in understanding primates and, by extension, human evolution.
- The work of the Trimates demonstrated:
 - **Complex social structures in great apes**
 - **Tool use and problem-solving capabilities**
 - **Parallels between human and primate behavior**
 - **Importance of conservation to protect endangered species**

Impact on Science and Conservation

- The Trimates' work has led to:
 - Global awareness of endangered species like **chimpanzees, gorillas, and orangutans**.
 - Founding of organizations such as the **Jane Goodall Institute, Gorilla Fund, and Orangutan Foundation International**.
 - Policy influence on **wildlife protection laws** and habitat preservation worldwide.

Hugo van Lawick and His Contribution to Jane Goodall's Work Introduction

- **Hugo van Lawick** (1937–2002) was a renowned **Dutch wildlife filmmaker and photographer**.
- He is widely recognized for **documenting Jane Goodall's groundbreaking work with chimpanzees in Gombe Stream National Park, Tanzania**.
- Van Lawick played a crucial role in **bringing Goodall's discoveries to the global audience** through visual media.

Role in Popularising Goodall's Work

- Van Lawick used **film and photography** to document **chimpanzee behavior**, including:
 - **Tool use**, such as fishing for termites with twigs
 - **Social structures and interactions**
 - **Intergroup conflicts**, like the Four-Year War of Gombe
- His work appeared in **National Geographic**, turning Goodall's scientific research into widely accessible and compelling visual stories.
- This media exposure helped **raise awareness about chimpanzee conservation** and the importance of **long-term field research**.

Impact on Science and Conservation

- Through **National Geographic films and documentaries**, van Lawick:
 - **Educated the public** about primate intelligence and social behavior
 - Highlighted the **threats faced by chimpanzees** due to habitat loss and poaching
 - Supported **fundraising and conservation initiatives** via visually engaging storytelling
- His work contributed to the **success of the Jane Goodall Institute** in promoting research and conservation globally.

Personal Connection

- Hugo van Lawick and Jane Goodall shared a close professional and personal relationship.
- He married Goodall in **1964** and worked alongside her to **capture rare moments of chimpanzee behavior** in the wild.

Roots & Shoots: Global Programme by Jane Goodall Introduction



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>
YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>
CONTACT: 9971932488



- **Roots & Shoots** is a **global environmental and humanitarian program** founded by **Dr. Jane Goodall** in **1991**.
- The programme encourages **young people to take action in their communities** to improve the environment, wildlife, and human welfare.
- It operates in **over 100 countries**, engaging **millions of youth worldwide**.

Objectives of Roots & Shoots

- **Environmental Conservation:** Promotes activities such as **tree planting, habitat restoration, and wildlife protection**.
- **Humanitarian Efforts:** Encourages **community service projects**, including supporting schools, healthcare, and local communities.
- **Youth Empowerment:** Inspires **leadership, teamwork, and problem-solving skills** among young people.
- **Education & Awareness:** Raises **awareness about pressing environmental and social issues** through workshops, campaigns, and school programs.

Key Features

- **Global Reach:** Active in **over 100 countries**, with chapters in Africa, Asia, Europe, and the Americas.
- **Community-based Projects:** Students and volunteers identify **local problems** and implement **practical solutions**.
- **Partnerships:** Works with **schools, NGOs, and government agencies** to scale impact.
- **Inclusivity:** Open to **all ages**, though primarily targets **youth aged 8–25**.

Impact and Achievements

- **Youth Engagement:** Over **500,000 young people** participate in Roots & Shoots programs annually.
- **Environmental Actions:** Thousands of **trees planted, clean-up drives conducted, and endangered species protected** globally.
- **Recognition:** The programme has been **acknowledged by the UN and global conservation organizations** for its effectiveness in fostering grassroots activism

United Nations Honour to Jane Goodall (2002)

Introduction

- In **2002**, **Dr. Jane Goodall** was appointed as a **United Nations Messenger of Peace**.
- This is one of the **highest honors given by the UN** to individuals who have made **significant contributions to peace, human rights, and global understanding**.
- Messengers of Peace serve as **advocates and ambassadors for the United Nations' values and missions**, raising awareness on **critical global issues**.

Role and Responsibilities as UN Messenger of Peace

- **Global Advocacy:** Promotes issues related to **environmental conservation, wildlife protection, and sustainable development**.
- **Public Engagement:** Uses her **international fame and outreach** to engage communities, youth, and policymakers on pressing **environmental and humanitarian challenges**.
- **Support to UN Initiatives:** Collaborates with UN campaigns such as **biodiversity protection, climate action, and environmental education**.

Significance of the Honor

- Recognizes **Goodall's lifelong dedication to chimpanzees, environmental activism, and youth empowerment**.
- Highlights the **interconnection between environmental sustainability and global peace**.

Address : 3rd Floor, KV Tower, Padleyganj Road, Gorakhpur
Email Id : info@patrioticias.in
Contact Number : 9971932488
Website : patrioticias.in



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>
YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>
CONTACT: 9971932488



- Encourages other **scientists, educators, and activists** to contribute to **global development and conservation efforts**.

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Address : 3rd Floor, KV Tower, Padleyganj Road, Gorakhpur
Email Id : info@patrioticias.in
Contact Number : 9971932488
Website : patrioticias.in