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Bhiwani 'bags five' of India's seven boxing golds at CWG

PCS
Ashok Kumar
GURUGRAM

For decades, the dusty town of Bhiwani, about 100 km away from Delhi, has punched far above its weight in boxing rings around the world. On Saturday, its boxers scripted history for India at the Glasgow Commonwealth Games, powering the country to a haul of 10 medals, its best-ever performance in the sport at the Games. Of the seven gold medallists, five come from Bhiwani, which is often hailed as the 'Mini Cuba' of India, a tribute to the Caribbean island nation that has produced a slew of famed boxers.

India's first boxer to win an Olympic medal, Vijender Singh, shot the town



Boxer Priya Ghanghas, left, who won a gold medal at Glasgow CWG, practice at a training centre in Bhiwani in April. SHIV KUMAR PUSHPAKAR

into the global spotlight in 2008, winning a bronze at Beijing, and sparking a winning streak for dozens of other boxers from Bhiwani.

On Saturday, four Bhiwani women climbed the podium in Glasgow — Sakshi Chaudhary (51 kg),

Preeti Pawar (54 kg), Jaismine Lamboria (57 kg), and Priya Ghanghas (60 kg) — along with one man, Sachin Siwach (60 kg).

Jagdish Singh who heads the Bhiwani Boxing Club that has played a major role in scripting the town's dominance in the

sport, credited the record haul to a major change in the selection process for the 2026 Games. The current transparent and trial-based selection process would also help India in the upcoming Asian Games and 2028 Olympics, he told *The Hindu*.

"For the last two years, selections were done without trials, based on five to seven parameters decided by coaches. It was like a teacher giving marks in class. Coaches got influenced by whether someone greeted them or had a good rapport. But in the ring, only punches matter," Mr. Singh told *The Hindu* over phone.

Following backlash from players and intervention by the Sports Authority of India, the Boxing Fed-

eration of India scrapped its controversial points-based "assessment" system and reverted to open, trial-based selections, said Mr. Singh, who also coached Glasgow gold medallist Ms. Chaudhary.

This time, he said, BFI officials conducted neutral trials in public view with neutral judges.

Along with the five gold medallists in Glasgow from Bhiwani, a fellow Haryanvi, Ankush Panghal, won gold in the 80 kg category, while the seventh gold went to Arundhati Choudhary (70kg) of Rajasthan. In the silver category, Narendar Bernal (90+ kg) from Sorkhi village in Hansi also brought home a medal for Haryana. The other two silvers were won by Jadamani Singh (55 kg) of

Manipur and Lovlina Borgohain (75 kg) of Assam.

Hometown celebration
Back home in Bhiwani's Dhanana village, it was a moment of pride for Ms. Ghanghas's family. Her father Mahendra told reporters that the entire village would welcome her home. Speaking about her discipline, he said her diet of "churma, kheer, curd and milk" had played a big role. "Every parent should take a lesson from Priya: encourage your children to take up sports and work hard," he said.

The boxers' performance drew praise from across the political spectrum in Haryana.

SATISFYING GLASGOW SHOW
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03A8. Bhiwani 'bags five' of India's seven boxing golds at CWG

राष्ट्रमंडल खेलों में भारत के सात मुक्केबाज़ी स्वर्ण पदकों में से पाँच भिवानी के खिलाड़ियों ने जीते

- Of the **seven gold medallists**, **five** come from **Bhiwani**, which is often hailed as the '**Mini Cuba**' of India, a tribute to the Caribbean island nation that has produced a slew of famed boxers.

सात स्वर्ण पदक विजेताओं में से पाँच भिवानी से हैं, जिसे अक्सर भारत का 'मिनी क्यूबा (Mini Cuba)' कहा जाता है। यह उपाधि प्रसिद्ध मुक्केबाज़ों को जन्म देने वाले कैरेबियाई द्वीपीय राष्ट्र क्यूबा के सम्मान में दी जाती है।

- India's** first boxer to win an **Olympic medal**, **Vijender Singh**, shot the town into the global spotlight in **2008**, winning a **bronze at Beijing**, and sparking a winning streak for dozens of other boxers from **Bhiwani**.

भारत के पहले ओलंपिक पदक विजेता मुक्केबाज़ विजेन्द्र सिंह ने 2008 में बीजिंग ओलंपिक में कांस्य पदक जीतकर भिवानी को वैश्विक पहचान दिलाई और इसके बाद भिवानी के अनेक अन्य मुक्केबाज़ों की सफलता का मार्ग प्रशस्त किया।

- On **Saturday**, **four Bhiwani** women climbed the podium in **Glasgow** — **Sakshi Chaudhary (51 kg)**, **Preeti Pawar (54 kg)**, **Jaismine Lamboria (57 kg)**, and **Priya Ghanghas (60 kg)** — along with one man, **Sachin Siwach (60 kg)**.

शनिवार को ग्लासगो में भिवानी की चार महिला मुक्केबाज़ — साक्षी चौधरी (51 किग्रा), प्रीति पवार (54 किग्रा), जैसमीन लाम्बोरिया (57 किग्रा) तथा प्रिया घांघास (60 किग्रा) — और एक पुरुष मुक्केबाज़ सचिन सिवाच (60 किग्रा) पदक मंच पर पहुँचे।

- The **current transparent and trial-based selection process** would also help **India** in the upcoming **Asian Games** and **2028 Olympics**, he told *The Hindu*.

उन्होंने द हिंदू से कहा कि वर्तमान पारदर्शी (Transparent) एवं ट्रायल-आधारित चयन प्रक्रिया (Trial-based Selection Process) आगामी एशियाई खेलों तथा 2028 ओलंपिक में भी भारत के लिए लाभकारी सिद्ध होगी।

- Following backlash from players and intervention by the **Sports Authority of India**, the **Boxing Federation of India** scrapped its controversial **points-based "assessment" system** and reverted to open, **trial-based selections**, said **Mr. Singh**, who also coached **Glasgow** gold medallist **Ms. Chaudhary**.

खिलाड़ियों के विरोध तथा भारतीय खेल प्राधिकरण (Sports Authority of India) के हस्तक्षेप के बाद भारतीय मुक्केबाज़ी महासंघ (Boxing Federation of India) ने अपने विवादास्पद अंक-आधारित



“आकलन” प्रणाली (Points-Based “Assessment” System) को समाप्त कर दिया और पुनः खुली ट्रायल-आधारित चयन प्रक्रिया (Trial-Based Selections) अपनाई। यह जानकारी श्री सिंह (Mr. Singh) ने दी, जिन्होंने ग्लासगो (Glasgow) की स्वर्ण पदक विजेता सुश्री चौधरी (Ms. Chaudhary) को भी प्रशिक्षित किया था।

- Along with the five gold medallists in Glasgow from Bhiwani, a fellow Haryanvi, Ankush Panghal, won gold in the 80 kg category, while the seventh gold went to Arundhati Choudhary (70 kg) of Rajasthan.

भिवानी (Bhiwani) से ग्लासगो (Glasgow) के पाँच स्वर्ण पदक विजेताओं (Five Gold Medallists) के साथ एक अन्य हरियाणवी (Haryanvi) खिलाड़ी अंकुश पंगाल (Ankush Panghal) ने 80 किलोग्राम (80 kg) वर्ग में स्वर्ण पदक जीता, जबकि सातवाँ स्वर्ण पदक (Seventh Gold) राजस्थान (Rajasthan) की अरुंधति चौधरी (Arundhati Choudhary) ने 70 किलोग्राम (70 kg) वर्ग में प्राप्त किया।

- In the silver category, Narender Berwal (90+ kg) from Sorkhi village in Hansi also brought home a medal for Haryana.

रजत पदक (Silver) वर्ग में हरियाणा (Haryana) के हांसी (Hansi) स्थित सोरखी (Sorkhi) गाँव के नरेंद्र बेरवाल (Narender Berwal) ने 90+ किलोग्राम (90+ kg) वर्ग में पदक जीतकर राज्य का गौरव बढ़ाया।

- The other two silvers were won by Jadumani Singh (55 kg) of Manipur and Lovlina Borgohain (75 kg) of Assam.

अन्य दो रजत पदक (Two Silvers) मणिपुर (Manipur) के जदुमणि सिंह (Jadumani Singh) ने 55 किलोग्राम (55 kg) वर्ग में तथा असम (Assam) की लवलीना बोरगोहैन (Lovlina Borgohain) ने 75 किलोग्राम (75 kg) वर्ग में जीते।

A highly satisfying show by the Indian contingent in Glasgow

The boxers make a significant contribution to the country's medal tally; Gulveer, with a double podium finish, turns out to be the brightest star among the athletes; Asmita and Harsh bag historic gold in judo; Mirabai proves her class yet again

COMMONWEALTH GAMES

PCS
K. Keerthivasan
GLASGOW

The people of Glasgow were warm and welcoming, displaying immense hospitality towards visitors who landed for the Commonwealth Games here.

On the roads leading to the stadiums and inside the venues, the volunteers were a shining example of kindness, respect and helpfulness. They went out of their way to make everyone feel at home. True to its official slogan, "People Make Glasgow", the city once again showed it's the people who make the Games special.

For many Indian athletes, the cold weather did pose a challenge and affected their performances to some extent. But they refused to use the conditions as an excuse, instead using it as an opportunity to learn and compete with dignity and pride.

India's tally of 13 gold, 17 silver and nine bronze was one of its best returns in the quadrennial event. It reflected the steady growth of Indian sportspersons on the Commonwealth stage and their ability to adapt to different conditions. Though it would not be fair to compare the previous editions as Glasgow was a scaled-down Games featuring only 10 sports.

Boxing's contribution to India's overall medal tally



Striking it rich: Lovlina finished with a silver while fellow boxers Jaismine, Priya, Preeti, Sakshi and Arundhati took home the gold. PTI

was significant and impossible to overlook. It was easily the country's best-ever showing in the sport in the Games history, with a haul of 10 medals, including seven gold and three silver.

The boxing arena at the Scottish Event Campus was transformed into a sea of Indian supporters. The competition witnessed fierce contests, with England, Canada and Northern Ireland fielding some of their top boxers.

However, weightlifting was somewhat of a disappointment for India. Head coach Vijay Sharma had expected a medal haul of "around 10", but the team could not touch double digits and finished with eight medals – one gold, six silver and a bronze.

Bindyarani Devi, who had won a silver at the 2022 Commonwealth



Sachin and Ankush continued India's domination in boxing. AP



Games in women's 55kg, was expected to improve on that, but she ended up with a bronze in 58kg.

Much was expected from Raja Muthupandi in the men's 65kg category. However, he fell short, finishing second despite a spirited effort.

Mirabai Chanu continued to win hearts with her exploits. The humble Indian weightlifting star claimed her third succes-

sive Games gold medal, adding another glorious chapter to a remarkable career and cementing her status as a Commonwealth legend.

Gulveer Singh was the standout performer for India in athletics. The 28-year-old achieved a rare feat by winning two medals in a single Games.

His historic silver in the men's 10000m and bronze in the 5000m, achieved in

a strong field featuring several Kenyans and world-class competitors, highlighted his ability to take on elite opposition and deliver.

The Indian athletics contingent also improved on its 2022 Birmingham Games tally, winning 10 medals – five silver and as many bronze – even though a gold remained elusive.

The historic gold medals in judo by Asmita Dey and Harsh Singh enhanced India's impressive overall campaign.

Para sports also made a huge contribution to India's kitty as the gutsy athletes scripted history with a record seven medals.

Like every edition, Glasgow brought its share of triumphs and setbacks, moments of joy and lessons to be learnt for the Indian sportspersons.



03A8. A highly satisfying show by the Indian contingent in Glasgow

ग्लासगो में भारतीय दल का अत्यंत संतोषजनक प्रदर्शन

- India's tally of **13 gold, 17 silver and nine bronze** was one of its best returns in the quadrennial event.
भारत का **13 स्वर्ण, 17 रजत और 9 कांस्य** पदकों का प्रदर्शन इस चार वर्षीय प्रतियोगिता में उसके सर्वश्रेष्ठ प्रदर्शनों में से एक रहा।
- Though it would not be fair to compare the previous editions as **Glasgow** was a scaled-down **Games** featuring only **10 sports**.
हालाँकि पिछले संस्करणों से इसकी तुलना करना उचित नहीं होगा क्योंकि ग्लासगो में आयोजित खेल सीमित स्तर के थे और इनमें केवल **10 खेल** शामिल थे।
- Bindyarani Devi**, who had won a **silver** at the **2022 Commonwealth** बिंद्यारानी देवी, जिन्होंने **2022 कॉमनवेल्थ** में रजत पदक जीता था।
- Games** in women's **55kg**, was expected to improve on that, but she ended up with a **bronze** in **58kg**.
महिला **55** किग्रा वर्ग के खेलों में अपने पिछले प्रदर्शन से बेहतर करने की उम्मीद थी, लेकिन उन्होंने **58** किग्रा वर्ग में कांस्य पदक जीता।
- Much was expected from **Raja Muthupandi** in the men's **65kg** category.
पुरुषों के **65** किग्रा वर्ग में राजा मुथुपांडी से काफी उम्मीदें थीं।
- However, he fell short, finishing second despite a spirited effort.
हालाँकि, भरपूर प्रयास के बावजूद वह दूसरे स्थान पर रह गए।
- Mirabai Chanu** continued to win hearts with her exploits.
मीराबाई चानू ने अपने शानदार प्रदर्शन से लोगों का दिल जीतना जारी रखा।
- The humble Indian **weightlifting** star claimed her **third successive Games gold medal**, adding another glorious chapter to a remarkable career and cementing her status as a **Commonwealth legend**.
भारतीय भारोत्तोलन स्टार ने लगातार अपना तीसरा कॉमनवेल्थ खेल स्वर्ण पदक जीतकर अपने शानदार करियर में एक और गौरवशाली अध्याय जोड़ दिया तथा कॉमनवेल्थ की महान खिलाड़ियों में अपनी पहचान और मजबूत कर ली।
- Gulveer Singh** was the **standout performer for India in athletics**.
एथलेटिक्स में भारत के लिए गुलवीर सिंह सबसे उत्कृष्ट प्रदर्शन करने वाले खिलाड़ी रहे।
- The **Indian athletics contingent** also improved on its **2022 Birmingham Games** tally, winning **10 medals — five silver and as many bronze** — even though a **gold** remained elusive.
भारतीय एथलेटिक्स दल ने **2022 बर्मिंघम खेलों** की तुलना में बेहतर प्रदर्शन करते हुए **10 पदक** जीते — **5 रजत और 5 कांस्य** — हालाँकि स्वर्ण पदक हासिल नहीं हो सका।
- The historic **gold medals in judo by Asmita Dey and Harsh Singh** enhanced India's impressive overall campaign.
अस्मिता डे और हर्ष सिंह द्वारा जूडो में जीते गए ऐतिहासिक स्वर्ण पदकों ने भारत के शानदार समग्र अभियान को और मजबूत बनाया।
- Para sports** also made a huge contribution to **India's** kitty as the gutsy athletes scripted history with a record **seven medals**.
पैरा खेलों ने भी भारत की पदक झोली में बड़ा योगदान दिया, जहाँ साहसी खिलाड़ियों ने रिकॉर्ड सात पदक जीतकर इतिहास रच दिया।

Top 5 Commonwealth Games performances



Rank	Commonwealth Games	Host City	Year	Gold	Silver	Bronze	Total Medals	Overall Rank
1	XIX Commonwealth Games	Delhi, India	2010	38	27	36	101	2nd
2	XVII Commonwealth Games	Manchester, England	2002	30	22	17	69	4th
3	XXI Commonwealth Games	Gold Coast, Australia	2018	26	20	20	66	3rd
4	XX Commonwealth Games	Glasgow, Scotland	2014	15	30	19	64	5th
5	XXII Commonwealth Games	Birmingham, England	2022	22	16	23	61	4th

Where does Glasgow 2026 stand?

Commonwealth Games	Gold	Silver	Bronze	Total	Overall Rank
Glasgow 2026	13	17	9	39	4th

The **Glasgow 2026 Commonwealth Games** featured only **10 sports**, making it the smallest Commonwealth Games programme since the 1990s. The Games also included the **largest-ever integrated Para-sport programme**, with Para events embedded within **6 of the 10 sports**.

Sports Included in the Commonwealth Games 2026 (Glasgow)

S. No.	Sport	Para Discipline Included
1	3×3 Basketball	☐ 3×3 Wheelchair Basketball
2	Artistic Gymnastics	☐
3	Athletics	☐ Para Athletics
4	Bowls (Lawn Bowls)	☐ Para Bowls
5	Boxing	☐
6	Track Cycling	☐ Para Track Cycling
7	Judo	☐
8	Netball	☐
9	Swimming	☐ Para Swimming
10	Weightlifting	☐ Para Powerlifting

Important Facts

- **Host:** Glasgow, Scotland
- **Edition:** 23rd Commonwealth Games
- **Dates:** 23 July – 2 August 2026
- **Number of Sports:** 10



- Participating Commonwealth Games Associations: 74
- Integrated Para Sports: 6
- Record Para Medal Events: 47 (largest in Commonwealth Games history)

Sports Excluded Compared with Birmingham 2022

Several popular sports were **not included** in Glasgow 2026 due to the streamlined programme:

- Badminton
- Cricket (T20)
- Hockey
- Rugby Sevens
- Squash
- Table Tennis
- Triathlon (an endurance race combining three continuous disciplines: swimming, cycling, and running.)
- Wrestling
- Road Cycling
- Mountain Biking
- Diving
- Beach Volleyball

Gulveer breaks new ground for Indian distance running

PCS
R. Keerthivasan

GLASGOW

Gulveer Singh etched his name in the annals of Indian athletics at the Glasgow Commonwealth Games. The 28-year-old broke new ground for Indian distance running on the Commonwealth stage by winning two medals in a single Games.

Gulveer had made history by clinching a silver in the men's 10000m, India's first-ever medal in the event at the Games.

Gutsy display

He returned to the track on Saturday and produced another gritty performance in a competitive field to secure the bronze medal (3:24.95s) in 5000m. Mathew Kipsang of Kenya won the gold in a time of 13:23.61 while Ky Robinson of Australia bagged the silver (13:24.70).

Cornelius Kemboi of Kenya came within striking distance of overtaking Gulveer, but the latter shifted

Gulveer secured the bronze medal in 5000m with a timing of 3:24.95s. The 28-year-old finished behind Kenya's Kipsang and Australia's Robinson

gears in the final 10-odd metres to stay ahead and hold off the former. The Kenyan was a mere 0.04 seconds short at 13:24.99.

Keeping pace

Gulveer stayed with the pack for almost the entire race, even when he wasn't setting the pace. At the 1000m mark, he kept pace with the leaders, alongside the likes of Kipchumba, Robinson, Mohammed Ahmed, Dan Kibet and Kemboi. He remained firmly in contention, consistently featuring among the top five.

The blip came around the 2400m mark when he slipped to seventh, but Gulveer quickly regained his position in the front group, ensuring he was well placed to finish well on the home stretch.

These omissions significantly affected countries such as India, which traditionally win many medals in **wrestling, badminton, table tennis, hockey, and cricket.**

03A8. Gulveer breaks new ground for Indian distance running

गुलवीर ने भारतीय लंबी दूरी की दौड़ में नया इतिहास रचा

• **Gulveer Singh** etched his name in the annals of Indian athletics at the **Glasgow Commonwealth Games.**

गुलवीर सिंह ने ग्लासगो कॉमनवेल्थ गेम्स में भारतीय एथलेटिक्स के इतिहास में अपना नाम दर्ज करा लिया।

• The **28-year-old** broke new ground for **Indian distance running** on the **Commonwealth** stage by winning **two medals** in a single **Games.**

28 वर्षीय खिलाड़ी ने एक ही कॉमनवेल्थ खेलों में दो पदक जीतकर भारतीय लंबी दूरी की दौड़ के लिए नया इतिहास रच दिया।

• **Gulveer** had made history by clinching a **silver** in the men's **10000m**, **India's** first-ever medal in the event at the **Games.**

गुलवीर ने पुरुषों की 10000 मीटर स्पर्धा में रजत पदक जीतकर इतिहास रच दिया, जो इस स्पर्धा में भारत का कॉमनवेल्थ खेलों में पहला पदक था।

Gutsy display

जुझारू प्रदर्शन

- He returned to the track on **Saturday** and produced another gritty performance in a competitive field to secure the **bronze medal (3:24.95s) in 5000m**.
वह शनिवार को ट्रैक पर लौटे और कड़े मुकाबले में शानदार प्रदर्शन करते हुए 5000 मीटर में कांस्य पदक (3:24.95 सेकंड) हासिल किया।

Near-perfect Tanvi stands tall to clinch maiden World Tour title

The 17-year-old beats Nguyen to become the youngest Taipei Open champion; she is the first Indian woman to win the crown since Saina in 2008



Holding her own: Tanvi stayed in control barring a few hiccups. BADMINTONPHOTO

PCS
BADMINTON

Press Trust of India
TAIPEI CITY

Teen Indian sensation Tanvi Sharma clinched her maiden BWF World Tour title, defeating sixth seed Nguyen Thuy Linh of Vietnam in the women's singles final of the Taipei Open Super 300 badminton here on Sunday.

The 17-year-old, hailing from Punjab, needed just 36 minutes to beat World No. 21 Nguyen 21-16, 21-16.

"I did not expect to win a title here, so I am really happy," said Tanvi, who became the youngest champion in Taipei Open history at just 17 years and 222 days.

Coached by P.V. Sindhu's former mentor Park Tae-sang, the youngster is the first Indian to bag the Taipei Open women's

I was quite nervous, but I tried to give my 100%. I was going step by step, match by match

crown since Saina Nehwal in 2008.

"I was quite nervous, but I tried to give my 100%. I was just trying to deliver my best. I was going step by step, match by match. I played really well in every match," added Tanvi, who dropped only one game all week.

"I have to do a lot more to play Super 500 and 750s. So, I will be keep working hard."

In the title decider, the Indian made a flying start, catching the Vietnam player at the front court with deft drops played with the same action used for a smash.

After surging to a 10-2

lead, Tanvi made a string of errors to allow Nguyen to reduce the deficit to six points at 9-15. She, however, regained control in the closing stages of the opener and sealed it with a cross-court smash.

In the second game, the Vietnamese opened up a 3-0 lead before Tanvi racked up a series of points to hold a three-point edge at the interval. The Indian gradually stretched the advantage, her deception once again fetching crucial points.

At 19-12, Tanvi unsuccessfully challenged a line call after being ruled late, but she soon earned seven match points with a smash. She squandered three of them in a nervous finish before settling the issue.

In a heart-warming gesture, Tanvi took off her gold medal and placed it around Park's neck before the two posed for photographs.

03A8. Near-perfect Tanvi stands tall to clinch maiden World Tour title

लगभग त्रुटिहीन प्रदर्शन के साथ तन्वी ने अपना पहला वर्ल्ड टूर खिताब जीता

- The **17-year-old** beat **Nguyen** to become the youngest **Taipei Open** champion; she is the first **Indian woman** to win the crown since **Saina** in **2008**.

17 वर्षीय तन्वी ने **नगुएन** को हराकर **ताइपे ओपन** की सबसे कम उम्र की चैंपियन बनने का गौरव हासिल किया; वह **2008** में **साइना** के बाद यह खिताब जीतने वाली पहली **भारतीय महिला** बनीं।

- Teen **Indian** sensation **Tanvi Sharma** clinched her maiden **BWF World Tour** title, defeating sixth seed **Nguyen Thuy Linh** of **Vietnam** in the women's singles final of the **Taipei Open Super 300 badminton** here on **Sunday**.

किशोर **भारतीय** स्टार **तन्वी शर्मा** ने रविवार को यहाँ आयोजित **ताइपे ओपन सुपर 300 बैडमिंटन टूर्नामेंट** के महिला एकल फाइनल में **वियतनाम** की छठी वरीयता प्राप्त **नगुएन थुई लिन्ह** को हराकर अपना पहला **BWF वर्ल्ड टूर खिताब** जीता।

- The **17-year-old**, hailing from **Punjab**, needed just **36 minutes** to beat **World No. 21 Nguyen** **21-16, 21-16**.

पंजाब की रहने वाली **17 वर्षीय** तन्वी ने **विश्व नंबर 21 नगुएन** को **21-16, 21-16** से हराने में केवल **36 मिनट** लगाए।

BWF World Tour Structured?

The tournaments are arranged according to prestige, prize money, ranking points, and the quality of participating players.

Level	Tournament Category	Prestige
1	BWF World Tour Finals	Highest
2	Super 1000	Very High
3	Super 750	High
4	Super 500	Upper-Middle
5	Super 300	Middle
6	Super 100	Entry Level

Generally, winning a **Super 1000** tournament is considered more prestigious than winning a **Super 300**, although every category counts as a **BWF World Tour** title.

GS Paper 1: Geography		03 August 2026
TOPICS COVERED		
03A	Cauvery situation better, says Karnataka CM कावेरी की स्थिति बेहतर है, कर्नाटक के मुख्यमंत्री ने कहा	
03A	Five more bodies found; death toll in Ceuta migrant rush rises to 72 पाँच और शव मिले; स्यूटा में प्रवासी भीड़ के दौरान मृतकों की संख्या बढ़कर 72 हुई	
03A	How monsoon ready is Chennai? चेन्नई मानसून के लिए कितनी तैयार है?	



Tragic crossing: Smoke rising from a passenger ferry which caught fire off Indonesia's Madura island in East Java province on Sunday. At least five persons were killed while efforts are on to find more than 40 missing people after many jumped overboard. (AP Photo/PTT)

Tragic crossing: Smoke rising from a passenger ferry which caught fire on **Indonesia's Madura island** in East Java province on Sunday. At-least five persons were killed while efforts are on to find more than 40 missing people after many jumped overboard



Cauvery situation better, says Karnataka CM

Releasing a limited quantity of water to Tamil Nadu for drinking purposes, says Shivakumar

CM reiterates that the Mekedatu project is vital to finding a long-term solution to water dispute

CM appeals for withdrawal of August 13 strike; Kannada leader Nagaraj says it will go ahead

SS I. Geography
Sharath S. Srivatsa
Laiq A. Khan
BENGALURU/MYSURU

Stating that the water situation in the Cauvery was "slightly better" in view of the rain, Karnataka Chief Minister D.K. Shivakumar on Sunday reiterated his appeal to the Kannada organisations to withdraw their State-wide bandh plan for August 13.

However, Kannada Chaluvali leader Vatal Nagaraj, who is leading the protest, said the bandh would be held as planned.

At an all-party meeting, the Chief Minister said Karnataka was assessing the Cauvery situation, including a petition filed in the Supreme Court by the Dravida Munnetra Kazhagam, the Opposition party in Tamil Nadu. A limited quantity of water was being released from the reservoirs following rain, he said.



Karnataka CM D.K. Shivakumar with ex-CMs B.S. Yeddyurappa and Siddaramaiah. SPECIAL ARRANGEMENT

The meeting had been convened to address the concerns over the Cauvery Water Management Authority (CWMA)'s directive to the State to abide by the Cauvery Water Regulation Committee's order to release 3,500 cusecs daily to Tamil Nadu for 15 days. The order set off protests in parts of Karnataka.

The data shared by the Water Resources Department show that Karnataka was releasing water at the rate of 25,000 cusecs from the Kabinri reservoir and 1,819 cusecs from the Krishnaraja Sagar on Sunday to Tamil Nadu. "We are releasing a limited quantity of water through canals only to fill lakes and tanks

meant for drinking water purposes, and not for irrigation," he said.

Reiterating that the proposed Mekedatu project on the Cauvery was the long-term solution to the problems faced by both States, he said: "Karnataka will respect the law and orders of the Supreme Court while protecting the State's

Cauvery water will reach Tamil Nadu today: officials

The Hindu Bureau
SALEM

Water released from the Kabinri Dam in Karnataka is expected to reach Tamil Nadu on Monday and flow into the Mettur Dam by Monday night or Tuesday, according to Water Resources Department officials. The Karnataka

government, following rain over the past few days, began releasing Cauvery water from the Kabinri Dam on Saturday. However, its entry into Tamil Nadu has been delayed as the dry Cauvery bed is absorbing part of the released water.

FULL STORY ON
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interest". He said Tamil Nadu Chief Minister C. Joseph Vijay had agreed to postpone his visit to Bengaluru to discuss the issue.

"(Four) reservoirs in the Cauvery basin are cumulatively receiving about 68,000 cusecs of water. Our dams were not full since there was no rain. There has been some rain

(now) and the situation has become slightly better. Kabinri (reservoir) is full," Mr. Shivakumar said.

Asked if he would be able to convince Mr. Vijay of the situation, he said: "We will make him understand (the situation) and he will understand. Though he is new to politics, he is courageous".

He said he will speak to the protesting farmers, Kannada organisations, and Opposition leaders. "Our Ministers will also speak. When the government is standing with you and nature is also with you, bandh is of no use. It will affect our schools and business," the Chief Minister said.

However, in Mysuru, former MLA Vatal Nagaraj said the bandh had not been called on one issue. "More than 2,000 Kannada organisations have extended support to the bandh. Bandh is for various issues, including the Mahadayi river water dispute, employment for Kannadigas, and the development of Mysuru, Hyderabad-Karnataka region, North Karnataka, Belagavi, Hubballi-Dharwad and border areas."

EDITORIAL
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03A8. Cauvery situation better, says Karnataka CM

कावेरी की स्थिति बेहतर है, कर्नाटक के मुख्यमंत्री ने कहा

- The meeting had been convened to address the concerns over the **Cauvery Water Management Authority (CWMA)**'s directive to the State to abide by the **Cauvery Water Regulation Committee (CWRC)**'s order to release **3,500 cusecs** daily to **Tamil Nadu** for **15 days**.

यह बैठक कावेरी जल प्रबंधन प्राधिकरण (CWMA) द्वारा राज्य को कावेरी जल विनियमन समिति (CWRC) के उस आदेश का पालन करने के निर्देश पर विचार करने के लिए बुलाई गई थी, जिसके अनुसार तमिलनाडु को **15 दिनों** तक प्रतिदिन **3,500 क्यूसेक** जल छोड़ा जाना है।

- The data shared by the **Water Resources Department** show that **Karnataka** was releasing water at the rate of **25,000 cusecs** from the **Kabini reservoir** and **1,819 cusecs** from the **Krishnaraja Sagar (KRS)** on **Sunday** to **Tamil Nadu**.

जल संसाधन विभाग द्वारा साझा किए गए आँकड़ों के अनुसार, रविवार को कर्नाटक कबिनी जलाशय से **25,000 क्यूसेक** तथा कृष्णराज सागर (KRS) से **1,819 क्यूसेक** जल तमिलनाडु के लिए छोड़ रहा था।

Top 10 Major Reservoirs/Projects in South India Associated with Inter-State Water Disputes

Rank	Reservoir / Project	River	States Involved	Nature of Dispute
1	Mullaperiyar Dam	Periyar	Kerala – Tamil Nadu	Water level, dam safety, operation rights, 999-year lease agreement .
2	Krishnaraja Sagar (KRS) Dam	Cauvery	Karnataka – Tamil Nadu (also Kerala & Puducherry as basin states)	Cauvery water sharing and reservoir releases.
3	Mettur Dam (Stanley Reservoir)	Cauvery	Tamil Nadu – Karnataka	Dependent on upstream releases from Karnataka under Cauvery awards.
4	Mekedatu Reservoir Project (Proposed)	Cauvery	Karnataka – Tamil Nadu	Karnataka proposes a balancing reservoir; Tamil Nadu fears reduced downstream flow.
5	Almatti Dam (Upper Krishna Project)	Krishna	Karnataka – Telangana – Andhra Pradesh (also Maharashtra in Krishna basin)	Raising dam height, Krishna water allocation, upstream storage.
6	Srisailem Dam	Krishna	Andhra Pradesh – Telangana	Hydropower generation vs irrigation releases; reservoir operation.
7	Nagarjuna Sagar Dam	Krishna	Andhra Pradesh – Telangana	Sharing of Krishna waters after bifurcation of Andhra Pradesh (2014).
8	Babli Barrage	Godavari	Maharashtra – Telangana (earlier Andhra Pradesh)	Upstream storage affecting downstream irrigation.
9	Polavaram Irrigation	Godavari	Andhra Pradesh –	Submergence,

Rank	Reservoir / Project	River	States Involved	Nature of Dispute
	Project		Telangana – Odisha – Chhattisgarh	rehabilitation, water diversion, interstate allocation.
10	Parambikulam–Aliyar Project (PAP)	Parambikulam, Aliyar and tributaries	Kerala – Tamil Nadu	Water-sharing agreement, reservoir operations, irrigation allocation.

River-wise Important Projects

Cauvery River

- Krishnaraja Sagar (KRS) Dam
- Mettur Dam
- Kabini Dam
- Hemavathi Dam
- Harangi Dam
- **Proposed Mekedatu Reservoir**
- **Dispute:** Karnataka vs Tamil Nadu (Kerala and Puducherry are also basin states).

Krishna River

- Almatti Dam
- Narayanpur Dam
- Tungabhadra Dam
- Srisailem Dam
- Nagarjuna Sagar Dam
- Pulichintala Project
- **Dispute:** Maharashtra, Karnataka, Telangana and Andhra Pradesh.

Godavari River

- Polavaram Project
- Babli Barrage
- Sriram Sagar Project
- Jayakwadi Dam
- **Dispute:** Andhra Pradesh, Telangana, Maharashtra, Chhattisgarh and Odisha.

Periyar River

- Mullaperiyar Dam
- Idukki Dam
- **Dispute:** Kerala vs Tamil Nadu.

West-flowing Rivers

- Parambikulam–Aliyar Project

- **Dispute:** Kerala vs Tamil Nadu.

Top 5 Longest Rivers of Kerala

Rank	River	Length (km)	Origin	Mouth	Important Facts
1	Periyar	244 km	Sivagiri Hills, Western Ghats	Arabian Sea (near Kochi)	Longest river of Kerala; known as the Lifeline of Kerala ; Mullaperiyar and Idukki dams are located on it.
2	Bharathapuzha (Nila River)	209 km	Anamalai Hills, Western Ghats	Arabian Sea at Ponnani	Second-longest river of Kerala; largest river basin entirely within Kerala; culturally known as River Nila .
3	Pamba	176 km	Pulachimala Hills, Western Ghats	Vembanad Lake	Third-longest river; called the Dakshina Bhagirathi ; associated with the Sabarimala Temple pilgrimage.
4	Chaliyar	169 km	Elambalari Hills, Western Ghats	Arabian Sea at Beypore	Fourth-longest river; flows through Kerala and a small part of Tamil Nadu; major river of northern Kerala.
5	Kadalundi	130 km	Silent Valley region, Western Ghats	Arabian Sea at Kadalundi	Fifth-longest river; famous for the Kadalundi Bird Sanctuary at its estuary.

Quick Facts

- **Longest River of Kerala:** Periyar (244 km)
- **Largest River Basin in Kerala:** Bharathapuzha Basin
 - **Largest Dam in Kerala:** Idukki Dam (on Periyar)
 - **Most Important Pilgrimage River:** Pamba (Sabarimala)
 - **Known as "Nila":** Bharathapuzha
 - **Known as "Lifeline of Kerala":** Periyar
 - **Known as "Dakshina Bhagirathi":** Pamba

Five more bodies found; death toll in Ceuta migrant rush rises to 72



GS I: Geography AFP
The death toll from Thursday's mass rush into Spain's North African enclave of Ceuta from Morocco reached at least 72 on Sunday as five more bodies were found along Ceuta's coast, officials said. More than 50,000 people crossed into Ceuta by land and sea in an unprecedented surge that began on Thursday. REUTERS

03A8. Five more bodies found; death toll in Ceuta migrant rush rises to 72

पाँच और शव मिले; स्यूटा में प्रवासी भीड़ के दौरान मृतकों की संख्या बढ़कर 72 हुई



• The death toll from Thursday's mass rush into **Spain's North African enclave of Ceuta from Morocco** reached at least **72** on **Sunday** as **five more bodies** were found along **Ceuta's coast**, officials said.

अधिकारियों ने कहा कि गुरुवार को मोरक्को से स्पेन के उत्तर अफ्रीकी एन्क्लेव स्यूटा में हुई बड़े पैमाने की भीड़ के बाद रविवार को स्यूटा के तट पर पाँच और शव मिलने से मृतकों की संख्या बढ़कर कम से कम 72 हो गई।

• More than **50,000 people** crossed into **Ceuta by land and sea** in an unprecedented surge that began on **Thursday**.

गुरुवार से शुरू हुई अभूतपूर्व भीड़ के दौरान 50,000 से अधिक लोग स्थल और समुद्री मार्ग से स्यूटा में प्रवेश कर गए।

How monsoon ready is Chennai?

As Chennai begins the countdown to the **Northeast monsoon**, the city confronts the twin challenges of a weak Southwest monsoon, followed by prospects of intense rainfall during the ensuing monsoon. An additional factor this year, El Nino, adds to the uncertainty. But the focus of the local government must always remain on making sure the city is monsoon ready, reports **K. Lakshmi**

Prepared, but not fully ready

August marks the start of the countdown to the Northeast monsoon, the season that poses a major annual challenge to Chennai. Even as the city is dealing with the impact of a weak Southwest monsoon, the focus has shifted to ensuring Chennai is ready for the ensuing monsoon, presenting the new government with its first major monsoon test.

The stakes are higher this year as meteorologists continue to monitor the evolving El Nino conditions. While the Northeast monsoon is known for its volatile nature, and often springs surprises, El Nino, a complex climate phenomenon that influences extreme weather, has added another layer of uncertainty this year. In its outlook for the second half of the Southwest monsoon, the India Meteorological Department has observed that the currently moderate El Nino conditions are expected to strengthen through the remaining part of the Southwest monsoon.

The outlook also presents a mixed picture on the global weather factors. While forecasts indicate that neutral Indian Ocean Dipole (IOD) conditions are likely to persist, some international forecasting centres suggest that a positive IOD may develop in September, raising expectations of countering the impact of El Nino.

Officials of the Regional Meteorological Centre note that El Nino is usually favourable for enhanced rainfall during Northeast monsoon. Recalling that 2015 was a strong El Nino year when Chennai experienced a deluge, officials say Northeast monsoon behaviour is shaped by a complex interplay of atmospheric and oceanic conditions and cannot be associated with a single weather phenomenon.

Given that the Northeast monsoon could still produce short, intense rainfall episodes, meteorologists underscore the need for robust flood preparedness alongside measures to safeguard water security. In response to the evolving climate scenario and growing concerns, the government has formed an expert advisory committee to monitor and assess the potential impact of a possible strong El Nino condition this year and recommend measures for preparedness and mitigation. The government on Friday ordered allocation of ₹440 crore to augment drinking water sources across the State to ensure no shortage of drinking water in view of the rainfall deficit during this monsoon.

Prepared, but not fully ready

While the city appears to be partly prepared, a significant amount of work is still waiting to be completed before the onset of the Northeast monsoon. A major concern among the residents is whether the remaining stormwater drain work, missing gaps in the drains, and canal improvement projects will be completed in time. For instance, residents of flood-prone areas of Velachery note that the civic agencies have informed them that pumps will be positioned at identified flood-prone locations and additional boats will be kept ready ahead of the Northeast monsoon. However, completion of long-pending flood mitigation projects remains crucial.

T.R. Subbiah of Velachery says the 3.5-km macro drain from the Vijayanagar bus terminus to Thorapakkam has not been desilted since its construction, despite being the area's main stormwater carrier. While water hyacinth is being removed from Velachery lake, a major groundwater recharge source, Geetha Ganesh, secretary of the AGS Colony Residents' Welfare

The State may make one of the secondary cities as an administrative capital. This strategy may make Chennai less vulnerable to natural disasters
K.P. SUBRAMANIAN, Former professor of urban engineering, Anna University

Association, says, "Velachery lake should be desilted, wherever feasible, and made sewage-free before the Northeast monsoon. The focus should be on protecting the lake rather than on cosmetic beautification."

The Greater Chennai Corporation (GCC) identified 87 locations prone to chronic inundation – based on the data from the 2024 monsoon – in its City Disaster Management Perspective Plan 2025. The report showed 26 high vulnerability and 27 medium vulnerability areas, while 34 locations were categorised as low vulnerability.

Councillors flag gaps

Elected representatives from some parts of the city, too, note that flood mitigation projects remain incomplete in their wards.

Puzhal's Tamilaga Vetri Kazhagam councillor E. Settu says large parts of his ward still lack stormwater drain connectivity. Unless Puzhal lake is cleared of encroachments in some portions near Surapur, the neighbouring area will remain vulnerable to flooding during the upcoming monsoon.

Some elected representatives have also alleged that they have not been invited to the government's monsoon preparedness review meetings this year. Complaining that councillors were not informed of the decisions taken at the monsoon preparedness review meetings held at the Ripon Buildings, Communist Party of India (Marxist) councillor R. Jayaraman says that about 10 stormwater drain links remain incomplete in his ward in the Tivoliyur Zone because short-term tenders were not being sanctioned. The Corporation Council would pass more than 100 resolutions at this time of the year, including several related to monsoon preparedness. Only fewer than 30 resolutions were passed in each of the past two years. As ward development funds have not yet been released, councillors could not take up local projects, he says.

Mayor R. Priya has also alleged that the elected representatives had not been invited to the government's monsoon preparedness review meetings this year. Such meetings enable elected representatives to raise constituency-level issues, particularly canal connectivity and flood mitigation requirements, she says.

Noting that monsoon preparedness work has started later than usual, she says canal desilting started a week ago. This year, tenders were is-

sued only in July owing to funding constraints. No new civic projects are being cleared and even small projects and work on connecting the missing stormwater drain links are put on hold because of funding constraints and delays in administrative approval.

Mobilisation of volunteer groups for monsoon preparedness has not taken off either. Snehasri S., one of the two volunteers who submitted reports on monsoon preparedness following the flooding caused by Cyclone Michaung, says she has not heard if the GCC is re-engaging its volunteer network this Northeast monsoon. A senior official, however, clarifies that recruitment of volunteers will begin soon.

Every year, the Water Resources Department (WRD) launches comprehensive monsoon preparedness projects to desilt waterways and waterbodies in and around the city, ahead of the Northeast monsoon. With the government order for these projects being delayed, the department launched a special drive earlier this week to desilt some of the vulnerable sites with the support of non-governmental organisations and under corporate social responsibility initiatives.

This year, NGOs and citizen volunteers have been roped in. The drive has been extended to the catchments of key reservoirs, including Pooni and Red Hills. As many of the ambitious flood mitigation projects may not begin until early next year, the WRD is eyeing short projects, to be taken up with the State Disaster Mitigation Fund, to remove bottlenecks in the waterways and reduce flood risk.

Major projects under scrutiny

Concern has also been voiced over two ongoing projects – the Chennai Port-Madharavoy Elevated Corridor and the Mamallan Reservoir – with environmentalists and residents pointing to increased flood risk, if adequate mitigation measures are not in place.

Councillors have demanded a study on the impact of the existing bridges and Metro Rail work on the Cooum's carrying capacity. Responding to the worries, GCC Commissioner G.S. Sameeran says the civic body has recognised the long-term importance of assessing the hydraulic impact of permanent structures on the Cooum riverbed. The WRD has entrusted Anna University with carrying out a scientific impact assessment of the piers constructed for the elevated corridor. The

university will also recommend mitigation measures, he says.

While the WRD noted that it would coordinate with NHA on the removal of work platforms during the monsoon, official sources in the NHA say the elevated corridor design has been changed. The entire double-decker structure stands on only one pillar. The NHA monitored the water flow in the past two seasons, and there was no flooding due to the pillars. Work platforms are removed from October to January.

Similarly, environmental groups and fishing communities have alleged that the proposed Mamallan Reservoir, conceived as Chennai's drinking water source, could increase flood risk in the low-lying coastal landscape between Old Mahabalipuram Road and East Coast Road. According to J. Prasanth of the Chennai Climate Action Group, converting this dynamic tidal landscape into a freshwater reservoir, enclosed by embankments and regulators, could obstruct the discharge of floodwaters during extreme rainfall, especially when heavy rain coincides with high tides or cyclonic storm surges.

Metrowater faces different challenge

This monsoon could present another set of challenges to Chennai Metrowater. The agency is strengthening water sources to sustain uninterrupted water supply until early next year, upgrading many sewage pumping stations and desilting sewer lines. However, the ongoing infrastructure projects to build new stormwater drains or gas pipelines often lead to recurring damage to sewer and water pipelines. In July, Metrowater received nearly 1,850 complaints, mostly pertaining to sewage block or overflow, following the collapse of ageing pipelines or the damage to the network.

Officials note that the issue continues despite sharing of maps of the agency's underground infrastructure. They attribute the problem to the lack of coordination with other agencies when projects are executed. To address power outages during the monsoon, Tamil Nadu Power Distribution Corporation Limited (TNPDCL) has instructed officials to prioritise buildings, including hospitals, public water supply and communication towers, for precautionary measures. Special teams have been formed for restoration.

TNPDCL Chairman and Managing Director V. Arun Roy has emphasised the need for speeding up maintenance work, including pruning of tree branches, to avoid snapping of overhead power lines and replacement of the damaged poles. TNPDCL has also identified sub-stations that got flooded in the past.

Urban planning experts note that accelerated urbanisation, particularly near river basins, has intensified flood vulnerability by disrupting natural water retention areas. Anna University's former professor of urban engineering K.P. Subramanian says that besides low-lying topography and inadequate stormwater drains, rapid but unplanned urbanisation is the pre-eminent cause of recurring floods in Chennai. Shrinking waterbodies have also led to flooding. "The government may consider making one of the secondary cities (Coimbatore, Madurai, and Tiruchi) as an administrative capital. Such a strategy may lead to the decentralisation of Chennai, making it less vulnerable to flooding and other natural disasters," he says.

(With inputs from Aloysius Xavier Lopez, R. Ashwaryya, R. Srikanth, Geetha Srirani, and Deepa H. Ramakrishnan)



Tardy progress A stormwater drain being built on Kallamman Road at Vinugambakkam. Residents are worried whether the remaining stormwater drain work will be completed in time. B. VELANJANANI (RA)



03A8. How monsoon ready is Chennai?

चेन्नई मानसून के लिए कितनी तैयार है?

- While the **Northeast monsoon** is known for its volatile nature, and often springs surprises, **El Nino**, a complex climate phenomenon that influences extreme weather, has added another layer of uncertainty this year.
जहाँ **उत्तर-पूर्व मानसून** अपनी अनिश्चित प्रकृति और अचानक बदलावों के लिए जाना जाता है, वहीं चरम मौसम को प्रभावित करने वाली जटिल जलवायु घटना **एल नीनो** ने इस वर्ष अनिश्चितता की एक और परत जोड़ दी है।
- While forecasts indicate that **neutral Indian Ocean Dipole (IOD) conditions are likely to persist**, some international forecasting centres suggest that a positive **IOD** may develop in **September**, raising expectations of countering the impact of **El Nino**.
जहाँ पूर्वानुमानों के अनुसार तटस्थ **हिंद महासागर द्विध्रुव (IOD)** की स्थिति बनी रह सकती है, वहीं कुछ अंतरराष्ट्रीय पूर्वानुमान केंद्रों का मानना है कि **सितंबर** में सकारात्मक **IOD** विकसित हो सकता है, जिससे **एल नीनो** के प्रभाव को कुछ हद तक संतुलित करने की उम्मीद बढ़ी है।
- Officials of the **Regional Meteorological Centre** note that **El Nino** is usually favourable for enhanced rainfall during **Northeast monsoon**.
क्षेत्रीय मौसम विज्ञान केंद्र के अधिकारियों का कहना है कि **एल नीनो** सामान्यतः **उत्तर-पूर्व मानसून** के दौरान अधिक वर्षा के लिए अनुकूल माना जाता है।

GS Paper II: Governance		03 August 2026
TOPICS COVERED		
03A	Why is the government? schools shutting down? सरकारी विद्यालय क्यों बंद हो रहे हैं?	



Why are govt. schools shutting down?

Which States have witnessed the highest number of closures? How has school rationalisation affected children's access to education? Who bears the biggest burden of government school closures? Can the Centre step in to reverse the trend? Why has the Right to Education Act fallen short?

SS II: Governance

EXPLAINER

G. Ramakrishnan

The story so far:

A recent NITI Aayog report said some 94,000 government schools were closed over the past decade, an average of 25 a day, contributing to a 2.26 crore decline in government school enrolment. The government schools' share of total enrolment has fallen from 71% in 2005 to 49.24% in 2024-25.

Why are government schools shutting down?

School closures are happening across States on the grounds of rationalisation. The National Education Policy 2020 advocates such rationalisation but without endangering the concept of neighbourhood schools.

School closure numbers cannot be explained away as gradual demographic drift, urban migration and so on. Rather, it is a coordinated administrative decision taken in states where the poorest and most rural children have the least capacity to compensate for a school that has vanished.

Which States are among the worst affected?

Uttar Pradesh, Madhya Pradesh and Jammu and Kashmir lead in this.

In December 2025, Madhya Pradesh's School Education Department found that 7.37 lakh children in the state have no school records. They are not enrolled in any school – private or government.

In Jhabua and Shivpuri, for instance, 29,000 children fall into the "Drop Box" category – the department's term for those at imminent risk of dropping out. Across the State's 55 districts, more than 3,500 government schools recorded zero new admissions this academic session. Another 6,500 schools saw fewer than 10 admissions.

The department's response was to



School closures are happening across States on the grounds of rationalisation. THULASI KAKKAT

instruct every district education officer to paste lists of unmapped children on school noticeboards, contact them directly, and upload their details to the State portal.

Statewide, 11.38 lakh children fall under the "Drop Box" category. Another 1.23 lakh are already recorded as dropouts. A further 1.55 lakh have left school because their families were displaced or migrated for work.

The department's flagship outreach programmes, School Chalan Hum and the Home Contact Campaign, were built to prevent exactly this. The State's own audit of its own scheme found three-quarters of a million children whom neither programme had reached.

Government data tabled in the Lok Sabha in February confirms the scale. UDISE+ figures show the national count of government schools falling from 11.07 lakh in 2014-15 to 10.17 lakh in 2023-24, a decline of roughly 89,000 that lines up almost exactly with NITI Aayog's own count. Private schools nationally grew from 2.88 lakh to 3.31 lakh over the same decade.

Madhya Pradesh's government schools fell from 1.22 lakh in 2018-19 to 99,411 the very next year – a drop of roughly 22,600

in twelve months. Uttar Pradesh's government schools fell from 1.63 lakh to 1.38 lakh in that identical year, a drop of over 25,000.

Reports on J&K's rationalisation programme documented children now travelling 4 to 6 km daily to reach a functioning school, violating neighbourhood school mandates of Right to Education Act (RTE).

More than 4,300 schools were closed or merged under a rationalisation scheme, with the Lok Sabha's own UDISE+ figures showing the state's school count falling from 23,167 in 2020-21 to 18,785 by 2022-23, alongside nearly 13,000 vacant teaching posts reported separately in the state assembly.

What is the impact of the shutdown of government schools?

Government schools in India are not a neutral public utility used evenly across classes. They are, disproportionately, the schools of the poor – of Scheduled Castes, Scheduled Tribes, and the poorer strata of backward-class communities. India is home to roughly 60% of the world's below-poverty-line population, and it is their children who fill government classrooms.

A 2019 National Sample Survey analysis found access to free education declining unevenly, with Muslim and Scheduled Caste and Scheduled Tribe households disproportionately marginalised from the schools nearest to them.

The burden falls disproportionately on girls who are the first to be withdrawn when the nearest school stops being nearby. What consolidation looks like on the ground is often a single teacher covering five classes at once – unable to know an individual child's background or tailor instruction, technically in breach of the Right to Education Act's staffing and quality norms.

Who is responsible for this trend?

In Lok Sabha, the concerned minister said education is on the concurrent list, and the responsibility for this trend lies entirely with States. But the RTE is a Central Act and the mandates on neighbourhood schools are the Centre's responsibility.

Further, the Centre seeks to intervene in State school education by making Central fund allocation for schools conditional on NEP implementation and also imposes a language policy. There are avenues for the Centre to step in against this trend.

The RTE Act, in force since 2010, guarantees free and compulsory education from age six to 14. RTE says nothing binding about the quality of what is delivered once a child is inside the classroom. It creates entitlements that children, by definition, cannot assert on their own – and parents, particularly poor and rural parents, often lack the legal and institutional capacity to enforce either. RTE assumes a symmetry of power between the state, the school, and the family that does not exist on the ground. RTE is not justiciable, in practice. School Management Committees, the one mechanism written into the RTE to give parents and communities a formal voice, largely go unconvoked.

(The author is Chairman, Central Control Commission, CPI(M))

THE GIST

Nearly 94,000 government schools have closed over the past decade under State-led rationalisation drives, with Uttar Pradesh, Madhya Pradesh and Jammu and Kashmir among the worst affected, leading to falling enrolment and rising dropout risks.

The closures have disproportionately affected poor, rural, Scheduled Caste, Scheduled Tribe and girl students, while questions remain over the Centre's role in enforcing neighbourhood school norms under the Right to Education Act.

03A8. Why is the government? schools shutting down?

सरकारी विद्यालय क्यों बंद हो रहे हैं?

- A recent **NITI Aayog** report said some **94,000 government schools** were closed over the past decade, an average of **25 a day**, contributing to a **2.26 crore** decline in government school enrolment.

हाल ही में नीति आयोग (NITI Aayog) की एक रिपोर्ट में कहा गया कि पिछले एक दशक में लगभग **94,000 सरकारी विद्यालय** बंद हुए, अर्थात औसतन प्रतिदिन **25 विद्यालय**, जिसके परिणामस्वरूप सरकारी विद्यालयों में नामांकन में **2.26 करोड़** की कमी आई।

- The **government schools' share of total enrolment** has fallen from **71% in 2005** to **49.24% in 2024-25**.

कुल नामांकन में सरकारी विद्यालयों की हिस्सेदारी **2005 के 71% से घटकर 2024-25 में 49.24%** रह गई है।

Why are government schools shutting down?

सरकारी विद्यालय क्यों बंद हो रहे हैं?

- School closures are happening across States on the grounds of **rationalisation**. विभिन्न राज्यों में **युक्तिकरण (Rationalisation)** के आधार पर विद्यालयों को बंद किया जा रहा है।
- The **National Education Policy (NEP) 2020** advocates such rationalisation but without endangering the concept of **neighbourhood schools**.

राष्ट्रीय शिक्षा नीति (NEP) 2020 ऐसे युक्तिकरण का समर्थन करती है, किंतु पड़ोस के विद्यालय (Neighbourhood Schools) की अवधारणा को प्रभावित किए बिना।

- **Uttar Pradesh, Madhya Pradesh and Jammu and Kashmir lead in this.**
इस मामले में उत्तर प्रदेश, मध्य प्रदेश तथा जम्मू-कश्मीर सबसे अधिक प्रभावित राज्यों में हैं।
- The department's response was to instruct every **district education officer** to paste lists of **unmapped children** on school noticeboards, contact them directly, and upload their details to the State portal.
विभाग ने प्रत्येक जिला शिक्षा अधिकारी को निर्देश दिया कि वे अचिह्नित बच्चों (Unmapped Children) की सूची विद्यालयों के सूचना-पट्टों पर प्रदर्शित करें, उनसे सीधे संपर्क करें तथा उनका विवरण राज्य पोर्टल पर अपलोड करें।
- **UDISE+ figures show the national count of government schools falling from 11.07 lakh in 2014-15 to 10.17 lakh in 2023-24, a decline of roughly 89,000 that lines up almost exactly with NITI Aayog's own count.**
यूडाइस प्लस (UDISE+) के आँकड़ों के अनुसार, देश में सरकारी विद्यालयों की संख्या 2014-15 के 11.07 लाख से घटकर 2023-24 में 10.17 लाख रह गई, अर्थात लगभग 89,000 विद्यालयों की कमी, जो नीति आयोग के आँकड़ों से लगभग पूरी तरह मेल खाती है।
- **Private schools nationally grew from 2.88 lakh to 3.31 lakh over the same decade.**
इसी अवधि में देशभर में निजी विद्यालयों की संख्या 2.88 लाख से बढ़कर 3.31 लाख हो गई।
- They are, disproportionately, the schools of the **poor — of Scheduled Castes, Scheduled Tribes, and the poorer strata of backward-class communities.**
वे मुख्यतः गरीब (Poor) लोगों के विद्यालय हैं — विशेष रूप से अनुसूचित जातियों (Scheduled Castes), अनुसूचित जनजातियों (Scheduled Tribes) तथा पिछड़े वर्गों (Backward-Class Communities) के आर्थिक रूप से कमजोर वर्गों के।
- **India is home to roughly 60% of the world's below-poverty-line population, and it is their children who fill government classrooms.**
भारत विश्व की गरीबी रेखा से नीचे (Below-Poverty-Line) रहने वाली जनसंख्या का लगभग 60% हिस्सा अपने यहाँ रखता है, और इन्हीं परिवारों के बच्चे सरकारी विद्यालयों की कक्षाओं में अध्ययन करते हैं।
- **A 2019 National Sample Survey analysis found access to free education declining unevenly, with Muslim and Scheduled Caste and Scheduled Tribe households disproportionately marginalised from the schools nearest to them.**
2019 के राष्ट्रीय नमूना सर्वेक्षण (National Sample Survey) के विश्लेषण में पाया गया कि निःशुल्क शिक्षा (Free Education) तक पहुँच असमान रूप से घट रही है, जिसमें मुस्लिम (Muslim) तथा अनुसूचित जाति (Scheduled Caste) और अनुसूचित जनजाति (Scheduled Tribe) परिवार अपने निकटतम विद्यालयों से अनुपातहीन रूप से वंचित हो रहे हैं।
- The **RTE Act, in force since 2010, guarantees free and compulsory education from age six to 14.**
शिक्षा का अधिकार अधिनियम (RTE Act), जो 2010 से लागू है, छह से चौदह वर्ष (Six to 14 Years) की आयु के बच्चों के लिए निःशुल्क एवं अनिवार्य शिक्षा (Free and Compulsory Education) की गारंटी देता है।

GS Paper II: International Relations		03 August 2026
TOPICS COVERED		
03A	Hungary PM Magyar flags 'critical' days ahead with looming nuclear shutdown हंगरी के प्रधानमंत्री मजार ने संभावित परमाणु संयंत्र बंदी के बीच आगे आने वाले 'गंभीर' दिनों की चेतावनी दी	



Hungary PM Magyar flags 'critical' days ahead with looming nuclear shutdown

GS II: IR

Reuters

BUDAPEST

Hungary faces a critical five days, Prime Minister Peter Magyar said on Sunday, as the drying out of the Danube forces the country's sole nuclear power plant to shut for the first time in over four decades, with a new heatwave looming.

Large parts of Europe have been hit by prolonged heat and drought, lowering river levels and raising concerns about water supplies, river transport and power generation.

Hungary's 2 gigawatt Paks power plant, which runs four Russian-built reactors, was operating at just over 10% of its total capacity on Sunday after the Danube, whose waters it uses as a coolant, fell to a record low.



Paks nuclear power plant with the partially dried-up Danube riverbed in Dunaszentbenedek, Hungary, on July 31. REUTERS

capacity on Sunday after the Danube, whose waters it uses as a coolant, fell to a record low.

The water authority was projecting that the level of the river, which flows from Germany to the Black Sea, would drop further in the coming days.

coming days.

"We are facing the most critical five days ahead," Mr. Magyar said in a Facebook video. "Tomorrow, the Paks power plant will not be generating, while the hottest, 40-degrees Celsius days are ahead."

"The power grid, our public services and ourselves will all come under enormous strain," said Mr. Magyar, who has warned that Paks could remain idle for weeks.

Falls in water levels have also disrupted shipping and tourism in Hungary and triggered water-use restrictions in more than 100 cities and villages, including on the outskirts of Budapest, according to government records.

Mr. Magyar reiterated a call for companies, public institutions, local governments and households to significantly reduce or reschedule electricity use during evening peak hours between 5 p.m. and 10 p.m.

03A8. Hungary PM Magyar flags 'critical' days ahead with looming nuclear shutdown

हंगरी के प्रधानमंत्री मजार ने संभावित परमाणु संयंत्र बंदी के बीच आगे आने वाले 'गंभीर' दिनों की चेतावनी दी

- Hungary faces a **critical five days**, Prime Minister **Peter Magyar** said on **Sunday**, as the **drying out of the Danube** forces the country's sole **nuclear power plant** to shut for the first time in over **four decades**, with a new **heatwave** looming.
हंगरी के सामने पाँच अत्यंत गंभीर दिन हैं, यह बात प्रधानमंत्री पीटर मजार ने रविवार को कही, क्योंकि डेन्यूब नदी के सूखने से देश के एकमात्र परमाणु ऊर्जा संयंत्र को चार दशकों से अधिक समय में पहली बार बंद करना पड़ रहा है और एक नई हीटवेव आने वाली है।
- Large parts of **Europe** have been hit by prolonged **heat and drought**, lowering river levels and raising concerns about **water supplies**, **river transport** and **power generation**.
यूरोप के बड़े हिस्से लंबे समय से जारी गर्मी और सूखे की चपेट में हैं, जिससे नदियों का जलस्तर घट गया है और जल आपूर्ति, नदी परिवहन तथा बिजली उत्पादन को लेकर चिंताएँ बढ़ गई हैं।
- Hungary's 2 **gigawatt Paks power plant**, which runs **four Russian-built reactors**, was operating at just over **10%** of its total capacity on **Sunday** after the **Danube**, whose waters it uses as a coolant, fell to a record low.
हंगरी का 2 गीगावाट क्षमता वाला पाक्स विद्युत संयंत्र, जिसमें रूस निर्मित चार रिएक्टर हैं, रविवार को अपनी कुल क्षमता के केवल 10% से कुछ अधिक पर संचालित हो रहा था, क्योंकि शीतलक के रूप में उपयोग होने वाली डेन्यूब नदी का जलस्तर रिकॉर्ड न्यूनतम स्तर पर पहुँच गया।



- The **water authority** was projecting that the level of the river, which flows from **Germany** to the **Black Sea**, would drop further in the coming days.
 जल प्राधिकरण का अनुमान था कि जर्मनी से काला सागर तक बहने वाली इस नदी का जलस्तर आने वाले दिनों में और नीचे जाएगा।
- Falls in **water levels** have also disrupted **shipping** and **tourism** in **Hungary** and triggered **water-use restrictions** in more than **100 cities and villages**, including on the outskirts of **Budapest**, according to government records.
 सरकारी अभिलेखों के अनुसार, जलस्तर में गिरावट ने हंगरी में नौवहन और पर्यटन को भी प्रभावित किया है तथा बुडापेस्ट के बाहरी क्षेत्रों सहित 100 से अधिक शहरों और गाँवों में जल उपयोग पर प्रतिबंध लागू कर दिए गए हैं।

GS Paper III: Science and Technology		03 August 2026
TOPICS COVERED		
03A	India produces smart scientists but is struggling to retain them भारत प्रतिभाशाली वैज्ञानिकों का निर्माण करता है, लेकिन उन्हें बनाए रखने के लिए संघर्ष कर रहा है।	
03A	Extreme-event materials अत्यधिक-ऊर्जा घटनाओं से निर्मित पदार्थ	
03A	What makes Kerala a hotspot for the disease? केरल इस रोग का प्रमुख केंद्र क्यों है?	
03A	Why are people turning to social media for childbirth advice? लोग प्रसव संबंधी सलाह के लिए सोशल मीडिया का सहारा क्यों ले रहे हैं?	
03A	Challenges involved in containing the fast-growing Ebola outbreak in Congo कांगो में तेजी से बढ़ते इबोला प्रकोप को नियंत्रित करने में शामिल चुनौतियाँ	

India produces smart scientists but is struggling to retain them

Research flourishes when ideas compete but suffers when people compete for proximity to power; many of India's laboratories continue to operate within rigid hierarchies that would appear strange in leading scientific institutions elsewhere in the world

THE GIST
Biju Dharmapalan

Recent reports of nearly 120 scientists resigning from the Indian Space Research Organisation (ISRO) have rightly raised concerns. The ISRO has been a symbol of India's scientific aspirations and such an exodus cannot be dismissed as an ordinary episode of employee turnover.

Resignations have occurred over the years but the scale of recent departures confronts us with the question: why some of India's brighter scientific minds are electing to leave institutions millions dream of joining.

The phenomenon is not unique to ISRO. Similar stories have emerged from laboratories under the Council of Scientific and Industrial Research (CSIR), premier autonomous institutes, and several government-funded research organisations. Often these departures are hard to notice as part of a larger pattern because they occur one scientist at a time – yet together they point to a deeper issue deserving of national attention.

Real main reason

The most obvious explanation is salary but it is not sufficient. Scientists who have spent decades building their expertise and reputation rarely leave only because another organisation is offering a bigger paycheck. Many of those that are resigning are also in the latter half of their careers, and generally unwilling to risk financial and professional stability. No; what they want is something even greater: professional dignity, freedom of thought, and the freedom to work on their topics of choice.

Several researchers – many of whom are unwilling to go on record for fear of repercussions – in private characterise these institutions as places where bureaucratic power is increasing at the expense of that of science, and where it is becoming more risky to question authority. The tragedy is that while Indian science inherited world-class institutions, it also retained a colonial administrative mindset.

Research flourishes when ideas compete but suffers when people compete for proximity to power. Many of India's laboratories continue to operate within rigid hierarchies that would appear strange in leading scientific institutions elsewhere in the world. Young scientists often learn quickly that survival depends less on asking bold scientific questions than on understanding invisible administrative boundaries. In some institutions, even simple acts of professional equality are viewed as breaches of etiquette. Respect, instead of being earned through scholarship and mentorship, is demanded through designation.

A class system
In order to be creative, for example, a doctoral student should be able to



Representative image of the National Institute of Animal Biotechnology (NIAB) in Hyderabad. India is spending a historically unprecedented, but otherwise still insufficient, amount of money on scientific research. FILE PHOTO

challenge a senior scientist's hypothesis without fearing that his or her long-term career will be adversely affected. A young investigator should feel confident enough to question established ideas. The world's best research environments are the best because they allow just such interactions.

Attend an international scientific conference in Europe or the Americas and you will often witness something remarkably ordinary: Nobel laureates standing in the same cafeteria queue as graduate students, and young scholars openly questioning senior scientists during presentations. They are respectful – and the seniors know that – but that respect flows from intellectual contributions rather than via ceremonial protocols.

However, many Indian scientific gatherings continue to have a bureaucratic rather than academic culture. Distinguished speakers receive VIP badges, exclusive dining arrangements, and special hospitality while students and junior participants are treated as an entirely different class. Such symbolism is not harmless; it reinforces a hierarchy that has little place in science. Science has never progressed because someone occupied a larger office or enjoyed a separate lunch. Let us foster the many little interactions; they could make a big difference.

Speaking up
Equally worryingly, scientists rarely speak openly about unhealthy workplace cultures because the ecosystem is remarkably small. Today's reviewer may become tomorrow's selection committee member. Today's director may influence tomorrow's funding decision.

Several researchers – many of whom are unwilling to go on record for fear of repercussions – in private characterise some institutions as places where bureaucratic power is increasing at the expense of that of science

Occasionally, some disturbing information emerges, including allegations of harassment, vindictive administrative actions, and attempts to publicly discredit accomplished scientists. Whether every allegation withstands scrutiny is for due process to determine – but the recurring perception is immediately damaging. As a result, many talented researchers are now moving to private research organisations, emerging deep-tech companies, universities abroad, and/or international collaborations where scientific autonomy has more room than administrative strictures. India's growing innovation ecosystem benefits from this movement to some extent but it is not a zero-sum: our national laboratories lose institutional memory and experienced mentors.

India is spending a historically unprecedented, but otherwise still insufficient, amount of money on scientific research. Excellent skills are now needed for new research missions, including those involving semiconductors, quantum technologies, artificial intelligence, biotechnology, and spaceflight. But whereas buildings can be built in a few months and, with adequate funds, sophisticated instruments can be bought, building an environment that

holds great scientists is a very long process, often taking decades.

Conscious effort

Today, India must increase administrative transparency in scientific institutions, and install robust systems to redress grievances concerning workplace harassment and mentoring-based leadership training to ensure a leadership free from command.

In parallel, we need a conscious effort to break free of the colonial bureaucracy that remains in the daily life of institutions. Respect should not disappear from scientific workplaces but it differs fundamentally from unquestioning deference.

India has repeatedly demonstrated that its scientists possess extraordinary capability. Our achievements in space exploration, vaccines, supercomputing, mathematics, biotechnology, and engineering stand as testimony to that talent. The challenge today is not producing brilliant scientists – our universities and institutions have figured that out. The challenge is to ensure those scientists can still flourish after they enter India's laboratories.

If we fail to reform workplace culture, the next generation may simply leave our public institutions. That will be an immeasurable loss. Science has always advanced through ideas that challenged power – not by power that silenced people or ideas.

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03A8. India produces smart scientists but is struggling to retain them

भारत प्रतिभाशाली वैज्ञानिकों का निर्माण करता है, लेकिन उन्हें बनाए रखने के लिए संघर्ष कर रहा है।

- Recent reports of nearly 120 scientists resigning from the Indian Space Research Organisation (ISRO) have rightly raised concerns.

हाल की रिपोर्टों में लगभग 120 वैज्ञानिकों के भारतीय अंतरिक्ष अनुसंधान संगठन (ISRO) से इस्तीफा देने की जानकारी ने उचित रूप से चिंताएँ उत्पन्न की हैं।

- Similar stories have emerged from laboratories under the Council of Scientific and Industrial Research (CSIR), premier autonomous institutes, and several government-funded research organisations.

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (CSIR) के अंतर्गत आने वाली प्रयोगशालाओं, प्रमुख स्वायत्त संस्थानों तथा अनेक सरकारी वित्तपोषित अनुसंधान संगठनों से भी इसी प्रकार की घटनाएँ सामने आई हैं।

- No; what they want is something even greater: professional dignity, freedom of thought, and the freedom to work on their topics of choice.



नहीं; वे इससे भी अधिक महत्वपूर्ण चीज़ चाहते हैं: **व्यावसायिक गरिमा, विचारों की स्वतंत्रता**, तथा अपनी पसंद के विषयों पर कार्य करने की स्वतंत्रता।

- The tragedy is that while Indian science inherited **world-class institutions**, it also retained a **colonial administrative mindset**.
विडंबना यह है कि भारतीय विज्ञान को जहाँ **विश्व-स्तरीय संस्थानों** की विरासत मिली, वहीं उसने **औपनिवेशिक प्रशासनिक मानसिकता** को भी बनाए रखा।
- Research flourishes when ideas compete but suffers when people compete for proximity to power.**
अनुसंधान तब फलता-फूलता है जब **विचारों** में प्रतिस्पर्धा होती है, किंतु तब प्रभावित होता है जब लोग **सत्ता** के निकट रहने की प्रतिस्पर्धा करते हैं।
- Many of India's laboratories continue to operate within rigid hierarchies that would appear strange in leading scientific institutions elsewhere in the world.**
भारत की अनेक प्रयोगशालाएँ अब भी **कठोर पदानुक्रमों** के भीतर कार्य करती हैं, जो विश्व के अग्रणी वैज्ञानिक संस्थानों में असामान्य प्रतीत होंगे।
- Young scientists often learn quickly that survival depends less on asking bold scientific questions than on understanding invisible administrative boundaries.**
युवा वैज्ञानिक शीघ्र ही यह सीख जाते हैं कि उनका भविष्य साहसिक वैज्ञानिक प्रश्न पूछने की अपेक्षा अदृश्य प्रशासनिक सीमाओं को समझने पर अधिक निर्भर करता है।
- In some institutions, even simple acts of professional equality are viewed as breaches of etiquette.**
कुछ संस्थानों में **व्यावसायिक समानता** के साधारण व्यवहार को भी शिष्टाचार का उल्लंघन माना जाता है।
- Respect, instead of being earned through scholarship and mentorship, is demanded through designation.**
सम्मान **विद्वत्ता और मार्गदर्शन** के माध्यम से अर्जित होने के बजाय पदनाम के आधार पर अपेक्षित किया जाता है।

A class system

एक वर्ग-आधारित व्यवस्था

- In order to be creative, for example, a doctoral student should be able to challenge a senior scientist's hypothesis without fearing that his or her long-term career will be adversely affected.**
रचनात्मक होने के लिए, उदाहरणार्थ, एक **डॉक्टरेट छात्र** को किसी वरिष्ठ वैज्ञानिक की परिकल्पना को इस भय के बिना चुनौती देने में सक्षम होना चाहिए कि इससे उसके दीर्घकालिक करियर पर प्रतिकूल प्रभाव पड़ेगा।
- A young investigator should feel confident enough to question established ideas.**
एक युवा शोधकर्ता को स्थापित विचारों पर प्रश्न उठाने का पर्याप्त आत्मविश्वास होना चाहिए।
- The world's best research environments are the best because they allow just such interactions.**
विश्व के सर्वश्रेष्ठ **अनुसंधान वातावरण** इसलिए सर्वश्रेष्ठ हैं क्योंकि वे इसी प्रकार की संवादात्मक सहभागिता की अनुमति देते हैं।
- Attend an international scientific conference in Europe or the Americas and you will often witness something remarkably ordinary: Nobel laureates standing in the same cafeteria queue as graduate students, and young scholars openly questioning senior scientists during presentations.**
यदि आप यूरोप या अमेरिका में आयोजित किसी अंतरराष्ट्रीय **वैज्ञानिक सम्मेलन** में जाएँ, तो आप अक्सर एक अत्यंत सामान्य किंतु उल्लेखनीय दृश्य देखेंगे: **नोबेल पुरस्कार विजेता** स्नातकोत्तर छात्रों के साथ एक ही भोजनालय की पंक्ति में खड़े होते हैं और युवा विद्वान प्रस्तुतियों के दौरान वरिष्ठ वैज्ञानिकों से खुलकर प्रश्न पूछते हैं।

- They are respectful — and the seniors know that — but that respect flows from **intellectual contributions** rather than via ceremonial protocols.
वे सम्मानपूर्ण व्यवहार करते हैं — और वरिष्ठ भी यह जानते हैं — किंतु वह सम्मान औपचारिक प्रोटोकॉल के बजाय **बौद्धिक योगदान** से उत्पन्न होता है।
- Distinguished speakers receive **VIP badges**, exclusive dining arrangements, and special hospitality while students and junior participants are treated as an entirely different class.
प्रतिष्ठित वक्ताओं को **वीआईपी बैज**, विशेष भोजन व्यवस्था तथा विशिष्ट आतिथ्य प्रदान किया जाता है, जबकि छात्रों और कनिष्ठ प्रतिभागियों के साथ मानो वे एक अलग वर्ग के हों, ऐसा व्यवहार किया जाता है।
- Such symbolism is not harmless: it reinforces a **hierarchy** that has little place in science.
इस प्रकार का प्रतीकात्मक व्यवहार निरापद नहीं है; यह ऐसे **पदानुक्रम** को सुदृढ़ करता है जिसका विज्ञान में बहुत कम स्थान है।
- Equally worryingly, scientists rarely speak openly about **unhealthy workplace cultures** because the ecosystem is remarkably small.
समान रूप से चिंताजनक बात यह है कि **अस्वस्थ कार्यस्थल संस्कृति** के बारे में वैज्ञानिक शायद ही कभी खुलकर बोलते हैं क्योंकि यह पारिस्थितिकी तंत्र अत्यंत छोटा है।
- Occasionally, some disturbing information emerges, including **allegations of harassment, vindictive administrative actions, and attempts to publicly discredit accomplished scientists**.
कभी-कभी कुछ चिंताजनक जानकारी सामने आती है, जिसमें **उत्पीड़न (Harassment)** के आरोप, प्रतिशोधात्मक प्रशासनिक कार्रवाइयाँ तथा प्रतिष्ठित वैज्ञानिकों की सार्वजनिक रूप से छवि धूमिल करने के प्रयास शामिल होते हैं।
- As a result, many talented researchers are now moving to **private research organisations, emerging deep-tech companies, universities abroad, and/or international collaborations** where **scientific autonomy** has more room than administrative strictures.
परिणामस्वरूप, अनेक प्रतिभाशाली शोधकर्ता अब **निजी अनुसंधान संगठनों (Private Research Organisations)**, उभरती हुई डीप-टेक कंपनियों (Deep-Tech Companies), विदेशी विश्वविद्यालयों तथा/या **अंतरराष्ट्रीय सहयोगों (International Collaborations)** की ओर जा रहे हैं, जहाँ प्रशासनिक कठोरताओं की अपेक्षा **वैज्ञानिक स्वायत्तता (Scientific Autonomy)** के लिए अधिक स्थान उपलब्ध है।
- India's growing **innovation ecosystem** benefits from this movement to some extent but it is not a zero-sum: our **national laboratories** lose **institutional memory** and experienced mentors.
भारत का विकसित होता हुआ **नवाचार पारिस्थितिकी तंत्र (Innovation Ecosystem)** इस प्रवृत्ति से कुछ हद तक लाभान्वित होता है, किंतु यह शून्य-योग (Zero-Sum) स्थिति नहीं है; हमारी **राष्ट्रीय प्रयोगशालाएँ (National Laboratories)** अपनी **संस्थागत स्मृति (Institutional Memory)** तथा अनुभवी मार्गदर्शकों को खो देती हैं।
- India is spending a historically unprecedented, but otherwise still insufficient, amount of money on **scientific research**.
भारत **वैज्ञानिक अनुसंधान (Scientific Research)** पर ऐतिहासिक रूप से अभूतपूर्व, किंतु फिर भी अपर्याप्त, धनराशि व्यय कर रहा है।
- Excellent skills are now needed for new **research missions**, including those involving **semiconductors, quantum technologies, artificial intelligence, biotechnology, and spaceflight**.
अब नए **अनुसंधान अभियानों (Research Missions)** के लिए उत्कृष्ट कौशलों की आवश्यकता है, जिनमें **सेमीकंडक्टर (Semiconductors)**, **क्वांटम प्रौद्योगिकियाँ (Quantum Technologies)**, **कृत्रिम बुद्धिमत्ता (Artificial Intelligence)**, **जैव प्रौद्योगिकी (Biotechnology)** तथा **अंतरिक्ष उड़ान (Spaceflight)** से संबंधित क्षेत्र शामिल हैं।
- Respect should not disappear from scientific workplaces but it differs fundamentally from unquestioning deference.



वैज्ञानिक कार्यस्थलों से **सम्मान (Respect)** समाप्त नहीं होना चाहिए, किंतु यह बिना प्रश्न किए जाने वाले **अंधानुकरण (Unquestioning Deference)** से मूलतः भिन्न होता है।

- **Science** has always advanced through **ideas** that challenged **power** — not by power that silenced people or ideas.

विज्ञान (Science) ने सदैव उन **विचारों (Ideas)** के माध्यम से प्रगति की है जिन्होंने **सत्ता (Power)** को चुनौती दी है — न कि ऐसी सत्ता के माध्यम से जिसने लोगों या विचारों को मौन कर दिया हो।

Extreme-event materials

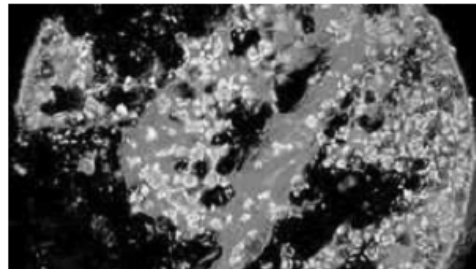
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Vasudevan Mukundh

Researchers have found a previously unknown metal alloy created by the blast of the Hiroshima atomic bomb in 1945. The material was found inside small, glass-like beads called hiroshimaite, which were recovered from the beach sands of Hiroshima Bay. These beads formed when the intense heat of the blast vaporised building materials, soil, and metals, which solidified as they fell back to the earth.

When the researchers examined the beads, they identified a micrometer-sized metallic grain embedded in the glass. It turned out to be a complex mix of iron, chromium, nickel, manganese, molybdenum, silicon, and aluminium — and it had a unique crystal structure.

The findings were published in *Science Advances* on July 29. The team has expressed belief that the alloy formed by ultrafast quenching: the explosion's fireball reached temperatures over 7,000 degrees Celsius, turning urban materials such as construction steel into a mixed metallic vapour. As the fireball expanded and rapidly cooled, the elements mixed in a way that is impossible under normal conditions. According to the researchers, their work shows that high-energy



Back-scattered electron image of the spheroidal hiroshimaite sample in which the alloy was found.
BINDI ET AL., SCI. ADV. 12, EAEG8299 (2026)

plasma events like nuclear detonations can be natural laboratories where scientists can discover new materials that are difficult to synthesise in a scientific lab. The alloy already shares characteristics with other unusual high-entropy alloys and quasicrystals.

The researchers also wrote that their work shows how debris can preserve a “high-resolution record” of the chemical and physical environment during a nuclear event.

For feedback and suggestions

for 'Science', please write to science@thehindu.co.in with the subject 'Daily page'

03A8. Extreme-event materials
अत्यधिक-ऊर्जा घटनाओं से निर्मित पदार्थ

- Researchers have found a previously unknown **metal alloy** created by the blast of the **Hiroshima atomic bomb in 1945**.
शोधकर्ताओं ने 1945 में हुए हिरोशिमा परमाणु बम के विस्फोट से निर्मित एक पूर्व में अज्ञात धातु मिश्रधातु (Metal Alloy) की खोज की है।
- The material was found inside small, glass-like beads called **hiroshimaite**s, which were recovered from the beach sands of **Hiroshima Bay**.
यह पदार्थ हिरोशिमाइट्स (Hiroshimaite)s कहलाने वाले छोटे, काँच-सदृश कणों के भीतर पाया गया, जिन्हें हिरोशिमा खाड़ी (Hiroshima Bay) के समुद्री तट की रेत से प्राप्त किया गया।
- These beads formed when the intense heat of the blast vaporised building materials, soil, and metals, which solidified as they fell back to the earth.
ये कण तब बने जब विस्फोट की तीव्र ऊष्मा ने निर्माण सामग्री, मिट्टी तथा धातुओं को वाष्पित कर दिया, जो पुनः पृथ्वी पर गिरते समय ठोस रूप में परिवर्तित हो गए।
- When the researchers examined the beads, they identified a **micrometer-sized metallic grain embedded in the glass**.
जब शोधकर्ताओं ने इन कणों का परीक्षण किया, तो उन्होंने काँच के भीतर समाहित माइक्रोमीटर-आकार के धात्विक कण (Micrometer-sized Metallic Grain) की पहचान की।
- It turned out to be a complex mix of **iron, chromium, nickel, manganese, molybdenum, silicon, and aluminium** — and it had a unique **crystal structure**.
यह लोहा, क्रोमियम, निकेल, मैंगनीज़, मोलिब्डेनम, सिलिकॉन तथा एल्युमिनियम का एक जटिल मिश्रण निकला — और इसकी क्रिस्टलीय संरचना (Crystal Structure) अद्वितीय थी।
- The findings were published in **Science Advances** on **July 29**.
ये निष्कर्ष 29 जुलाई को साइंस एडवांसेज़ (Science Advances) पत्रिका में प्रकाशित किए गए।
- The team has expressed belief that the **alloy formed by ultrafast quenching**: the explosion's fireball reached temperatures over **7,000 degrees Celsius**, turning urban materials such as construction steel into a mixed metallic vapour.
शोध दल का मानना है कि यह मिश्रधातु अत्यंत तीव्र शीतलन (Ultrafast Quenching) की प्रक्रिया से बनी। विस्फोट का अग्निगोलक 7,000 डिग्री सेल्सियस से अधिक तापमान तक पहुँच गया, जिससे निर्माण में प्रयुक्त इस्पात जैसी शहरी सामग्री मिश्रित धात्विक वाष्प में परिवर्तित हो गई।
- As the fireball expanded and rapidly cooled, the elements mixed in a way that is impossible under normal conditions.
जैसे-जैसे अग्निगोलक का विस्तार हुआ और वह तीव्र गति से ठंडा हुआ, तत्व ऐसे ढंग से परस्पर मिश्रित हुए जो सामान्य परिस्थितियों में संभव नहीं है।
- According to the researchers, their work shows that **high-energy plasma events like nuclear detonations** can be natural laboratories where scientists can discover new materials that are difficult to synthesise in a scientific lab.
शोधकर्ताओं के अनुसार, उनका अध्ययन दर्शाता है कि उच्च-ऊर्जा प्लाज़्मा घटनाएँ (High-energy Plasma Events), जैसे परमाणु विस्फोट (Nuclear Detonations), प्राकृतिक प्रयोगशालाओं के रूप में कार्य कर सकती हैं, जहाँ वैज्ञानिक ऐसे नए पदार्थों की खोज कर सकते हैं जिन्हें वैज्ञानिक प्रयोगशाला में संश्लेषित करना कठिन होता है।
- The alloy already shares characteristics with other unusual **high-entropy alloys and quasicrystals**.
यह मिश्रधातु पहले से ज्ञात अन्य असामान्य उच्च-एंट्रॉपी मिश्रधातुओं (High-entropy Alloys) तथा क्वाज़ीक्रिस्टलों (Quasicrystals) के साथ कई समान विशेषताएँ साझा करती है।



Why does Kerala report a high leptospirosis burden?

Which groups are most vulnerable to contracting leptospirosis in the State?

The story so far:
Leptospirosis is a tropical zoonotic disease – a bacterial systemic infection caused by pathogenic *Leptospira* – highly integrated with an environment in which both humans and animals thrive. The disease, which began to be reported in Kerala since 1989, has been endemic in the State for the past three decades or more and has now become the communicable disease with the highest mortality profile. Leptospirosis is yet again in focus now, as the disease has claimed 50 lives just in the month of July this year.

What makes Kerala a hotspot for the disease?

Kerala's unique environment, with heavy monsoons, frequent floods and year-round moisture and humidity, creates ideal survival conditions for *Leptospira* bacteria in soil and water bodies such as lakes and canals. An

abundance of rodent and animal reservoir hosts live in proximity to human residential areas and farms. Paddy cultivation, pineapple plantations and canal cleaning activities expose large numbers of agricultural and manual labourers in productive ages to contaminated water, leading *Leptospira* to enter the body through mucosal surfaces, abrasions or broken skin.

The Health Department maintains that according to the data of the National Centre for Disease Control, leptospirosis is endemic in at least 12 other States, with a high burden of disease. It is better disease surveillance, extensive diagnostic facilities and aggressive logging of both confirmed and probable cases that make Kerala seem like the State with the highest leptospirosis burden, it is claimed.

Which is the population most affected by leptospirosis?

Traditionally, leptospirosis has remained an occupational hazard, with people engaged in farming, dairy farming, and cleaning work – essentially, people are at

high risk of coming into contact with soil and contaminated water – contracting the disease. The disease typically affects those in the low socio-economic strata, but there have also been cases in urban areas, where women have contracted the disease following gardening (possibly bare-handed). Health Department has also identified that construction workers – especially the migrant workers who are employed in the road works on the State's Highways – are at heightened risk of contracting leptospirosis. The proliferation of wayside eateries has increased the chances of soil contamination by rodents.

What is making the case fatality rate go up?

Late diagnosis and rapid progression of the disease, leading to a cascade of lethal complications such as pulmonary haemorrhage and multi-organ failure between 4.5 and 5 days, leaving a narrow therapeutic window for clinicians to intervene, has been making leptospirosis a very unpredictable disease with a

difficult prognosis in recent times. Previously, patients showed signs of complications only by the second week of the illness. Clinicians note that in the post-COVID era, dysregulatory immune response triggering a rapid cytokine storm, with patients requiring mechanical ventilation, has been a feature of most infectious diseases.

Leptospirosis is associated with a broad spectrum of severity, ranging from subclinical or mild illness to severe disease, manifesting as fever, myalgia, conjunctival suffusion and gastrointestinal issues. It is only in 5-10% that the disease worsens and the prognosis becomes unpredictable.

In the initial days, the symptoms overlap with those of any tropical fever and hence people self-treat with analgesics and remain at home, till the symptoms suddenly worsen.

The laboratory diagnosis of leptospirosis also continues to be a challenge, because current serological tests for antibodies, such as ELISA, do not give confirmatory results in the acute phase of the disease.

Molecular diagnosis (PCR) has been introduced by the State for the early detection of leptospirosis; however, these tests are not widely available across districts. Intensive management and multidisciplinary support are crucial for a patient developing complications, but secondary care hospitals often lack round-the-clock emergency management facilities and human resources, all of which adds to the mortality.

What has been Kerala's strategy?
Chemo prophylaxis with Doxycycline – 200 mg twice a week – targeting the high-risk groups has been a strategy the State has always relied on to prevent leptospirosis. Clinicians point out that one cannot go wrong in starting doxycycline early on, even when the patients' symptoms might be hard to distinguish. The strategy is very effective even after one has contracted the infectious organism because, when taken as per the protocol, doxycycline prevents the replication of *Leptospira* in the body. However, compliance has been poor and people seldom listen to the advisories issued by the Health Department.

The State's treatment protocol advised primary care physicians to maintain a high index of suspicion if a patient presents with fever and myalgia and without any respiratory symptoms and to start antibiotics as early as possible if the patient belongs to a high-risk category.

What are the modifications suggested in the strategy?

An experts' group has suggested that disease prevention strategies focussing on the vulnerable categories at high risk of occupational exposure to leptospirosis be devised and that risk communication be taken up as a campaign amongst these groups. Preventive gear, such as gum boots and heavy-duty gloves are to be provided to manual labourers and farm workers so that the risk of bare skin contact with contaminated soil and water is minimised.

03A8. What makes Kerala a hotspot for the disease?

केरल इस रोग का प्रमुख केंद्र क्यों है?

- **Kerala's unique environment, with heavy monsoons, frequent floods and year-round moisture and humidity, creates ideal survival conditions for *Leptospira* bacteria in soil and water bodies such as lakes and canals.**
केरल का विशिष्ट पर्यावरण, जिसमें भारी मानसून, बार-बार आने वाली बाढ़, तथा पूरे वर्ष नमी और आर्द्रता बनी रहती है, मिट्टी और झीलों एवं नहरों जैसे जल निकायों में *लेप्टोस्पाइरा* जीवाणुओं के जीवित रहने के लिए आदर्श परिस्थितियाँ प्रदान करता है।
- **An abundance of rodent and animal reservoir hosts live in proximity to human residential areas and farms.**
बड़ी संख्या में कृंतक (Rodents) तथा पशु भंडार मेजबान (Animal Reservoir Hosts) मानव बस्तियों और कृषि क्षेत्रों के निकट रहते हैं।
- **Paddy cultivation, pineapple plantations and canal cleaning activities expose large numbers of agricultural and manual labourers in productive ages to contaminated water, leading *Leptospira* to enter the body through mucosal surfaces, abrasions or broken skin.**
धान की खेती, अनानास के बागान, तथा नहरों की सफाई जैसे कार्य बड़ी संख्या में कृषि एवं श्रमिक वर्ग के लोगों को दूषित जल के संपर्क में लाते हैं, जिससे *लेप्टोस्पाइरा* जीवाणु श्लेष्म झिल्लियों (Mucosal Surfaces), खरोंच (Abrasions) अथवा क्षतिग्रस्त त्वचा (Broken Skin) के माध्यम से शरीर में प्रवेश कर जाता है।
- Traditionally, **leptospirosis has remained an occupational hazard, with people engaged in farming, dairy farming, and cleaning work — essentially, people at high risk of coming into contact with soil and contaminated water — contracting the disease.**
परंपरागत रूप से *लेप्टोस्पायरोसिस* एक व्यावसायिक जोखिम (Occupational Hazard) रहा है। कृषि, दुग्ध उत्पादन, तथा सफाई कार्य से जुड़े लोग, अर्थात वे व्यक्ति जिनका मिट्टी और दूषित जल से संपर्क अधिक होता है, इस रोग से अधिक प्रभावित होते हैं।
- Late diagnosis and rapid progression of the disease, leading to a cascade of lethal complications such as **pulmonary haemorrhage and multi-organ failure between 4.5 and 5 days, leaving a narrow therapeutic window for clinicians to intervene, has been making leptospirosis a very unpredictable disease with a difficult prognosis in recent times.**



देर से निदान (Diagnosis) तथा रोग की तीव्र प्रगति, जिसके कारण 4.5 से 5 दिनों (4.5 and 5 Days) के भीतर फुफुसीय रक्तस्राव (Pulmonary Haemorrhage) एवं बहु-अंग विफलता (Multi-Organ Failure) जैसी घातक जटिलताएँ उत्पन्न हो जाती हैं और चिकित्सकों के हस्तक्षेप के लिए उपचारात्मक अवसर (Therapeutic Window) अत्यंत सीमित रह जाता है, ने हाल के वर्षों में लेप्टोस्पायरोसिस (Leptospirosis) को अत्यंत अप्रत्याशित तथा कठिन रोग-पूर्वानुमान वाला रोग बना दिया है।

- **Leptospirosis** is associated with a broad spectrum of severity, ranging from **subclinical or mild illness** to severe disease, manifesting as **fever, myalgia, conjunctival suffusion and gastrointestinal issues**.

लेप्टोस्पायरोसिस (Leptospirosis) की गंभीरता का दायरा अत्यंत व्यापक है, जो उप-नैदानिक (Subclinical) अथवा हल्के रोग (Mild Illness) से लेकर गंभीर बीमारी तक हो सकता है। इसके लक्षणों में बुखार (Fever), मांसपेशियों में दर्द (Myalgia), नेत्रश्लेष्मला का लाल होना (Conjunctival Suffusion) तथा जठरांत्र संबंधी समस्याएँ (Gastrointestinal Issues) शामिल हैं।

- The laboratory diagnosis of **leptospirosis** also continues to be a challenge, because current **serological tests** for antibodies, such as **ELISA**, do not give confirmatory results in the **acute phase** of the disease.

लेप्टोस्पायरोसिस (Leptospirosis) का प्रयोगशाला-आधारित निदान भी चुनौतीपूर्ण बना हुआ है, क्योंकि वर्तमान सीरोलॉजिकल परीक्षण (Serological Tests), जैसे एलिसा (ELISA), रोग के तीव्र चरण (Acute Phase) में पुष्टिकारी परिणाम नहीं देते।

- **Chemo prophylaxis with Doxycycline — 200 mg twice a week — targeting the high-risk groups** has been a strategy the State has always relied on to prevent **leptospirosis**.

डॉक्सीसाइक्लिन (Doxycycline) द्वारा रासायनिक रोग-निरोध (Chemo Prophylaxis) — 200 मिलीग्राम सप्ताह में दो बार (200 mg Twice a Week) — उच्च जोखिम वाले समूहों (High-Risk Groups) को लक्षित करते हुए लेप्टोस्पायरोसिस (Leptospirosis) की रोकथाम के लिए राज्य की प्रमुख रणनीति रही है।

Why are people turning to social media for childbirth advice?

Social media platforms are monetising unscientific content promoting home births and free births without doctors, while many parents turn to these practices after traumatic hospital experiences, experts warn that unsafe online advice and lack of regulation can have fatal consequences

GS III: S&T

Sahana Venugopala

The story so far:

In late June, a Tamil Nadu woman, 32, died from a postpartum haemorrhage and other complications. According to the police, the woman died after a medically unassisted birth at home, where family members allegedly helped her by watching YouTube videos for guidance. She leaves behind both her newborn and an older daughter. According to the initial police reports, the couple had wanted a "natural delivery."

Around the world, more people who want to give birth at home or without doctors and surgeries are going to Reddit, Instagram, and YouTube to both give and get medical guidance. This unvetted, high-risk content could cost the lives of more parents and newborns.

Is social media promoting childbirth without doctors?

Social media companies with millions of users — Google-owned YouTube and Meta-owned Instagram — are allowing content creators to share unscientific advice, as well as make money from videos that document and promote home births with only a midwife. On Reddit, most home birthing content is text-based but still poses risks.

For example, a home birth YouTube vlog posted in November 2025 with over 146,000 views showed the mother touting a "2-HOUR PAIN FREE HOME BIRTH!" in a small pool, as well as promoting a religious birthing course and app. The mother said she gave birth at 42 weeks, and claimed she experienced a "healthy,

supernatural labor". The vlog claimed that the midwife "finally got there only a few minutes before the baby's arrival" and that the family waited 90 seconds for the newborn's first breath, which is far longer than the accepted standard.

Another "natural home birth" vlog that was documenting the mother's labour ended with an emergency hospital delivery after meconium (the baby's very sticky first faeces) was detected before birth, upping the risk of potential infection should the baby inhale this via the amniotic fluid (meconium aspiration).

"Not the outcome we hoped for, but grateful to the NHS for keeping me and baby safe," stated the description of the mother's video from September that had over 420,000 views.

Multiple similar home birth vlogs contained links to online storefronts and other social media channels, or promoted products, coupon codes and affiliate links. This allows home birthers to directly profit from their content and view counts. But monetising childbirth vlogs brings up ethical concerns as birth videos include footage of the naked newborn and/or the mother in an undressed and vulnerable state.

On Instagram, several free birth influencers claim that they are going through their pregnancies without any doctors' appointments or ultrasound scans.

Other free or home birthers on Instagram recommended extending pregnancies well beyond 41 weeks (to avoid being induced at a hospital), even though such delays without medical clearance can increase the chances of a stillborn baby. Free birth influencers and

even some midwives online share frightening anecdotes about patient abuse, and push the false idea that women's bodies are made to birth babies without outside help.

In Reddit's Home Birth community, forum rules ban medical advice. However, this rule is openly flouted as people often ask sensitive medical questions, with other users' answers presented as opinions or personal stories.

One pregnant user in the Reddit Home Birth community, for example, posted that they had multiple high blood pressure readings. They dismissed these readings and declined a hospital-recommended induction. Instead, they asked Reddit users about taking a specific oil. This Reddit poster also minimised the potential risks of that oil causing the baby to pass faeces (meconium) before birth.

The work of free birth influencers online has already led to fatal consequences in the offline world. Take the Free Birth Society movement — with 72,000 subscribers on YouTube and 134,000 followers on Instagram — that has been named in relation to multiple baby injuries and deaths around the world, per an investigation by *The Guardian*. The founder has continued to promote highly unscientific videos, as well as her business, on social media.

Unlike the health content shared online during the COVID-19 pandemic that came with compulsory medical disclaimers, home birthing videos on YouTube and Instagram lack formal warnings about the dangers of giving birth in one's house (home birth) or without doctors present (free birth).

Why do people choose home births or free births?

There are valid reasons why these practices still exist. Many pregnant women on forums such as Reddit have posted about traumatising birthing experiences at hospitals, such as being ignored or assaulted by healthcare professionals, being pressured into caesarean deliveries, having surgeons cut them without warning, not being given adequate pain relief, and having their bodies and babies handled roughly.

For their part, home birthers portray their deliveries as being quiet, peaceful, luxurious, and even spiritual. Edited vlogs and curated clips on social media show the birthing parents being cared for by their partners, midwives, and other children for hours on end. Many are seen seated in a pool of warm water while surrounded by soft lights, nature, prayers, soothing music, snacks, and even photographers. In multiple such videos, rushing to the hospital to be induced or undergo a C-section is often framed as a catastrophe to be avoided until the very last minute. But when such practices are normalised, hospital doctors and nurses face increased pressure; instead of a monitored delivery, they are dealing with a medical emergency.

In truth, the popularity of free birthing and home birthing can be seen as a response to the failure of hospitals to give pregnant parents the standard of care that they require. But as influencers leverage both trauma and technology in order to promote life-threatening birthing practices on social media, what viewers must really see is the dangerous absence of regulation.

03A8. Why are people turning to social media for childbirth advice?

लोग प्रसव संबंधी सलाह के लिए सोशल मीडिया का सहारा क्यों ले रहे हैं?

- In late June, a Tamil Nadu woman, 32, died from a postpartum haemorrhage and other complications.
जून के अंत में तमिलनाडु की 32 वर्षीय एक महिला की प्रसवोत्तर रक्तस्राव (Postpartum Haemorrhage) तथा अन्य जटिलताओं के कारण मृत्यु हो गई।
- According to the police, the woman died after a medically unassisted birth at home, where family members allegedly helped her by watching YouTube videos for guidance.
पुलिस के अनुसार, महिला की मृत्यु चिकित्सकीय सहायता के बिना घर पर हुए प्रसव (Birth at Home) के बाद हुई, जहाँ परिवार के सदस्यों ने कथित रूप से YouTube वीडियो देखकर उसकी सहायता की।
- She leaves behind both her newborn and an older daughter.
अपने पीछे वह अपने नवजात शिशु तथा एक बड़ी पुत्री को छोड़ गई हैं।
- According to the initial police reports, the couple had wanted a "natural delivery."
प्रारंभिक पुलिस रिपोर्टों के अनुसार, दंपति "प्राकृतिक प्रसव (Natural Delivery)" चाहते थे।
- Around the world, more people who want to give birth at home or without doctors and surgeries are going to Reddit, Instagram, and YouTube to both give and get medical guidance.
दुनिया भर में अधिक लोग, जो घर पर अथवा डॉक्टरों और शल्य चिकित्सा के बिना प्रसव कराना चाहते हैं, चिकित्सा संबंधी सलाह देने और प्राप्त करने के लिए Reddit, Instagram तथा YouTube का सहारा ले रहे हैं।
- Social media companies with millions of users — Google-owned YouTube and Meta-owned Instagram — are allowing content creators to share unscientific advice, as well as make money from videos that document and promote home births with only a midwife.
लाखों उपयोगकर्ताओं वाले सोशल मीडिया मंच — Google के स्वामित्व वाला YouTube तथा Meta के स्वामित्व वाला Instagram — सामग्री निर्माताओं को अवैज्ञानिक सलाह (Unscientific Advice) साझा करने तथा केवल दाई (Midwife) की सहायता से होने वाले घरेलू प्रसव (Home Births) को दर्शाने और बढ़ावा देने वाले वीडियो से आयु अर्जित करने की अनुमति दे रहे हैं।

- On **Reddit**, most home birthing content is text-based but still poses risks.
Reddit पर घरेलू प्रसव से संबंधित अधिकांश सामग्री पाठ-आधारित है, किंतु वह भी जोखिम उत्पन्न करती है।
- For example, a **home birth YouTube vlog** posted in **November 2025** with over **146,000 views** showed the mother touting a **"2-HOUR PAIN FREE HOME BIRTH!"** in a small pool, as well as promoting a religious birthing course and app.
उदाहरण के लिए, **नवंबर 2025** में प्रकाशित एक **होम बर्थ YouTube ब्लॉग**, जिसे **1,46,000** से अधिक बार देखा गया, में एक माँ ने छोटे से जलकुंड में **"2-HOUR PAIN FREE HOME BIRTH!"** का दावा किया तथा एक धार्मिक प्रसव पाठ्यक्रम और मोबाइल ऐप का भी प्रचार किया।
- The mother said she gave birth at **42 weeks**, and claimed she experienced a **"healthy, supernatural labor"**.
उस महिला ने कहा कि उसने **42 सप्ताह** की गर्भावस्था के बाद प्रसव किया तथा दावा किया कि उसे **"स्वस्थ एवं अलौकिक प्रसव पीड़ा (Healthy, Supernatural Labor)"** का अनुभव हुआ।
- The vlog claimed that the **midwife** "finally got there only a few minutes before the baby's arrival" and that the family waited **90 seconds** for the **newborn's first breath**, which is far longer than the accepted standard.
ब्लॉग में दावा किया गया कि **दाई (Midwife)** शिशु के जन्म से केवल कुछ मिनट पहले पहुँची तथा परिवार ने **नवजात की पहली साँस** के लिए **90 सेकंड** तक प्रतीक्षा की, जो स्वीकृत चिकित्सीय मानक से कहीं अधिक समय है।
- Another **"natural home birth"** vlog that was documenting the mother's labour ended with an **emergency hospital delivery after meconium** (the baby's very sticky first faeces) was detected before birth, upping the risk of potential infection should the baby inhale this via the **amniotic fluid (meconium aspiration)**.
एक अन्य **"प्राकृतिक घरेलू प्रसव (Natural Home Birth)"** ब्लॉग, जिसमें प्रसव प्रक्रिया को रिकॉर्ड किया जा रहा था, अंततः **आपातकालीन अस्पताल प्रसव (Emergency Hospital Delivery)** पर समाप्त हुआ, क्योंकि जन्म से पहले **मीकोनियम (Meconium)** — अर्थात् शिशु का पहला चिपचिपा मल — पाया गया, जिससे **एम्नियोटिक द्रव (Amniotic Fluid)** के माध्यम से उसके श्वसन में जाने (**Meconium Aspiration**) पर संक्रमण का जोखिम बढ़ गया।
- "Not the outcome we hoped for, but grateful to the NHS for keeping me and baby safe,"** stated the description of the mother's video from **September** that had over **420,000 views**.
"यह वह परिणाम नहीं था जिसकी हमें आशा थी, लेकिन मुझे और मेरे शिशु को सुरक्षित रखने के लिए NHS का आभारी हूँ," यह सितंबर में प्रकाशित उस वीडियो के विवरण में लिखा गया था, जिसे **4,20,000** से अधिक बार देखा गया।
- Multiple similar **home birth vlogs** contained links to online storefronts and other social media channels, or promoted products, coupon codes and **affiliate links**.
ऐसे अनेक **होम बर्थ ब्लॉग** में ऑनलाइन स्टोर, अन्य सोशल मीडिया चैनलों के लिंक अथवा उत्पादों, कूपन कोड तथा **एफिलिएट लिंक (Affiliate Links)** का प्रचार किया गया था।
- This allows **home birthers** to directly profit from their content and view counts.
इससे **घरेलू प्रसव का प्रचार करने वाले लोग (Home Birthers)** अपनी सामग्री और उसके व्यूज से सीधे आर्थिक लाभ अर्जित कर सकते हैं।
- But **monetising childbirth vlogs** brings up ethical concerns as birth videos include footage of the naked newborn and/or the mother in an undressed and vulnerable state.
किन्तु **प्रसव संबंधी ब्लॉग का व्यावसायीकरण (Monetising Childbirth Vlogs)** गंभीर नैतिक प्रश्न उत्पन्न करता है, क्योंकि ऐसे वीडियो में नवजात शिशु तथा/या माँ की नग्न अथवा अत्यंत संवेदनशील अवस्था के दृश्य सम्मिलित होते हैं।
- On **Instagram**, several **free birth influencers** claim that they are going through their **pregnancies without any doctors' appointments or ultrasound scans**.
Instagram पर कई **फ्री बर्थ इन्फ्लुएंसर्स (Free Birth Influencers)** दावा करते हैं कि वे अपनी गर्भावस्था के दौरान बिना किसी डॉक्टर की जाँच अथवा **अल्ट्रासाउंड परीक्षण (Ultrasound Scans)** के आगे बढ़ रहे हैं।



- Other **free** or **home birthers** on **Instagram** recommended extending pregnancies well beyond **41 weeks** (to avoid being induced at a hospital), even though such delays without medical clearance can increase the chances of a **stillborn baby**.
Instagram पर अन्य **फ्री बर्थ** अथवा **होम बर्थ** समर्थकों ने गर्भावस्था को **41 सप्ताह** से भी अधिक बढ़ाने की सलाह दी, ताकि अस्पताल में प्रसव प्रेरित (Induction) न कराना पड़े, जबकि चिकित्सकीय अनुमति के बिना ऐसा करने से **मृतजन्म (Stillbirth)** का जोखिम बढ़ सकता है।
- **Free birth influencers** and even some **midwives** online share frightening anecdotes about patient abuse, and push the false idea that women's bodies are made to birth babies without outside help.
फ्री बर्थ इन्फ्लुएंसर्स तथा कुछ ऑनलाइन **दाइयाँ (Midwives)** रोगियों के साथ कथित दुर्व्यवहार की भयावह कहानियाँ साझा करती हैं और इस गलत धारणा को बढ़ावा देती हैं कि महिलाओं का शरीर बाहरी सहायता के बिना ही सुरक्षित प्रसव के लिए बना है।
- In **Reddit's Home Birth** community, forum rules ban **medical advice**.
Reddit के **Home Birth** समुदाय में मंच के नियम **चिकित्सकीय सलाह (Medical Advice)** देने पर प्रतिबंध लगाते हैं।
- However, this rule is openly flouted as people often ask sensitive medical questions, with other users' answers presented as opinions or personal stories.
हालाँकि, इस नियम का खुलेआम उल्लंघन किया जाता है, क्योंकि लोग अक्सर संवेदनशील चिकित्सकीय प्रश्न पूछते हैं और अन्य उपयोगकर्ताओं के उत्तर व्यक्तिगत अनुभवों या निजी मतों के रूप में प्रस्तुत किए जाते हैं।
- One pregnant user in the **Reddit Home Birth** community, for example, posted that they had multiple **high blood pressure** readings.
उदाहरण के लिए, **रेडिट होम बर्थ (Reddit Home Birth)** समुदाय की एक गर्भवती उपयोगकर्ता ने लिखा कि उनके **उच्च रक्तचाप (High Blood Pressure)** के कई रीडिंग आए थे।
- They dismissed these readings and declined a **hospital-recommended induction**.
उन्होंने इन रीडिंगों को नज़रअंदाज़ कर दिया और अस्पताल द्वारा सुझाए गए **प्रसव प्रेरण (Hospital-Recommended Induction)** को अस्वीकार कर दिया।
- Instead, they asked Reddit users about taking a specific **oil**.
इसके बजाय, उन्होंने रेडिट उपयोगकर्ताओं से एक विशेष **तेल (Oil)** के सेवन के बारे में सलाह माँगी।
- This Reddit poster also minimised the potential risks of that oil causing the baby to pass **faeces (meconium)** before birth.
इस रेडिट उपयोगकर्ता ने उस तेल के कारण जन्म से पहले शिशु द्वारा **मल (Meconium)** त्यागने के संभावित जोखिमों को भी कम करके प्रस्तुत किया।
- The work of **free birth influencers** online has already led to fatal consequences in the offline world.
ऑनलाइन सक्रिय **फ्री बर्थ इन्फ्लुएंसर्स (Free Birth Influencers)** की गतिविधियों के कारण वास्तविक जीवन में पहले ही घातक परिणाम सामने आ चुके हैं।
- Take the **Free Birth Society** movement — with **72,000 subscribers** on **YouTube** and **134,000 followers** on **Instagram** — that has been named in relation to multiple baby injuries and deaths around the world, per an investigation by **The Guardian**.
उदाहरण के लिए **फ्री बर्थ सोसाइटी (Free Birth Society)** आंदोलन को देखें, जिसके **यूट्यूब (YouTube)** पर **72,000 सब्सक्राइबर** और **इंस्टाग्राम (Instagram)** पर **134,000 अनुयायी** हैं। **द गार्जियन (The Guardian)** की एक जाँच के अनुसार, इस आंदोलन का विश्वभर में कई शिशुओं की चोटों और मृत्यु के मामलों से संबंध जोड़ा गया है।
- The founder has continued to promote highly **unscientific** videos, as well as her business, on social media.
इसकी संस्थापक सोशल मीडिया पर अत्यधिक **अवैज्ञानिक (Unscientific)** वीडियो तथा अपने व्यवसाय का प्रचार लगातार करती रही हैं।

- Unlike the health content shared online during the **COVID-19 pandemic** that came with compulsory **medical disclaimers**, **home birthing** videos on **YouTube** and **Instagram** lack formal warnings about the dangers of giving birth in one's house (**home birth**) or without doctors present (**free birth**).

कोविड-19 महामारी (COVID-19 Pandemic) के दौरान ऑनलाइन साझा की गई स्वास्थ्य संबंधी सामग्री के साथ अनिवार्य चिकित्सीय अस्वीकरण (**Medical Disclaimers**) दिए जाते थे, किन्तु **यूट्यूब (YouTube)** और **इंस्टाग्राम (Instagram)** पर उपलब्ध घर पर प्रसव (**Home Birthing**) संबंधी वीडियो में घर पर प्रसव (**Home Birth**) अथवा डॉक्टरों की अनुपस्थिति में प्रसव (**Free Birth**) के खतरों के बारे में कोई औपचारिक चेतावनी नहीं होती।

Why do people choose home births or free births?

लोग घर पर प्रसव या फ्री बर्थ क्यों चुनते हैं?

- There are valid reasons why these practices still exist.
इन प्रथाओं के आज भी प्रचलित रहने के पीछे कुछ वास्तविक और उचित कारण हैं।
- Many pregnant women on forums such as **Reddit** have posted about traumatising **birthing experiences** at hospitals, such as being ignored or assaulted by **healthcare professionals**, being pressured into **caesarean deliveries**, having surgeons cut them without warning, not being given adequate **pain relief**, and having their bodies and babies handled roughly.
रेडिट (Reddit) जैसे मंचों पर अनेक गर्भवती महिलाओं ने अस्पतालों में हुए आघातपूर्ण प्रसव अनुभवों (**Birthing Experiences**) का उल्लेख किया है। इनमें **स्वास्थ्यकर्मियों (Healthcare Professionals)** द्वारा उपेक्षा या दुर्व्यवहार, **सीज़ेरियन प्रसव (Caesarean Deliveries)** के लिए दबाव डालना, बिना पूर्व सूचना के शल्यक्रिया करना, पर्याप्त दर्द निवारण (**Pain Relief**) न देना तथा माँ और शिशु के साथ असावधानीपूर्ण व्यवहार करना शामिल है।
- For their part, **home birthers** portray their deliveries as being quiet, peaceful, luxurious, and even spiritual.
दूसरी ओर, घर पर प्रसव का समर्थन करने वाले (**Home Birthers**) अपने प्रसव अनुभवों को शांत, सुखद, विलासपूर्ण और यहाँ तक कि आध्यात्मिक भी बताते हैं।
- Edited **vlogs** and curated clips on social media show the birthing parents being cared for by their partners, **midwives**, and other children for hours on end.
सोशल मीडिया पर संपादित वीडियो ब्लॉग (**Vlogs**) तथा चयनित वीडियो क्लिप्स में प्रसव कराने वाले माता-पिता की उनके जीवनसाथी, **दाइयों (Midwives)** तथा परिवार के अन्य बच्चों द्वारा घंटों तक देखभाल करते हुए दिखाया जाता है।
- Many are seen seated in a pool of **warm water** while surrounded by **soft lights**, **nature**, **prayers**, **soothing music**, **snacks**, and even **photographers**.
अनेक वीडियो में प्रसव कराने वाली महिलाओं को **गर्म पानी (Warm Water)** के कुंड में बैठे हुए दिखाया जाता है, जहाँ उनके चारों ओर **मृदु प्रकाश (Soft Lights)**, **प्राकृतिक वातावरण (Nature)**, **प्रार्थनाएँ (Prayers)**, **सुकून देने वाला संगीत (Soothing Music)**, **हल्के खाद्य पदार्थ (Snacks)** तथा यहाँ तक कि **फोटोग्राफर (Photographers)** भी उपस्थित होते हैं।
- In multiple such videos, rushing to the hospital to be induced or undergo a **C-section** is often framed as a catastrophe to be avoided until the very last minute.
ऐसे अनेक वीडियो में अस्पताल जाकर प्रसव प्रेरण (**Induction**) कराना अथवा **सी-सेक्शन (C-Section)** करवाना एक ऐसी विपत्ति के रूप में प्रस्तुत किया जाता है जिससे अंतिम क्षण तक बचना चाहिए।
- But when such practices are normalised, **hospital doctors** and **nurses** face increased pressure; instead of a monitored delivery, they are dealing with a **medical emergency**.
किन्तु जब ऐसी प्रथाओं को सामान्य बना दिया जाता है, तो अस्पताल के डॉक्टरों (**Hospital Doctors**) और

नर्सों (Nurses) पर अतिरिक्त दबाव पड़ता है। वे सामान्य निगरानी वाले प्रसव के बजाय एक चिकित्सीय आपातस्थिति (Medical Emergency) का सामना कर रहे होते हैं।

- In truth, the popularity of **free birthing** and **home birthing** can be seen as a response to the failure of hospitals to give pregnant parents the standard of care that they require. वास्तव में, **फ्री बर्थ (Free Birthing)** तथा **घर पर प्रसव (Home Birthing)** की बढ़ती लोकप्रियता को इस रूप में देखा जा सकता है कि अस्पताल गर्भवती माता-पिता को अपेक्षित स्तर की देखभाल प्रदान करने में विफल रहे हैं।
- But as **influencers** leverage both **trauma** and **technology** in order to promote life-threatening birthing practices on social media, what viewers must really see is the dangerous absence of **regulation**. किन्तु जब **इन्फ्लुएंसर्स (Influencers)** सोशल मीडिया पर जीवन के लिए जोखिमपूर्ण प्रसव प्रथाओं को बढ़ावा देने हेतु **आघात (Trauma)** और **प्रौद्योगिकी (Technology)** दोनों का उपयोग करते हैं, तब दर्शकों को वास्तव में जिस बात पर ध्यान देना चाहिए, वह है **नियमन (Regulation)** का खतरनाक अभाव।

GS Paper III: Environment	03 August 2026
TOPICS COVERED	
03A	A lepidoptera hotspot, India is home to 13,703 species of butterflies and moths लेपिडॉप्टेरा जैव-विविधता का प्रमुख केंद्र : भारत 13,703 तितली एवं पतंगा प्रजातियों का आवास है

A lepidoptera hotspot, India is home to 8.25% of the world's butterflies, moths

GS III: Environment

Shiv Sahay Singh
KOLKATA

India is home to 13,703 species of lepidoptera – butterflies and moths – which is about 8.25% of the total lepidoptera found across the globe.

Scientists of the Zoological Survey of India (ZSI) have come out with a detailed “Catalogue of Lepidoptera (Butterflies & Moths) of India”, which has been published in the peer-reviewed journal *Zootaxa*.

ZSI scientists Navneet Singh and Rahul Joshi took almost 12 years to complete the monumental work of cataloguing, field exploration, museum curation, and rigorous literature verification.

“There have been attempts to classify and catalogue lepidoptera for over 100 years. There are 13,703 species of butterflies and moths across 3,705 genera,



Of the 13,703 species of lepidoptera found in India, 12,286 are moths and 1,417 are butterflies. M. PERIASAMY

240 subfamilies, 102 families, and 31 superfamilies,” Mr. Singh said.

Of the 13,703 species of lepidoptera, 1,417 are butterflies, and the remaining 12,286 are moths, Mr. Singh said.

The scientific work bridges critical taxonomic gaps that have persisted for more than 100 years, since the first historical attempts to document the region's insect fauna, a Press Infor-

mation Bureau release stated. “It firmly positions India among a select group of megadiverse nations possessing a fully updated, centralised, and authoritative baseline inventory of its butterfly and moth diversity,” the release said.

Crucial role

Butterflies and moths play crucial roles in maintaining ecological equilibrium, serving as essential herbi-

vores, detritivores, and pollinators, while acting as vital food resources for birds, bats, and other insectivores, the ZSI scientists said.

“These catalogue volumes will serve as a vital national asset for biodiversity research, ecological monitoring, and global conservation strategies. Such comprehensive catalogues ensure these species are given an authoritative voice, a clear legal identity, and a permanent place in scientific history,” Dhriti Banerjee, Director, ZSI, said.

Among the 13,703 species of lepidoptera, the scientists have identified and catalogued 2,205 species of Geometroidea, nocturnal pollinators taking over the “night shift” when daytime butterflies rest. These 2,205 species account for 8.8% of the world's known species in this superfamily.

03A8. A lepidoptera hotspot, India is home to 13,703 species of butterflies and moths

लेपिडॉप्टेरा जैव-विविधता का प्रमुख केंद्र : भारत 13,703 तितली एवं पतंगा प्रजातियों का आवास है

- India is home to **13,703 species of Lepidoptera — butterflies and moths —** which is about **8.25%** of the total lepidoptera found across the globe.
भारत में लेपिडॉप्टेरा (Lepidoptera) — अर्थात् तितलियों (Butterflies) और पतंगों (Moths) — की 13,703 प्रजातियाँ पाई जाती हैं, जो विश्व में ज्ञात कुल लेपिडॉप्टेरा प्रजातियों का लगभग 8.25% हैं।
- Scientists of the Zoological Survey of India (ZSI) have come out with a detailed “Catalogue of Lepidoptera (Butterflies & Moths) of India”, which has been published in the peer-reviewed journal Zootaxa.
भारतीय प्राणी सर्वेक्षण (Zoological Survey of India-ZSI) के वैज्ञानिकों ने “Catalogue of Lepidoptera (Butterflies & Moths) of India” शीर्षक से एक विस्तृत सूची प्रकाशित की है, जिसे समीक्षित (Peer-reviewed) वैज्ञानिक पत्रिका Zootaxa में प्रकाशित किया गया है।
- ZSI scientists Navneet Singh and Rahul Joshi took almost 12 years to complete the monumental work of cataloguing, field exploration, museum curation, and rigorous literature verification.
जेडएसआई (ZSI) के वैज्ञानिक नवनीत सिंह और राहुल जोशी ने सूचीकरण (Cataloguing), मैदानी अन्वेषण (Field Exploration), संग्रहालय संरक्षण (Museum Curation) तथा व्यापक साहित्य सत्यापन (Literature Verification) का यह महत्वपूर्ण कार्य पूरा करने में लगभग 12 वर्ष लगाए।
- “There have been attempts to classify and catalogue Lepidoptera for over 100 years. There are 13,703 species of butterflies and moths across 3,705 genera, 240 subfamilies, 102 families, and 31 superfamilies,” Mr. Singh said.
श्री सिंह ने कहा, “लेपिडॉप्टेरा का वर्गीकरण और सूचीकरण करने के प्रयास पिछले 100 वर्षों से अधिक समय से किए जा रहे हैं। तितलियों और पतंगों की 13,703 प्रजातियाँ 3,705 वंशों (Genera), 240 उपकुलों (Subfamilies), 102 कुलों (Families) तथा 31 अधिसुपरकुलों (Superfamilies) में विभाजित हैं।”
- Of the 13,703 species of Lepidoptera, 1,417 are butterflies, and the remaining 12,286 are moths, Mr. Singh said.
श्री सिंह ने बताया कि लेपिडॉप्टेरा की 13,703 प्रजातियों में से 1,417 तितलियाँ हैं, जबकि शेष 12,286 प्रजातियाँ पतंगों की हैं।
- The scientific work bridges critical taxonomic gaps that have persisted for more than 100 years, since the first historical attempts to document the region's insect fauna, a Press Information Bureau (PIB) release stated.
प्रेस सूचना ब्यूरो (PIB) की विज्ञप्ति के अनुसार, यह वैज्ञानिक कार्य उन महत्वपूर्ण वर्गिकी (Taxonomy) संबंधी रिक्तियों को भरता है, जो इस क्षेत्र के कीट जीव-जंतुओं के प्रथम ऐतिहासिक अभिलेखीकरण के बाद से 100 वर्षों से अधिक समय से बनी हुई थीं।
- “It firmly positions India among a select group of megadiverse nations possessing a fully updated, centralised, and authoritative baseline inventory of its butterfly and moth diversity,” the release said.
विज्ञप्ति में कहा गया है, “यह भारत को उन चुनिंदा महाविविध (Megadiverse) देशों की श्रेणी में स्थापित करता है, जिनके पास अपनी तितली एवं पतंगा विविधता का पूर्णतः अद्यतन, केंद्रीकृत और प्रामाणिक आधारभूत अभिलेख उपलब्ध है।”

Crucial role

महत्वपूर्ण भूमिका

- Butterflies and moths play crucial roles in maintaining **ecological equilibrium**, serving as essential **herbivores**, **detritivores**, and **pollinators**, while acting as vital food resources for **birds**, **bats**, and other **insectivores**, the ZSI scientists said.



जेडएसआई के वैज्ञानिकों ने कहा कि तितलियाँ और पतंगे पारिस्थितिक संतुलन (Ecological Equilibrium) बनाए रखने में अत्यंत महत्वपूर्ण भूमिका निभाते हैं। वे शाकाहारी (Herbivores), अपघटक-भक्षी (Detritivores) तथा परागणकर्ता (Pollinators) के रूप में कार्य करते हैं और साथ ही पक्षियों, चमगादड़ों तथा अन्य कीटभक्षी (Insectivores) जीवों के लिए महत्वपूर्ण खाद्य स्रोत भी हैं।

- Among the **13,703 species of Lepidoptera**, the scientists have identified and catalogued **2,205 species of Geometroidea**, nocturnal **pollinators** taking over the “**night shift**” when daytime butterflies rest.

लेपिडॉप्टेरा की 13,703 प्रजातियों में वैज्ञानिकों ने जियोमेट्रोइडिया (Geometroidea) की 2,205 प्रजातियों की पहचान कर उनका सूचीकरण किया है। ये रात्रिचर परागणकर्ता (Pollinators) हैं, जो दिन में तितलियों के विश्राम करने पर "रात्रि पाली (Night Shift)" का कार्य संभालते हैं।

- These **2,205 species** account for **8.8%** of the world's known species in this **superfamily**. ये **2,205 प्रजातियाँ** इस अधिसुपरकुल (Superfamily) की विश्व में ज्ञात कुल प्रजातियों का **8.8%** प्रतिनिधित्व करती हैं।

PATRIOTIC IAS