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GS Paper II: Polity	10 September 2026
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10S9	'Data on proposals for de-reservation not readily available' 'आरक्षण समाप्त करने के प्रस्तावों से संबंधित आँकड़े आसानी से उपलब्ध नहीं हैं'
10S9	MHA proposes new Chapter 'K' under Article 371 for Ladakh MHA ने लद्दाख के लिए अनुच्छेद 371 के तहत नए अध्याय 'K' का प्रस्ताव रखा
10S9	Local tribal group opposes choice of varsity coordinator स्थानीय जनजातीय समूह ने विश्वविद्यालय के समन्वयक के चयन का विरोध किया

'Data on proposals for de-reservation not readily available'

GS II: Polity

Abhinay Lakshman
NEW DELHI

The Department of Personnel and Training (DoPT) has said that it does not have "readily available" data on the number of de-reservation proposals it had received from various Ministries and departments of the Union government over the last six years.

De-reservation is the practice of filling a reserved position with a general category candidate.

The DoPT clarification comes amid a recent complaint from the National Commission for Scheduled Castes (NCSC) that the Centre's de-reservation proposals were often incomplete and did not reveal alternative efforts made to fill reserved vacancies. The NCSC had, therefore, decided to launch a probe into such proposals, to ensure effective implementation of the reservation policy.

According to regulations for government recruitment issued by the DoPT, there is a general ban on de-reserving posts, with very specific exceptions.

In response to queries from *The Hindu* under the Right to Information Act of 2005, the DoPT cited Section 7(9) of the law to say that gathering the information on de-reservation proposals would "disproportionately divert the resources of the public authority". It went on to say, "Information required may be scattered with many departments/Ministries," adding that the law does not mandate the concerned information officer to "create or interpret" information.

10S9. 'Data on proposals for de-reservation not readily available'

'आरक्षण समाप्त करने के प्रस्तावों से संबंधित आँकड़े आसानी से उपलब्ध नहीं हैं'

- The **Department of Personnel and Training (DoPT)** has said that it does not have "readily available" data on the number of **de-reservation proposals** it had received from various Ministries and departments of the Union government over the last six years.

कार्मिक एवं प्रशिक्षण विभाग (DoPT) ने कहा है कि उसके पास पिछले छह वर्षों के दौरान केंद्र सरकार के विभिन्न मंत्रालयों और विभागों से प्राप्त **आरक्षण समाप्त करने के प्रस्तावों** की संख्या से संबंधित "आसानी से उपलब्ध" आँकड़े नहीं हैं।

- De-reservation is the practice of filling a reserved position with a **general category candidate**.

आरक्षण समाप्त करना उस प्रक्रिया को कहा जाता है, जिसमें किसी **आरक्षित पद** को सामान्य वर्ग के उम्मीदवार से भरा जाता है।

- The DoPT clarification comes amid a recent complaint from the **National Commission for Scheduled Castes (NCSC)** that the Centre's de-reservation proposals were often incomplete and did not reveal alternative efforts made to fill reserved vacancies.

DoPT का यह स्पष्टीकरण **राष्ट्रीय अनुसूचित जाति आयोग (NCSC)** की हालिया शिकायत के बीच आया है, जिसमें कहा गया था कि केंद्र के **आरक्षण समाप्त करने के प्रस्ताव** अक्सर अधूरे होते हैं और आरक्षित रिक्तियों को भरने के लिए किए गए वैकल्पिक प्रयासों का उल्लेख नहीं करते।

- The NCSC had, therefore, decided to launch a probe into such proposals, to ensure effective implementation of the **reservation policy**.

इसलिए NCSC ने **आरक्षण नीति** के प्रभावी कार्यान्वयन को सुनिश्चित करने के लिए ऐसे प्रस्तावों की जाँच शुरू करने का निर्णय लिया था।

- According to regulations for government recruitment issued by the DoPT, there is a **general ban on de-reserving posts**, with very specific exceptions.

DoPT द्वारा जारी सरकारी भर्ती संबंधी नियमों के अनुसार, **पदों का आरक्षण समाप्त करने पर सामान्य प्रतिबंध** है, जिसके केवल कुछ अत्यंत विशिष्ट अपवाद हैं।

- In response to queries from The Hindu under the **Right to Information Act of 2005**, the DoPT cited Section 7(9) of the law to say that gathering the information on de-reservation proposals would "disproportionately divert the resources of the public authority".

सूचना का अधिकार अधिनियम, 2005 के तहत द हिंदू द्वारा पूछे गए प्रश्नों के उत्तर में DoPT ने कानून की धारा 7(9) का हवाला देते हुए कहा कि आरक्षण समाप्त करने के प्रस्तावों से संबंधित जानकारी एकत्र करना "लोक प्राधिकरण के संसाधनों को असंगत रूप से अन्यत्र लगाने" के समान होगा।

- It went on to say, "Information required may be scattered with many departments/Ministries," adding that the law does not mandate the concerned information officer to "create or interpret" information.

विभाग ने आगे कहा, "आवश्यक जानकारी कई विभागों/मंत्रालयों में बिखरी हुई हो सकती है," और यह भी जोड़ा कि कानून संबंधित **सूचना अधिकारी** को जानकारी "सृजित या व्याख्यायित" करने के लिए बाध्य नहीं करता।

MHA proposes new Chapter 'K' under Article 371 for Ladakh

Provision being made to bring elected body for Union Territory; civil society members who attended MHA meet say they were 'disappointed' as they are yet to receive draft proposal; they also sought compensation for families of violence victims

GS II: Polity

Vijaita Singh
NEW DELHI

The Union Ministry of Home Affairs (MHA) has proposed an elected body for the Union Territory (UT) of Ladakh by introducing a new constitutional provision under Article 371 of the Constitution in a proposed Chapter K, civil society members who attended a meeting with MHA officials in Delhi on Wednesday said.

Cherring Dorjay Lakruk of the Leh Apex Body (LAB) told *The Hindu* that they were "disappointed" as this was a reiteration of the May 22 meeting, and were given a PowerPoint presentation mentioning Chapter K on Wednesday but were yet to get a detailed "draft proposal" from the MHA.

A statement released by the civil society members said, "The MHA stated that the intended UT-level body, would be elected by direct election, and would have legislative powers with respect to land, culture and language, forest, environment, natural resources, and any other subject matter reserved for the UT under Article 240."

Ladakh chief secretary Ashish Kundra, who attended the meeting, said in a post on X, "Attended the sub-committee meeting with leaders of Ladakh at MHA in Delhi today. A general air of positivity prevailed as the broad contours of a Sui-generis model of governance under Article 371 of the Constitution were discussed. Deepening democracy is the goal."

Representatives of the LAB and the Kargil Democratic Alliance (KDA) asked the MHA to ensure that the Lieutenant-Governor of Ladakh does not take any major decisions concerning the administration, bureaucracy or land until the proposed constitutional safeguards are put in place, while pressing for the legislation to be passed in the upcoming Winter Session of Parliament.

The members also sought compensation for the families of the victims of the violence that broke out on September 24, 2025, in Leh city, where four people were killed in police firing. They further sought the withdrawal of criminal cases against 80 people, along the lines of the protection afforded to those who took part in the "Gen Z protest" at Delhi's Jantar Mantar in July. The violence in Ladakh erupted amid a protest that was called to demand constitutional safeguards.

Article 371, which currently has chapters that run from A to J, deals with "Temporary, Transitional and Special Provisions" and exists under Part XXI of the Constitution. It is currently applicable in 12 States: Nagaland, Assam, Manipur, Mizoram, Maharashtra, Gujarat, Andhra Pradesh, Telangana, Arunachal Pradesh, Goa, Sikkim, and Karnataka.

After Ladakh lost its special status under Article 370 of the Constitution as part of the erstwhile State of Jammu and Kashmir, it was turned into a Union Territory without a legislative assembly in 2019. Since then, the LAB and the KDA have been demanding Statehood and tribal status for Ladakh and seeking a larger role for local residents in decisions relating to land and infrastructure projects.

Climate activist Sonam Wangchuk, who was also part of the delegation that met MHA officials, said, "We cannot say that the meeting was a complete success. We hoped to get a draft proposal assuring us protection under Article 371. However, that was not provided. We have asked the government to take back the cases registered against protesters after last year's incident in Leh city."

Making a point: People from Ladakh have staged several protests over the years seeking Statehood. ANI

10S9. MHA proposes new Chapter 'K' under Article 371 for Ladakh
MHA ने लद्दाख के लिए अनुच्छेद 371 के तहत नए अध्याय 'K' का प्रस्ताव रखा

- The **Union Ministry of Home Affairs (MHA)** has proposed an elected body for the **Union Territory (UT) of Ladakh** by introducing a new constitutional provision under **Article 371 of the Constitution** in a proposed **Chapter K**, civil society members who attended a meeting with MHA officials in Delhi on Wednesday said.
  केंद्रीय गृह मंत्रालय (MHA) ने प्रस्तावित **अध्याय K** में **संविधान के अनुच्छेद 371** के तहत एक नया संवैधानिक प्रावधान प्रस्तुत करके **केंद्रशासित प्रदेश (UT) लद्दाख** के लिए एक निर्वाचित निकाय का प्रस्ताव रखा है, बुधवार को दिल्ली में MHA अधिकारियों के साथ बैठक में शामिल नागरिक समाज के सदस्यों ने कहा।
- A statement released by the civil society members said, "The MHA stated that the intended **UT-level body** would be elected by direct election, and would have **legislative powers** with respect to land, culture and language, forest, environment, natural resources, and any other subject matter reserved for the UT under **Article 240**."
  नागरिक समाज के सदस्यों द्वारा जारी एक बयान में कहा गया, "MHA ने कहा कि प्रस्तावित **UT-स्तरीय निकाय** का चुनाव प्रत्यक्ष निर्वाचन के माध्यम से किया जाएगा और उसके पास **भूमि, संस्कृति एवं भाषा, वन, पर्यावरण, प्राकृतिक संसाधनों** तथा **अनुच्छेद 240** के तहत UT के लिए आरक्षित किसी अन्य विषय के संबंध में **विधायी शक्तियाँ** होंगी।"
- **Article 371**, which currently has chapters that run from A to J, deals with **"Temporary, Transitional and Special Provisions"** and exists under **Part XXI of the Constitution**.
  अनुच्छेद 371, जिसमें वर्तमान में A से J तक के अध्याय हैं, **"अस्थायी, संक्रमणकालीन और विशेष प्रावधानों"** से संबंधित है और यह **संविधान के भाग XXI** के अंतर्गत आता है।
- It is currently applicable in 12 States: **Nagaland, Assam, Manipur, Mizoram, Maharashtra, Gujarat, Andhra Pradesh, Telangana, Arunachal Pradesh, Goa, Sikkim, and Karnataka**.

यह वर्तमान में 12 राज्यों में लागू है: **नागालैंड, असम, मणिपुर, मिजोरम, महाराष्ट्र, गुजरात, आंध्र प्रदेश, तेलंगाना, अरुणाचल प्रदेश, गोवा, सिक्किम और कर्नाटक**।

- After Ladakh lost its special status under **Article 370 of the Constitution** as part of the erstwhile State of Jammu and Kashmir, it was turned into a **Union Territory without a legislative assembly in 2019**.

पूर्ववर्ती जम्मू और कश्मीर राज्य के हिस्से के रूप में लद्दाख ने **संविधान के अनुच्छेद 370 के तहत अपना विशेष दर्जा** खोने के बाद, 2019 में इसे **बिना विधायी विधानसभा वाले केंद्रशासित प्रदेश** में बदल दिया गया।

Local tribal group opposes choice of varsity coordinator

GS II: Polity

Vinaya Deshpande Pandit

MUMBAI

A local tribal group from Gadchiroli in Maharashtra has opposed the appointment of former Maoist leader Bhupati as a coordinator in Gondwana University.

"Why are local tribals, who have worked for PESA, not being given the opportunity?" asked Bajirao Usendi from Gadchiroli.

PESA stands for the Panchayats (Extension to Scheduled Areas) Act, 1996, a landmark law enacted by the Union Government to ensure self-governance for tribal communities living in Fifth Schedule areas.

"An upper-caste man from outside Maharashtra who exploited tribals and led them to their deaths is being favoured for a job that involves empowerment of tribals. How can we trust him to spread awareness among tribals about PESA, and not anything else? We want the government to cancel this appointment and give a chance to deserving tribals who are qualified for this work," Mr. Usendi added.

Bhupati

He is the leader of a Mahagramsabha, an informal body that plays an advisory role to local gram sabhas in Gadchiroli. The Mahagramsabha has issued a memorandum to the Gondwana University, the Collector, and the Gadchiroli Police Superintendent, calling for the appointment to be revoked.

Bhupati is a former Maoist whose surrender last year crippled Maoism in Maharashtra. He was recently appointed coordinator by Gondwana University to spread awareness among tribal communities about PESA, Forest Rights Act, and other rights of the communities.

Meanwhile, the University has said the appointment is for three months, and that Bhupati will have only clerical responsibility.

10S9. Local tribal group opposes choice of varsity coordinator

स्थानीय जनजातीय समूह ने विश्वविद्यालय के समन्वयक के चयन का विरोध किया

- A local tribal group from **Gadchiroli in Maharashtra** has opposed the appointment of former **Maoist leader Bhupati** as a coordinator in Gondwana University.

महाराष्ट्र के गढ़चिरौली के एक स्थानीय जनजातीय समूह ने Gondwana University में पूर्व **माओवादी नेता Bhupati** को समन्वयक नियुक्त किए जाने का विरोध किया है।

- "Why are local tribals, who have worked for **PESA**, not being given the opportunity?" asked Bajirao Usendi from Gadchiroli.

गढ़चिरौली के Bajirao Usendi ने पूछा, "**PESA** के लिए काम करने वाले स्थानीय जनजातीय लोगों को अवसर क्यों नहीं दिया जा रहा है?"

- PESA stands for the **Panchayats (Extension to Scheduled Areas) Act, 1996**, a landmark law enacted by the Union Government to ensure **self-governance for tribal communities** living in Fifth Schedule areas.

PESA का पूरा नाम **पंचायत (अनुसूचित क्षेत्रों तक विस्तार) अधिनियम, 1996** है, जो केंद्र सरकार द्वारा **पाँचवीं अनुसूची वाले क्षेत्रों में रहने वाले जनजातीय समुदायों के स्वशासन** को सुनिश्चित करने के लिए बनाया गया एक महत्वपूर्ण कानून है।

- "An upper-caste man from outside Maharashtra who exploited tribals and led them to their deaths is being favoured for a job that involves **empowerment of tribals**.

"महाराष्ट्र के बाहर का एक **उच्च जाति का व्यक्ति**, जिसने जनजातीय लोगों का शोषण किया और उन्हें मौत के मुँह में धकेला, ऐसे पद के लिए प्राथमिकता पा रहा है जिसमें **जनजातीय लोगों का सशक्तीकरण** शामिल है।

GS Paper II: Governance	10 September 2026
TOPICS COVERED	
10S9	India has to act on its 'sugar' problem भारत को अपनी 'चीनी' की समस्या पर कार्रवाई करनी होगी

India has to act on its 'sugar' problem

GS II: Governance

Dr. Praveen George Paul

Assistant Professor, Pediatric Endocrinology and Metabolism, Department of Pediatrics, Christian Medical College, Vellore

Dr. Vandana Jain

Professor, Pediatric Endocrinology Division, Department of Pediatrics, All India Institute of Medical Sciences (AIIMS)

This week, the Food Safety and Standards Authority of India (FSSAI), prodded by the Supreme Court, proposed a simple but overdue idea. Packaged foods high in fat, salt, or sugar should carry a bold red warning on the front of the pack, not buried in fine print on the back. Someone picking up instant noodles, a breakfast cereal, or a "health drink" will finally be told, at a glance, that it is not as wholesome as its advertising claims. This is a welcome step. It is also, on its own, nowhere near enough.

The number of children presenting with morbid obesity and diabetes has climbed sharply within just a few years. The World Obesity Atlas 2026 bears this out – 41 million Indian children and adolescents aged 5 to 19 are now overweight or obese. This is not just because children are eating more; it is about what they are being sold. Breakfast cereals, sweetened yoghurts, and "health drinks" are marketed to parents as filling gaps in a child's diet, emphasising "energy" and vitamins while saying little about the sugar content inside. In 2024, a leading multinational was found adding sugar to infant food sold in India and other lower income countries; sugar was left out of the same product in Europe. When a health drink, popular in Indian homes, turned out to be nothing more than flavoured sugar syrup, it took a social media storm, and not a regulator, to force the company to prescribe a 15% cut in its added sugar.

The problem is worse around schools and colleges, where studies show that the cheapest, most easily available snacks are also the least healthy. A popular "energy drink" among teenagers, priced at just ₹20, packs close to 17 grams of sugar, caffeine, and artificial colour into a single bottle. Its label says it is not meant for children, yet nothing stops a child from buying it. This is the market pricing unhealthy calories to fit within the range of a child's pocket money.

When the U.K. introduced its soft drinks industry levy, sugar consumption fell. Manufacturers reformulated their drinks to slip below the tax threshold rather than raise prices

Need for enforcement

None of this is a secret. What has been missing is enforcement. The FSSAI and the Central Board of Secondary Education (CBSE) have long recommended what schools should not sell, but optional rules get treated as optional, and canteens stock whatever sells cheapest. A red warning label only works if it is actually enforced.

Moreover, the new rule stops at the edge of organised retail. Most of India's sugar, salt, and trans fat is eaten unbranded, from street stalls, dhabas, and sweet shops that make up the unorganised sector, none of which is required to declare anything. A red label on a biscuit packet does nothing about the jalebi sold loose beside it. Regulation that reaches only packaged food leaves the unregulated half of the plate untouched.

Then there is the conversation India keeps avoiding – a tax on sugar. When the U.K. introduced its soft drinks industry levy, sugar consumption among both children and adults fell. Manufacturers reformulated their drinks to slip below the tax threshold rather than raise prices. A well-designed sugar tax does not just discourage people from buying a product, it pushes the industry to make the product itself less harmful.

India already taxes sugary drinks heavily; just not usefully. Since September 2025, aerated and sweetened beverages, sugar free versions included, were folded into one 40% GST slab – so a 'normal' cola and its zero-sugar counterpart pay the same tax, leaving manufacturers with no reason to cut sugar. The U.K.'s levy worked differently, taxing drinks in tiers by sugar content, so that companies could lower their bill by reformulating the product. India could tax products in the same way so that manufacturers have a reason to cut sugar.

The standard objection – that such a tax would hit the poor the hardest – is not wrong, but it is only half the argument. Unregulated, cheap sugar already extracts a heavy price from the poor, who bear the brunt of the diabetes, hypertension and childhood obesity epidemic that sugar heavy diets drive, with the least means to treat it. Doing nothing is not neutral; it is a slower, costlier tax, paid in ill health rather than rupees at the till. The answer is to design the tax calibrated to sugar content so that it nudges reformulation, with part of the revenue set aside to make healthy food cheaper.

The FSSAI's proposed red label is a genuine, if belated, first step. What India needs now is the resolve to finish what it has started – mandatory food standards; limits on how unhealthy food is marketed to children; rules that reach the unorganised sector; and an honest debate on taxing sugar in a way that protects families with the least room to absorb either cost, the tax, or the disease.

10S9. India has to act on its 'sugar' problem
भारत को अपनी 'चीनी' की समस्या पर कार्रवाई करनी होगी

- This week, the **Food Safety and Standards Authority of India (FSSAI)**, prodded by the Supreme Court, proposed a simple but overdue idea.
  इस सप्ताह, **भारतीय खाद्य सुरक्षा और मानक प्राधिकरण (FSSAI)** ने सर्वोच्च न्यायालय के निर्देश के बाद एक सरल लेकिन लंबे समय से लंबित विचार प्रस्तावित किया।
- Packaged foods high in fat, salt, or sugar should carry a **bold red warning** on the front of the pack, not buried in fine print on the back.
  वसा, नमक या चीनी की अधिक मात्रा वाले पैकेज्ड खाद्य पदार्थों के पैकेट के सामने **स्पष्ट लाल चेतावनी** होनी चाहिए, न कि उसे पीछे छोटे अक्षरों में छिपाया जाना चाहिए।
- Someone picking up instant noodles, a breakfast cereal, or a "health drink" will finally be told, at a glance, that it is not as wholesome as its advertising claims.
  इंस्टेंट नूडल्स, नाश्ते के सीरियल या किसी **"हेल्थ ड्रिंक"** को उठाने वाले व्यक्ति को अब एक नज़र में यह पता चल सकेगा कि वह उत्पाद विज्ञापन में किए गए दावों जितना स्वास्थ्यवर्धक नहीं है।
- The number of children presenting with **morbid obesity and diabetes** has climbed sharply within just a few years.
  केवल कुछ वर्षों में **गंभीर मोटापे और मधुमेह** से पीड़ित बच्चों की संख्या में तेज़ी से वृद्धि हुई है।
- The World Obesity Atlas 2026 bears this out — 41 million Indian children and adolescents aged 5 to 19 are now overweight or obese.
  World Obesity Atlas 2026 भी इसकी पुष्टि करता है—भारत में 5 से 19 वर्ष की आयु के **4.1 करोड़ बच्चे और किशोर** अब अधिक वजन या मोटापे से ग्रस्त हैं।
- Breakfast cereals, sweetened yoghurts, and "health drinks" are marketed to parents as filling gaps in a child's diet, emphasising "energy" and vitamins while saying little about the sugar content inside.
  नाश्ते के सीरियल, मीठे योगर्ट और **"हेल्थ ड्रिंक्स"** को माता-पिता के सामने इस रूप में प्रस्तुत किया जाता है कि वे बच्चे के आहार की पोषण संबंधी कमियों को पूरा करते हैं। इनमें **"ऊर्जा" और विटामिन** पर जोर दिया जाता है, जबकि उनमें मौजूद चीनी की मात्रा के बारे में बहुत कम बताया जाता है।
- In 2024, a leading multinational was found adding sugar to infant food sold in India and other lower income countries; sugar was left out of the same product in Europe.
  2024 में, एक प्रमुख बहुराष्ट्रीय कंपनी द्वारा भारत और अन्य निम्न-आय वाले देशों में बेचे जाने वाले **शिशु आहार में चीनी मिलाए जाने** का पता चला; जबकि यूरोप में उसी उत्पाद में चीनी नहीं मिलाई गई थी।
- A popular "energy drink" among teenagers, priced at just ₹20, packs close to 17 grams of sugar, caffeine, and artificial colour into a single bottle.
  किशोरों के बीच लोकप्रिय एक **"एनर्जी ड्रिंक"**, जिसकी कीमत केवल ₹20 है, एक बोतल में लगभग **17 ग्राम चीनी, कैफीन और कृत्रिम रंग** रखता है।
- The FSSAI and the Central Board of Secondary Education (CBSE) have long recommended what schools should not sell, but optional rules get treated as optional, and canteens stock whatever sells cheapest.
  FSSAI और केंद्रीय माध्यमिक शिक्षा बोर्ड (CBSE) लंबे समय से यह अनुशंसा करते रहे हैं कि स्कूलों में क्या नहीं बेचा जाना चाहिए, लेकिन वैकल्पिक नियमों को वास्तव में वैकल्पिक ही माना जाता है और कैंटीन में वही वस्तुएँ रखी जाती हैं जो सबसे सस्ती बिकती हैं।
- Then there is the conversation India keeps avoiding — a **tax on sugar**.
  इसके बाद वह चर्चा आती है जिससे भारत लगातार बचता रहा है—**चीनी पर कर**।
- A well-designed sugar tax does not just discourage people from buying a product, it pushes the industry to make the product itself less harmful.
  अच्छी तरह तैयार किया गया **चीनी कर** केवल लोगों को किसी उत्पाद को खरीदने से हतोत्साहित नहीं करता, बल्कि उद्योग को स्वयं उत्पाद को **कम हानिकारक बनाने** के लिए प्रेरित करता है।

- India already taxes sugary drinks heavily; just not usefully.
  भारत पहले से ही **मीठे पेय पदार्थों पर भारी कर** लगाता है; लेकिन यह कर प्रभावी ढंग से काम नहीं करता।
- Since September 2025, aerated and sweetened beverages, sugar free versions included, were folded into one 40% GST slab — so a 'normal' cola and its zero-sugar counterpart pay the same tax, leaving manufacturers with no reason to cut sugar.
  सितंबर 2025 से, कार्बोनेटेड और मीठे पेय पदार्थों, जिनमें **शुगर-फ्री संस्करण** भी शामिल हैं, को एक ही **40% GST स्लैब** में रखा गया है—इसलिए एक 'सामान्य' कोला और उसका शून्य-चीनी वाला संस्करण समान कर चुकाते हैं, जिससे निर्माताओं के पास चीनी कम करने का कोई प्रोत्साहन नहीं रहता।
- The U.K.'s levy worked differently, taxing drinks in tiers by sugar content, so that companies could lower their bill by reformulating the product.
  ब्रिटेन की लेवी अलग तरीके से काम करती थी; इसमें पेय पदार्थों पर उनकी **चीनी की मात्रा के आधार पर अलग-अलग स्तरों** में कर लगाया जाता था, ताकि कंपनियाँ उत्पाद के संघटन में बदलाव करके अपना कर भार कम कर सकें।
- Unregulated, cheap sugar already extracts a heavy price from the poor, who bear the brunt of the diabetes, hypertension and childhood obesity epidemic that sugar heavy diets drive, with the least means to treat it.
  अनियंत्रित और सस्ती चीनी पहले से ही गरीबों से **भारी कीमत वसूल रही है**। वे मधुमेह, उच्च रक्तचाप और बचपन के मोटापे की उस महामारी का सबसे अधिक बोझ उठाते हैं, जिसे अधिक चीनी वाले आहार बढ़ावा देते हैं, जबकि उनके पास इसके उपचार के लिए सबसे कम संसाधन होते हैं।
- Doing nothing is not neutral; it is a slower, costlier tax, paid in ill health rather than rupees at the till.
  कुछ न करना तटस्थ विकल्प नहीं है; यह एक **धीमा और अधिक महँगा कर** है, जिसकी कीमत भुगतान काउंटर पर रुपये में नहीं, बल्कि **खराब स्वास्थ्य** के रूप में चुकानी पड़ती है।

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TOPICS COVERED	
10S9	**Cargo that fell into sea near Keralam could cause future shoreline impact, says report** **केरलम के पास समुद्र में गिरे माल से भविष्य में तटरेखा पर प्रभाव पड़ सकता है, रिपोर्ट में कहा गया**
10S9	**Turning economic cooperation into shared prosperity** **आर्थिक सहयोग को साझा समृद्धि में बदलना**
10S9	**Trade between BRICS countries shows marked increase** **ब्रिक्स देशों के बीच व्यापार में उल्लेखनीय वृद्धि**
10S9	**PM-KUSUM 2.0 likely to be announced soon: Pralhad** **PM-KUSUM 2.0 की घोषणा जल्द होने की संभावना: प्रह्लाद**
10S9	**India, Sri Lanka sign three defence sector MoUs during Rajnath's visit** **राजनाथ की यात्रा के दौरान भारत और श्रीलंका ने रक्षा क्षेत्र से संबंधित तीन समझौता ज्ञापनों पर हस्ताक्षर किए**
10S9	**IAEA's board reports Iran to UN Security Council for 'failure to cooperate in probe'** **'जांच में सहयोग करने में विफलता' के लिए IAEA बोर्ड ने ईरान को संयुक्त राष्ट्र सुरक्षा परिषद में भेजा**

Cargo that fell into sea near Keralam could cause future shoreline impact, says report

GS II: IR

G. Krishnakumar
KOCHI

A pollution risk assessment by the International Tanker Owners Pollution Federation (ITOPF) on the containers that fell into the sea after a fire aboard the Singapore-flagged vessel *Wan Hai 503* off the Keralam coast on June 9, 2025, has stated that some shoreline impacts may be experienced in the future "due to corrosion of the container or loss of integrity of the packaging (likely to be in decades)".

"At this time, ITOPF considers that these cargoes do not pose a significant risk to the marine environment," said the container risk assessment report submitted by the vessel's registered owner before the National Green Tribunal (NGT).

Singapore-flagged *Wan Hai 503* that caught fire off the Kerala coast on June 9, 2025.

The Southern Bench, which took *suo motu* cognisance of the report, *Container vessel on fire off Kerala coast*, published in *The Hindu*, had asked the owners to submit a report with details of the cargo and its environmental impact.

The vessel was carrying approximately 1,754 containers at the time of the incident. It was subsequently towed to the port of Jebel Ali in the UAE in August 24, 2025. The registered owners had entrusted the ITOPF, an organisation funded by the global shipping industry, with preparing a container risk assessment in compliance with the tribunal's directive.

The report said the containers had a wide range of products, categorised as miscellaneous goods, plastic resins and pellets, food, and inorganic chemicals.

10S9. Cargo that fell into sea near Keralam could cause future shoreline impact, says report
केरलम के पास समुद्र में गिरे माल से भविष्य में तटरेखा पर प्रभाव पड़ सकता है, रिपोर्ट में कहा गया

- A **pollution risk assessment** by the **International Tanker Owners Pollution Federation (ITOPF)** on the containers that fell into the sea after a **fire** aboard the **Singapore-flagged vessel Wan Hai 503** off the **Kerala coast** on June 9, 2025, has stated that some **shoreline impacts** may be experienced in the future "due to corrosion of the container or loss of integrity of the packaging (likely to be in decades)".
  International Tanker Owners Pollution Federation (ITOPF) द्वारा 9 जून, 2025 को **केरल तट** के निकट **सिंगापुर के ध्वज वाले पोत Wan Hai 503** में **आग** लगने के बाद समुद्र में गिरे कंटेनरों के संबंध में किए गए **प्रदूषण जोखिम आकलन** में कहा गया है कि भविष्य में कुछ **तटरेखा संबंधी प्रभाव** देखे जा सकते हैं, "कंटेनर के क्षरण या पैकेजिंग की अखंडता के नष्ट होने के कारण (जिसमें संभवतः दशकों का समय लग सकता है)।"
- It was subsequently towed to the **port of Jebel Ali in the UAE** on August 24, 2025.
  इसके बाद 24 अगस्त, 2025 को इसे **संयुक्त अरब अमीरात के Jebel Ali बंदरगाह** तक खींचकर ले जाया गया।
- The registered owners had entrusted the **ITOPF**, an organisation funded by the **global shipping industry**, with preparing a container risk assessment in compliance with the tribunal's directive.
  पंजीकृत स्वामियों ने अधिकरण के निर्देश के अनुपालन में **कंटेनर जोखिम आकलन** तैयार करने का दायित्व **ITOPF** को सौंपा था, जो **वैश्विक नौवहन उद्योग द्वारा वित्तपोषित संगठन** है।
- The report said the containers had a wide range of products, categorised as **miscellaneous goods, plastic resins and pellets, food, and inorganic chemicals**.

रिपोर्ट में कहा गया कि कंटेनरों में विभिन्न प्रकार के उत्पाद थे, जिन्हें **विविध वस्तुओं, प्लास्टिक रेजिन और पेलेट्स, खाद्य पदार्थों तथा अकार्बनिक रसायनों** के रूप में वर्गीकृत किया गया था।

Turning economic cooperation into shared prosperity

GS II: IR

At a time when the international landscape is becoming more complex and uncertain, the case for meaningful international cooperation has rarely been stronger. Its value must increasingly be measured by its ability to deliver stability, resilience and shared prosperity.

For the United Arab Emirates (UAE), this is central to how it approaches BRICS. Since becoming a full member in January 2024, its engagement has been guided by a straightforward principle: economic cooperation should create tangible opportunities for countries, businesses and people.

A diversity that creates opportunities

The strength of BRICS lies partly in its diversity. Its members bring different economic structures, resources, capabilities and development experiences – from major producers and consumers to sources of capital, investment destinations, energy exporters and manufacturing centres.

These differences create opportunities for complementarity – connecting markets, capital, capabilities and ideas in ways that can benefit its members, and by extension the Global South.

The UAE's participation in BRICS is part of its broader commitment to multilateralism, constructive dialogue and diversified international partnerships. It seeks to build bridges between economies and regions. It supports an open international system that advances peace, stability, sustainable development and shared prosperity.

For the UAE, BRICS' ultimate value lies in implementation. Dialogue should translate into easier trade, stronger investment flows, more resilient supply chains, better connectivity and greater opportunities for businesses.

India's 2026 BRICS Chairship, centered on resilience, innovation, cooperation and sustainability, provides a timely framework for this agenda. At a time when trade restrictions, supply-chain disruptions and uncertainty are increasing costs for businesses and consumers, the response should not be to retreat from global economic integration, but to make it more resilient and inclusive.

BRICS stands out when cooperation can produce tangible benefits: through strengthening the multilateral trading system, facilitating trade and investment, improving connectivity, supporting resilient global value chains, and promoting sustainable development.

Saeed bin Mubarak Al Hajeri
Minister of State at the United Arab Emirates Ministry of Foreign Affairs

The United Arab Emirates promotes open, resilient economic cooperation through its engagement with BRICS

Development finance is also part of this equation. The New Development Bank (NDB) has approved more than $40 billion in financing since its establishment, supporting infrastructure and sustainable development across its member countries. The UAE's active engagement with the NDB long before joining BRICS reflects its wider commitment to mobilising capital towards productive investment and long-term growth.

The UAE's own economic partnership with India demonstrates what practical connectivity can achieve.

On UAE-India ties, the UAE's advantages

The UAE-India Comprehensive Economic Partnership Agreement has helped create a more enabling environment for trade and investment between two highly complementary economies. In 2025, non-oil bilateral trade grew by 17% to exceed $76 billion and the UAE and India have set the ambition of increasing bilateral trade to $200 billion by 2032.

But the strength of the UAE-India relationship extends beyond trade. It is reinforced by investment, innovation, education, tourism and long-standing connections between their businesses, institutions and people.

This experience points to a broader lesson for BRICS: the strongest economic partnerships are built not only through agreements between governments, but through lasting connections across societies – creating the trust, opportunity, and resilience that allow commercial ties to deepen over time.

Economic connectivity is strengthened when businesses, entrepreneurs, investors, and institutions develop greater familiarity with one another. It is reinforced through education, research, tourism, cultural exchange and engagement of younger generations, which help build the trust and networks on which longer-term economic relationships grow.

The opportunity for BRICS is therefore to deepen the quality of connectivity among its members – connecting not only economies but also institutions, ideas and people.

The UAE is particularly well positioned to contribute because connectivity lies at the heart of its own economic model.

Non-oil sectors accounted for almost 79% of GDP in 2025, supported by world-class infrastructure, trusted financial institutions, advanced logistics and energy capabilities, and an open investment environment that enables businesses to scale-upwards and outwards.

The UAE's ports, airports and logistics networks connect markets across Asia, Africa, Europe and beyond. Its financial centres connect international capital with opportunities across the region, while, its universities, research institutions and innovation ecosystem connect talent, knowledge and ideas.

With sovereign wealth assets exceeding $2.9 trillion, and 38 concluded Comprehensive Economic Partnership Agreements, the UAE has built the capacity to connect capital, markets and economies at scale.

For the UAE, connectivity is not simply about moving goods from one market to another. It is about creating the conditions in which capital, knowledge, technology, talent and people can interact and create new opportunities.

The UAE's approach is not to build economic cooperation around division, but around connectivity.

The path under India's leadership

As India leads BRICS through 2026, there is an opportunity to move further toward delivery: building resilience without closing markets, supporting innovation while widening opportunity, and strengthening connections among the businesses, institutions and people of the UAE and India. The UAE also looks ahead with confidence to China's BRICS Chairship in 2027, where it hopes to build on the momentum of India's leadership and carry forward the same energy of openness, connectivity and practical cooperation.

Ultimately, the success of BRICS cooperation will be measured by the opportunities it creates. That is the approach that the UAE brings to BRICS. As India hosts the 2026 Summit (September 12-13) , the UAE stands ready to continue the work that translates cooperation into ways that support shared prosperity.

10S9. Turning economic cooperation into shared prosperity
आर्थिक सहयोग को साझा समृद्धि में बदलना

- At a time when the international landscape is becoming more complex and uncertain, the case for meaningful international cooperation has rarely been stronger.
  ऐसे समय में, जब **अंतरराष्ट्रीय परिदृश्य अधिक जटिल और अनिश्चित** होता जा रहा है, सार्थक अंतरराष्ट्रीय सहयोग की आवश्यकता शायद ही कभी इतनी अधिक रही हो।
- Its value must increasingly be measured by its ability to deliver stability, resilience and shared prosperity.
  इसके महत्व का आकलन तेजी से इस आधार पर किया जाना चाहिए कि वह **स्थिरता, प्रत्यास्थता और साझा समृद्धि** प्रदान करने में कितना सक्षम है।

- For the United Arab Emirates (UAE), this is central to how it approaches BRICS.
  संयुक्त अरब अमीरात (UAE) के लिए, यह इस बात का केंद्रीय आधार है कि वह **BRICS** के प्रति किस प्रकार का दृष्टिकोण अपनाता है।
- Since becoming a full member in January 2024, its engagement has been guided by a straightforward principle: economic cooperation should create tangible opportunities for countries, businesses and people.
  जनवरी 2024 में पूर्ण सदस्य बनने के बाद से, उसकी सहभागिता एक सरल सिद्धांत द्वारा निर्देशित रही है: **आर्थिक सहयोग को देशों, व्यवसायों और लोगों के लिए ठोस अवसर पैदा करने चाहिए।**

A diversity that creates opportunities
अवसरों का सृजन करने वाली विविधता

- The strength of BRICS lies partly in its diversity.
  BRICS की शक्ति आंशिक रूप से उसकी विविधता में निहित है।
- Its members bring different economic structures, resources, capabilities and development experiences — from major producers and consumers to sources of capital, investment destinations, energy exporters and manufacturing centres.
  इसके सदस्य **विभिन्न आर्थिक संरचनाएँ, संसाधन, क्षमताएँ और विकास संबंधी अनुभव** लेकर आते हैं — जिनमें प्रमुख उत्पादक और उपभोक्ता, पूँजी के स्रोत, निवेश गंतव्य, ऊर्जा निर्यातक तथा विनिर्माण केंद्र शामिल हैं।
- These differences create opportunities for complementarity — connecting markets, capital, capabilities and ideas in ways that can benefit its members, and by extension the Global South.
  ये **अंतर पूरकता के अवसर** उत्पन्न करते हैं — ऐसे तरीकों से बाजारों, पूँजी, क्षमताओं और विचारों को जोड़ते हैं, जिनसे इसके सदस्यों और व्यापक रूप से **ग्लोबल साउथ** को लाभ हो सकता है।
- The UAE's participation in BRICS is part of its broader commitment to multilateralism, constructive dialogue and diversified international partnerships.
  BRICS में UAE की भागीदारी बहुपक्षवाद, रचनात्मक संवाद और **विविधीकृत अंतरराष्ट्रीय साझेदारियों** के प्रति उसकी व्यापक प्रतिबद्धता का हिस्सा है।
- It seeks to build bridges between economies and regions.
  यह **अर्थव्यवस्थाओं और क्षेत्रों के बीच सेतु बनाने** का प्रयास करता है।
- It supports an open international system that advances peace, stability, sustainable development and shared prosperity.
  यह एक **खुली अंतरराष्ट्रीय व्यवस्था** का समर्थन करता है, जो शांति, स्थिरता, सतत विकास और **साझा समृद्धि** को आगे बढ़ाती है।
- For the UAE, BRICS' ultimate value lies in implementation.
  UAE के लिए, **BRICS का वास्तविक महत्व उसके कार्यान्वयन** में निहित है।
- Dialogue should translate into easier trade, stronger investment flows, more resilient supply chains, better connectivity and greater opportunities for businesses.
  संवाद का रूपांतरण **सरल व्यापार, मजबूत निवेश प्रवाह, अधिक प्रत्यास्थ आपूर्ति शृंखलाओं, बेहतर संपर्क व्यवस्था और व्यवसायों के लिए अधिक अवसरों** में होना चाहिए।
- India's 2026 BRICS Chairship, centered on resilience, innovation, cooperation and sustainability, provides a timely framework for this agenda.
  भारत की 2026 BRICS अध्यक्षता, जो प्रत्यास्थता, नवाचार, सहयोग और सततता पर केंद्रित है, इस एजेंडे के लिए एक **उपयुक्त और समयानुकूल ढाँचा** प्रदान करती है।
- At a time when trade restrictions, supply-chain disruptions and uncertainty are increasing costs for businesses and consumers, the response should not be to retreat from global economic integration, but to make it more resilient and inclusive.
  ऐसे समय में जब **व्यापार प्रतिबंध, आपूर्ति शृंखला में व्यवधान और अनिश्चितता** व्यवसायों और उपभोक्ताओं

की लागत बढ़ा रहे हैं, प्रतिक्रिया वैश्विक आर्थिक एकीकरण से पीछे हटने की नहीं, बल्कि इसे **अधिक प्रत्यास्थ और समावेशी बनाने** की होनी चाहिए।

- BRICS stands out when cooperation can produce tangible benefits: through strengthening the multilateral trading system, facilitating trade and investment, improving connectivity, supporting resilient global value chains, and promoting sustainable development.
  BRICS तब विशेष रूप से प्रभावी दिखाई देता है जब सहयोग **ठोस लाभ** उत्पन्न कर सकता है: बहुपक्षीय व्यापार प्रणाली को मजबूत करके, व्यापार और निवेश को सुगम बनाकर, संपर्क व्यवस्था में सुधार करके, **प्रत्यास्थ वैश्विक मूल्य शृंखलाओं** का समर्थन करके और सतत विकास को बढ़ावा देकर।
- Development finance is also part of this equation.
  विकास वित्त भी इस समीकरण का एक हिस्सा है।
- The New Development Bank (NDB) has approved more than $40 billion in financing since its establishment, supporting infrastructure and sustainable development across its member countries.
  न्यू डेवलपमेंट बैंक (NDB) ने अपनी स्थापना के बाद से **$40 बिलियन से अधिक के वित्तपोषण** को मंजूरी दी है, जिससे इसके सदस्य देशों में अवसंरचना और सतत विकास को समर्थन मिला है।
- The UAE's active engagement with the NDB long before joining BRICS reflects its wider commitment to mobilising capital towards productive investment and long-term growth.
  BRICS में शामिल होने से बहुत पहले से ही **NDB के साथ UAE की सक्रिय सहभागिता** उत्पादक निवेश और दीर्घकालिक विकास की दिशा में पूँजी जुटाने के प्रति उसकी व्यापक प्रतिबद्धता को दर्शाती है।
- The UAE's own economic partnership with India demonstrates what practical connectivity can achieve.
  भारत के साथ UAE की आर्थिक साझेदारी यह दर्शाती है कि व्यावहारिक संपर्क व्यवस्था क्या उपलब्धियाँ हासिल कर सकती है।

On UAE-India ties, the UAE's advantages
UAE-भारत संबंधों में UAE के लाभ

- The UAE-India Comprehensive Economic Partnership Agreement has helped create a more enabling environment for trade and investment between two highly complementary economies.
  UAE-भारत व्यापक आर्थिक साझेदारी समझौते ने दो अत्यधिक पूरक अर्थव्यवस्थाओं के बीच व्यापार और निवेश के लिए अधिक **अनुकूल वातावरण** बनाने में सहायता की है।
- In 2025, non-oil bilateral trade grew by 17% to exceed $76 billion and the UAE and India have set the ambition of increasing bilateral trade to $200 billion by 2032.
  2025 में **गैर-तेल द्विपक्षीय व्यापार 17% बढ़कर $76 बिलियन से अधिक** हो गया और UAE तथा भारत ने 2032 तक द्विपक्षीय व्यापार को **$200 बिलियन** तक बढ़ाने का लक्ष्य निर्धारित किया है।
- But the strength of the UAE-India relationship extends beyond trade.
  लेकिन **UAE-भारत संबंधों की शक्ति व्यापार से कहीं आगे तक फैली हुई है।**
- It is reinforced by investment, innovation, education, tourism and long-standing connections between their businesses, institutions and people.
  इसे **निवेश, नवाचार, शिक्षा, पर्यटन तथा दोनों देशों के व्यवसायों, संस्थानों और लोगों के बीच लंबे समय से चले आ रहे संबंधों** से मजबूती मिलती है।
- This experience points to a broader lesson for BRICS: the strongest economic partnerships are built not only through agreements between governments, but through lasting connections across societies — creating the trust, opportunity, and resilience that allow commercial ties to deepen over time.
  यह अनुभव **BRICS के लिए एक व्यापक सबक** प्रस्तुत करता है: सबसे मजबूत आर्थिक साझेदारियाँ केवल सरकारों के बीच समझौतों के माध्यम से नहीं, बल्कि समाजों के बीच **स्थायी संबंधों** के माध्यम से निर्मित होती

हैं — जो विश्वास, अवसर और प्रत्यास्थता का निर्माण करते हैं तथा समय के साथ वाणिज्यिक संबंधों को गहरा होने में सक्षम बनाते हैं।

- Economic connectivity is strengthened when businesses, entrepreneurs, investors, and institutions develop greater familiarity with one another.
  आर्थिक संपर्क तब मजबूत होता है जब व्यवसाय, उद्यमी, निवेशक और संस्थान एक-दूसरे के साथ अधिक **परिचित और जुड़े हुए** होते हैं।
- It is reinforced through education, research, tourism, cultural exchange and engagement of younger generations, which help build the trust and networks on which longer-term economic relationships grow.
  इसे **शिक्षा, अनुसंधान, पर्यटन, सांस्कृतिक आदान-प्रदान और युवा पीढ़ियों की सहभागिता** के माध्यम से और मजबूत किया जाता है, जो उस विश्वास और नेटवर्क के निर्माण में सहायता करते हैं, जिन पर दीर्घकालिक आर्थिक संबंध विकसित होते हैं।
- The opportunity for BRICS is therefore to deepen the quality of connectivity among its members — connecting not only economies but also institutions, ideas and people.
  इसलिए BRICS के लिए अवसर यह है कि वह अपने सदस्यों के बीच **संपर्क की गुणवत्ता को और गहरा करे** — केवल अर्थव्यवस्थाओं को ही नहीं, बल्कि संस्थानों, विचारों और लोगों को भी जोड़े।
- The UAE is particularly well positioned to contribute because connectivity lies at the heart of its own economic model.
  UAE विशेष रूप से योगदान देने की स्थिति में है क्योंकि **संपर्क व्यवस्था उसके अपने आर्थिक मॉडल के केंद्र में है।**
- Non-oil sectors accounted for almost 79% of GDP in 2025, supported by world-class infrastructure, trusted financial institutions, advanced logistics and energy capabilities, and an open investment environment that enables businesses to scale-upwards and outwards.
  2025 में **गैर-तेल क्षेत्रों का GDP में लगभग 79% योगदान** था, जिसे विश्वस्तरीय अवसंरचना, विश्वसनीय वित्तीय संस्थानों, उन्नत लॉजिस्टिक्स और ऊर्जा क्षमताओं तथा एक खुले निवेश वातावरण का समर्थन प्राप्त है, जो व्यवसायों को **विस्तार करने और नए क्षेत्रों में आगे बढ़ने** में सक्षम बनाता है।
- The UAE's ports, airports and logistics networks connect markets across Asia, Africa, Europe and beyond.
  UAE के बंदरगाह, हवाई अड्डे और लॉजिस्टिक्स नेटवर्क एशिया, अफ्रीका, यूरोप और उससे आगे के बाजारों को जोड़ते हैं।
- Its financial centres connect international capital with opportunities across the region, while its universities, research institutions and innovation ecosystem connect talent, knowledge and ideas.
  इसके **वित्तीय केंद्र अंतरराष्ट्रीय पूँजी को पूरे क्षेत्र में उपलब्ध अवसरों से जोड़ते हैं**, जबकि इसके विश्वविद्यालय, अनुसंधान संस्थान और नवाचार पारिस्थितिकी तंत्र प्रतिभा, ज्ञान और विचारों को जोड़ते हैं।
- With sovereign wealth assets exceeding $2.9 trillion, and 38 concluded Comprehensive Economic Partnership Agreements, the UAE has built the capacity to connect capital, markets and economies at scale.
  $2.9 ट्रिलियन से अधिक की संप्रभु संपत्ति और **38 संपन्न व्यापक आर्थिक साझेदारी समझौतों** के साथ, UAE ने बड़े पैमाने पर पूँजी, बाजारों और अर्थव्यवस्थाओं को जोड़ने की क्षमता विकसित की है।
- For the UAE, connectivity is not simply about moving goods from one market to another.
  UAE के लिए **संपर्क व्यवस्था केवल एक बाजार से दूसरे बाजार तक वस्तुओं को पहुँचाने** तक सीमित नहीं है।
- It is about creating the conditions in which capital, knowledge, technology, talent and people can interact and create new opportunities.
  यह ऐसी **परिस्थितियों का निर्माण करने** के बारे में है, जिनमें पूँजी, ज्ञान, प्रौद्योगिकी, प्रतिभा और लोग परस्पर संपर्क स्थापित कर **नए अवसरों का सृजन** कर सकें।
- The UAE's approach is not to build economic cooperation around division, but around connectivity.

UAE का दृष्टिकोण आर्थिक सहयोग को **विभाजन के आधार पर नहीं, बल्कि संपर्क व्यवस्था के आधार पर** विकसित करना है।

The path under India's leadership
भारत के नेतृत्व में आगे की राह

- As India leads BRICS through 2026, there is an opportunity to move further toward delivery: building resilience without closing markets, supporting innovation while widening opportunity, and strengthening connections among the businesses, institutions and people of the UAE and India.
  जैसे-जैसे भारत 2026 के दौरान **BRICS का नेतृत्व** कर रहा है, ठोस परिणामों की दिशा में आगे बढ़ने का अवसर है: बाजारों को बंद किए बिना **प्रत्यास्थता का निर्माण करना**, अवसरों का विस्तार करते हुए नवाचार को समर्थन देना और UAE तथा भारत के **व्यवसायों, संस्थानों और लोगों के बीच संबंधों को मजबूत करना**।
- The UAE also looks ahead with confidence to China's BRICS Chairship in 2027, where it hopes to build on the momentum of India's leadership and carry forward the same energy of openness, connectivity and practical cooperation.
  UAE **2027 में चीन की BRICS अध्यक्षता** की ओर भी विश्वास के साथ देखता है, जहाँ उसे भारत के नेतृत्व से प्राप्त गति को आगे बढ़ाने और **खुलेपन, संपर्क व्यवस्था तथा व्यावहारिक सहयोग** की उसी भावना को जारी रखने की आशा है।
- Ultimately, the success of BRICS cooperation will be measured by the opportunities it creates.
  अंततः, **BRICS सहयोग की सफलता का आकलन उसके द्वारा सृजित अवसरों** के आधार पर किया जाएगा।
- That is the approach that the UAE brings to BRICS.
  यही वह दृष्टिकोण है जिसे UAE BRICS के समक्ष प्रस्तुत करता है।
- As India hosts the 2026 Summit (September 12-13), the UAE stands ready to continue the work that translates cooperation into ways that support shared prosperity.
  जब भारत **2026 शिखर सम्मेलन (12-13 सितंबर)** की मेजबानी कर रहा है, तब UAE ऐसे प्रयासों को जारी रखने के लिए तैयार है, जो सहयोग को **साझा समृद्धि को समर्थन देने वाले ठोस उपायों** में परिवर्तित करते हैं।

Trade between BRICS countries shows marked increase

The rise in intra-BRICS trade strengthens the case for a cross-border payments system

GS II: IR

DATA POINT

Nitika Francis
Gandla Sneha

Reducing global dependence on the U.S. dollar is expected to be a key part of the discussions in the 18th BRICS Summit, chaired by India, happening in New Delhi on September 12 and 13, 2026. Finance ministries' and central bank governors from BRICS countries met in August to discuss the facilitation of cross-border payments and strengthening of national currencies.

The BRICS bloc with its 10 member countries – Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran, and the UAE – has grown in strength in its objective of advancing trade and diplomatic relations within the Global South, which makes cross-border payments desirable.

Currently, making payments across countries requires a string of transactions via correspondent banks, which hold accounts with each other. When two countries do not have such correspondent banks, they route their payments through international banks, converting the currency of the sender country to a dominant currency such as dollars, and then converting the dollars to the currency of the receiving country. This process, besides being slow at times, comes with the cost of foreign exchange margins and the fee charged by the intermediaries. Seeing that the BRICS comprises many developing economies, this can be among the many impediments to trade opportunities.

Trade data shows that merchandise exports by BRICS countries made up about one-fourth of all global exports in 2024 **(Chart 1)**. The BRICS countries have all drastically increased their exports over the years, with China touching $500 billion in 2024. Other members such as Brazil, India, Indonesia, Russia, and the UAE also recorded large figures between $80 and $180 billion. In addition to this, their trade amongst each other has also increased. **Chart 2** shows that as of 2024, all members of BRICS, except China, received more than 30% of imports from other members.

Iran depends on BRICS for more than 65% of its imports, and Ethiopia nearly 45%. Intra-BRICS import dependency could be on the rise due to the heterogeneity of goods available among its members, as noted in a report by the United Nations Conference on Trade and Development.

Concurrently, export dependency within the bloc has also risen. In the last decade, five members (Russia, China, the UAE, Brazil, and Indonesia) have doubled and even quadrupled their exports to members of the bloc. However, China has consistently shown the lowest dependency on intra-BRICS exports due to its diversified export market **(Chart 3)**.

Russia saw a rapid increase in its export dependency between 2020 and 2023, in the middle of its invasion of Ukraine, during which countries such as India imported its fuel. The country saw a decline in export dependence in 2024.

It was under Russia's chairmanship in 2024 that the BRICS argued against the dominance of the U.S. dollar. Russia was hit directly by the dollar monopoly in 2022; due to sanctions from the U.S., Russian banks were cut off from the Society for Worldwide Interbank Financial Technologies (SWIFT) which enables institutions to settle amounts. Hence, international transactions proved difficult for the Russia.

While the U.S. is the largest economy in the world, the BRICS bloc does not fall far behind, as China, India, and Russia are in the top 10 in terms of Gross Domestic Product (current prices) **(Table 1)**. Whether this collective economic strength can challenge the dominance of the dollar is to be seen in the coming days.

Dollar detour

The data for the charts were sourced from report by the United Nations Conference on Trade and Development titled "Two Decades of Intra-BRICS Trade: Trends, Patterns and Policies" and the International Monetary Fund (IMF)

CHART 1: In 2025, exports from BRICS countries made up about 25% of global merchandise exports. BRICS countries include Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran, and the UAE. Values in $ trillion

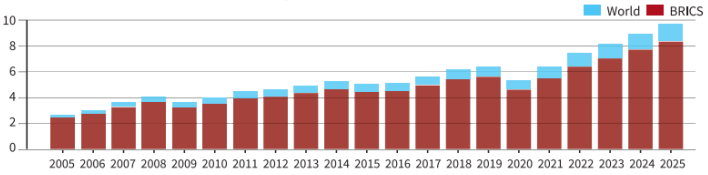


CHART 2: All BRICS countries have increased their dependency on imports from other nations from the bloc. *Values in %*

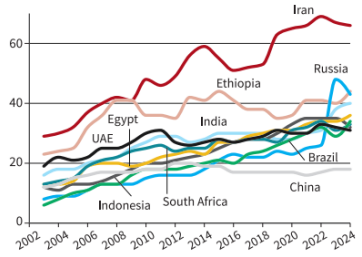


CHART 3: The exports from BRICS countries as a share of each country's total exports. Values in %

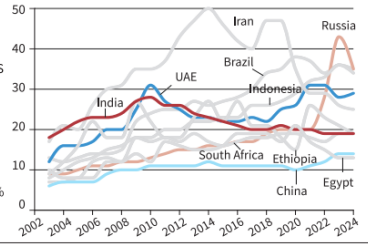


TABLE 1: Country-wise size and ranking of Gross Domestic Product of 2025 (current prices). Values are estimated by IMF

Country	GDP, current prices (billions of $)	Rank
China	19,626.247	2
India	3,916.312	7
Russian Federation	2,587.938	9
Brazil	2,279.918	12
Indonesia	1,445.642	18
United Arab Emirates	571.643	32
South Africa	427.141	43
Iran	371.196	46
Egypt	364.64	47
Ethiopia	109.109	74

"Collectively, the 10 member countries account for 27 per cent of world output, 24 per cent of merchandise exports, and 22 per cent of FDI inflow by 2024" - *Two Decades of Intra-BRICS Trade: Trends, Patterns and Policies* report

Gandla Sneha is interning with The Hindu

10S9. Trade between BRICS countries shows marked increase
ब्रिक्स देशों के बीच व्यापार में उल्लेखनीय वृद्धि

- Reducing global dependence on the U.S. dollar is expected to be a key part of the discussions in the **18th BRICS Summit**, chaired by India, happening in New Delhi on September 12 and 13, 2026.
  वैश्विक स्तर पर **अमेरिकी डॉलर पर निर्भरता कम करना** भारत की अध्यक्षता में 12 और 13 सितंबर, 2026 को नई दिल्ली में होने वाले **18वें BRICS शिखर सम्मेलन** की चर्चाओं का एक प्रमुख विषय होने की संभावना है।
- Finance ministries' and central bank governors from BRICS countries met in August to discuss the facilitation of **cross-border payments** and strengthening of national currencies.
  BRICS देशों के वित्त मंत्रालयों के प्रतिनिधियों और केंद्रीय बैंक के गवर्नरों ने अगस्त में **सीमा-पार भुगतान** को सुगम बनाने तथा राष्ट्रीय मुद्राओं को मजबूत करने पर चर्चा करने के लिए बैठक की।
- The BRICS bloc with its 10 member countries — Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran, and the UAE — has grown in strength in its objective of advancing trade and diplomatic relations within the Global South, which makes cross-border

payments desirable.
10 सदस्य देशों—ब्राज़ील, रूस, भारत, चीन, दक्षिण अफ्रीका, मिस्र, इथियोपिया, इंडोनेशिया, ईरान और संयुक्त अरब अमीरात—वाला BRICS समूह **वैश्विक दक्षिण** के भीतर व्यापार और राजनयिक संबंधों को आगे बढ़ाने के अपने उद्देश्य में मजबूत हुआ है, जिससे सीमा-पार भुगतान को सुगम बनाना वांछनीय हो गया है।

- Currently, making payments across countries requires a string of transactions via correspondent banks, which hold accounts with each other.
वर्तमान में, देशों के बीच भुगतान करने के लिए **कॉरेस्पॉन्डेंट बैंकों** के माध्यम से कई लेन-देन करने पड़ते हैं, जिनके एक-दूसरे के साथ खाते होते हैं।
- When two countries do not have such correspondent banks, they route their payments through international banks, converting the currency of the sender country to a dominant currency such as dollars, and then converting the dollars to the currency of the receiving country.
जब दो देशों के बीच ऐसे कॉरेस्पॉन्डेंट बैंक नहीं होते हैं, तो वे अंतरराष्ट्रीय बैंकों के माध्यम से अपने भुगतान को संचालित करते हैं। इसमें प्रेषक देश की मुद्रा को डॉलर जैसी **प्रमुख मुद्रा** में बदला जाता है और फिर डॉलर को प्राप्तकर्ता देश की मुद्रा में परिवर्तित किया जाता है।
- This process, besides being slow at times, comes with the cost of **foreign exchange margins** and the fee charged by the intermediaries.
यह प्रक्रिया कभी-कभी धीमी होने के साथ-साथ **विदेशी मुद्रा विनिमय मार्जिन** और मध्यस्थों द्वारा लगाए जाने वाले शुल्क की लागत भी वहन करती है।
- Trade data shows that merchandise exports by BRICS countries made up about **one-fourth of all global exports in 2024** (Chart 1).
व्यापार संबंधी आँकड़े दर्शाते हैं कि 2024 में BRICS देशों के **वस्तु निर्यात का हिस्सा वैश्विक कुल निर्यात का लगभग एक-चौथाई** था (चार्ट 1)।
- The BRICS countries have all drastically increased their exports over the years, with China touching $500 billion in 2024.
वर्षों के दौरान सभी BRICS देशों ने अपने निर्यात में उल्लेखनीय वृद्धि की है, जिसमें **चीन का निर्यात 2024 में 500 अरब डॉलर** तक पहुँच गया।
- Other members such as Brazil, India, Indonesia, Russia, and the UAE also recorded large figures between $80 and $180 billion.
ब्राज़ील, भारत, इंडोनेशिया, रूस और संयुक्त अरब अमीरात जैसे अन्य सदस्यों ने भी **80 अरब डॉलर से 180 अरब डॉलर** के बीच बड़े आँकड़े दर्ज किए।
- In addition to this, their trade amongst each other has also increased.
इसके अतिरिक्त, **आपस में होने वाला उनका व्यापार** भी बढ़ा है।
- Chart 2 shows that as of 2024, all members of BRICS, except China, received more than 30% of imports from other members.
चार्ट 2 दर्शाता है कि 2024 तक, **चीन को छोड़कर BRICS के सभी सदस्यों ने अपने आयात का 30% से अधिक हिस्सा** अन्य सदस्य देशों से प्राप्त किया।
- Iran depends on BRICS for more than 65% of its imports, and Ethiopia nearly 45%.
ईरान अपने **65% से अधिक आयात** के लिए BRICS पर निर्भर है, जबकि इथियोपिया लगभग **45%** के लिए निर्भर है।
- Intra-BRICS import dependency could be on the rise due to the heterogeneity of goods available among its members, as noted in a report by the **United Nations Conference on Trade and Development**.
संयुक्त राष्ट्र व्यापार एवं विकास सम्मेलन की एक रिपोर्ट में उल्लेखित अनुसार, BRICS के सदस्य देशों के बीच उपलब्ध वस्तुओं की **विविधता** के कारण आपस में आयात पर निर्भरता बढ़ सकती है।
- In the last decade, five members (Russia, China, the UAE, Brazil, and Indonesia) have doubled and even quadrupled their exports to members of the bloc.

पिछले एक दशक में पाँच सदस्यों—**रूस, चीन, संयुक्त अरब अमीरात, ब्राज़ील और इंडोनेशिया**—ने समूह के सदस्य देशों को किए जाने वाले अपने निर्यात को दोगुना और यहाँ तक कि चार गुना तक बढ़ाया है।

- However, China has consistently shown the lowest dependency on intra-BRICS exports due to its diversified export market (Chart 3).
  हालाँकि, अपने **विविधीकृत निर्यात बाजार** के कारण चीन ने लगातार BRICS के भीतर होने वाले निर्यात पर सबसे कम निर्भरता दिखाई है (चार्ट 3)।
- Russia saw a rapid increase in its export dependency between 2020 and 2023, in the middle of its invasion of Ukraine, during which countries such as India imported its fuel.
  2020 और 2023 के बीच, **यूक्रेन पर उसके आक्रमण** के दौरान रूस की निर्यात निर्भरता में तेजी से वृद्धि हुई, इस अवधि में भारत जैसे देशों ने रूस से ईंधन का आयात किया।
- The country saw a decline in export dependence in 2024.
  2024 में देश की **निर्यात निर्भरता में कमी** आई।
- It was under Russia's chairmanship in 2024 that the BRICS argued against the dominance of the U.S. dollar.
  2024 में **रूस की अध्यक्षता** के दौरान BRICS ने अमेरिकी डॉलर के **वर्चस्व के विरुद्ध** अपना पक्ष रखा।
- Russia was hit directly by the dollar monopoly in 2022; due to sanctions from the U.S., Russian banks were cut off from the **Society for Worldwide Interbank Financial Telecommunication (SWIFT)** which enables institutions to settle amounts.
  2022 में रूस सीधे **डॉलर के एकाधिकार** से प्रभावित हुआ; अमेरिका द्वारा लगाए गए प्रतिबंधों के कारण रूसी बैंकों को **Society for Worldwide Interbank Financial Telecommunication (SWIFT)** से अलग कर दिया गया, जो संस्थानों को भुगतान का निपटान करने में सक्षम बनाता है।
- While the U.S. is the largest economy in the world, the BRICS bloc does not fall far behind, as China, India, and Russia are in the top 10 in terms of **Gross Domestic Product (current prices)** (Table 1).
  यद्यपि अमेरिका विश्व की सबसे बड़ी अर्थव्यवस्था है, लेकिन BRICS समूह भी उससे बहुत पीछे नहीं है, क्योंकि **सकल घरेलू उत्पाद (वर्तमान कीमतों)** के आधार पर चीन, भारत और रूस विश्व की शीर्ष 10 अर्थव्यवस्थाओं में शामिल हैं (तालिका 1)।

Society for Worldwide Interbank Financial Telecommunication (SWIFT)

- **SWIFT** stands for the **Society for Worldwide Interbank Financial Telecommunication**.
- It is a global **financial messaging network** through which banks and other financial institutions securely exchange standardized instructions concerning international financial transactions.
- **What does SWIFT actually do?**
- SWIFT **does not itself transfer money** from one country to another. Instead, it securely communicates the **payment instructions** that enable banks to transfer and settle money through their accounts and correspondent banking relationships.
- Think of SWIFT as a highly secure **WhatsApp for banks**, but with standardized financial messages and stringent security.
- **Simple Example**
- Suppose **Rahul in India wants to send ₹1 lakh equivalent to John in the United States**.
- Rahul instructs his Indian bank to make the international payment.
- The Indian bank sends a secure **SWIFT message** to the relevant

foreign/correspondent bank specifying the beneficiary, amount and other payment details.

- The banks then arrange the actual movement and settlement of funds.
- Thus:
- **Customer → Bank → SWIFT message → Correspondent/Receiving Bank → Beneficiary**
- **SWIFT Code**
- Banks participating in the network are identified through a **Business Identifier Code (BIC)**, commonly called a **SWIFT/BIC code**.
- For example, a BIC identifies the particular financial institution and may additionally identify its country, location and branch.
- **Important Facts**
- SWIFT was established in **1973** and is headquartered in **Belgium**.
- It is a **member-owned cooperative** and is neither a bank nor a central bank.
- It connects **more than 11,500 institutions across over 200 countries and territories**, according to SWIFT.
- SWIFT has major geopolitical significance because restricting a country's banks from accessing the network can make **cross-border payments and international trade considerably more difficult**, although alternative channels may still exist.

PM-KUSUM 2.0 likely to be announced soon: Pralhad

BS II IR [redacted]
Saptaparno Ghosh
NEW DELHI

The second phase of the Centre's flagship PM-KUSUM scheme is likely to be announced shortly, Union Minister for New and Renewable Energy Pralhad Joshi said on the sidelines of the curtain raiser for the seventh Agrivoltaics World Conference 2026.

"The process is on for PM-KUSUM 2.0, that is, Phase-II, and I am quite confident very shortly the honourable Prime Minister [will make the announcement]," Mr. Joshi told reporters.

Addressing the conference, the Minister said the next phase of the scheme would include a dedicated component for agrivoltaics, which combines agricultural activity with solar power generation.

Mr. Joshi said the government's broader focus would remain on supporting small and marginal farmers, farmer producer organisations (FPOs), cooperatives and panchayats as the country expands the use of renewable energy in agriculture.

He also called on industry stakeholders and researchers to deepen studies on agrivoltaic applications.

10S9. PM-KUSUM 2.0 likely to be announced soon: Pralhad
PM-KUSUM 2.0 की घोषणा जल्द होने की संभावना: प्रहलाद

- The second phase of the Centre's **flagship PM-KUSUM scheme** is likely to be announced shortly, Union Minister for New and Renewable Energy **Pralhad Joshi** said on the sidelines of the curtain raiser for the **seventh Agrivoltaics World Conference 2026**.

केंद्र की **प्रमुख PM-KUSUM योजना** के दूसरे चरण की घोषणा जल्द होने की संभावना है, केंद्रीय नवीन एवं नवीकरणीय ऊर्जा मंत्री **प्रहलाद जोशी** ने सातवें Agri Voltaics World Conference 2026 के कर्टन रेज़र कार्यक्रम के अवसर पर कहा।

- "The process is on for **PM-KUSUM 2.0**, that is, Phase-II, and I am quite confident very shortly the honourable Prime Minister [will make the announcement]," Mr. Joshi told reporters.

"**PM-KUSUM 2.0**, अर्थात् Phase-II के लिए प्रक्रिया जारी है और मुझे पूरा विश्वास है कि माननीय प्रधानमंत्री जल्द ही **इसकी घोषणा करेंगे**," श्री जोशी ने संवाददाताओं से कहा।

- Addressing the conference, the Minister said the next phase of the scheme would include a **dedicated component for agrivoltaics**, which combines agricultural activity with solar power generation.

सम्मेलन को संबोधित करते हुए मंत्री ने कहा कि योजना के अगले चरण में **एग्रीवोल्टिक्स के लिए एक समर्पित घटक** शामिल होगा, जिसमें कृषि गतिविधियों को **सौर ऊर्जा उत्पादन** के साथ जोड़ा जाता है।

- Mr. Joshi said the government's broader focus would remain on supporting **small and marginal farmers, farmer producer organisations (FPOs), cooperatives and panchayats** as the country expands the use of renewable energy in agriculture.

श्री जोशी ने कहा कि सरकार का व्यापक ध्यान **लघु और सीमांत किसानों, किसान उत्पादक संगठनों (FPOs),**

सहकारी समितियों और पंचायतों को समर्थन देने पर बना रहेगा, क्योंकि देश कृषि में **नवीकरणीय ऊर्जा के उपयोग** का विस्तार कर रहा है।

- He also called on **industry stakeholders and researchers** to deepen studies on agrivoltaic applications.
  उन्होंने **उद्योग जगत के हितधारकों और शोधकर्ताओं** से एग्रीवोल्टिक अनुप्रयोगों पर अध्ययन को और गहन बनाने का भी आह्वान किया।

India, Sri Lanka sign three defence sector MoUs during Rajnath's visit

The agreements cover upgrading L70 guns for Sri Lankan Air Force and cooperation between the two countries' National Cadet Corps, National Defence Colleges; this is the first visit by an Indian Defence Minister to Sri Lanka in nearly 40 years

GS II: IR

Meera Srinivasan
COLOMBO

Defence Minister Rajnath Singh on Wednesday pledged India's continued support to Sri Lanka during a meeting with Sri Lankan President Anura Kumara Dissanayake in Colombo, as the two countries inked three Memoranda of Understanding (MoU) on defence equipment and training.

Mr. Singh's visit, the first by an Indian Defence Minister to Sri Lanka in nearly 40 years, and the agreements come over a year after Prime Minister Narendra Modi's visit to Sri Lanka in 2025, when seven MoUs, including an overarching defence sector agreement, were signed.

Defence Minister Rajnath Singh meets Sri Lankan President Anura Kumara Dissanayake in Colombo on Wednesday. ANI

The MoUs signed on Wednesday pertain to the upgradation of L70 Guns for the Sri Lankan Air Force, and cooperation between the National Cadet Corps and the National Defence Colleges of the two countries.

During President Dissanayake's meeting with Mr. Singh, the two sides held "extensive discussions on further strengthening the existing defence, economic, maritime and regional partnerships between India and Sri Lanka", the Presidential Media Unit said in a statement.

Mutual interests

Further, Mr. Dissanayake briefed Mr. Singh on Sri Lanka's recently-launched islandwide programme to combat drug trafficking.

An official release from the Indian government said the President recalled his interactions with Mr. Modi and reiterated that "Sri Lanka would never allow its territory to be used for any activities inimical to India's security interests".

President Dissanayake's office said he emphasised that Sri Lanka makes decisions "taking into consideration both national and regional interests", and that, as a sovereign State, Sri Lanka enters into various agreements with countries around the world while remaining mindful of regional security".

The statement from his office added that the leaders paid "special attention" to the fisheries issue in the Palk Strait.

10S9. India, Sri Lanka sign three defence sector MoUs during Rajnath's visit राजनाथ की यात्रा के दौरान भारत और श्रीलंका ने रक्षा क्षेत्र से संबंधित तीन समझौता ज्ञापनों पर हस्ताक्षर किए

- Defence Minister **Rajnath Singh** on Wednesday pledged India's continued support to Sri Lanka during a meeting with Sri Lankan President **Anura Kumara Dissanayake** in Colombo, as the two countries inked three **Memoranda of Understanding (MoU)** on defence equipment and training.
  रक्षा मंत्री **राजनाथ सिंह** ने बुधवार को कोलंबो में श्रीलंका के राष्ट्रपति **अनुरा कुमारा दिसानायके** के साथ बैठक के दौरान श्रीलंका को भारत के निरंतर समर्थन का आश्वासन दिया, वहीं दोनों देशों ने **रक्षा उपकरण और प्रशिक्षण** से संबंधित तीन **समझौता ज्ञापनों (MoU)** पर हस्ताक्षर किए।
- Mr. Singh's visit, the first by an Indian Defence Minister to Sri Lanka in nearly 40 years, and the agreements come over a year after Prime Minister **Narendra Modi's** visit to Sri Lanka in 2025, when seven MoUs, including an overarching defence sector agreement, were signed.
  श्री सिंह की यह यात्रा, जो लगभग **40 वर्षों में किसी भारतीय रक्षा मंत्री की श्रीलंका की पहली यात्रा** है, और ये समझौते प्रधानमंत्री **नरेंद्र मोदी** की 2025 में श्रीलंका यात्रा के एक वर्ष से अधिक समय बाद हुए हैं, जब व्यापक **रक्षा क्षेत्र समझौते** सहित सात समझौता ज्ञापनों पर हस्ताक्षर किए गए थे।
- The MoUs signed on Wednesday pertain to the upgradation of **L70 Guns** for the Sri Lankan Air Force, and cooperation between the **National Cadet Corps** and the **National Defence Colleges** of the two countries.

बुधवार को हस्ताक्षरित समझौता ज्ञापन श्रीलंकाई वायु सेना के लिए **L70 तोपों के उन्नयन** तथा दोनों देशों के **राष्ट्रीय कैडेट कोर** और **राष्ट्रीय रक्षा महाविद्यालयों** के बीच सहयोग से संबंधित हैं।

IAEA's board reports Iran to UN Security Council for 'failure to cooperate in probe'

GS II: IR

Associated Press
VIENNA

Iran's Ambassador to the United Nations in Vienna rejected resolution, describing it as a 'political tool'

The UN atomic watchdog's board on Wednesday reported Iran to the UN Security Council for the first time in 20 years, citing it for failure to cooperate in a long-running investigation into uranium traces detected by inspectors at undeclared sites.

Western officials suspect that the traces could provide evidence that Iran had a secret nuclear weapons programme until 2003. Iran says that it is not pursuing nuclear weapons, and that its programme is entirely peaceful.

Reporting Iran to the Security Council opens the country to possible sanctions and asset freezes, though such punitive measures are unlikely because Iran's allies Russia and China hold veto power on the panel.

Twenty-three countries on the International Atomic Energy Agency's 35-member board of governors voted for Wednesday's resolution at IAEA headquarters in Vienna.

China, Russia and Niger opposed it, while eight countries abstained and one did not vote as it was in arrears, according to diplomats who spoke on condition of anonymity to describe the outcome of the closed-door vote.

The resolution was put forward by the United States, Britain, France and Germany.

The diplomatic move has been under consideration since June 2025, when the IAEA board found Iran officially in non-compliance with its non-proliferation obligations because of Tehran's lack of cooperation in the investigation.

Iran's Ambassador to the UN in Vienna, Reza Najafi, rejected the resolution, describing it as a "political tool" and saying that it ruined confidence in the IAEA's "independence, impartiality and credibility".

He suggested that compliance with any obligation to allow UN inspections of nuclear sites inside Iran was, in any case, impossible at the moment.

10S9. IAEA's board reports Iran to UN Security Council for 'failure to cooperate in probe'

'जांच में सहयोग करने में विफलता' के लिए IAEA बोर्ड ने ईरान को संयुक्त राष्ट्र सुरक्षा परिषद में भेजा

- The **UN atomic watchdog's board** on Wednesday reported Iran to the **UN Security Council** for the first time in 20 years, citing it for failure to cooperate in a long-running investigation into uranium traces detected by inspectors at undeclared sites.
  संयुक्त राष्ट्र की परमाणु निगरानी संस्था के बोर्ड ने बुधवार को 20 वर्षों में पहली बार ईरान को **संयुक्त राष्ट्र सुरक्षा परिषद** में भेजा, क्योंकि ईरान पर अघोषित स्थलों पर निरीक्षकों द्वारा पाए गए यूरेनियम के निशानों की लंबे समय से चल रही जांच में सहयोग न करने का आरोप है।
- Western officials suspect that the traces could provide evidence that Iran had a **secret nuclear weapons programme** until 2003.
  पश्चिमी अधिकारियों को संदेह है कि ये निशान इस बात के प्रमाण हो सकते हैं कि ईरान के पास 2003 तक एक **गुप्त परमाणु हथियार कार्यक्रम** था।
- Twenty-three countries on the **International Atomic Energy Agency's 35-member board of governors** voted for Wednesday's resolution at IAEA headquarters in Vienna.
  अंतर्राष्ट्रीय परमाणु ऊर्जा एजेंसी (IAEA) के 35 सदस्यीय बोर्ड ऑफ गवर्नर्स में से 23 देशों ने वियना स्थित IAEA मुख्यालय में बुधवार को प्रस्ताव के पक्ष में मतदान किया।

10S9	India's Lohum ships first lithium ore from Zimbabwe भारत की लोहुम ने जिम्बाब्वे से पहली लिथियम अयस्क की खेप भेजी

GS III: Economy

India's Lohum ships first lithium ore from Zimbabwe

India's Lohum said on Wednesday it had dispatched its first shipment of lithium ore from Zimbabwe, marking the start of its mining operations in the southern African country and making it the first domestic company to produce lithium from overseas assets. The Indian producer of sustainable critical minerals has secured rights to 10 lithium mining blocks in Zimbabwe's Matabelel and South Province covering about 1,100 hectares, with estimated deposits of 30 million-40 million tonnes of ore. The assets are expected to support production of around 3,00,000 metric tonnes of lithium carbonate equivalent and carry an estimated value of about $7 billion at current prices. REUTERS

10S9. India's Lohum ships first lithium ore from Zimbabwe

भारत की लोहुम ने जिम्बाब्वे से पहली लिथियम अयस्क की खेप भेजी

- India's **Lohum** said on Wednesday it had dispatched its first shipment of **lithium ore** from Zimbabwe, marking the start of its mining operations in the southern African country and making it the first domestic company to produce lithium from overseas assets.

भारत की **लोहुम** ने बुधवार को कहा कि उसने जिम्बाब्वे से **लिथियम अयस्क की पहली खेप** रवाना की है, जो इस दक्षिणी अफ्रीकी देश में उसके **खनन परिचालन की शुरुआत** का प्रतीक है और उसे विदेशों में स्थित परिसंपत्तियों से लिथियम का उत्पादन करने वाली पहली घरेलू कंपनी बनाती है।

- The Indian producer of **sustainable critical minerals** has secured rights to 10 lithium mining blocks in Zimbabwe's Matabeleland South Province covering about 1,100 hectares, with estimated deposits of 30 million-40 million tonnes of ore.

सतत महत्त्वपूर्ण खनिजों के भारतीय उत्पादक ने जिम्बाब्वे के **माताबेलेलैंड साउथ प्रांत** में लगभग 1,100 हेक्टेयर क्षेत्र में फैले 10 लिथियम खनन ब्लॉकों के अधिकार हासिल किए हैं, जहाँ अयस्क के अनुमानित भंडार **3 करोड़ से 4 करोड़ टन** हैं।

- The assets are expected to support production of around 3,00,000 metric tonnes of **lithium carbonate equivalent** and carry an estimated value of about $7 billion at current prices.

इन परिसंपत्तियों से लगभग **3,00,000 मीट्रिक टन लिथियम कार्बोनेट समतुल्य** के उत्पादन में सहायता मिलने की उम्मीद है और मौजूदा कीमतों पर इनका अनुमानित मूल्य लगभग **7 अरब डॉलर** है।

GS Paper III: Science and Technology	10 September 2026
TOPICS COVERED	
10S9	ESA and ISRO to discuss human space flight, lunar exploration in Paris meet ESA और ISRO पेरिस बैठक में मानव अंतरिक्ष उड़ान और चंद्र अन्वेषण पर चर्चा करेंगे
10S9	How scientists are using menstrual blood in osteoarthritis treatment वैज्ञानिक ऑस्टियोआर्थराइटिस के उपचार में मासिक धर्म के रक्त का उपयोग कैसे कर रहे हैं
10S9	Dark matter could form tiny black holes inside stars: study डार्क मैटर तारों के भीतर छोटे ब्लैक होल बना सकता है: अध्ययन
10S9	Quiz
10S9	Did OpenAI solve the Navier-Stokes problem? क्या OpenAI ने Navier-Stokes समस्या हल कर ली है?
10S9	Quiz
10S9	AI researcher quits industry, warning that AI race is 'gambling with our lives' AI शोधकर्ता ने उद्योग छोड़ा, चेतावनी दी कि AI की दौड़ 'हमारे जीवन के साथ जुआ खेलने' जैसी है

ESA and ISRO to discuss human space flight, lunar exploration in Paris meet

GS III: S&T

Hemanth C.S.
PARIS

The European Space Agency (ESA) will hold discussions with the Indian Space Research Organisation (ISRO) on the cooperation in human space flight and lunar exploration, during the International Space Summit in Paris, which started on Wednesday.

A high-level delegation from India is in Paris to take part in the summit.

ESA Director-General Josef Aschbacher said he would hold discussions with ISRO Chairperson V. Narayanan. "I am meeting the Chairperson of ISRO. We will make good use of his visit to Paris. We have quite a number of cooperation points between the two agencies, and exploration is a topic of priority," Mr. Aschbacher told *The Hindu*.

Elaborating on the potential areas of cooperation between the two space agencies, Daniel Neuenschwander, Director for Human and Robotic Exploration, ESA, said,"We have already signed an agreement with ISRO for cooperating on the human space flight (Gaganyaan). If you speak about human space flight, you can talk about low earth orbit. India will soon have its own capability to launch humans into space. India is also developing the Bharatiya Antariksh Station. We are developing certain capabilities and we are exploring how we can mutually benefit from these capabilities to strengthen the partnership. We can certainly start with the low earth orbit but we are also exploring potential cooperation on lunar exploration," said Mr. Neuenschwander.


Josef Aschbacher

ISRO and ESA have already signed a Technical Implementing Plan (TIP) document for Ground Tracking Support for Gaganyaan missions.

The TIP will enable the ESA to provide ground station support for Gaganyaan missions, which will ensure continuity in data flow and communication with the orbital module for monitoring and orbital operations.

The Gaganyaan project envisages demonstration of human spaceflight capability by launching a crew of three members into an orbit of 400 km for a three-day mission, and bringing them back safely to earth by landing in Indian sea waters.

Venus mission

The two space agencies have also been exploring potential cooperation in the Venus Orbiter Mission.

"We have the Venus science coordination group that partners with those who have interest in missions to Venus. We are speaking to our ISRO colleagues to make sure that the missions complement each other," said Carole Mindel, Director of Space, ESA.

India's maiden mission to Venus – the ₹1,236-crore Venus Orbiter Mission (VOM) – has been approved by the Union Cabinet and ISRO.

A spacecraft, which is scheduled for launch in March 2028, will embark on a 112-day journey to Venus.

According to the targeted launch window for VOM, the earth departure date is scheduled for March 29, 2028, and the arrival date on Venus is July 19, 2028. VOM will be launched by Launch Vehicle Mark-3 (LVM-3).

(This reporter is in Paris at the invitation of France's Ministry for Europe and Foreign Affairs to cover the International Space Summit)

10S9. ESA and ISRO to discuss human space flight, lunar exploration in Paris meet

ESA और ISRO पेरिस बैठक में मानव अंतरिक्ष उड़ान और चंद्र अन्वेषण पर चर्चा करेंगे

- The **European Space Agency (ESA)** will hold discussions with the **Indian Space Research Organisation (ISRO)** on cooperation in **human space flight and lunar exploration**, during the International Space Summit in Paris, which started on Wednesday.
  यूरोपीय अंतरिक्ष एजेंसी (ESA) बुधवार से शुरू हुए पेरिस में **International Space Summit** के दौरान **मानव अंतरिक्ष उड़ान और चंद्र अन्वेषण** में सहयोग को लेकर **भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO)** के साथ चर्चा करेगी।
- ESA Director-General **Josef Aschbacher** said he would hold discussions with ISRO Chairperson **V. Narayanan**.

ESA के महानिदेशक **Josef Aschbacher** ने कहा कि वह ISRO के अध्यक्ष **V. Narayanan** के साथ चर्चा करेंगे।

- Elaborating on the potential areas of cooperation between the two space agencies, **Daniel Neuenschwander**, Director for Human and Robotic Exploration, ESA, said, "We have already signed an agreement with ISRO for cooperating on human **space flight (Gaganyaan)**.
  दोनों अंतरिक्ष एजेंसियों के बीच सहयोग के संभावित क्षेत्रों के बारे में विस्तार से बताते हुए ESA में Human and Robotic Exploration के निदेशक **Daniel Neuenschwander** ने कहा, "हमने **मानव अंतरिक्ष उड़ान (Gaganyaan)** में सहयोग के लिए ISRO के साथ पहले ही एक समझौते पर हस्ताक्षर किए हैं।
- India is also developing the **Bharatiya Antariksh Station**.
  भारत **भारतीय अंतरिक्ष स्टेशन** भी विकसित कर रहा है।
- ISRO and ESA have already signed a **Technical Implementing Plan (TIP)** document for Ground Tracking Support for Gaganyaan missions.
  ISRO और ESA ने Gaganyaan मिशनों के लिए **Ground Tracking Support** हेतु पहले ही **Technical Implementation Plan (TIP)** दस्तावेज़ पर हस्ताक्षर किए हैं।
- The TIP will enable the ESA to provide **ground station support** for Gaganyaan missions, which will ensure continuity in data flow and communication with the orbital module for monitoring and orbital operations.
  TIP ESA को Gaganyaan मिशनों के लिए **ग्राउंड स्टेशन सहायता** प्रदान करने में सक्षम बनाएगा, जिससे निगरानी और कक्षीय संचालन के लिए **डेटा प्रवाह और कक्षीय मॉड्यूल के साथ संचार की निरंतरता** सुनिश्चित होगी।
- The **Gaganyaan project** envisages demonstration of human space flight capability by launching a crew of three members into an orbit of 400 km for a three-day mission, and bringing them back safely to earth by landing in Indian sea waters.
  Gaganyaan परियोजना का उद्देश्य तीन सदस्यों वाले दल को **400 किमी की कक्षा में तीन दिवसीय मिशन** के लिए प्रक्षेपित करके मानव अंतरिक्ष उड़ान क्षमता का प्रदर्शन करना और उन्हें भारतीय समुद्री जल में उतारकर सुरक्षित रूप से **पृथ्वी पर वापस लाना** है।

Venus mission
शुक्र मिशन

- The two space agencies have also been exploring potential cooperation in the **Venus Orbiter Mission**.
  दोनों अंतरिक्ष एजेंसियाँ **Venus Orbiter Mission** में संभावित सहयोग की भी तलाश कर रही हैं।
- India's maiden mission to Venus — the **₹1,236-crore Venus Orbiter Mission (VOM)** — has been approved by the Union Cabinet and ISRO.
  भारत के **शुक्र के लिए पहले मिशन** — **₹1,236 करोड़ के Venus Orbiter Mission (VOM)** — को केंद्रीय मंत्रिमंडल और ISRO द्वारा मंजूरी दी जा चुकी है।
- A spacecraft, which is scheduled for launch in **March 2028**, will embark on a 112-day journey to Venus.
  मार्च 2028 में प्रक्षेपित किए जाने के लिए निर्धारित यह अंतरिक्ष यान **112 दिनों की यात्रा** करके शुक्र तक पहुँचेगा।
- According to the targeted launch window for VOM, the **earth departure date** is scheduled for March 29, 2028, and the arrival date on Venus is July 19, 2028.
  VOM के लक्षित प्रक्षेपण समय-सीमा के अनुसार, **पृथ्वी से प्रस्थान की तिथि** 29 मार्च, 2028 निर्धारित की गई है और शुक्र पर पहुँचने की तिथि 19 जुलाई, 2028 है।
- VOM will be launched by **Launch Vehicle Mark-3 (LVM-3)**.
  VOM का प्रक्षेपण **Launch Vehicle Mark-3 (LVM-3)** द्वारा किया जाएगा।

How scientists are using menstrual blood in osteoarthritis treatment

Much like saliva or blood plasma, menstrual fluid is rich with biological information; it is packed with immune cells, endometrial tissue, proteins, and genetic fragments; scientists are digging into these biomarkers to find ways to detect diseases early, and drop the use of invasive clinical procedures

GS III: S&T

Manjeera Gowravaram

While most current treatments for osteoarthritis mask the pain, new findings suggest a way to actually slow or reverse the damage. GETTY IMAGES/ISTOCKPHOTO

For most of history, menstrual blood has been dismissed as biological waste. But emerging research is now recasting this material as a goldmine for non-invasive diagnostics and regenerative medicine. Its potential applications are surprisingly broad, ranging from innovative cervical cancer screenings to advanced cartilage repair.

Much like saliva or blood plasma, menstrual fluid is rich with biological information. It is packed with immune cells, endometrial tissue, proteins, and genetic fragments.

Scientists are now digging into these biomarkers hoping to find ways to detect diseases early, and thus drop the use of invasive clinical procedures.

Stem cells

Researchers have recently reported that they had used menstrual blood to spot cancer early. Normally, medical workers have screened for cervical cancer using clinical check-ups that many people skip due to discomfort, cost, limited access to healthcare, and in fact plain embarrassment. As a result, screening rates remain low even in economically developed regions.

In 2025, a large population-based study in *The BMJ* by researchers from China offered a workaround. The team found that menstrual blood collected directly from sanitary pads could be tested for human papillomavirus DNA and precancerous lesions just as accurately as cervical swab samples collected by a clinician. Of course, the method excludes those who do not menstruate, but the fact that it offered a non-invasive, inexpensive, and suitable test that could begin from home is notable.

Menstrual blood is also gaining research focus thanks to stem cells derived from it. The groundwork for this was laid back in 2007 when a team from the U.S. and Canada successfully isolated menstrual stem cells from menstrual blood. These cells came from the endometrium, the uterine lining that breaks down and rebuilds itself on a monthly cycle without scarring – something other human tissue cannot do. The researchers believed the stem cells had something to do with that ability. In the lab, the menstrual-blood-derived stem cells readily divided and proved to be tough and versatile.

Researchers are already using them to grow uterine organoids – small functional models of the uterus located outside the body and used to study conditions like endometriosis. The stem cells could reveal traces of exposure to chemical compounds like phthalates and parabens, which was previously not possible to discern without an invasive examination.

Indeed, while bone marrow stem cells are still the gold standard for many therapies, extracting them is a gruelling process. It is painful, requires anaesthesia, and bears significant surgical risks. Menstrual-blood-derived stem cells however can be collected non-invasively, and sans the ethical baggage that often complicates stem-cell sourcing.

As the science of these cells has matured, so have their applications. For instance, in 2025, a team in China studied the role they could play on Niemann-Pick disease type C1. This is a rare and devastating inherited condition that is caused by cholesterol and lipids build-up inside cells, leading to rapid neurological decline, loss of motor function, and dementia. The study found that menstrual-blood-derived stem cells could significantly lower neuroinflammation and cell death in experimental models of the disease. The work is still in its early stages, but for a condition whose therapeutic options are currently limited to drugs easing the clinical symptoms, a potential new advance is welcome.

A 2023 study by Iranian researchers showed that when these cells were delivered alongside their conditioned medium – the nutrient-rich fluid they had been cultured with – they helped accelerate heart recovery in rat models after a heart attack.

In hepatology, menstrual-blood-derived stem cells have been found to suppress the specific liver cells responsible for scarring and fibrosis. Because they naturally migrate towards areas of inflammation and cancer, researchers are also exploring engineering these cells to deliver therapeutic genes directly to a tumour site, sparing the rest of the body from the toxic side effects of chemotherapy.

Many experts increasingly believe extracellular vesicles (EVs) are the future of regenerative medicine. They are easier to standardise than whole stem cells – which are complete, living biological units that can divide and adapt within the body, but vary significantly from one batch to another. They also carry risks of becoming unintended tissue types. Because EVs are not whole cells, but rather clumps of proteins, lipids, RNA, and signalling molecules enclosed by membranes secreted from the parent cell, they can't divide or differentiate into other tissues. This makes them safer, more stable alternatives and less likely to trigger immune rejection, can be engineered to evade immune detection, and can be frozen and stored just like conventional biological drugs.

Menstrual-blood-derived stem cells can be made to release these EVs when cultured in specific conditions in the lab, such as hypoxia (low oxygen) or by adding inflammatory cytokines.

Ordinary challenges

In a notable study published in *Scientific Reports* in February, a team from Lithuania isolated EVs from healthy donors and introduced them to human cartilage cells taken from patients who had undergone joint surgery. Within hours, the cartilage cells had absorbed the EVs and produced a new extracellular matrix, the scaffolding of healthy joints. When the team simulated joint inflammation, the vesicles reduced the release of markers associated with cartilage degradation.

Since osteoarthritis disproportionately affects women, the researchers also tracked hormone receptors. Specifically, when they examined how EVs affected receptors in the joint tissue, they found that the EVs had increased the expression of the progesterone receptor in cartilage cells, potentially restoring a hormonal signalling pathway that tends to deteriorate in women following menopause.

While most current treatments for osteoarthritis mask the pain, these findings suggest a way to actually slow or reverse the damage. Even though the research is nascent, if the findings hold up in future trials, any benefits will matter considering the number of people living with this condition, estimated to be 595 million worldwide in 2020.

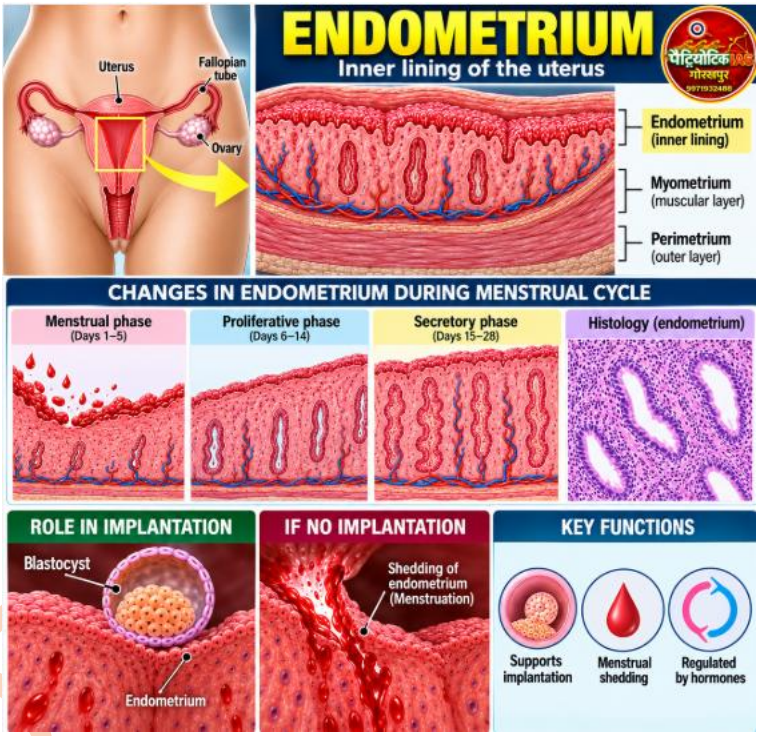
Some significant hurdles remain as well. Scientists do not yet know how long these cells will survive once they are introduced into the body. There is no long-term human safety data– partly because there are no reliable markers to track the cells once they are inside a patient. Producing consistent, high-quality batches also remains a challenge, since no standardised benchmarks exist to verify the cells before use. The cells must themselves behave differently depending on the donor, varying with age, hormonal status, contraceptive history, and the conditions in which the cells were grown in the lab.

Then again, these are ordinary challenges of early-stage biomedical research rather than reasons to dismiss what has already been found.

(Manjeera Gowravaram has a PhD in RNA biochemistry and works as a freelance science writer. gmanjeera@gmail.com)

10S9. How scientists are using menstrual blood in osteoarthritis treatment
वैज्ञानिक ऑस्टियोआर्थराइटिस के उपचार में मासिक धर्म के रक्त का उपयोग कैसे कर रहे हैं

- For most of history, menstrual blood has been dismissed as biological waste. But emerging research is now recasting this material as a goldmine for **non-invasive diagnostics** and **regenerative medicine**. Its potential applications are surprisingly broad, ranging from innovative cervical cancer screenings to advanced cartilage repair.
अधिकांश इतिहास में मासिक धर्म के रक्त को जैविक अपशिष्ट के रूप में नज़रअंदाज़ किया गया है। लेकिन उभरते हुए शोध अब इस पदार्थ को **गैर-आक्रामक निदान** और **पुनर्योजी चिकित्सा** के लिए एक महत्वपूर्ण संसाधन के रूप में पुनर्परिभाषित कर रहे हैं। इसके संभावित अनुप्रयोग आश्चर्यजनक रूप से व्यापक हैं, जिनमें अभिनव **गर्भाशय-ग्रीवा कैंसर की जाँच** से लेकर उन्नत **उपास्थि की मरम्मत** तक शामिल हैं।



- Much like saliva or blood plasma, menstrual fluid is rich with biological information. It is packed with **immune cells, endometrial tissue, proteins, and genetic fragments**.
लार या रक्त प्लाज़्मा की तरह, मासिक धर्म का द्रव जैविक जानकारी से समृद्ध होता है। इसमें **प्रतिरक्षा कोशिकाएँ, एंडोमेट्रियल ऊतक, प्रोटीन और आनुवंशिक अंश** प्रचुर मात्रा में पाए जाते हैं।
- Scientists are now digging into these **biomarkers** hoping to find ways to detect diseases early, and thus drop the use of invasive clinical procedures.
वैज्ञानिक अब इन **जैवचिह्नों** का गहन अध्ययन कर रहे हैं, ताकि रोगों का प्रारंभिक अवस्था में पता लगाने के उपाय खोजे जा सकें और इस प्रकार **आक्रामक चिकित्सीय प्रक्रियाओं** के उपयोग को कम किया जा सके।

Stem cells
स्टेम कोशिकाएँ

- Researchers have recently reported that they had used menstrual blood to spot cancer early. Normally, medical workers have screened for cervical cancer using clinical check-ups that many people skip due to discomfort, cost, limited access to healthcare, and in fact plain embarrassment. As a result, screening rates remain low even in economically developed regions.
शोधकर्ताओं ने हाल ही में बताया है कि उन्होंने **मासिक धर्म के रक्त** का उपयोग करके कैंसर का प्रारंभिक अवस्था में पता लगाया। सामान्यतः, चिकित्सा कर्मी **गर्भाशय-ग्रीवा कैंसर** की जाँच नैदानिक परीक्षणों के माध्यम से करते हैं, जिन्हें बहुत से लोग असुविधा, लागत, स्वास्थ्य सेवाओं तक सीमित पहुँच और वास्तव में केवल संकोच के कारण नहीं करवाते। परिणामस्वरूप, आर्थिक रूप से विकसित क्षेत्रों में भी जाँच की दर कम बनी हुई है।
- In 2025, a large population-based study in The BMJ by researchers from China offered a workaround. The team found that menstrual blood collected directly from sanitary pads could be tested for **human papillomavirus DNA** and precancerous lesions just as accurately as cervical swab samples collected by a clinician. Of course, the method excludes those who do not menstruate, but the fact that it offered a **non-invasive, inexpensive, and suitable test**

that could begin from home is notable.

2025 में, चीन के शोधकर्ताओं द्वारा **The BMJ** में प्रकाशित एक बड़े जनसंख्या-आधारित अध्ययन ने एक वैकल्पिक उपाय प्रस्तुत किया। दल ने पाया कि सैनिटरी पैड से सीधे एकत्र किए गए मासिक धर्म के रक्त की जाँच **ह्यूमन पैपिलोमावायरस DNA** और कैंसर-पूर्व घावों के लिए उतनी ही सटीकता से की जा सकती है, जितनी किसी चिकित्सक द्वारा एकत्र किए गए गर्भाशय-ग्रीवा स्वैब नमूनों की। निश्चित रूप से, यह विधि उन लोगों को शामिल नहीं करती जो मासिक धर्म नहीं करते, लेकिन यह तथ्य उल्लेखनीय है कि इससे एक **गैर-आक्रामक, कम लागत वाली और उपयुक्त जाँच** संभव हो सकती है, जिसकी शुरुआत घर से की जा सकती है।

- Menstrual blood is also gaining research focus thanks to **stem cells** derived from it. The groundwork for this was laid back in 2007 when a team from the U.S. and Canada successfully isolated menstrual stem cells from menstrual blood. These cells came from the endometrium, the uterine lining that breaks down and rebuilds itself on a monthly cycle without scarring — something other human tissue cannot do.

  मासिक धर्म के रक्त से प्राप्त **स्टेम कोशिकाओं** के कारण भी मासिक धर्म का रक्त शोध का केंद्र बन रहा है। इसके लिए आधार 2007 में तैयार हुआ, जब अमेरिका और कनाडा की एक टीम ने मासिक धर्म के रक्त से मासिक धर्म संबंधी स्टेम कोशिकाओं को सफलतापूर्वक अलग किया। ये कोशिकाएँ **एंडोमेट्रियम**, अर्थात गर्भाशय की उस आंतरिक परत से प्राप्त हुई थीं, जो मासिक चक्र के दौरान बिना किसी निशान के नष्ट होकर पुनः निर्मित होती है—ऐसा कार्य अन्य मानव ऊतक नहीं कर सकते।

- The researchers believed the stem cells had something to do with that ability. In the lab, the menstrual-blood-derived stem cells readily divided and proved to be tough and versatile.

  शोधकर्ताओं का मानना था कि इस क्षमता में इन स्टेम कोशिकाओं की कुछ भूमिका हो सकती है। प्रयोगशाला में, **मासिक धर्म के रक्त से प्राप्त स्टेम कोशिकाएँ** आसानी से विभाजित हुईं और मजबूत तथा बहुमुखी सिद्ध हुईं।

- Researchers are already using them to grow **uterine organoids** — small functional models of the uterus located outside the body and used to study conditions like endometriosis. The stem cells could reveal traces of exposure to chemical compounds like **phthalates and parabens**, which was previously not possible to discern without an invasive examination.

  शोधकर्ता पहले से ही इनका उपयोग **गर्भाशय ऑर्गेनॉइड** विकसित करने के लिए कर रहे हैं—ये शरीर के बाहर स्थित गर्भाशय के छोटे कार्यात्मक मॉडल होते हैं, जिनका उपयोग एंडोमेट्रियोसिस जैसी स्थितियों के अध्ययन के लिए किया जाता है। ये स्टेम कोशिकाएँ **फ्थैलेट्स और पैराबेन्स** जैसे रासायनिक यौगिकों के संपर्क के निशान उजागर कर सकती हैं, जिनका पहले आक्रामक परीक्षण के बिना पता लगाना संभव नहीं था।

- Indeed, while bone marrow stem cells are still the gold standard for many therapies, extracting them is a gruelling process.

  वास्तव में, जबकि **अस्थि-मज्जा स्टेम कोशिकाएँ** अभी भी अनेक उपचारों के लिए स्वर्ण मानक हैं, उन्हें निकालना एक कठिन प्रक्रिया है।

- It is painful, requires anaesthesia, and bears significant surgical risks. Menstrual-blood-derived stem cells however can be collected non-invasively, and sans the ethical baggage that often complicates stem-cell sourcing.

  यह पीड़ादायक होती है, इसमें **बेहोशी की दवा** की आवश्यकता होती है और इसमें महत्वपूर्ण शल्य-चिकित्सीय जोखिम होते हैं। इसके विपरीत, **मासिक धर्म के रक्त से प्राप्त स्टेम कोशिकाओं** को गैर-आक्रामक तरीके से एकत्र किया जा सकता है और इनके स्रोत से जुड़े वे नैतिक प्रश्न भी नहीं होते, जो अक्सर स्टेम कोशिकाओं के स्रोत को जटिल बनाते हैं।

- As the science of these cells has matured, so have their applications. For instance, in 2025, a team in China studied the role they could play on **Niemann-Pick disease type C1**. This is a rare and devastating inherited condition that is caused by cholesterol and lipids build-up inside cells, leading to rapid neurological decline, loss of motor function, and dementia.

  जैसे-जैसे इन कोशिकाओं से संबंधित विज्ञान विकसित हुआ है, वैसे-वैसे इनके अनुप्रयोग भी बढ़े हैं। उदाहरण के लिए, 2025 में चीन की एक टीम ने **Niemann-Pick disease type C1** में इनकी संभावित भूमिका का

अध्ययन किया। यह एक दुर्लभ और गंभीर वंशानुगत रोग है, जो कोशिकाओं के भीतर कोलेस्ट्रॉल और लिपिड के जमाव के कारण होता है तथा तेजी से **तंत्रिका संबंधी गिरावट, मोटर कार्यक्षमता की हानि और मनोभ्रंश** का कारण बनता है।

- The study found that menstrual-blood-derived stem cells could significantly lower **neuroinflammation** and cell death in experimental models of the disease.
- The work is still in its early stages, but for a condition whose therapeutic options are currently limited to drugs easing the clinical symptoms, a potential new advance is welcome.

अध्ययन में पाया गया कि **मासिक धर्म के रक्त से प्राप्त स्टेम कोशिकाएँ** रोग के प्रायोगिक मॉडलों में **तंत्रिका-तंत्र की सूजन** और कोशिका मृत्यु को उल्लेखनीय रूप से कम कर सकती हैं। यह कार्य अभी प्रारंभिक चरण में है, लेकिन ऐसी स्थिति के लिए, जिसके उपचार के विकल्प वर्तमान में केवल नैदानिक लक्षणों को कम करने वाली दवाओं तक सीमित हैं, संभावित नई प्रगति स्वागत योग्य है।

- A 2023 study by Iranian researchers showed that when these cells were delivered alongside their conditioned medium — the nutrient-rich fluid they had been cultured with — they helped accelerate heart recovery in rat models after a heart attack.

ईरानी शोधकर्ताओं द्वारा 2023 में किए गए एक अध्ययन से पता चला कि जब इन कोशिकाओं को उनके **कंडीशन्ड माध्यम**—अर्थात उस पोषक तत्वों से समृद्ध द्रव, जिसमें उन्हें संवर्धित किया गया था—के साथ दिया गया, तो उन्होंने दिल का दौरा पड़ने के बाद चूहे के मॉडलों में **हृदय की पुनर्प्राप्ति** को तेज करने में सहायता की।

- In hepatology, menstrual-blood-derived stem cells have been found to suppress the specific liver cells responsible for scarring and fibrosis. Because they naturally migrate towards areas of inflammation and cancer, researchers are also exploring engineering these cells to deliver **therapeutic genes** directly to a tumour site, sparing the rest of the body from the toxic side effects of chemotherapy.

हेपेटोलॉजी में, मासिक धर्म के रक्त से प्राप्त स्टेम कोशिकाएँ उन विशिष्ट यकृत कोशिकाओं को दबाने में सक्षम पाई गई हैं जो **ऊतक में घाव और फाइब्रोसिस** के लिए जिम्मेदार होती हैं। चूँकि ये कोशिकाएँ स्वाभाविक रूप से सूजन और कैंसर वाले क्षेत्रों की ओर प्रवास करती हैं, इसलिए शोधकर्ता इन कोशिकाओं को इस प्रकार अभियांत्रिक रूप देने की संभावनाओं का भी अध्ययन कर रहे हैं कि वे **उपचारात्मक जीन** सीधे ट्यूमर के स्थान तक पहुँचा सकें और शरीर के शेष हिस्से को कीमोथेरेपी के विषैले दुष्प्रभावों से बचाया जा सके।

- Many experts increasingly believe **extracellular vesicles (EVs)** are the future of regenerative medicine. They are easier to standardise than whole stem cells — which are complete, living biological units that can divide and adapt within the body, but vary significantly from one batch to another. They also carry risks of becoming unintended tissue types.

कई विशेषज्ञों का मानना लगातार बढ़ रहा है कि **एक्स्ट्रासेल्युलर वेसिकल्स (EVs)** पुनर्योजी चिकित्सा का भविष्य हैं। इन्हें संपूर्ण स्टेम कोशिकाओं की तुलना में मानकीकृत करना आसान होता है—संपूर्ण स्टेम कोशिकाएँ पूर्ण, जीवित जैविक इकाइयाँ होती हैं, जो शरीर के भीतर विभाजित और अनुकूलित हो सकती हैं, लेकिन एक बैच से दूसरे बैच में उनमें महत्वपूर्ण भिन्नता हो सकती है। इनमें अनपेक्षित प्रकार के ऊतक में परिवर्तित होने का जोखिम भी होता है।

- Because EVs are not whole cells, but rather clumps of proteins, lipids, RNA, and signalling molecules enclosed by membranes secreted from the parent cell, they can't divide or differentiate into other tissues. This makes them safer, more stable alternatives and less likely to trigger immune rejection, can be engineered to evade immune detection, and can be frozen and stored just like conventional biological drugs.

चूँकि EVs संपूर्ण कोशिकाएँ नहीं हैं, बल्कि प्रोटीन, लिपिड, RNA और **संकेतन अणुओं** के समूह हैं, जो मूल कोशिका द्वारा स्रावित झिल्लियों से घिरे होते हैं, इसलिए वे विभाजित नहीं हो सकते और न ही अन्य ऊतकों में विभेदित हो सकते हैं। इससे वे अधिक सुरक्षित और अधिक स्थिर विकल्प बनते हैं तथा उनमें **प्रतिरक्षा अस्वीकृति** उत्पन्न करने की संभावना कम होती है। उन्हें प्रतिरक्षा प्रणाली की पहचान से बचने के लिए अभियांत्रिक रूप दिया जा सकता है और पारंपरिक जैविक दवाओं की तरह जमाकर संग्रहीत भी किया जा सकता है।

- Menstrual-blood-derived stem cells can be made to release these EVs when cultured in specific conditions in the lab, such as hypoxia (low oxygen) or by adding inflammatory cytokines.
  मासिक धर्म के रक्त से प्राप्त स्टेम कोशिकाओं को प्रयोगशाला में **हाइपोक्सिया (कम ऑक्सीजन)** जैसी विशिष्ट परिस्थितियों में संवर्धित करके या सूजनकारी साइटोकाइन्स मिलाकर इन EVs को छोड़ने के लिए प्रेरित किया जा सकता है।

Ordinary challenges
सामान्य चुनौतियाँ

- In a notable study published in Scientific Reports in February, a team from Lithuania isolated EVs from healthy donors and introduced them to human cartilage cells taken from patients who had undergone joint surgery. Within hours, the cartilage cells had absorbed the EVs and produced a new extracellular matrix, the scaffolding of healthy joints.
  फरवरी में **Scientific Reports** में प्रकाशित एक उल्लेखनीय अध्ययन में, लिथुआनिया की एक टीम ने स्वस्थ दाताओं से EVs को अलग किया और उन्हें उन रोगियों से प्राप्त मानव **उपास्थि कोशिकाओं** में पहुँचाया, जिनकी जोड़ की शल्य-चिकित्सा हुई थी। कुछ ही घंटों के भीतर, उपास्थि कोशिकाओं ने EVs को अवशोषित कर लिया और एक नया **एक्स्ट्रासेल्युलर मैट्रिक्स** उत्पन्न किया, जो स्वस्थ जोड़ों का आधारभूत ढाँचा होता है।
- When the team simulated joint inflammation, the vesicles reduced the release of markers associated with cartilage degradation.
  जब टीम ने **जोड़ों की सूजन** का कृत्रिम रूप से अनुकरण किया, तो वेसिकल्स ने उपास्थि के क्षरण से जुड़े **जैवचिह्नों** के स्राव को कम कर दिया।
- Since osteoarthritis disproportionately affects women, the researchers also tracked hormone receptors. Specifically, when they examined how EVs affected receptors in the joint tissue, they found that the EVs had increased the expression of the **progesterone receptor** in cartilage cells, potentially restoring a hormonal signalling pathway that tends to deteriorate in women following menopause.
  चूँकि **ऑस्टियोआर्थराइटिस** महिलाओं को असमान रूप से अधिक प्रभावित करता है, इसलिए शोधकर्ताओं ने हार्मोन रिसेप्टर्स का भी अध्ययन किया। विशेष रूप से, जब उन्होंने जाँच की कि EVs जोड़ों के ऊतक में रिसेप्टर्स को किस प्रकार प्रभावित करते हैं, तो उन्होंने पाया कि EVs ने उपास्थि कोशिकाओं में **प्रोजेस्टेरोन रिसेप्टर** की अभिव्यक्ति को बढ़ा दिया, जिससे संभावित रूप से उस हार्मोनल संकेतन मार्ग को पुनर्स्थापित किया जा सकता है, जो रजोनिवृत्ति के बाद महिलाओं में कमजोर होने लगता है।
- While most current treatments for osteoarthritis mask the pain, these findings suggest a way to actually slow or reverse the damage. Even though the research is nascent, if the findings hold up in future trials, any benefits will matter considering the number of people living with this condition, estimated to be 595 million worldwide in 2020.
  यद्यपि ऑस्टियोआर्थराइटिस के अधिकांश वर्तमान उपचार केवल **दर्द को नियंत्रित** करते हैं, ये निष्कर्ष वास्तव में क्षति को धीमा करने या उलटने का एक उपाय सुझाते हैं। यद्यपि यह शोध अभी प्रारंभिक अवस्था में है, यदि भविष्य के परीक्षणों में ये निष्कर्ष सही सिद्ध होते हैं, तो इसके किसी भी लाभ का महत्व होगा, क्योंकि 2020 में विश्वभर में इस स्थिति के साथ जीवन व्यतीत करने वाले लोगों की संख्या अनुमानतः **595 मिलियन** थी।

REGENERATIVE MEDICINE

- **Regenerative medicine** is a branch of medicine that aims to **repair, replace, restore or regenerate damaged cells, tissues or organs**, rather than merely controlling the symptoms of a disease.

Simple Example

- Suppose the **cartilage in a person's knee** is damaged.
- A conventional treatment may reduce **pain and inflammation** using medicines. However, the damaged cartilage may remain damaged.
- Regenerative medicine asks a different question:
    - **Can we stimulate the body to actually rebuild or repair the damaged cartilage?**
- Thus, the basic idea is:
- **Damage → Regeneration/Repair → Restoration of function**

How Does Regenerative Medicine Work?

- **Stem-cell therapy:** Stem cells can multiply and, depending on their type and biological environment, may generate specialised cells or promote tissue repair.
- For example, **blood-forming stem-cell transplantation** is already an established treatment for several blood cancers and disorders.
- **Tissue engineering:** Scientists combine **cells with biomaterials or scaffolds** to create or repair tissues. Think of the scaffold as the **framework of a building**, while cells are the workers that construct tissue on it.
- **Extracellular vesicles (EVs):** Cells release microscopic membrane-bound packages containing **proteins, lipids, RNA and signalling molecules**. Researchers are studying whether these biological messages can stimulate tissue repair without transplanting whole cells.
- **Gene-based approaches:** Scientists may modify or deliver genes to correct defective biological processes or improve tissue regeneration.

Where Could It Be Used?

- Regenerative medicine is being investigated or used in areas such as **bone and cartilage repair, skin and wound healing, heart damage, nerve injuries, liver disease and eye disorders**.
- For example, researchers are investigating whether stem cells or their EVs can encourage damaged **cartilage cells to rebuild extracellular matrix**, the supporting framework of cartilage.

Important Caution

- Regenerative medicine does **not mean that doctors can currently regrow any human organ**. Some therapies, particularly **hematopoietic stem-cell transplantation**, are well established, whereas many proposed treatments for heart, cartilage, brain or other organ regeneration remain experimental.

Dark matter could form tiny black holes inside stars: study

GS III: S&T

The Hindu Bureau
GUWAHATI

Dark matter, the unseen substance that makes up most of the universe's matter, could play a more dramatic role than previously thought.

A new study suggests that heavy dark matter particles trapped inside a dense star could accumulate at its core, collapse into a tiny black hole roughly the mass of a loaded semi-truck, and gradually transform the entire star into a black hole.

The authors of the study, published in the latest issue of the *Physical Review D*, are H.A. Adarsha and Chandrachur Chakraborty of the Manipal Centre for Natural Sciences at Manipal Academy of Higher Education, and Sudip Bhattacharyya of Mumbai's Tata Institute of Fundamental Research (TIFR).

Two stellar objects

Their study focuses on two extremely dense types of stellar objects – millisecond pulsars and white dwarfs.

An extremely dense star is essentially a dead star that has run out of nuclear fuel. A millisecond pulsar is a rapidly rotating neutron star that emits regular beams of electromagnetic radiation at intervals of less than 10 milliseconds, while a white dwarf is a hot, dense stellar remnant.

A new study suggests that heavy dark matter particles trapped inside a dense star could accumulate at its core, collapse into a tiny black hole roughly the mass of a loaded semi-truck, and gradually transform the entire star into a black hole

A black hole would evaporate rapidly if left on its own, but the researchers' calculations through a new mathematical framework showed that a continuous supply of dark matter could keep such tiny black holes growing inside dense stars.

The researchers used a conservative age of about 1 billion years for millisecond pulsars and about 10 billion years for white dwarfs to place limits on the possible properties of ultra-heavy dark matter.

"Hawking radiation causes black holes to lose mass, with smaller black holes evaporating faster. However, some hypothetical ultra-heavy dark matter particles could be captured by dense stellar remnants such as millisecond pulsars and white dwarfs, collect at their centres, and eventually collapse into a tiny black hole," the researchers said.

Consumption of dark matter

They calculated what would happen next by considering a black hole's consumption of stellar material, continued feeding by dark matter, Hawking evaporation, and quantum effects important at extremely small scales.

"We find that continued dark matter feeding can allow black holes born with masses as low as about 40 tonnes to overcome evaporation and eventually consume their host stars. Because many millisecond pulsars and white dwarfs have survived for billions of years, dark matter capable of destroying them sooner can be ruled out," the study said.

"These ancient stars, therefore, provide natural laboratories for probing forms of ultra-heavy dark matter that are difficult to test on earth," they found.

10S9. Dark matter could form tiny black holes inside stars: study

डार्क मैटर तारों के भीतर छोटे ब्लैक होल बना सकता है: अध्ययन

- Dark matter, the unseen substance that makes up most of the universe's matter, could play a more dramatic role than previously thought.

डार्क मैटर, **ब्रह्मांड के अधिकांश पदार्थ का निर्माण करने वाला अदृश्य पदार्थ**, पहले की अपेक्षा अधिक महत्वपूर्ण भूमिका निभा सकता है।

- A new study suggests that heavy dark matter particles trapped inside a dense star could accumulate at its core, collapse into a tiny black hole roughly the mass of a loaded semi-truck, and gradually transform the entire star into a black hole.

एक नए अध्ययन से पता चलता है कि किसी सघन तारे के भीतर फँसे **भारी डार्क मैटर कण** उसके केंद्र में एकत्रित हो सकते हैं, लगभग **भरे हुए सेमी-ट्रक के द्रव्यमान** के बराबर एक छोटे ब्लैक होल में संकुचित हो सकते हैं और धीरे-धीरे पूरे तारे को ब्लैक होल में परिवर्तित कर सकते हैं।

- Their study focuses on two extremely dense types of stellar objects — millisecond pulsars and white dwarfs.

उनका अध्ययन **दो अत्यंत सघन प्रकार के तारकीय पिंडों** — मिलीसेकंड पल्सर और श्वेत बौनों — पर केंद्रित है।

- An extremely dense star is essentially a dead star that has run out of nuclear fuel.

अत्यंत सघन तारा मूलतः एक मृत तारा होता है, जिसका **नाभिकीय ईंधन समाप्त** हो चुका होता है।

- A millisecond pulsar is a rapidly rotating neutron star that emits regular beams of electromagnetic radiation at intervals of less than 10 milliseconds, while a white dwarf is a hot, dense stellar remnant.

मिलीसेकंड पल्सर एक तीव्र गति से घूमने वाला न्यूट्रॉन तारा है, जो **10 मिलीसेकंड से कम अंतराल** पर विद्युतचुंबकीय विकिरण की नियमित किरणें उत्सर्जित करता है, जबकि **श्वेत बौना** एक गर्म और सघन तारकीय अवशेष होता है।

- "Hawking radiation causes black holes to lose mass, with smaller black holes evaporating faster.

Answers to September 3 quiz:
1. Effective mood stabiliser whose mechanism of action is unclear – **Ans: Lithium**
2. Immobility-inducing substance whose molecular effects are unclear – **Ans: Anaesthesia**
3. Compounds, some of which exhibit a mystery form of superconductivity – **Ans: Cuprates**
4. First-line drug used to treat type-II diabetes – **Ans: Metformin**
5. Drug from phencyclidine that can lift depression in hours – **Ans: Ketamine**
Visual: **Turbulence**

First contact:
Prem Raj P. | K.N. Viswanathan | Tamal Biswas | Prem Nath Tiwari | Kaushal K.R.

10S9. Quiz

1. Lithium — Effective Mood Stabiliser

- Lithium is a naturally occurring alkali metal used primarily as a mood stabiliser in bipolar disorder. It is effective in treating acute mania and preventing both manic and depressive relapses.

2. Anaesthesia — Immobility-Inducing State

- Anaesthesia is not one particular substance; it is a medically induced state produced by anaesthetic drugs. General anaesthesia normally involves unconsciousness, amnesia, analgesia and immobility during surgery.
- William T. G. Morton publicly demonstrated ether anaesthesia in **Boston on 16 October 1846**, an important landmark in surgical history.
- Anaesthetic agents act at several molecular targets, including GABA-A, NMDA, glycine and potassium channels. However, no single mechanism completely explains all components of general anaesthesia.
- Immobility is produced largely through actions on spinal-cord neural circuits, while unconsciousness principally involves brain networks controlling awareness and arousal.

3. Cuprates — Unconventional Superconductors

- Cuprates are layered compounds containing copper and oxygen. Some become superconductors at temperatures considerably higher than conventional metallic superconductors, although they still require substantial cooling.
- High-temperature superconductivity in cuprates was discovered by **Johannes Georg Bednorz and Karl Alexander Müller in 1986**; they received the **1987 Nobel Prize in Physics**.
- Antiferromagnetic spin fluctuations, charge ordering, electron correlations and quantum-critical behaviour are leading research areas. Cuprates are therefore classified as unconventional, rather than room-temperature, superconductors.

4. Metformin — Type-II Diabetes Medicine

- Metformin is an oral biguanide widely used as an initial medicine for type-II diabetes, together with diet, exercise and weight management. It primarily decreases glucose production by the liver and improves insulin sensitivity.
- It was introduced clinically in Europe during the **1950s** and approved in the United States in **1994**.
- Metformin has a low risk of causing hypoglycaemia when used alone and usually does not cause weight gain.
- Gastrointestinal discomfort is common, while long-term use may reduce vitamin B12 levels. Treatment must consider kidney function. Modern guidelines may prioritise SGLT2 inhibitors or GLP-1 medicines in certain heart or kidney conditions.

5. Ketamine — Rapid-Acting Antidepressant

- Ketamine was developed in **1962** as a safer derivative of phencyclidine and received approval as an anaesthetic in **1970**. It principally acts as an NMDA-type glutamate-receptor antagonist.
- At sub-anaesthetic doses, intravenous ketamine can reduce depressive symptoms within hours, especially in some patients with treatment-resistant depression. Conventional antidepressants generally require several weeks to produce comparable improvement.

- Esketamine, one of ketamine's mirror-image molecules, was approved in **2019** for supervised treatment of resistant depression because monitoring is necessary for sedation, dissociation and blood-pressure elevation.

Did OpenAI solve Navier-Stokes problem?

OpenAI's claim of Navier-Stokes breakthrough has sparked controversy after Tristan Buckmaster alleged that its internal model arrived at the exact approach he and Levent Alpöge had been pursuing; questions remain over whether OpenAI trained on private Codex data, the proof's validity and who deserves credit

GS III: S&T

FULL CONTEXT

Vasudevan Mukunth

The story so far:

In what is quickly becoming an explosive controversy in mathematics, a potential solution to one of the field's greatest open questions has been overshadowed by allegations of espionage and unethical academic conduct. Over the last few days, the mathematical community has been rocked by claims that OpenAI leveraged its enormous computing power – and potentially the private user data of academic researchers – to scoop a solution to the Navier-Stokes equations problem.

What is the Navier-Stokes problem?

The Navier-Stokes equations describe the motion of viscous fluids like water and air, and they have frustrated mathematicians and physicists for more than two centuries.

As OpenAI wrote on its website: "The Navier-Stokes equations use Newton's second law of motion ($F = m \times a$) to describe how fluids move. Importantly, they treat a fluid as a continuous medium rather than tracking individual molecules. These equations are used for aircraft design, weather forecasting, and the study of blood flow."

The Clay Mathematics Institute in New York lists a problem about the equations as one of the seven Millennium Prize Problems. That is, anyone who can prove whether the equations always have smooth, predictable solutions or whether the equations can 'blow up' – meaning the mathematical solutions reach infinity in finite time – will win $1 million and considerable prestige in the mathematics community.

What is a forcing function?

The Millennium Prize problem statement, authored by U.S. mathematician Charles Fefferman, offers a few avenues for a valid proof. Options A and B deal with unforced equations, while Options C and D allow for a solution that includes an external forcing function.

A forcing function is an external influence that adds momentum to the fluid, e.g., you dip your spoon into a bowl of water and stir it. A forced blow-up would be when you keep stirring the fluid harder and harder until the equations predict the flow becomes infinitely violent in a finite amount of time – as if you were stirring at nearly the speed of light.

For such a blow-up to qualify for the Millennium Prize under Options C and D, the force causing the blow-up can't suddenly appear/disappear or change abruptly from one place or time to another. It must obey the usual laws of physics.

Over the last year, New York University mathematician Tristan Buckmaster and Anthropic researcher Levent Alpöge have been using AI models to use a technique developed by Spanish mathematicians Diego Córdoba and Luis Martínez-Zoroa to show that forced blow-ups cause the Navier-Stokes equations to become insensible in finite time.

This route is a niche vector of attack; mathematicians agree it is not possible to arrive at by feeding the problem to an AI chatbot. This detail matters to what followed.

How did OpenAI get involved?

Buckmaster and Alpöge made a breakthrough on August 15. A week later, the duo had their proofs – heavily generated by models like Anthropic's Claude and OpenAI's GPT-5.6 Sol – checked by a computer to make sure the mathematics were correct.

However, the raw output from the AI was practically unreadable. Buckmaster described one initial proof as "the most horrendous I have ever read". So Alpöge and Buckmaster spent weeks working around the clock to translate the AI output into a readable paper.

But last week, a rumor began circulating that Anthropic had solved a major open problem in mathematics. On September 3, after hearing OpenAI was investigating the rumors, Buckmaster emailed a prominent mathematician at OpenAI. This information comes from a statement that Buckmaster published on his university webpage.

Buckmaster said he clarified that his work with Alpöge was in a personal capacity and did not represent an institutional effort by Anthropic and that the duo planned to publish its results once it had finished polishing the manuscript. The (unnamed) interlocutor at OpenAI replied expressing excitement.

But on September 4, OpenAI requested a same-day meeting with Buckmaster, which Buckmaster deferred to the following week (i.e., the current week). Two days later, OpenAI urgently requested a meeting, so Buckmaster said he joined a call with OpenAI computer scientist Sebastien Bubeck and another representative. Alpöge did not attend the call.

During this call, Buckmaster said Bubeck dropped a bombshell: an internal OpenAI model had produced a proof of finite-time blow-up for the forced Navier-Stokes equations. When Buckmaster pressed for details, the OpenAI team revealed their solution was exactly "Existence of forced blowup in R3 and T3, with the forcing function is smooth Option C and D in Fefferman" – for Buckmaster, the exact mathematical route he and Alpöge had been pursuing.

Buckmaster also wrote that he and Alpöge had been logging their work on OpenAI Codex, a tool to translate natural language prompts into code, for months.

At this point, Buckmaster refused to cooperate with OpenAI and rushed to publish his and Alpöge's results, plus his public statement.

OpenAI subsequently held a press briefing in which it claimed 10,000 AI agents had cracked the problem in an 88-hour marathon that had cost the company millions of dollars.

What is the data-access issue?

Buckmaster's public statement has already triggered scrutiny of OpenAI's corporate practices. When it claimed to have solved the same formulation of the problem Buckmaster and Alpöge had been working on, Buckmaster asked how the AI model had arrived there. On the September 6 call, Bubeck allegedly admitted an entire team had been assigned to crack the problem.

Further, Buckmaster said he had been inputting all of his and Alpöge's drafts into Codex over a year. So when Buckmaster asked if the internal OpenAI model had been trained on or had access to his private Codex sessions, OpenAI said the model "did not look up user data". But when Buckmaster pressed on whether his data had been used to train the model that worked on the problem, OpenAI didn't answer.

According to Buckmaster, Bubeck also offered him two unethical proposals. In the first, Buckmaster would post his significant result and OpenAI would post their Navier-Stokes result the following day. The second was that Buckmaster would write a solo paper presenting the Navier-Stokes result and acknowledge the internal OpenAI model.

Bubeck reportedly asserted on the call that he wanted Alpöge removed from authorship because Alpöge is an employee of Anthropic, OpenAI's rival.

Buckmaster said he refused both offers and threatened to go public with the conversation, whereupon Bubeck allegedly responded: "Why would you ruin your career?" and "If you don't want me to be nice, then I don't have to be nice".

Bubeck has since publicly called the allegations against him "false and inflammatory".

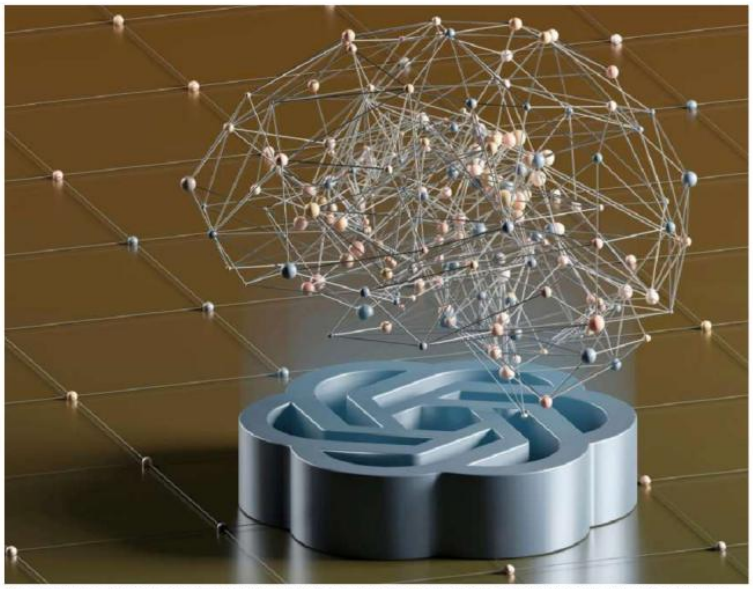
What questions remain?

1. Did OpenAI actually solve the problem? While OpenAI has said its agents reached a solution in 88 hours, it is unclear who, if any, outside the company has seen the claimed proof. Since Buckmaster described the AI-generated paper as "slop", it is also unknown whether OpenAI's internal model actually produced a rigorous proof or a convoluted approximation.

2. Did OpenAI breach user privacy? The silence regarding whether OpenAI trained its internal model on Buckmaster's private Codex logs has been deafening.

3. Who deserves the credit? The AI agents? OpenAI the corporation? Buckmaster and Alpöge? Or Diego Córdoba and Luis Martínez-Zoroa? Indeed, Buckmaster wrote in his statement he believes "Luis Martínez-Zoroa deserves a Fields Medal".

Just before the controversy broke out, Fields Medal winner Terence Tao had published a series of notes about why a 'human mathematics' remains relevant in the age of AI. As he wrote: "The point remains that there is a substantial opportunity cost in converting a historically productive and motivating problem ... into a mere viral social media post advertising some benchmark progress, rather than actually advancing the field and developing the next generation of both problems to ask and people to work on them."



While OpenAI has said its agents reached a solution for the Navier-Stokes regularity problem in 88 hours, it is unclear who, if any, outside the company has seen the claimed 100-page proof. GROWTIKA/UNSPLASH

THE GIST

- The Navier-Stokes equations describe fluid motion and form one of the seven Millennium Prize Problems, with a $1 million prize for a valid solution
- Buckmaster and Alpöge used AI models to develop a proof of finite-time blow-up involving a forcing function, then worked to turn the AI-generated output into a readable paper
- OpenAI later said 10,000 AI agents had solved the problem in an 88-hour effort, while Buckmaster alleged that OpenAI made questionable proposals over publication and authorship

10S9. Did OpenAI solve the Navier-Stokes problem?
क्या OpenAI ने Navier-Stokes समस्या हल कर ली है?

Navier–Stokes Problem and the AI Controversy

1. What are the Navier–Stokes equations?

- The **Navier–Stokes equations** mathematically describe how fluids such as **water and air move**. They apply Newton's laws of motion to fluids while treating the fluid as a continuous substance rather than tracking billions of individual molecules.
- For example, they help model:
- **Air flowing around an aircraft wing**
- **Weather and atmospheric circulation**
- **Water flowing through pipes**
- **Blood flowing through arteries**
- The equations work extremely well in applications. The unresolved mathematical question is different: **Can their three-dimensional solutions always remain smooth and well-behaved, or can they develop a singularity ("blow up") in finite time?**
- Solving this rigorously is one of the **seven Millennium Prize Problems**, carrying a **$1 million prize**.

2. What does "blow-up" mean?

- Imagine stirring water.
- Normally, its speed and turbulence remain finite. Mathematicians ask whether under certain conditions the equations could produce a quantity that becomes **unbounded/infinite within finite time**.
- That would indicate a **singularity**—essentially a point where the mathematical description ceases to behave smoothly.

3. What is a "forcing function"?

- A **forcing function** represents an **external force acting on the fluid**.
- **Bowl of water + spoon stirring it = external forcing**
- Mathematicians **Tristan Buckmaster and Levent Alpöge** were investigating a sophisticated route involving a **smooth external forcing function** and finite-time blow-up.

4. Where does AI enter the controversy?

- According to the article, Buckmaster and Alpöge used AI tools while developing their mathematical work.
- Later, OpenAI reportedly said an internal model had independently obtained a result following **essentially the same specialised route**.
- That generated the central controversy because Buckmaster said drafts of their research had previously been entered into **Codex**.

5. What are the unresolved questions?

- **Mathematics:** Is the claimed AI-generated proof actually rigorous?
- **Privacy:** Did an AI system somehow benefit from researchers' private work?
- **Academic credit:** If humans developed the key approach but AI generated important parts of a proof, **who deserves authorship and recognition?**
- These matters remain **unresolved and contested**, and that the allegations against OpenAI personnel have been denied.

Questions and Answers for the previous day's daily quiz: 1. Which two Greek words are generally given as the roots of the word "photograph"? **Ans: *Phos* (light) and *graphe* (drawing or writing)**
2. Which chemical did Herschel identify in 1819? **Ans: Sodium thiosulphate, then commonly called hyposulphite of soda**
3. What was the principal purpose of using sodium thiosulphate? **Ans: To fix the photographic image by removing unexposed silver salts and making the image more permanent**
4. What photographic printing process did Herschel develop that later became particularly associated with blueprints? **Ans: The cyanotype process**
5. Which French photographic process was a contemporary development in early photography? **Ans: The daguerreotype, developed by Louis Daguerre**
Visual: Identify the object. **Ans: It is the 40-foot reflecting telescope built by his father, Sir William Herschel, at Slough**
Early Birds: Avidha Mojumder | Sadhan Panda | Varghese Joseph | Sukdev Shet | Dodo Jayaditya

10S9. Quiz

1. Roots of the Word "Photograph" — *Phos* and *Graphē*

- "Photograph" is derived from the Greek words *phōs* or its genitive form *phōtos*, meaning "light," and *graphē*, meaning "drawing" or "writing." The term therefore literally signifies "drawing with light."
- Photography creates an image by recording light reflected or emitted by objects on a light-sensitive surface or electronic sensor. Sir John Herschel helped establish the English terms "photography," "negative" and "positive" in **1839**. However, the **Franco-Brazilian inventor Hércules Florence** had independently used the French term *photographie* during the **1830s**, illustrating that photographic terminology developed through several contemporary experiments.

2. Sodium Thiosulphate Identified by Herschel in 1819

- In **1819**, Sir John Herschel discovered that sodium thiosulphate—then called "hyposulphite of soda" and commonly shortened to "hypo"—could dissolve silver salts. Its modern chemical formula is $Na_2S_2O_3$.
- This discovery preceded the public announcement of practical photography in **1839**.

- Herschel subsequently informed Louis Daguerre and William Henry Fox Talbot about its photographic usefulness. Sodium thiosulphate became a dependable photographic fixing agent because it forms soluble complexes with otherwise insoluble silver halides. The modern chemical name is sodium **thiosulphate**, although "hypo" remained widely used among photographers.

3. Purpose of Sodium Thiosulphate in Photography

- Sodium thiosulphate was principally used as a photographic **fixer**. After exposure and development, a photographic surface still contained unexposed, light-sensitive silver-halide crystals that could darken when subsequently exposed to light.
- The fixer dissolved and removed these residual silver salts while leaving the developed metallic-silver image comparatively unaffected. Washing then removed the soluble chemical products, making the image more stable and permanent. Herschel demonstrated the suitability of "hypo" for photographic fixing in **1839**, using his earlier **1819** chemical finding. Fixing must be distinguished from developing: development makes the latent image visible, whereas fixation prevents continued unwanted darkening.

4. Cyanotype Process

- Sir John Herschel invented the cyanotype process in **1842**. It uses light-sensitive iron compounds rather than the silver salts employed in many other early photographic processes.
- During exposure to ultraviolet light, the sensitised surface undergoes a chemical reaction that ultimately produces insoluble **Prussian blue**, giving cyanotypes their characteristic blue-and-white appearance. Areas exposed to light turn blue, while covered areas remain pale.

- The inexpensive process was later widely employed to reproduce engineering and architectural drawings, producing the familiar "blueprint."

- Botanist **Anna Atkins** used cyanotypes from **1843** onward to document algae and is associated with one of the earliest photographically illustrated books.

5. Daguerreotype Process

- The daguerreotype was developed in France by **Louis-Jacques-Mandé Daguerre**, building partly upon his collaboration with Joseph Nicéphore Niépce. It was publicly announced in Paris in **January 1839**, and operational details were released on **19 August 1839**.

- The process produced a highly detailed, unique positive image on a silver-coated copper plate.
- The plate was sensitised with iodine vapour, exposed in a camera, developed with mercury vapour and fixed chemically.
- Unlike Talbot's later negative–positive process, a daguerreotype could not directly produce multiple copies. It became highly popular for portraiture during the **1840s and 1850s**. Metropolitan Museum of Art

6. William Herschel's 40-Foot Reflecting Telescope

- The object is the **40-foot reflecting telescope** constructed by astronomer Sir William Herschel, father of Sir John Herschel, at Observatory House in Slough, England. It was constructed between **1785 and 1789** with financial assistance from King George III.
- "Forty-foot" referred to its focal length, not its mirror diameter. Its principal speculum-metal mirror was approximately **48 inches or 1.2 metres** across, making it the world's largest telescope for several decades.
- William Herschel used it to discover Saturn's moons **Enceladus in 1789** and **Mimas in 1789**.
- Its deteriorating wooden framework was dismantled in **1839–40**, though surviving components were preserved.

AI researcher quits industry, warning that AI race is 'gambling with our lives'

GS III: S&T

Agence France-Presse
SAN FRANCISCO

An artificial intelligence researcher who left OpenAI to join Anthropic has decided to leave the industry, accusing both U.S. companies of "playing with our lives" in the race to develop AI models capable of self-improvement.

Jacob Coxon, 27, spent the past three years pretraining AI models, first at OpenAI and then, this year, at its rival Anthropic, which he considered more cautious in its approach.

Pretraining is the stage where AI models absorb vast quantities of data.

"Neither company is acting responsibly. They are racing straight to self-improving superintelligence and gambling with our lives," Mr. Coxon said on Tuesday.

"The people building AI earnestly believe that it could kill us all by the end of the decade," he said in a post on X.

"This is not a marketing stunt," he added.

Superintelligence is the theoretical point when AI's capabilities exceed human intelligence.

Anthropic safety executive Evan Hubinger backed up Mr. Coxon on X.


Jacob Coxon

"We really do earnestly believe AI could kill all humans!" he said, adding that he estimated that risk at more than 10% over the next decade.

Mr. Hubinger said Anthropic is "trying its best", but does not yet have a plan to ensure an AI system that surpasses human capabilities would obey its creators. He said there was a "low" risk of that happening with current models.

Mr. Coxon's resignation comes as Anthropic prepares for its market debut, following a summer marked by unauthorised hacks carried out by AI tools during testing.

"At Anthropic, the stakes are well-understood, but they are locked in a race to get there first, despite the risk," he said.

10S9. AI researcher quits industry, warning that AI race is 'gambling with our lives

AI शोधकर्ता ने उद्योग छोड़ा, चेतावनी दी कि AI की दौड़ 'हमारे जीवन के साथ जुआ खेलने' जैसी है

- An **artificial intelligence researcher** who left OpenAI to join Anthropic has decided to leave the industry, accusing both U.S. companies of "playing with our lives" in the race to develop AI models capable of **self-improvement**.

कृत्रिम बुद्धिमत्ता शोधकर्ता ने OpenAI छोड़कर Anthropic में शामिल होने के बाद अब उद्योग छोड़ने का निर्णय लिया है और दोनों अमेरिकी कंपनियों पर **स्वयं-सुधार में सक्षम AI मॉडल** विकसित करने की दौड़ में "हमारे जीवन के साथ खिलवाड़" करने का आरोप लगाया है।

- Jacob Coxon, 27, spent the past three years pretraining AI models, first at OpenAI and then, this year, at its rival Anthropic, which he considered more cautious in its approach.
  27 वर्षीय **जैकब कॉक्सन** ने पिछले तीन वर्षों में AI मॉडलों के **प्रीट्रेनिंग** पर काम किया—पहले OpenAI में और फिर इस वर्ष उसकी प्रतिद्वंद्वी कंपनी Anthropic में, जिसे वे अपने दृष्टिकोण में अधिक सतर्क मानते थे।
- Pretraining is the stage where AI models absorb vast quantities of data.
  प्रीट्रेनिंग वह चरण है जिसमें AI मॉडल बड़ी मात्रा में **डेटा ग्रहण** करते हैं।
- "Neither company is acting responsibly. They are racing straight to **self-improving superintelligence** and gambling with our lives," Mr. Coxon said on Tuesday.
  "इनमें से कोई भी कंपनी **जिम्मेदारी से काम नहीं कर रही है**। वे सीधे **स्वयं-सुधार करने वाली सुपरइंटेलिजेंस** की ओर दौड़ रही हैं और हमारे जीवन के साथ जुआ खेल रही हैं," श्री कॉक्सन ने मंगलवार को कहा।
- "The people building AI earnestly believe that it could kill us all by the end of the decade," he said in a post on X.
  उन्होंने X पर एक पोस्ट में कहा, "**AI विकसित करने वाले लोग** गंभीरता से मानते हैं कि दशक के अंत तक यह हम सभी की **जान ले सकती है**।"
- "This is not a marketing stunt," he added.
  उन्होंने आगे कहा, "यह कोई **मार्केटिंग स्टंट** नहीं है।"
- **Superintelligence** is the theoretical point when AI's capabilities exceed human intelligence.
  सुपरइंटेलिजेंस वह सैद्धांतिक अवस्था है जब AI की क्षमताएँ **मानव बुद्धिमत्ता से आगे निकल जाती हैं**।
- Anthropic safety executive **Evan Hubinger** backed up Mr. Coxon on X.
  Anthropic के **सुरक्षा कार्यकारी इवान ह्यूबिंगर** ने X पर श्री कॉक्सन के दावे का समर्थन किया।
- "We really do earnestly believe AI could kill all humans!" he said, adding that he estimated that risk at more than **10% over the next decade**.
  उन्होंने कहा, "हम वास्तव में गंभीरता से मानते हैं कि AI **सभी मनुष्यों की जान ले सकता है**!" उन्होंने आगे कहा कि अगले दशक में उन्होंने इस जोखिम का अनुमान **10% से अधिक** लगाया है।
- Mr. Hubinger said Anthropic is "trying its best", but does not yet have a plan to ensure an AI system that surpasses human capabilities would **obey its creators**.
  श्री ह्यूबिंगर ने कहा कि Anthropic "अपनी पूरी कोशिश कर रही है", लेकिन उसके पास अभी तक यह सुनिश्चित करने की कोई योजना नहीं है कि **मानव क्षमताओं से आगे निकलने वाली AI प्रणाली अपने निर्माताओं की आज्ञा मानेगी**।
- He said there was a "low" risk of that happening with current models.
  उन्होंने कहा कि वर्तमान मॉडलों के साथ ऐसा होने का जोखिम **"कम"** है।
- Mr. Coxon's resignation comes as Anthropic prepares for its **market debut**, following a summer marked by unauthorised hacks carried out by AI tools during testing.
  श्री कॉक्सन का इस्तीफा ऐसे समय में आया है जब Anthropic अपने **बाजार में पदार्पण** की तैयारी कर रही है और गर्मियों के दौरान परीक्षण के समय AI उपकरणों द्वारा किए गए **अनधिकृत हैक** की घटनाएँ सामने आई थीं।
- "At Anthropic, the stakes are well-understood, but they are locked in a race to get there first, despite the risk," he said.
  उन्होंने कहा, "Anthropic में **दाँव पर लगी परिस्थितियों और जोखिमों को अच्छी तरह समझा जाता है**, लेकिन जोखिम के बावजूद वे वहाँ सबसे पहले पहुँचने की दौड़ में फँसे हुए हैं।"

TOPICS COVERED	
10S9	Duo stuck in Keralam forest after filming Neelakurinji rescued in night operation नीलकुरिंजी की फिल्मिंग के बाद केरल के जंगल में फँसे दो युवकों को रात के अभियान में बचाया गया
10S9	Orangutan rescue: wildlife crime control experts to join probe ओरंगुटान बचाव: वन्यजीव अपराध नियंत्रण विशेषज्ञ जाँच में शामिल होंगे

GS III: Environment

Visual: The image shows Alaska's McCarty Glacier in Kenai Fjords National Park. In under a century, the glacier receded by about 15 km. There is dense vegetation on the slopes, once covered by ice. What is the phenomenon illustrated in this image called? PUBLIC DOMAIN

Visual: The image shows **Alaska's McCarty Glacier in Kenai Fjords National Park**.
In under a century, the glacier receded by about 15 km. There is dense vegetation on the slopes, once covered by ice. What is the phenomenon illustrated in this image called

Duo stuck in Keralam forest after filming *Neelakurinji* rescued in night operation

GS III: Environment

The Hindu Bureau
PALAKKAD

Two youth who entered the Attappady forest in Palakkad district of Keralam to film *Neelakurinji* blooms for their social media handles got lost in the dense jungle, prompting a risky late-night search operation by forest staff.

Abheendar and Shanu, both aged 23, entered the protected Chenthamala reserve forest without permission on Tuesday morning. They hiked for over three hours before reaching a high-altitude area. While returning, they lost their way. Darkness fell before they could find their way out. They then alerted their family members who contacted forest officials around 8 p.m.

Forest department staff pose with the two youth rescued from the Attappady forest on Wednesday. SPECIAL ARRANGEMENT

A forest team launched a search, carrying water and biscuits for the youth. It trekked for about three-and-a-half hours and found the duo around 11.30 p.m. "They were tired. One had muscle cramps," said N. Safeer, Attappady range Forest Officer, who supervised the operation.

However, the team had a few more obstacles to overcome before the journey was over. On their way back, they encountered elephants many times and had to step away to avoid confrontation. Eventually, the team came out of the forest early on Wednesday.

Chenthamala has a high presence of elephants and other wild animals. Weather here also changes quickly, Mr. Safeer said.

Case filed against youth

The Forest department filed a case against the duo for trespassing into the forest. Forest staff summoned their parents and explained the risks involved.

The famed *Neelakurinji* had bloomed in the area about three weeks ago. The department had warned people not to enter the forest owing to the risks.

10S9. Duo stuck in Keralam forest after filming Neelakurinji rescued in night operation
नीलकुरिंजी की फिल्मिंग के बाद केरल के जंगल में फँसे दो युवकों को रात के अभियान में बचाया गया

- Two youths who entered the **Attappady forest** in Palakkad district of Keralam to film **Neelakurinji blooms** for their social media handles got lost in the dense jungle, prompting a risky late-night search operation by forest staff.

केरल के **पालक्काड जिले के अट्टाप्पडी वन** में अपने सोशल मीडिया हैंडल के लिए **नीलकुरिंजी के फूलों** की फिल्मिंग करने गए दो युवक घने जंगल में रास्ता भटक गए, जिसके बाद वन कर्मचारियों को देर रात जोखिमपूर्ण खोज अभियान चलाना पड़ा।

- Abheendar and Shanu, both aged 23, entered the protected **Chenthamala reserve forest** without permission on Tuesday morning.
  23 वर्षीय **अभींदर और शानू** मंगलवार सुबह बिना अनुमति के संरक्षित **चेंथमाला आरक्षित वन** में प्रवेश कर गए।
- They hiked for over three hours before reaching a high-altitude area.
  उन्होंने **तीन घंटे से अधिक समय** तक पैदल यात्रा की और इसके बाद एक ऊँचाई वाले क्षेत्र में पहुँचे।
- While returning, they lost their way.
  वापस लौटते समय वे **रास्ता भटक गए**।
- Darkness fell before they could find their way out.
  इससे पहले कि वे बाहर निकलने का रास्ता खोज पाते, **अँधेरा हो गया**।
- They then alerted their family members who contacted forest officials around 8 p.m.
  इसके बाद उन्होंने अपने परिवार के सदस्यों को सूचित किया, जिन्होंने रात करीब **8 बजे वन अधिकारियों** से संपर्क किया।
- A forest team launched a search, carrying water and biscuits for the youth.
  एक **वन दल** ने खोज अभियान शुरू किया और युवकों के लिए पानी तथा बिस्कुट साथ ले गया।
- It trekked for about three and-a-half hours and found the duo around 11.30 p.m.
  दल ने लगभग **साढ़े तीन घंटे तक पैदल खोज** की और रात करीब **11:30 बजे दोनों युवकों** को खोज लिया।
- "They were tired. One had muscle cramps," said N. Safeer, Attappady range Forest Officer, who supervised the operation.
  अट्टाप्पडी रेंज वन अधिकारी **N. Safeer**, जिन्होंने अभियान की निगरानी की, ने कहा, "वे थके हुए थे। उनमें से एक को **मांसपेशियों में ऐंठन** हो रही थी।"
- However, the team had a few more obstacles to overcome before the journey was over.
  हालाँकि, यात्रा समाप्त होने से पहले दल को **कुछ और बाधाओं** का सामना करना पड़ा।
- On their way back, they encountered elephants many times and had to step away to avoid confrontation.
  वापसी के दौरान उनका कई बार **हाथियों से सामना** हुआ और टकराव से बचने के लिए उन्हें रास्ते से हटना पड़ा।
- Eventually, the team came out of the forest early on Wednesday.
  अंततः दल बुधवार तड़के **जंगल से बाहर निकल आया**।
- Chenthamala has a high presence of elephants and other wild animals.
  चेंथमाला में **हाथियों और अन्य जंगली जानवरों की अधिक मौजूदगी** है।
- Weather here also changes quickly, Mr. Safeer said.
  श्री Safeer ने कहा कि यहाँ का **मौसम भी तेजी से बदलता है**।

Case filed against youth
युवकों के खिलाफ मामला दर्ज

- The Forest department filed a case against the duo for trespassing into the forest.
  वन विभाग ने जंगल में अवैध रूप से प्रवेश करने के आरोप में दोनों युवकों के खिलाफ **मामला दर्ज** किया।
- Forest staff summoned their parents and explained the risks involved.
  वन कर्मचारियों ने उनके **माता-पिता को बुलाया** और इसमें शामिल जोखिमों के बारे में समझाया।
- The famed **Neelakurinji bloomed** in the area about three weeks ago.
  प्रसिद्ध **नीलकुरिंजी** इस क्षेत्र में लगभग **तीन सप्ताह पहले खिली थी**।
- The department had warned people not to enter the forest owing to the risks.
  विभाग ने लोगों को जोखिमों को देखते हुए **जंगल में प्रवेश न करने की चेतावनी** दी थी।

Orangutan rescue: wildlife crime control experts to join probe

GS III: Environment

Satyasundar Barik
BHUBANESWAR

The Special Task Force (STF) of the Odisha Police on Wednesday began a probe into the circumstances surrounding the rescue of five young orangutans from a coastal forest in Balasore district.

The Odisha Forest and Environment Department has also approached the Wildlife Crime Control Bureau (WCCB), seeking its expertise in investigating cases involving the illegal trafficking of wild animals.

Orangutans are not native to India. The five young apes – three males and two females – were mysteriously found in a casuarina plantation in the Udayapur-Talsari forest area on Tuesday.

Odisha Forest and Environment Minister Ganesh Ram Singhkhuntia said a thorough investigation had been initiated into what appeared to be a case of wildlife smuggling.

10S9. Orangutan rescue: wildlife crime control experts to join probe

ओरंगुटान बचाव: वन्यजीव अपराध नियंत्रण विशेषज्ञ जाँच में शामिल होंगे

- The **Special Task Force (STF)** of the Odisha Police on Wednesday began a probe into the circumstances surrounding the rescue of **five young orangutans** from a coastal forest in Balasore district.
ओडिशा पुलिस के **विशेष कार्य बल (STF)** ने बुधवार को बालासोर जिले के एक तटीय वन से **पाँच युवा ओरंगुटानों** के बचाव से जुड़ी परिस्थितियों की जाँच शुरू कर दी।
- The **Odisha Forest and Environment Department** has also approached the **Wildlife Crime Control Bureau (WCCB)**, seeking its expertise in investigating cases involving the illegal trafficking of wild animals.
ओडिशा वन एवं पर्यावरण विभाग ने **वन्यजीव अपराध नियंत्रण ब्यूरो (WCCB)** से भी संपर्क किया है और वन्यजीवों की **अवैध तस्करी** से जुड़े मामलों की जाँच में उसकी विशेषज्ञता माँगी है।
- Orangutans are not native to India.
ओरंगुटान भारत के मूल निवासी नहीं हैं।
- The five young apes — three males and two females — were mysteriously found in a casuarina plantation in the Udayapur-Talsari forest area on Tuesday.
पाँच युवा वानर—**तीन नर और दो मादा**—मंगलवार को उदयपुर-तालसारी वन क्षेत्र में स्थित एक **काजुआरिना वृक्षारोपण क्षेत्र** में रहस्यमय परिस्थितियों में पाए गए।
- Odisha Forest and Environment Minister **Ganesh Ram Singhkhuntia** said a thorough investigation had been initiated into what appeared to be a ca
ओडिशा के वन एवं पर्यावरण मंत्री **गणेश राम सिंहखुंटिया** ने कहा कि जो प्रतीत होता है, उसकी गहन जाँच शुरू कर दी गई है।

PCS Special:	10 September
10S9	T.N. to build new Secretariat complex at Pattinapakkam पट्टिनपक्कम में नया सचिवालय परिसर बनाएगा तमिलनाडु
10S9	North Korea builds new Yongbyon uranium enrichment facility: IAEA उत्तर कोरिया ने योंगब्योन में नई यूरेनियम संवर्धन सुविधा बनाई: IAEA
10S9	Norway bids final farewell to King Harald V at his funeral नॉर्वे ने राजा हाराल्ड V को अंतिम संस्कार में अंतिम विदाई दी
10S9	Sheetal wins two medals, India finishes second in the table शीतल ने दो पदक जीते, भारत पदक तालिका में दूसरे स्थान पर रहा

T.N. to build new Secretariat complex at Pattinapakkam

PCS

The Hindu Bureau
CHENNAI

The Tamil Nadu government has issued an order giving in-principle approval for initiating the process of constructing a new building complex comprising the Legislative Assembly and Secretariat at Pattinapakkam (Foreshore Estate) in Chennai on an aggregate 25.55 acres of land.

The State government also directed the Public Works Department to submit the Detailed Project Report (DPR), along with estimates, within three months.

On September 3, Chief Minister C. Joseph Vijay announced in the Assembly the government's plan to construct a new integrated Secretariat complex in Chennai, spread over 20 lakh sq.ft., at an estimated cost of ₹1,200 crore. At present, the Tamil Nadu Legislative Assembly and Secretariat are functioning on the historical Fort St. George campus.

According to the G.O. issued by the Public Department, the State government has identified 21.76 acres of land under the possession of the Tamil Nadu Housing Board, 0.93 acres of Greater Chennai Corporation land, 1.73 acres of Revenue Department land, and 1.13 acres of Tamil Nadu Housing Board land under the possession of the State government at Foreshore Estate.

The State also constituted three committees - a committee to call for Expressions of Interest and finalise the architectural consultancy firm; a committee to finalise building drawings and designs at the preliminary design stage; and a committee to finalise building drawings and designs at the final design stage, the order said.

10S9. T.N. to build new Secretariat complex at Pattinapakkam

पट्टिनपक्कम में नया सचिवालय परिसर बनाएगा तमिलनाडु

- The **Tamil Nadu government** has issued an order giving in-principle approval for initiating the process of constructing a new building complex comprising the **Legislative Assembly and Secretariat** at Pattinapakkam (Foreshore Estate) in Chennai on an aggregate 25.55 acres of land.

तमिलनाडु सरकार ने चेन्नई के पट्टिनपक्कम (फोरशोर एस्टेट) में कुल **25.55 एकड़ भूमि** पर **विधानसभा और सचिवालय** वाले नए भवन परिसर के निर्माण की प्रक्रिया शुरू करने के लिए सैद्धांतिक स्वीकृति प्रदान करने वाला आदेश जारी किया है।

- The State government also directed the **Public Works Department** to submit the Detailed Project Report (DPR), along with estimates, within three months.

राज्य सरकार ने **लोक निर्माण विभाग** को तीन महीने के भीतर अनुमानों के साथ **विस्तृत परियोजना रिपोर्ट (DPR)** प्रस्तुत करने का भी निर्देश दिया है।

- On September 3, Chief Minister C. Joseph Vijayan announced in the Assembly the government's plan to construct a new integrated Secretariat complex in Chennai, spread over 20 lakh sq.ft., at an estimated cost of ₹1,200 crore.

3 सितंबर को मुख्यमंत्री **C. Joseph Vijayan** ने विधानसभा में चेन्नई में **20 लाख वर्ग फुट क्षेत्रफल** में फैले नए एकीकृत सचिवालय परिसर के निर्माण की सरकार की योजना की घोषणा की, जिसकी अनुमानित लागत **₹1,200 करोड़** है।

- At present, the **Tamil Nadu Legislative Assembly and Secretariat** are functioning on the historical Fort St. George campus.

वर्तमान में **तमिलनाडु विधानसभा और सचिवालय** ऐतिहासिक **फोर्ट सेंट जॉर्ज परिसर** में कार्यरत हैं।

- According to the G.O. issued by the Public Department, the State government has identified 21.76 acres of land under the possession of the **Tamil Nadu Housing Board**, 0.93 acres of Greater Chennai Corporation land, 1.73 acres of Revenue Department land, and 1.13 acres of Tamil Nadu Housing Board land under the possession of the State government at Foreshore Estate.

लोक विभाग द्वारा जारी **सरकारी आदेश (G.O.)** के अनुसार, राज्य सरकार ने फोरशोर एस्टेट में **तमिलनाडु हाउसिंग बोर्ड** के कब्जे वाली 21.76 एकड़ भूमि, ग्रेटर चेन्नई कॉरपोरेशन की 0.93 एकड़ भूमि, राजस्व विभाग की 1.73 एकड़ भूमि तथा राज्य सरकार के कब्जे वाली तमिलनाडु हाउसिंग बोर्ड की 1.13 एकड़ भूमि की पहचान की है।

- The State also constituted three committees – a committee to call for **Expressions of Interest** and finalise the architectural consultancy firm; a committee to finalise building drawings and designs at the preliminary design stage; and a committee to finalise building drawings and designs at the final design stage, the order said.

राज्य ने तीन समितियों का भी गठन किया है—**रुचि की अभिव्यक्तियाँ (Expressions of Interest)** आमंत्रित करने और वास्तु परामर्श फर्म को अंतिम रूप देने के लिए एक समिति; प्रारंभिक डिजाइन चरण में भवन के **नक्शों और डिजाइनों** को अंतिम रूप देने के लिए एक समिति; तथा अंतिम डिजाइन चरण में भवन के नक्शों और डिजाइनों को अंतिम रूप देने के लिए एक समिति, आदेश में कहा गया है।

North Korea builds new Yongbyon uranium enrichment facility: IAEA

REUTERS

North Korea has built a new uranium enrichment facility at its main Yongbyon nuclear complex, and started operating an expanded annex at its Kangson enrichment site, the nuclear watchdog IAEA said. The IAEA said the developments in North Korea's nuclear programme violated UN Security Council resolutions. REUTERS

10S9. North Korea builds new Yongbyon uranium enrichment facility: IAEA
उत्तर कोरिया ने योंगब्योन में नई यूरेनियम संवर्धन सुविधा बनाई: IAEA

- North Korea has built a new **uranium enrichment facility** at its main **Yongbyon nuclear complex**, and started operating an expanded annex at its **Kangson enrichment site**, the nuclear watchdog IAEA said.

परमाणु निगरानी संस्था **IAEA** ने कहा कि उत्तर कोरिया ने अपने मुख्य **योंगब्योन परमाणु परिसर** में एक नई **यूरेनियम संवर्धन सुविधा** का निर्माण किया है और अपने **कांगसोन संवर्धन स्थल** में विस्तारित एक अतिरिक्त परिसर का संचालन शुरू कर दिया है।

- The IAEA said the developments in North Korea's **nuclear programme** violated **UN Security Council resolutions**.

IAEA ने कहा कि उत्तर कोरिया के **परमाणु कार्यक्रम** में हुए ये विकास **संयुक्त राष्ट्र सुरक्षा परिषद के प्रस्तावों** का उल्लंघन करते हैं।

Norway bids final farewell to King Harald V at his funeral

AFP

Norway bade its final farewell to King Harald V in Oslo on Wednesday, with thousands lining the streets and global royals and leaders attending. A 21-gun salute opened the procession from the royal palace to Oslo Cathedral. Harald, who died aged 89 after 35 years on the throne, was remembered for his humility. AP

10S9. Norway bids final farewell to King Harald V at his funeral
नॉर्वे ने राजा हाराल्ड V को अंतिम संस्कार में अंतिम विदाई दी

- Norway bade its final farewell to **King Harald V** in Oslo on Wednesday, with thousands lining the streets and global royals and leaders attending.

बुधवार को ओस्लो में नॉर्वे ने **राजा हाराल्ड V** को अंतिम विदाई दी, इस अवसर पर हजारों लोग सड़कों के किनारे एकत्र हुए तथा विश्व के राजपरिवारों के सदस्य और नेता उपस्थित रहे।

- A **21-gun salute** opened the procession from the royal palace to Oslo Cathedral.

21 तोपों की सलामी के साथ शाही महल से Oslo Cathedral तक अंतिम यात्रा शुरू हुई।

- Harald, who died aged 89 after 35 years on the throne, was remembered for his **humility**. AP

35 वर्षों तक सिंहासन पर रहने के बाद 89 वर्ष की आयु में निधन हुए Harald को उनकी **विनम्रता** के लिए याद किया गया। AP

Sheetal wins two medals, India finishes second in the table


Memorable: Sheetal pipped Kazakhstan's Aizada to bag the individual gold after combining with Toman for the compound mixed team bronze. VIJAY SONEJI

PARA ARCHERY

PCS
Sports Bureau

Armless para-archer Sheetal Devi won two medals, including a gold, as India secured six medals on the concluding day of the World Archery Para Series in Ahmedabad on Wednesday. The host finished second with its tally of four gold, three silver and eight bronze, behind Czechia, which topped the table with five gold.

Sheetal combined with Toman Kumar to get past Iraq's Hameed Sarah and Kadhim Abbas 157-145 for the compound mixed team bronze. Then, she pipped Kazakhstan's Seidan Aizada 144-144 (shoot-off 10-9) in the final to bag the women's individual gold.

In the recurve mixed team final, Bhawna and Harvinder Singh defeated China's Lang Quirong and Xia Lei 6-0 to claim the day's second gold. Later, Bhawna outsmarted compatriot Rajshri Rathod 6-0 for the women's individual bronze.

Toman went past Abbas 143-138, while Sarita beat China's Wang Huiting 141-140 for compound men's and women's bronze medals respectively.

10S9. Sheetal wins two medals, India finishes second in the table
शीतल ने दो पदक जीते, भारत पदक तालिका में दूसरे स्थान पर रहा

- Armless para-archer **Sheetal Devi** won two medals, including a gold, as India secured six medals on the concluding day of the **World Archery Para Series** in Ahmedabad on Wednesday.
  बिना हाथों वाली पैरा-तीरंदाज **शीतल देवी** ने एक स्वर्ण सहित दो पदक जीते, जबकि भारत ने बुधवार को अहमदाबाद में आयोजित **वर्ल्ड आर्चरी पैरा सीरीज़** के समापन दिवस पर छह पदक हासिल किए।
- The host finished second with its tally of four gold, three silver and eight bronze, behind **Czechia**, which topped the table with five gold.
  मेजबान भारत **चार स्वर्ण, तीन रजत और आठ कांस्य पदकों** के साथ दूसरे स्थान पर रहा, जबकि **चेकिया** पाँच स्वर्ण पदकों के साथ पदक तालिका में शीर्ष पर रहा।
- Sheetal combined with **Toman Kumar** to get past Iraq's Hameed Sarah and Kadhim Abbas 157-145 for the compound mixed team bronze.
  शीतल ने **तोमन कुमार** के साथ जोड़ी बनाकर इराक की हमीद सारा और काधिम अब्बास की जोड़ी को **157-145** से हराकर कंपाउंड मिश्रित टीम का कांस्य पदक जीता।
- Then, she pipped Kazakhstan's **Seidan Aizada** 144-144 (shoot-off 10-9) in the final to bag the women's individual gold.
  इसके बाद उन्होंने फाइनल में कजाखस्तान की **सीदान आइज़ादा** को 144-144 (**शूट-ऑफ 10-9**) से हराकर महिला व्यक्तिगत स्पर्धा का **स्वर्ण पदक** हासिल किया।
- In the recurve mixed team final, **Bhawna and Harvinder Singh** defeated China's Lang Quirong and Xia Lei 6-0 to claim the day's second gold.

रिकर्व मिश्रित टीम के फाइनल में **भावना और हरविंदर सिंह** ने चीन की लैंग क्विरोंग और शिया लेई को **6-0** से हराकर दिन का दूसरा **स्वर्ण पदक** जीता।

- Later, Bhawna outsmarted compatriot **Rajshri Rathod** 6-0 for the women's individual bronze.
  बाद में भावना ने अपनी हमवतन **राजश्री राठौड़** को **6-0** से हराकर महिला व्यक्तिगत स्पर्धा का कांस्य पदक जीता।
- Toman went past Abbas 143-138, while **Sarita** beat China's Wang Huiting 141-140 for compound men's and women's bronze medals respectively.
  तोमन ने अब्बास को **143-138** से हराया, जबकि **सरिता** ने चीन की वांग हुइटिंग को **141-140** से हराकर क्रमशः कंपाउंड पुरुष और महिला वर्ग के **कांस्य पदक** जीते।