



UPSC CIVIL SERVICES · PRELIMINARY EXAMINATION 2027

July-September PT Current Affairs 2026

July · August · September 2026

Section-wise Prelims notes — In news, key facts, technical points, Prelims traps and static linkage, with maps for places in news.

Polity

Environment

Science & Tech

Security & DM

Places in News

Nobel 2026

Sports

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Facts as reported up to 20 October 2026 · verify any development after that date

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How to use this book. Each section opens with its own topic index. Every topic follows one pattern: *In news* → key facts → **technical points** → **Prelims traps** (the likely wrong-statement angles) → static linkage. Practice MCQs and Mains expected questions are in the two companion files.

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Polity & Governance — Acts of the Monsoon Session and September 2026

Monsoon Session (20 Jul – 13 Aug 2026): 11 Acts passed · September 2026: delegated legislation, draft Bill and scheme guidelines · Prelims facts with Mains angle

#	Topic	Area	#	Topic	Area
1	Supreme Court (Number of Judges) Amendment Act	Judiciary	11	Commencement notifications (Aug-Sep)	Delegated leg.
2	Kerala (Alteration of Name) Act	Federalism	12	Zero-charge & MDR notification: UPI/RuPay	Digital payments
3	Tribunals Reforms Act, 2026	Tribunals	13	Consumer Protection (E-Commerce) Amdt. Rules	Consumer rights
4	Prevention of Insults to National Honour (Amdt.) Act	National symbols	14	Draft Petroleum (Amendment) Bill, 2026	Energy security
5	Registration of Births & Deaths (Amdt.) Act	Governance	15	TRAI: TCCCPR amendment & TV-ad regulations	Telecom · Media
6	MMDR Amendment Act, 2026	Mining · Fiscal fed.	16	NCAHP Registration Regulations, 2026	Health workforce
7	MSMED (Amendment) Act, 2026	MSMEs	17	FSSAI Laboratory & Sample Analysis Amdt.	Food safety
8	Taxation and Other Laws (Amendment) Act	Taxation	18	Draft CAQM stubble-burning compensation rules	Environment
9	Bankers' Books Evidence Act, 2026	Banking · Evidence	19	DILRMP 3.0 operational guidelines	Land records
10	NCDC (Amendment) Act, 2026	Cooperatives			

Each Act: *In news* → key provisions → **technical points** → **Prelims traps** → static linkage → **Mains angle**.

Monsoon Session 2026 at a glance

- **20 Jul – 13 Aug 2026; 19 sittings** over 25 days; productivity Lok Sabha ≈ **19%**, Rajya Sabha ≈ **39%**.
- **Output (PRS)**: 12 Bills introduced, **11 passed**; pending: **Indian Statistical Institute Bill, 2026**. PIB counts 12 (incl. Appropriation Bill). **FCRA Amendment Bill** sent to a **Joint Committee**.
- **Scrutiny**: **no** Bill referred to a Standing Committee; 9 of 11 passed in Lok Sabha with only the Minister speaking.
- **Ordinances replaced**: **Supreme Court (Number of Judges) Amendment Ordinance, 2026** and **Income-tax (Amendment) Ordinance, 2026**.
- **September 2026**: Parliament not in session — no new Central Act and no ordinance; law-making came through delegated legislation (Part C).

PART A · POLITY & GOVERNANCE (GS-II)

1. Supreme Court (Number of Judges) Amendment Act, 2026

ACT · JUDICIARY

In news: Parliament replaced the May 2026 Ordinance, raising the Supreme Court's sanctioned strength to **37 judges + CJI = 38**.

- **What it does**: raises sanctioned strength from **33 to 37 judges (excluding the CJI)** — total **38**. Amends the **Supreme Court (Number of Judges) Act, 1956**.
- **Route**: Cabinet approval **5 May 2026** → **Ordinance** promulgated by the President in **May 2026 (Art. 123)** → replaced by this Act in the Monsoon Session (both Houses).

- **Expenditure:** salaries/allowances of SC judges are **charged on the Consolidated Fund of India** — not subject to vote (**Art. 112(3)(d)**), only discussion.
- **Constitutional basis: Art. 124(1)** — originally CJI + 7 judges; Parliament may raise the number **by ordinary law** — not an amendment under Art. 368.
- **Pendency (NJDG, 2025): 5.1 crore+** cases across all courts; **90,000+** in the Supreme Court.

Year	1950	1956	1960	1977	1986	2008	2019	2026
Judges excl. CJI	7	10	13	17	25	30	33	37
Total incl. CJI	8	11	14	18	26	31	34	38

Technical points

- Strength is fixed by Parliament under **Art. 124(1)** by ordinary law (simple majority).
- Salaries charged on CFI — **Art. 112(3)(d)**; charged items are discussed but not voted (Art. 113).
- Ordinance (Art. 123) → Act in the next session.
- More judges ⇒ more **Constitution Benches** can sit simultaneously.

Prelims traps

- 37 is the number **excluding** the CJI — total sanctioned strength is **38**, not 37.
- Increasing judges needs only an **ordinary law under Art. 124(1)** — **not** a constitutional amendment, **not** special majority.
- Judges' salaries are **charged** expenditure — Parliament cannot vote on them (Art. 112/113).
- Strength was last raised in **2019 (30 → 33)**, not 2009. The 2008 increase was 25 → 30.
- Regional benches do **not** require amending the Constitution — Art. 130 already allows sittings elsewhere.
- Art. 128 (retired judges) ≠ Art. 127 (ad hoc judges from High Courts).

Static linkage

- **Art. 124(2)**: judges appointed by the **President**; **Collegium** system from **Second Judges case (1993)** and **Third Judges case (1998)**; **NJAC (99th Amendment, 2014)** struck down in **Fourth Judges case (2015)**.
- Retirement age **65** (Art. 124(2)); removal by Parliament on **proved misbehaviour or incapacity** — special majority in each House (Art. 124(4)); procedure in **Judges (Inquiry) Act, 1968**.
- **Art. 127** — ad hoc judges (when quorum lacking); **Art. 128** — retired judges may be requested to sit; **Art. 130** — SC sits in **Delhi or elsewhere** as CJI decides **with President's approval** (regional benches possible without a constitutional amendment).
- Ordinance: must be laid before Parliament; ceases **6 weeks after reassembly** unless approved (Art. 123(2)).

Mains angle**Significance**

- Directly addresses pendency; enables more **Constitution Benches** to sit at once without suspending regular benches.
- Speedy trial is part of **Art. 21 (Hussainara Khatoon, 1979)**; “justice delayed is justice denied”.
- Workload: SC has drifted from a constitutional court into a regular appellate forum — more judges ease the SLP load.

Concerns / criticism

- Posts alone don't help if **vacancies** persist — friction between Collegium and executive over the **Memorandum of Procedure**.
- Pendency is also caused by **adjournments, frivolous SLPs, government as the largest litigant**, and weak lower-court infrastructure.
- More judges sitting in smaller benches can produce **conflicting judgments** and more reference to larger benches.
- Delhi-centric court limits **access to justice** for litigants from the South and North-East.

Way forward

- Finalise a time-bound **Memorandum of Procedure**; fill vacancies before they arise.
- Regional benches / a **National Court of Appeal** — **229th Law Commission Report (2009)**; Parliamentary Standing Committee support.
- Restrict SLP admission; **National Litigation Policy** to cut government litigation; **e-Courts Phase III** and AI-based case management.

Probable Mains question: “Increasing the number of judges is necessary but not sufficient to address judicial pendency in the Supreme Court.” Discuss. (10 marks)

2. Kerala (Alteration of Name) Act, 2026

ACT · FEDERALISM

In news: Parliament renamed the State **Kerala** → “**Keralam**”, clearing the Bill on **12 Aug 2026**.

- **What it does:** renames the State **Kerala** → “**Keralam**”; amends the **First Schedule** and makes consequential changes.
- **Passage:** introduced in Lok Sabha by the **Home Minister** on **10 Aug 2026**; LS passed **11 Aug**; Parliament cleared **12 Aug 2026**.
- **Trigger:** Kerala Assembly resolutions (**2023**, revised **2024**) — also asked that “Keralam” be used in all **Eighth Schedule** languages. Union Cabinet cleared it in early 2026 after NOCs from **Railways, IB, Department of Posts, Survey of India, Registrar General of India; Legislative Department** concurred.
- **History of name:** “**Keralaputra**” in **Ashoka’s Rock Edict II**; Hermann Gundert linked “Keralam” to “Cheralam” (land of the Cheras). **Aikya Kerala** movement (1920s) for a united Malayalam State.
- **Formation:** **1 Nov 1956** (Kerala Piravi) under the **States Reorganisation Act, 1956** on the **Fazl Ali Commission (SRC)** recommendation — Travancore-Cochin + Malabar district + Kasaragod taluk.

Earlier renaming	Year
Madras State → Tamil Nadu	1969
Mysore → Karnataka	1973
Pondicherry → Puducherry (UT)	2006
Uttaranchal → Uttarakhand	2007
Orissa → Odisha	2011
Kerala → Keralam	2026

Technical points

- **Procedure (Art. 3):** Bill only on **President's recommendation**; President refers it to the **State legislature** for views within a set period (**views not binding**).
- Passed by **simple majority**; under **Art. 4** it is **not** a constitutional amendment under Art. 368.
- Amends the **First Schedule** (States & territories).

Prelims traps

- The State legislature's consent is **not required** — only its **views**, which Parliament may ignore.
- President's **prior recommendation** is mandatory before introduction — the State cannot introduce the Bill itself.
- Law under Art. 3 is passed by **simple majority**; Art. 4 says it is **not** an Art. 368 amendment — even though it changes the First Schedule.
- The **First Schedule** (States & territories) is amended — not the Eighth (languages).
- Odisha (2011) was via the **Orissa (Alteration of Name) Act, 2011** + the **96th Amendment** (Oriya → Odia in the Eighth Schedule) — the amendment was for the **language** name, not the State name.
- Kerala Piravi Day is **1 November**, not 26 January.

Static linkage

- **Art. 3** covers: forming new States, altering **area, boundaries or name** of any State.
- **Babulal Parate (1959)**: Parliament need not accept State views; **Berubari (1960)**: ceding territory to a foreign country needs Art. 368, not Art. 3.
- Renaming **cities/districts/railway stations** is an **executive** act (State Government with MHA NOC) — only a **State** name change needs a Central law.

Mains angle**Significance**

- Restores **native linguistic identity** — States were reorganised on linguistic lines (1956).
- Follows the Art. 3 consultative route — a case of **cooperative federalism** and respect for State aspiration.
- Symbolic decolonisation of names, consistent with Orissa → Odisha.

Concerns / criticism

- Shows the asymmetry of Indian federalism — Parliament can alter States unilaterally ("**indestructible Union of destructible States**"), e.g., J&K Reorganisation, 2019.
- Administrative cost: records, maps, signage, legal documents, IDs.
- Can trigger more identity-based renaming demands (West Bengal → "Bangla" still pending) and politicisation of nomenclature.

Way forward

- Transparent criteria and time limits for processing State requests; phased, low-cost transition; consistent transliteration across official languages.

Probable Mains question: *Examine the scope of Parliament's powers under Articles 3 and 4 of the Constitution in the light of recent changes in State names. (10 marks)*

3. Tribunals Reforms Act, 2026

ACT · TRIBUNALS

In news: New Act (No. 17 of 2026) **repeals the Tribunals Reforms Act, 2021** and creates a **National Tribunals Commission**; in force from **25 Aug 2026**.

- **What it does:** **repeals the 2021 Act**; re-enacts appointment and service conditions in line with SC directions; covers ≈ **16 major tribunals** (e.g., **CAT, ITAT, NGT, NCLAT**).

- **National Tribunals Commission (NTC):** Chair — former **SC judge or HC Chief Justice**; **2 judicial members** (former HC CJs/judges); **2 technical members** (≥ 25 yrs in public administration, finance, law, accountancy, banking, management or technology). Appointed by the **Centre, consulting the CJI** for chair & judicial members. Secretariat headed by a **Central Government Secretary**.
- **NTC functions:** conducts selections; reviews tribunal performance; supervises inquiries into complaints against chairpersons/members; maintains the **National Tribunals Data Grid**.
- **Search-cum-Selection Committee:** head — NTC chair (for tribunal chairpersons) / an NTC judicial member (for members). Members: retired HC CJ or judge (nominated by NTC chair), an NTC technical member, a Central Secretary, **2 experts**, NTC Secretary. **Experts and NTC Secretary cannot vote**; head has a **casting vote**.
- **Selection output:** **1 name + 1 waitlist name** per vacancy; Government must appoint within **3 months**.
- **Tenure:** **5 years** or age limit — tribunal **chairpersons 70, members 67**; NTC members 5 yrs/70. **Reappointment** possible on past performance (chairperson consulted for members).
- **Removal:** insolvency, moral-turpitude conviction, physical/mental incapacity, abuse of position, prejudicial interest; for tribunal members also **incompetence/inefficiency** and taking a **paid assignment**.
- **Delegated: qualifications, selection method, pay & allowances** — by **Central Rules**.
- **Commencement:** Act No. **17 of 2026**; all provisions in force from **25 Aug 2026** (S.O. 4713(E), Ministry of Law & Justice).

Technical points

- NTC = single independent oversight body: selection + performance review + complaints + Data Grid.
- Selection: **1 + 1 waitlist**; appointment within **3 months**.
- Age limits: chairperson **70**, member **67**; tenure **5 years**.
- Casting vote with the (judicial) head; experts and NTC Secretary non-voting.

Prelims traps

- Art. 323A tribunals can be created **only by Parliament**; Art. 323B tribunals by **Parliament or State legislatures**.
- Tribunals are **not** outside writ jurisdiction — **L. Chandra Kumar** restored HC review.
- NTC appointments are by the **Central Government** (in consultation with CJI) — **not** by the CJI or Collegium.
- Member age limit is **67**, chairperson **70** — don't swap.
- In the selection committee, **experts cannot vote**; the **head** (judicial) has the casting vote — not the Government Secretary.
- NGT was created by the **NGT Act, 2010** (rooted in Art. 21), not by a constitutional amendment.

Static linkage

- **42nd Amendment (1976)** — **Part XIV-A: Art. 323A** (administrative tribunals for public services — **Parliament only**); **Art. 323B** (tax, industrial, land reforms, elections, etc. — **Parliament and State legislatures**).
- **S.P. Sampath Kumar (1987)**: tribunals as effective substitutes of HCs; **L. Chandra Kumar (1997)**: judicial review by HCs/SC is **basic structure** — tribunals are courts of first instance, subject to HC (division bench) review.
- **R. Gandhi (2010)** and **Madras Bar Association** cases (2014, 2020, 2021, 2025): 5-year tenure, minimum age not to bar young advocates, an independent **NTC**; SC struck down parts of the 2021 Act in **Nov 2025**.
- 2017 Finance Act merged several tribunals; 2021 Ordinance/Act **abolished 9 appellate tribunals** (e.g., FCAT, AAI tribunal).

Mains angle**Significance**

- Implements a long-pending SC demand for a **single, independent oversight body** for tribunals.
- Fixed timelines (1+1 panel; 3-month appointment) tackle chronic **vacancies** that crippled NCLT, DRT, ITAT.
- Performance review and a **Data Grid** add transparency and accountability.

Concerns / criticism

- **Executive dominance:** Centre appoints, frames qualifications/pay by Rules, and the Government is often the main litigant before tribunals.
- **Reappointment** based on “performance” may induce deference to the Government.
- Parent-ministry control over budgets and staff continues; risk of fresh litigation (fourth round of the Madras Bar saga).
- “Courtification” — adjournments and complex pleadings erode the speed advantage of tribunals.

Way forward

- Financial and administrative **autonomy for NTC**; single nodal ministry (Law & Justice) rather than parent ministries.
- **Judicial-impact assessment** before creating new tribunals; benches beyond Delhi; digital hearings; uniform procedure code.

Probable Mains question: *Critically evaluate whether the Tribunals Reforms Act, 2026 secures the independence of tribunals as envisaged by the Supreme Court. (15 marks)*

4. Prevention of Insults to National Honour (Amendment) Act, 2026

ACT · NATIONAL SYMBOLS

In news: Preventing or disturbing the singing of the National Song “**Vande Mataram**” made an offence — parity with the National Anthem.

- **What it does:** amends **Sec. 3** of the **1971 Act** — intentionally **preventing the singing** of the **National Song “Vande Mataram”** or **causing disturbance** to an assembly singing it is now an offence — same protection as the National Anthem.
- **Punishment:** up to **3 years** imprisonment, or fine, or both. **Sec. 3A** (added **2003**): **minimum 1 year** on second/subsequent conviction.
- **Passage:** introduced LS **24 Jul 2026**; passed by Parliament by **30 Jul 2026**.
- **1971 Act — structure:** **Sec. 2** — insult to the **National Flag and the Constitution** (burning, defacing etc.; criticism aimed at lawful change is **not** an offence). **Sec. 3** — preventing singing of the **Anthem**. **Sec. 3A** — repeat offences.
- **Rationale cited:** on **24 Jan 1950**, Dr **Rajendra Prasad** declared in the Constituent Assembly that Vande Mataram shall be honoured **equally** with Jana Gana Mana — yet it had no statutory protection.

Technical points

- Sec. 2: Flag & Constitution; Sec. 3: Anthem + **now National Song**; Sec. 3A: repeat offence (min. 1 yr).
- Max punishment: **3 years/fine/both**.
- Offence = **preventing** singing or **disturbing** an assembly singing it.

Prelims traps

- The Constitution does **not** mention a National Song — status flows from the 24 Jan 1950 declaration (and now statute).
- Fundamental Duty **51A(a)** covers Flag and Anthem — **not** the National Song.
- The offence is **preventing or disturbing** the singing — **not** merely refusing to sing or not standing.
- Vande Mataram was written in **1875** but published in Anandamath in **1882**; first sung at INC in **1896** (Calcutta) — not 1905.
- Flag & Constitution are in **Sec. 2**; Anthem (and now Song) in **Sec. 3**.
- Minimum 1-year punishment applies only to **repeat** offences (Sec. 3A).

Static linkage

- Vande Mataram: by **Bankim Chandra Chattopadhyay**, in **Sanskritised Bengali**; first in **Bangadarshan (7 Nov 1875)**, then in the novel **Anandamath (1882)**.
- First sung by **Rabindranath Tagore** at the **1896 Calcutta INC session**; rallying cry of the **Swadeshi movement** (7 Aug 1905); **CWC (1937)** adopted only the **first two stanzas** as the national song.
- Jana Gana Mana: by **Tagore**; adopted as National Anthem on **24 Jan 1950**; full version ≈ **52 seconds**.
- **Art. 51A(a)**: duty to respect Constitution, its ideals and institutions, **National Flag and National Anthem** — the National Song is **not mentioned** anywhere in the Constitution.
- **Flag Code of India, 2002** (amended 2021, 2022 — polyester & day-night flying).

Mains angle**Significance**

- Formal parity between the two national symbols; honours the freedom-struggle legacy of Vande Mataram.
- Closes a legal gap noted since 1950; deters deliberate disruption of national ceremonies.

Concerns / criticism

- **Compelled expression** debate — **Bijoe Emmanuel (1986)**: no one can be compelled to sing the Anthem if they stand respectfully; Art. 19(1)(a) and 25 protect silence.
- Some groups have historically objected to later stanzas on religious grounds — risk of the law being used against minorities or dissent.
- Vague “disturbance” standard; passed with little debate.

Way forward

- MHA guidelines distinguishing **non-participation** (protected) from **obstruction** (punishable); proportionate, non-selective enforcement; civic education over coercion.

Probable Mains question: *Respect for national symbols must be balanced with freedom of conscience.*

Discuss with reference to the 2026 amendment to the Prevention of Insults to National Honour Act. (10 marks)

5. Registration of Births and Deaths (Amendment) Act, 2026

ACT · GOVERNANCE

In news: Amends **Sec. 13(3)** of the **RBD Act, 1969** to tighten **delayed registration** — *judicial order needed for delays beyond 2 years.*

- **Delay 1-2 years:** registration only with prior approval of the **DM / SDM / an Executive Magistrate authorised by the DM**, after verification and fee.
- **Delay > 2 years:** only on the order of a **Judicial Magistrate First Class (JMFC)** — compulsory judicial verification.
- **Passage:** Cabinet **20 Jul 2026**; introduced by **MoS Home**; LS passed by voice vote **31 Jul**; RS passed early August.
- **Rationale:** curb **fraudulent** delayed registrations; add legal scrutiny for long delays.

Technical points

- Normal reporting: within **21 days**.
- 1-2 yrs late → **Executive Magistrate (DM/SDM)**; > 2 yrs → **JMFC**.
- Amended provision: **Sec. 13(3)** (delayed registration).

Prelims traps

- 1-2 year delay → **Executive Magistrate (DM/SDM)**; > 2 years → **Judicial Magistrate First Class** — don't swap.
- Registration of births and deaths is in the **Concurrent List** (Entry 30), not State List.
- The **2023** amendment (not 2026) made the birth certificate a single proof of date of birth.
- The amended provision is **Sec. 13** (delayed registration), not Sec. 8 (persons required to register).
- The RGI is under the **Ministry of Home Affairs**, not Health.

Static linkage

- Subject: “**Vital statistics including registration of births and deaths**” — **Entry 30, Concurrent List**.
- Administered by the **Registrar General of India (RGI), MHA**; Chief Registrars in States; normal reporting within **21 days**.
- **RBD (Amendment) Act, 2023** (in force **1 Oct 2023**): **digital birth certificate** as a **single document** for school admission, driving licence, voter list, Aadhaar, marriage registration, government jobs; national & State databases linked to **NPR, electoral rolls, ration cards**.
- **Civil Registration System (CRS)** portal; reports: Vital Statistics based on CRS (annual).

Mains angle**Significance**

- Birth certificate is now a **foundational identity document** — integrity of late entries matters for citizenship, voter rolls, inheritance, age-related benefits and recruitment.
- Judicial filter deters organised document fraud.

Concerns / criticism

- Hardship for the **poor, rural, tribal, migrants** and **home births** — those most likely to register late.
- Extra load on **JMFCs** already facing pendency; delays in welfare access (scholarships, pensions).
- Passed by voice vote **without debate** amid disruptions.

Way forward

- Single-window camps; doorstep verification; time limits for magistrate decisions; awareness for registration within 21 days; incentivise institutional delivery and ASHA reporting.

Probable Mains question: *Discuss the significance of the Registration of Births and Deaths (Amendment) Act, 2026 for identity governance, and the concerns it raises for vulnerable groups. (10 marks)*

PART B · ECONOMY & FEDERAL FINANCE (GS-III / GS-II)

6. Mines and Minerals (Development & Regulation) Amendment Act, 2026

ACT · MINING · FISCAL FEDERALISM

In news: New **Sec. 9D** bars States from taxing mineral rights and mineral-bearing lands except as the Centre prescribes — a response to the **2024 nine-judge verdict**.

- **Passage:** introduced LS **10 Aug 2026**; passed within about **three days**; PIB explainer **18 Aug 2026**.
- **Sec. 2 amended:** declaration of Union control extended explicitly to “**mineral-bearing lands**”.
- **New Sec. 9D:** States **cannot impose any tax, cess or levy** on **mineral rights** or **mineral-bearing lands** — based on **quantity, value, royalty or otherwise** — **except under conditions/restrictions prescribed by the Centre**.
- **Sec. 13:** Centre empowered to make rules prescribing parameters, conditions and ceilings for State levies (Act itself sets no ceiling).
- **Past dues:** unpaid/unrecovered pre-amendment State levies **deemed invalid**; amounts already deposited/collected **not refunded**.
- **Not affected:** States’ ownership of land & minerals, **royalty**, auction premium, **District Mineral Foundation**; **minor minerals** remain fully with States.
- **Govt data:** State revenue from major minerals **₹13,586 cr (FY14) → ₹82,366 cr (FY26)**; **723** major mineral blocks auctioned in **17** States since 2015.

Technical points

- Mineral **rights** → **Entry 50, List II** (subject to Parliament's limits on mineral development).
- Mineral-bearing **land** → **Entry 49, List II** (no such limitation — basis of PRS's competence doubt).
- Union regulatory power → **Entry 54, List I**.
- Ceilings by **Central rules** (Sec. 13), not in the Act.

Prelims traps

- After the 2024 verdict, **royalty is not a tax** — it is a contractual consideration.
- Mineral **rights** → **Entry 50, List II**; mineral-bearing **land** → **Entry 49, List II**; Union's regulatory power → **Entry 54, List I**.
- The 2026 Act does **not** abolish royalty and does **not** touch **minor minerals**.
- Taxes already paid are **not refunded**; only **unpaid** past dues are extinguished.
- The dissent in the 2024 case was by **Justice B.V. Nagarathna** (the only one).
- Ceilings are set by **Central rules**, not written into the Act.

Static linkage

- **Mineral Area Development Authority v. SAIL (25 Jul 2024)** — 9-judge bench, **8:1** (majority by CJI D.Y. Chandrachud; dissent **Justice B.V. Nagarathna**): **royalty is not a tax**; States can tax **mineral rights (Entry 50, List II)** and **mineral-bearing land (Entry 49, List II)**; overruled **India Cement (1989)** on royalty-as-tax.
- Follow-up order (Aug 2024): States may recover arrears from **1 Apr 2005**, in instalments over **12 years**, without interest/penalty.
- **Entry 50, List II** is "subject to limitations imposed by Parliament by law relating to mineral development"; **Entry 54, List I** — regulation of mines & mineral development under Union control declared by law. **Entry 49** (land & buildings) has **no such limitation** — basis of PRS's competence doubt.
- MMDR milestones: **2015** (auctions, **DMF**, **NMET**), **2021** (captive-merchant distinction removed), **2023** (critical minerals; **exploration licence**), **2025** (NMEDT for overseas exploration).

Mains angle**Significance**

- **Uniform, predictable** fiscal regime; prevents cascading State cesses that raise input costs for steel, power, cement and infrastructure.
- Investor certainty for **critical-mineral** auctions and the **National Critical Mineral Mission**; avoids a sudden retrospective burden on PSUs and private miners.
- States still receive rising royalty and auction revenue under the post-2015 auction regime.

Concerns / criticism

- **Fiscal federalism**: curtails a taxing power upheld by a 9-judge bench — seen as **legislatively overruling** the verdict.
- Competence doubt over restricting tax on **land (Entry 49)**, which Parliament cannot limit.
- Retrospective wiping of dues hits mineral-rich, poorer States — **Odisha** (claims > ₹1 lakh cr), **Jharkhand**, **Chhattisgarh**.
- Excessive **delegation** — ceilings by executive rules; minimal parliamentary scrutiny; certain litigation.

Way forward

- Consult States through the **Inter-State Council** / a GST-Council-like mineral forum; a **compensatory revenue-sharing** mechanism for arrears.
- Statutory ceilings in the Act; sunset review; earmark part of revenue for mining-affected areas via DMF.

Probable Mains question: *The MMDR Amendment Act, 2026 has reopened the debate on fiscal federalism. Analyse in the light of the Supreme Court's 2024 verdict on mineral taxation. (15 marks)*

7. Micro, Small and Medium Enterprises Development (Amendment) Act, 2026

ACT · MSMEs

In news: Amends the **MSMED Act, 2006** — statutory Udyam registration and a time-bound “90-30-90” dispute route for delayed payments.

- **Passage:** introduced in **Rajya Sabha 28 Jul 2026**; RS passed **3 Aug**, LS **7 Aug**; provisions commence on notified dates.
- **Classification:** statutory basis for classification on **investment + turnover** (replaces Sec. 7(1)).
- **Registration:** **Udyam Registration** gets permanent legal recognition (new Sec. 8) — **free, digital, voluntary**; registration remains the gateway to delayed-payment protection (a “supplier” under Sec. 2(n) must have filed the memorandum).
- **Disputes (Sec. 18): MSE Facilitation Council (MSEFC)** — **mediation within 90 days** of first appearance (**Mediation Act, 2023** applies) → arbitration within **30 days** of failed mediation → time-bound award (“90-30-90”). **Online Dispute Resolution** enabled.
- **Payment protection:** if a challenge to an award is pending > **6 months**, court must order release of **at least 50%** of the award to the MSE.
- **Councils:** States may set up **multiple MSEFCs**; composition rationalised to cut pendency.
- **Penalties:** criminal penalties replaced by **administrative adjudication** (decriminalisation).
- **Unchanged: Sec. 15** — pay within agreed period, **max 45 days**; **Sec. 16** — compound interest (monthly rests) at **3× RBI bank rate**.

Technical points

- **90-30-90:** mediation 90 days (from first appearance) → arbitration within 30 days → time-bound award.
- **≥ 50%** of award released if challenge pending > 6 months.
- Classification (revised Budget 2025): **Micro** ≤ ₹2.5 cr investment / ₹10 cr turnover; **Small** ≤ ₹25 cr / ₹100 cr; **Medium** ≤ ₹125 cr / ₹500 cr.

Prelims traps

- Delayed-payment protection (Secs. 15-18) applies to **micro and small** suppliers — **not medium**.
- Maximum credit period is **45 days**; interest is **3× bank rate**, compounded **monthly** — both **unchanged** by the 2026 Act.
- MSEFCs are set up by **State Governments**, not the Centre.
- Udyam Registration remains **voluntary** and **free**.
- The Bill was introduced in **Rajya Sabha** first (not Lok Sabha).
- The “90” in 90-30-90 for mediation counts from the **first appearance**, not from filing.

Static linkage

- Support ecosystem: **TReDS** (invoice discounting), **MSME Samadhaan** portal, **Sec. 43B(h)** of income-tax law (deduction only when MSE paid within time), **CGTMSE**, **Udyam Assist** for informal micro units.
- Delayed payments: an estimated **₹10.7 lakh crore** tied up annually.

Mains angle**Significance**

- Targets the single biggest MSE pain point — **delayed payments** that choke working capital and push units into NPAs.
- Faster, cheaper recovery via **ODR** and fixed timelines; the 50% pre-deposit rule discourages tactical appeals by large buyers.
- Decriminalisation and digital registration improve **ease of doing business**.

Concerns / criticism

- Unequal **bargaining power** — MSEs fear losing buyers if they file claims.
- MSEFC capacity varies widely across States; awards still face court delays.
- Medium enterprises left out of payment protection; informal micro units lack Udyam registration.
- Passed without Standing Committee scrutiny.

Way forward

- Mandatory **TReDS** onboarding for large corporates and CPSEs; public **defaulter dashboard**; disclosure of MSE dues in financial statements.
- Capacity building and digitisation of MSEFCs; extend protection to medium enterprises in a phased way.

Probable Mains question: *Delayed payments are a major constraint on MSME growth. How far does the MSMED (Amendment) Act, 2026 address this problem? (10 marks)*

8. Taxation and Other Laws (Amendment) Act, 2026

ACT · TAXATION

In news: Replaces the **Income-tax (Amendment) Ordinance, 2026** (promulgated **5 Jun 2026**), issued to cushion **external economic shocks** and support affected sectors.

- **Introduced:** Lok Sabha, **5 Aug 2026**, by the **Finance Minister**.
- **Laws amended:** **Income-tax Act, 2025** (in force **1 Apr 2026**), **Finance Act, 2026**, **Payment and Settlement Systems Act, 2007**.
- **Data centres:** simplified exemptions for **foreign companies using Indian data centres**; **leased data centres** can claim tax benefits.
- **Fund managers:** easier relocation of **foreign fund managers** to India **without creating a taxable business presence** (PE risk).
- **REITs / InvITs:** **dividend exemption restored** under the **new tax regime**.
- PSS Act amendment lets the Centre notify electronic payment modes on which banks/system providers cannot levy charges — used in September for the UPI/RuPay notification (Topic 12).

Technical points

- Ordinance (5 Jun 2026) → Act in Monsoon Session.
- Three laws amended: IT Act 2025, Finance Act 2026, PSS Act 2007.
- Benefits: data centres, fund-manager relocation, REIT/InvIT dividends.

Prelims traps

- The Ordinance amended the **new Income-tax Act, 2025**, not the 1961 Act (repealed from 1 Apr 2026).
- An ordinance **can** amend tax laws — Art. 123 has the same scope as Parliament's law-making power (except constitutional amendments).
- Ordinance lapses **6 weeks from reassembly** of Parliament — not 6 months.
- The Act also amends the **Payment and Settlement Systems Act, 2007** — not only tax statutes.
- Restored exemption is for **REIT/InvIT dividends** under the **new** regime.

Static linkage

- **Income-tax Act, 2025** replaced the **Income-tax Act, 1961** from **1 Apr 2026** (simpler language, “tax year” concept).
- **Art. 123**: ordinance only when Parliament is not in session and the President is satisfied immediate action is needed; lapses **6 weeks after reassembly**; **D.C. Wadhwa (1987)** — re-promulgation is fraud on the Constitution; **Krishna Kumar Singh (2017)** — ordinances are subject to judicial review and must be laid.
- **Art. 265**: no tax except by authority of law. **PSS Act, 2007** — RBI regulates payment systems.
- REITs/InvITs regulated by **SEBI** (2014 regulations).

Mains angle**Significance**

- Tax certainty for **data-centre** investment and **fund-management** relocation (GIFT City IFSC) — supports digital infrastructure and capital-market depth.
- Quick fiscal response to external shocks.

Concerns / criticism

- Repeated recourse to **ordinances** for tax law dilutes parliamentary deliberation (“ordinance raj”).
- Revenue foregone and new carve-outs within months of a “simplified” Act undermine its stability.
- No Standing Committee examination.

Way forward

- Pre-legislative consultation; tax-expenditure statements with **sunset clauses**; stability period for a new code.

Probable Mains question: *Frequent use of ordinances in economic legislation weakens parliamentary accountability. Discuss with recent examples. (10 marks)*

9. Bankers’ Books Evidence Act, 2026**ACT · BANKING · EVIDENCE**

In news: Modernises the **1891** law; “bankers’ books” now include electronic, digital and cloud records — in force **1 Oct 2026**.

- **What it does:** modernises the **Bankers’ Books Evidence Act, 1891**, which lets **certified copies** of bank records be used as evidence without producing the originals.
- **Key change:** definition of “**bankers’ books**” expanded to records maintained in **physical, electronic, digital, virtual, cloud-based** or any other form.
- **In force:** Act No. **15 of 2026**; commencement notified by **Department of Financial Services** on **10 Sep 2026** (S.O. 5041(E)), effective **1 October 2026**.
- **Why:** old Act framed when records were paper ledgers; core banking and cloud storage created evidentiary uncertainty.

Technical points

- Admissibility of **certified copies** of bank records (originals need not be produced).
- Form-neutral definition: physical / electronic / digital / virtual / cloud.
- Notified 10 Sep 2026 → effective 1 Oct 2026.

Prelims traps

- Parent law is of **1891**, not 1872 (that is the old Evidence Act).
- The change is about **admissibility of certified copies** of bank records — not about bank secrecy or RBI supervision.
- In force from **1 Oct 2026** (not from enactment date).
- Evidence law now = **BSA, 2023** — the Indian Evidence Act no longer applies.

Static linkage

- **Bharatiya Sakshya Adhiniyam (BSA), 2023** replaced the **Indian Evidence Act, 1872** from **1 Jul 2024** — electronic records can be **primary evidence**; certificate requirement for electronic evidence.
- **IT Act, 2000** — legal recognition of electronic records; **DPDP Act, 2023** — personal data protection.

Mains angle**Significance**

- Aligns banking evidence with digital reality; speeds up **recovery suits, DRT, fraud and PMLA** cases.
- Reduces need to summon bank officials and produce bulky ledgers.

Concerns / criticism

- **Authenticity and chain of custody** of cloud records; cyber tampering risk.
- Cross-border cloud storage and **data localisation**; privacy of customer data under DPDP.

Way forward

- Standard certification protocols (hash values, audit trails); training of judges and bank officials in digital evidence.

10. National Cooperative Development Corporation (Amendment) Act, 2026

ACT · COOPERATIVES

In news: Widens NCDC's lending scope and enables credit-information sharing — for timely, direct and flexible finance for cooperative development.

- **About NCDC:** statutory body set up in **1963** under the **NCDC Act, 1962**; now under the **Ministry of Cooperation** (created **July 2021**).
- **Changes:** wider definition of **"foodstuffs"** (any food item notified by the Centre); **removes geographical restriction** on industrial goods; enables **collection and sharing of credit information** with authorised institutions; updates statutory references, removes obsolete provisions; adds incidental powers.
- **Aim:** timely, direct and flexible finance for cooperative development.

Technical points

- "Foodstuffs" = any food item notified by the Centre.
- No geographical restriction on industrial goods.
- Credit-information collection & sharing with authorised institutions.

Prelims traps

- NCDC was **established in 1963** under an Act of **1962**.
- It works under the **Ministry of Cooperation**, not Agriculture (shifted in 2021).
- Part IX-B is **not wholly** struck down — it survives for **multi-State** cooperatives.
- Right to form cooperatives is in **Art. 19(1)(c)** (FR); promotion of cooperatives in **Art. 43B** (DPSP).

Static linkage

- "Co-operative societies" — **Entry 32, State List**; multi-State cooperatives — **Union domain (Multi-State Cooperative Societies Act, 2002, amended 2023)**.
- **97th Amendment (2011):** Art. **19(1)(c)** (right to form cooperatives), Art. **43B** (DPSP), **Part IX-B** (Arts. 243ZH-243ZT). **Union of India v. Rajendra Shah (2021):** Part IX-B struck down for **State** cooperatives (lacked State ratification), upheld for **multi-State** ones.
- Related: **National Cooperative Policy 2025**, computerisation of PACS, world's largest grain storage plan in cooperatives, **Sahakar se Samridhi**.

Mains angle**Significance**

- Wider lending scope for food processing and industrial cooperatives; better **credit discipline** through information sharing.
- Supports farmer incomes, value addition and rural employment.

Concerns / criticism

- Cooperatives are a **State subject** — growing Central role raises **federal** concerns.
- Privacy safeguards for credit data; risk of politicisation of cooperative finance.

Way forward

- Clear Centre-State division of roles; credit-data sharing under DPDP safeguards; professional management and audit of cooperatives.

Probable Mains question: *Examine the role of the Union in the cooperative sector after the creation of the Ministry of Cooperation, keeping in mind constitutional limits. (10 marks)*

PART C · SEPTEMBER 2026: LEGISLATIVE & REGULATORY INSTRUMENTS

Read this first

- Parliament was **not in session** in September 2026 (Monsoon Session ended 13 Aug; Winter Session not begun). **No new Central Act and no ordinance** was made in September (PRS Monthly Policy Review).
- September's "law-making" therefore came through **delegated legislation**: commencement notifications of August Acts, **rules and regulations** under existing Acts, a **draft Bill** for consultation, and scheme guidelines.

Static linkage — delegated legislation (useful for all of Part C)

- **S.O.** (Statutory Order) = notifications/orders under an Act (e.g., commencement dates, exemptions); **G.S.R.** (General Statutory Rules) = rules and regulations of general application. Both appear in **Gazette Part II, Section 3**.
- **Commencement**: an Act may come into force on assent, or on a date the Centre **notifies** under its Sec. 1(2) — different dates may be fixed for different provisions.
- Scrutiny: **Committee on Subordinate Legislation** (each House) checks rules for excess of delegated power; rules must be **laid before Parliament**.
- Pre-Legislative Consultation Policy, **2014**: draft Bills to be placed in public domain for at least **30 days** (e.g., the draft Petroleum Bill).

11. Commencement notifications of Monsoon-Session Acts

NOTIFICATION · DELEGATED LEGISLATION

In news: Two Monsoon-Session Acts were brought into force by notification, and the EPFO wage ceiling was revised.

Act	Notification	In force from
Tribunals Reforms Act, 2026 (17 of 2026)	S.O. 4713(E), 25 Aug 2026 — Law & Justice	25 Aug 2026 (all provisions)
Bankers' Books Evidence Act, 2026 (15 of 2026)	S.O. 5041(E), 10 Sep 2026 — Dept of Financial Services	1 Oct 2026
EPFO wage ceiling (EPF & MP Act, 1952 schemes)	S.O. 5109(E), 17 Sep 2026 — Labour & Employment	17 Sep 2026: ₹15,000 → ₹25,000

Technical points

- S.O. = commencement / exemption orders; G.S.R. = rules.
- EPFO wage ceiling: **₹15,000 → ₹25,000** from 17 Sep 2026.

Prelims traps

- An Act passed and assented in August need **not** be in force in August — the Bankers' Books Act was notified in **September** but took effect only on **1 October**.
- The EPFO ceiling is revised by **notification under the EPF schemes**, not by amending the 1952 Act.

12. Zero-charge & MDR notification for UPI / RuPay

NOTIFICATION · DIGITAL PAYMENTS

In news: S.O. 5067(E), 14 Sep 2026 (Ministry of Finance): UPI up to ₹2,000 and RuPay debit stay free; **0.4% MDR** on P2M UPI above ₹2,000 from **15 Oct 2026**.

- **Instrument:** notified under the **Payment and Settlement Systems Act, 2007** — as amended by the **Taxation and Other Laws (Amendment) Act, 2026**, which lets the Centre notify electronic payment modes on which banks/system providers cannot levy charges.
- **Free (no charge):** RuPay debit card transactions and **UPI** transactions **up to ₹2,000**.
- **MDR (from 15 Oct 2026):** **0.4%** on **P2M** (person-to-merchant) UPI payments **above ₹2,000**; capped at **₹300** for transactions above ₹75,000.
- **Special rates: thin-margin sectors** — flat **₹5 per transaction** above ₹2,000. **Capital-market** payments (MFs, stocks) — **0.02%**, capped at ₹300.
- **Who pays:** MDR is borne by the **merchant; customers cannot be charged**; small merchants exempt. P2P transfers remain free.

Payment type	Charge
RuPay debit card; UPI up to ₹2,000; all P2P	Free
UPI P2M above ₹2,000 (general)	0.4% (cap ₹300 above ₹75,000)
Thin-margin sectors, above ₹2,000	Flat ₹5 per transaction
Capital-market payments (MFs, stocks)	0.02%, cap ₹300

Technical points

- **MDR:** fee paid by the merchant to the acquiring bank/payment provider for accepting digital payments.
- Notified by the Centre under the PSS Act (power added by the Taxation and Other Laws (Amendment) Act, 2026).
- Notified 14 Sep; effective 15 Oct 2026.

Prelims traps

- MDR is paid by the **merchant**, not the customer — “UPI charges for users” is false.
- Threshold is **₹2,000**, and only **P2M** transactions; **P2P** remains free.
- 0.4% is the general rate; capital-market rate is **0.02%**; cap **₹300**.
- Notified by the **Central Government (Finance Ministry)** under the PSS Act — **not** by RBI or NPCI.
- Effective date is **15 Oct 2026**, though notified on 14 Sep.

Static linkage

- **MDR (Merchant Discount Rate):** fee paid by the merchant to the acquiring bank/payment provider for accepting digital payments.
- Zero-MDR regime since **1 Jan 2020** for RuPay & UPI — **Sec. 10A, PSS Act** (inserted 2019) read with **Sec. 269SU, Income-tax Act, 1961**; Government compensated banks via the **UPI incentive scheme** for low-value P2M payments.
- **UPI** launched **2016** by **NPCI** (a not-for-profit under Sec. 8 of Companies Act, promoted by RBI & IBA). **RBI** regulates payment systems under the PSS Act.

Mains angle**Significance**

- Funds the **sustainability of UPI infrastructure** — banks/PSPs had borne costs under zero-MDR; encourages investment in security and innovation.
- Keeps small-value and P2P payments free, protecting **financial inclusion**.

Concerns / criticism

- Merchants may **pass on costs** indirectly or push customers back to **cash**; risk to small traders above the threshold.
- Market concentration of UPI apps continues (two apps dominate).

Way forward

- Periodic review based on cost data; continue targeted incentives for rural and small merchants; enforce NPCI market-share cap.

Probable Mains question: *Should digital public infrastructure like UPI remain free? Examine the case for a calibrated MDR regime. (10 marks)*

13. Consumer Protection (E-Commerce) (Amendment) Rules, 2026

RULES · CONSUMER RIGHTS

In news: *G.S.R. 789(E), 9 Sep 2026, Department of Consumer Affairs, amends the **E-Commerce Rules, 2020** under the **Consumer Protection Act, 2019**; in force **1 Jan 2027**.*

- **Price transparency:** any discount must show the “**prior price**” = lowest price on the platform in the preceding **30 days**.
- **Search neutrality:** no manipulation of search results/indices that misleads users; marketplaces must publish a **plain-language explanation of ranking parameters**.
- **Sponsored listings:** must be **clearly and prominently labelled**.
- **Dark patterns:** mandatory compliance with **2023 Dark Patterns Guidelines**, **annual self-audit**, and public display of a **Certificate of Compliance**.
- **Self-preferencing:** marketplace cannot use collected consumer data to favour **own-brand / associated sellers** without **express, affirmative consent**.
- **Fees: no bundled fees** for unrelated services (except authorised loyalty/membership programmes).
- **Grievances:** platforms to join the **National Consumer Helpline (NCH)** convergence programme; NCH got ≈ **17.71 lakh** grievances in 2025, ≈ **29%** from e-commerce.
- **Disclosures:** expiry dates, return/refund and warranty terms; **country of origin and importer** for imported goods.

Technical points

- “Prior price” = lowest in preceding **30 days**.
- Ranking-parameter explanation; sponsored labels; annual dark-pattern self-audit + Certificate of Compliance.
- Anti-self-preferencing (consent-based use of consumer data); no bundled fees.

Prelims traps

- These are **Rules** (delegated legislation) under CPA 2019 — **not** a new Act; enforcement lies with **CCPA**, not the Competition Commission.
- “Prior price” = lowest price in the **preceding 30 days** — not MRP.
- Notified in **September 2026**, but effective only from **1 Jan 2027**.
- Dark patterns guidelines are of **2023** and list **13** patterns.

Static linkage

- **Consumer Protection Act, 2019** replaced the 1986 Act; created the **Central Consumer Protection Authority (CCPA)** (est. **July 2020**, Sec. 10) — powers on unfair trade practices, misleading ads, class action.
- **Guidelines for Prevention and Regulation of Dark Patterns, 2023** (30 Nov 2023) list **13** dark patterns — e.g., false urgency, basket sneaking, confirm shaming, forced action, subscription trap, drip pricing, disguised ads, nagging.
- Three-tier consumer commissions: District (up to ₹50 lakh), State (₹50 lakh–₹2 cr), National (above ₹2 cr) — revised 2021. NCH helpline **1915**.

Mains angle**Significance**

- Moves regulation from mere **disclosure** to **platform governance** — algorithmic transparency, anti-self-preferencing, data consent.
- Tackles fake discounts and drip pricing; complements the **DPDP Act, 2023** on consent.

Concerns / criticism

- Overlap with **Competition Act** (self-preferencing) and **DPDP** — risk of regulatory turf conflict.
- Self-audit model may be weak without independent verification; compliance burden on smaller platforms.

Way forward

- Coordinated enforcement (CCPA-CCI-Data Protection Board); third-party audits for large platforms; ex-ante **Digital Competition Bill** framework.

Probable Mains question: *Discuss how the 2026 amendments to the E-Commerce Rules seek to protect consumers from algorithmic manipulation. (10 marks)*

14. Draft Petroleum (Amendment) Bill, 2026

DRAFT BILL · ENERGY SECURITY

In news: Released by the Ministry of **Petroleum & Natural Gas** on **30 Sep 2026** (comments till **30 Oct 2026**); amends the **Petroleum Act, 1934** (92 years old).

Provision	Draft proposal
Unlicensed activity	Up to 3 years and/or fine up to ₹25 crore (now: up to 1 month / ₹1,000); ₹10 lakh per day for continuing violation
Decriminalisation	Breach of licence terms, false statements → civil penalty by an adjudicating officer : up to ₹2.5 cr (first), ₹5 cr (subsequent); licence suspension/revocation; recovery as arrears of land revenue
Fraudulent licence	Up to 5 years imprisonment and/or fine
Pilferage / safety threats	Up to 5 yrs / ₹15 cr (first); 7 yrs / ₹25 cr (subsequent)
Critical Petroleum Infrastructure	Centre may declare installations, refineries, pipelines as critical ; damage → up to 10 years and fine up to ₹25 cr or actual damage cost (whichever is less)
Procedure	Wider confiscation (facilities, equipment); offences on obstruction and non-reporting of accidents; aligned with BNSS, 2023

Technical points

- Graded penalties: civil (licence breaches) vs criminal (unlicensed, fraud, pilferage, sabotage).
- Highest: **10 years** for damaging **critical petroleum infrastructure**.
- Consultation under the Pre-Legislative Consultation Policy, 2014.

Prelims traps

- It is only a **draft** released for consultation — **not** introduced in Parliament and **not** law.
- The parent Act is of **1934** — not the Oilfields (Regulation & Development) Act, 1948 (amended 2025, upstream).
- Licence-term breaches become **civil** penalties; **unlicensed** activity stays **criminal**.
- Max punishment (10 years) is for damaging **critical petroleum infrastructure**.

Static linkage

- Petroleum Act, 1934 regulates import, transport, storage, production, refining and blending of petroleum; classes by flash point — **Class A** (< 23°C), **Class B** (23–65°C), **Class C** (65–93°C).
- Administered through **PESO** (Petroleum & Explosives Safety Organisation), **Nagpur**, under **DPIIT**.
- Decriminalisation trend: **Jan Vishwas (Amendment of Provisions) Act, 2023** (183 provisions in 42 Acts); Jan Vishwas 2.0 (2025).

Mains angle**Significance**

- Graded, **proportionate** penalties; removes fear of criminal prosecution for technical lapses (ease of doing business).
- Protects **energy-security** assets (refineries, pipelines) against sabotage and pilferage amid geopolitical risk.

Concerns / criticism

- Very high fines vs. small dealers; wide discretion of adjudicating officers; vague criteria for “critical” designation.

Way forward

- Clear designation criteria, appellate mechanism, graded fines by entity size.

15. TRAI: TCCCPR (Third Amendment) & repeal of TV-ad duration rules

REGULATIONS · TELECOM · MEDIA

In news: TRAI tightened spam-call rules (**18 Sep**) and repealed its 2012 TV-advertisement duration regulations (**10 Sep**).

- **TCCCPR (Third Amendment) Regulations, 2026 (18 Sep):** amends **Telecom Commercial Communications Customer Preference Regulations, 2018** (spam/UCC). Entities using **A2P calls** must declare use and numbers; charge up to **5 paise/min** (except on TRAI-designated commercial series); post-inquiry contact window cut to **7 days** (from 3 months), inquiry must be verifiable; **call-management apps cannot blanket-block** designated commercial series (users may still block individually).
- **Repeal of TV Advertisement Duration Regulations, 2012 (10 Sep):** removes TRAI’s cap on ad duration and the rule restricting live-sports ads to breaks in play. Earlier (Aug 2026) **Cable Television Networks (Amendment) Rules, 2026** removed the **12-minutes-per-hour** ad ceiling.

Technical points

- A2P calls: declaration + up to **5 paise/min.**
- Post-inquiry contact window: **7 days** (was 3 months).
- Apps cannot blanket-block designated commercial series.

Prelims traps

- Ad-time ceiling of **12 minutes per hour** was removed by amending **Cable TV Rules (MIB)** — TRAI separately repealed its **2012** regulations.
- Users may still block commercial numbers **individually** — only blanket-blocking by apps is barred.

Static linkage

- **TRAI**: statutory body under **TRAI Act, 1997**; DND/UCC regime; promotional calls on **140-series**, service/transactional on **160-series**.

16. NCAHP — Registration of Allied & Healthcare Professionals Regulations, 2026

REGULATIONS · HEALTH

In news: Registration regulations under the **NCAHP Act, 2021** notified (gazette **31 Aug 2026**), with an **exit exam** and CPD-based renewal.

- Registration valid **5 years**; needs recognised qualification + **exit exam** + State residence; via **State Council**.
- Renewal needs **15 CPD hours/yr** (75 over 5 yrs, ≤ 50% online).
- Appeal to NCAHP within **1 month** (decision in **90 working days**); interim registration for interns; foreign-qualified Indians eligible after exit exam.

Technical points

- 5-year registration; 15 CPD hrs/yr (75/5 yrs; ≤ 50% online).
- Registration through the **State Council**.

Prelims traps

- NCAHP regulations require an **exit examination** for registration — similar to NExT for doctors.

Static linkage

- **NCAHP Act, 2021**: regulates **10 categories / 56** allied & healthcare professions; National Commission + State Councils.

17. FSSAI — Laboratory & Sample Analysis Amendment Regulations, 2026

REGULATIONS · FOOD SAFETY

In news: Notified **14 Sep 2026**; amends the 2011 Regulations under the **FSS Act, 2006** to set reporting timelines for food testing.

- Labs follow **FSSAI manuals** (else ISO/BIS methods).
- Reports on regulatory samples in **14 days** (also referral labs); **imported food samples within 5 days**; reasons for delay to be recorded.

Technical points

- Domestic regulatory samples: **14 days**; imported food samples: **5 days**.

Prelims traps

- FSSAI is under **MoHFW**, not Food Processing or Consumer Affairs.

Static linkage

- **FSSAI**: under **FSS Act, 2006**, Ministry of **Health & Family Welfare**.

18. Draft CAQM (Environmental Compensation for Stubble Burning) Rules, 2026

DRAFT RULES · ENVIRONMENT

In news: Draft released **8 Sep 2026** (comments till **7 Nov 2026**) to replace the 2023 Rules.

- Compensation money to fund **crop-residue management, crop diversification, biomass infrastructure, R&D, farmer training**.
- Land where burning is detected flagged in records for **15 months** (renewable on repeat/non-payment).

Technical points

- Use of compensation: residue management, diversification, biomass infra, R&D, training.
- Land-record flag: **15 months**.

Prelims traps

- The CAQM stubble rules are only **draft**; the 2023 rules (as amended 2024) still apply.

Static linkage

- **CAQM: CAQM in NCR & Adjoining Areas Act, 2021**; stubble-burning compensation (doubled in **Nov 2024**): **₹5,000** (< 2 acres), **₹10,000** (2–5 acres), **₹30,000** (> 5 acres) per incident.

19. DILRMP 3.0 operational guidelines

SCHEME · LAND RECORDS

In news: Guidelines issued **10 Sep 2026** for the next phase of the Digital India Land Records Modernization Programme.

- **Central Sector Scheme** (100% Central), **Dept of Land Resources, MoRD**; **₹565.5 crore, 2026-27 to 2030-31**.
- GIS-based **“Land Stack” DPI**; universal **14-digit Bhu-Aadhaar (ULPIN)**; georeferenced cadastral maps.
- Paperless registration (75 SROs → **Registration Seva Kendras**); online **Revenue Court Case Management System**; **NAKSHA** pilot (urban land survey) completed.

Technical points

- Outlay **₹565.5 cr**, 2026-27 to 2030-31.
- Land Stack + ULPIN + georeferenced maps + Registration Seva Kendras.

Prelims traps

- DILRMP is a **Central Sector** (100% Centre) scheme under **Rural Development** — not Agriculture, not a Centrally Sponsored Scheme.
- Bhu-Aadhaar/ULPIN is **14-digit alphanumeric**, based on parcel geo-coordinates — not the 12-digit Aadhaar.

Static linkage

- **DILRMP** began as **NLRMP (2008)**; restructured as Central Sector Scheme in **2016**; **ULPIN** (“Aadhaar for land”) rolled out **2021**; **NGDRS** = “One Nation One Registration Software”.

Mains angle — September’s pattern

- **Regulation by subordinate legislation**: major policy changes (MDR, platform rules, broadcasting ad limits) made by notifications — efficient but with **limited parliamentary scrutiny**; strengthens the case for an active **Committee on Subordinate Legislation**.
- **Decriminalisation + civil penalties** (Petroleum draft, MSMED Act, GST) — trust-based governance in line with Jan Vishwas.
- **Digital public infrastructure** expanding into land (Land Stack), payments (UPI pricing) and consumer protection (algorithmic transparency).

PART D · QUICK REVISION

Cross-cutting Mains point — quality of law-making (use as introduction or conclusion)

- Lok Sabha productivity ≈ **19%**, Rajya Sabha ≈ **39%**; **none** of the Bills referred to a Standing Committee (PRS).
- Nine of 11 Bills passed in Lok Sabha **with only the Minister speaking**; two Ordinances converted into law.
- Reforms: mandatory committee referral of Bills, the **Pre-Legislative Consultation Policy (2014)**, minimum sittings, **Opposition day**, NCRWC (2002) suggestions on 100/120 sittings a year.

#	Instrument	One-line recall	Key number / date
1	SC (Number of Judges) Amdt. Act	Ordinance → Act; Art. 124(1) ordinary law	33 → 37 + CJI = 38
2	Kerala (Alteration of Name) Act	Art. 3/4; First Schedule; State views not binding	Cleared 12 Aug 2026
3	Tribunals Reforms Act	Repeals 2021 Act; NTC; 1+1 panel	Age 70/67; in force 25 Aug 2026
4	Prevention of Insults to National Honour (Amdt.)	Sec. 3 now covers Vande Mataram	Up to 3 yrs; Sec. 3A min. 1 yr
5	RBD (Amdt.) Act	Sec. 13(3): delayed registration	1-2 yrs DM/SDM; > 2 yrs JMFC
6	MMDR Amdt. Act	Sec. 9D: no State levy except per Central rules	Post MADA v. SAIL (8:1, 2024)
7	MSMED (Amdt.) Act	Udyam statutory; ODR; 50% award release	90-30-90; 45 days; 3× bank rate
8	Taxation and Other Laws (Amdt.) Act	Replaces 5 Jun Ordinance; IT Act 2025, Finance Act 2026, PSS Act	Introduced 5 Aug 2026
9	Bankers' Books Evidence Act	Cloud/digital records as bankers' books	Act 15 of 2026; in force 1 Oct 2026
10	NCDC (Amdt.) Act	Foodstuffs widened; credit-info sharing	NCDC est. 1963 (Act of 1962)
11	EPFO wage ceiling	Notification under EPF schemes	₹15,000 → ₹25,000 (17 Sep)
12	UPI/RuPay MDR notification	Merchant pays; P2P free	0.4% > ₹2,000; cap ₹300; from 15 Oct
13	E-Commerce (Amdt.) Rules	Prior price; ranking transparency; self-audit	30 days; in force 1 Jan 2027
14	Draft Petroleum (Amdt.) Bill	Amends 1934 Act; civil penalties	Critical infra: up to 10 yrs
15	TRAI TCCCPR / ad-duration repeal	A2P declaration; no blanket blocking	5 paise/min; 7 days
16	NCAHP Registration Regulations	Exit exam; State Council	5 yrs; 15 CPD hrs/yr
17	FSSAI Lab Amdt. Regulations	Testing timelines	14 days; imports 5 days
18	Draft CAQM stubble rules	Compensation use; land flag	15 months; comments till 7 Nov
19	DILRMP 3.0	Central Sector; Land Stack; ULPIN	₹565.5 cr; 2026-27 to 2030-31

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III · Jun-Aug 2027	12 classes, 15 full-length tests (5 mocks), 8 feedback sessions

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- Prelims-cum-Mains (PCM) holistic preparation
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Environment & Ecology

July – October 2026 · Conventions, climate, biodiversity and India's green policy · Prelims short notes · GS-III

#	Topic	Area	#	Topic	Area
1	CBD COP17, Yerevan	Biodiversity	10	New Ramsar sites: 103	Wetlands
2	UNCCD COP17, Ulaanbaatar	Land	11	Project Cheetah at four	Wildlife
3	Deep-sea mining & the high seas	Oceans	12	Tigers & eco-sensitive zones	Wildlife
4	UN Sea-Level Rise Declaration	Oceans	13	Living Planet Report 2026	Reports
5	IMO Net-Zero Framework	Shipping	14	Species in news	Species
6	Road to COP31 & India's NDC	Climate	15	Carbon Credit Trading Scheme	Carbon market
7	El Niño 2026 & global heat	Climate	16	Green Energy Corridor-III	Energy
8	Monsoon 2026: a deficient year	Climate	17	Amazon deforestation falls	Forests
9	Antarctic ozone hole 2026	Atmosphere	18	Pollution, courts & one-liners	Misc

Each note: *In news* → key facts → **key details** → **Prelims traps** → static / map linkage. Quick revision table at the end.

PART A · GLOBAL CONVENTIONS & NEGOTIATIONS

1. CBD COP17, Yerevan — first global review of the biodiversity framework

BIODIVERSITY · 19-30 OCT

In news: The UN Biodiversity Conference (**CBD COP17**) is under way in **Yerevan, Armenia**, from **19 to 30 October 2026**, under the theme “**Taking Action for Nature**”. Preparatory meetings were held in July–August: **SBSTTA-28** (27 Jul–1 Aug) and **SBI-7** (4–12 Aug).

- Centrepiece: the **first global review** of the **Kunming-Montreal Global Biodiversity Framework (KMGBF)**, based on countries' updated **NBSAPs** (national biodiversity strategies and action plans).
- Other agenda: resource mobilisation and finance; Article 8(j) on Indigenous Peoples and local communities; **Digital Sequence Information (DSI)**; synthetic biology.
- Background: COP16 (Cali, Colombia, 2024) had to resume in Rome (2025) to settle finance.

Key details

- KMGBF (Dec 2022): **4 goals for 2050 and 23 targets for 2030**. Target 3 = “**30×30**” — protect 30% of land and 30% of oceans by 2030.
- Finance goal: \$200 bn a year from all sources by 2030, including \$20 bn a year of international finance by 2025 (rising to \$30 bn by 2030).
- **Cali Fund** (COP16): companies that use DSI from genetic resources are expected to share benefits.
- India updated its NBSAP in 2024, with **23 national targets** mirroring the KMGBF.

Prelims traps

- 30×30 is a target of the KMGBF, not of the Paris Agreement.
- The Cali Fund is about DSI benefit-sharing, not climate loss and damage.
- COP17 is in Armenia; COP16 was in Colombia.

Static / map linkage

- CBD: opened at the Rio Earth Summit (1992); Secretariat in **Montreal**; protocols: **Cartagena** (biosafety, 2000) and **Nagoya** (access & benefit-sharing, 2010).
- India's law: **Biological Diversity Act, 2002** (amended 2023) → National Biodiversity Authority (Chennai), State Biodiversity Boards, Biodiversity Management Committees.

2. UNCCD COP17, Ulaanbaatar — a COP for rangelands

LAND · AUG

In news: The **17th COP of the UN Convention to Combat Desertification** ended in **Ulaanbaatar, Mongolia**, on **28 August 2026**, during the **UN International Year of Rangelands and Pastoralists**.

- Theme: “**Restoring Land. Restoring Hope.**”
- **Rangelands Flagship Initiative:** US\$1.2 bn across 45 projects — the Convention's biggest ever push on rangelands.
- No agreement on a **legally binding drought protocol**; deferred. From COP18, drought becomes a regular agenda item.
- New tools: the **Drought Resilience Index** (AI-based) and a **Drought Resilience Investment Facility** (with Luxembourg). About US\$1.3 bn of new and pipeline finance was announced.
- **COP18: Egypt** (Sharm El-Sheikh), 2028.

Key details

- Rangelands cover ~**54%** of Earth's land, support ~2 billion people and are stewarded by ~500 million pastoralists.
- **India at COP17:** launched its first guide to **grasslands and Open Natural Ecosystems** (Thar, Banni, Deccan savannas); reported **21.76 Mha** under restoration against its **26 Mha by 2030** Bonn Challenge pledge; cited Rajasthan's sacred groves (**orans**).

Prelims traps

- The drought protocol was NOT adopted.
- UNCCD is one of the three Rio Conventions, although it was adopted in 1994, not at Rio in 1992.
- India hosted COP14 (New Delhi, 2019); Saudi Arabia hosted COP16 (Riyadh, 2024).

Static / map linkage

- UNCCD: Secretariat in **Bonn**; 197 Parties; goal of **Land Degradation Neutrality** (SDG 15.3).
- India's Desertification and Land Degradation Atlas (ISRO-SAC) shows ~30% of India's land as degraded.

3. Deep-sea mining and the high seas

OCEANS

In news: The **International Seabed Authority (ISA)** met in **Kingston, Jamaica (13-31 July 2026)** but again did not finish the **Mining Code**. An **IUCN Red List** update listed a deep-sea snail as **Critically Endangered** because of mining exploration.

- ISA Council asked for a negotiation “**roadmap**”, to be adopted in 2027. Disputes remain on test mining, environmental thresholds and acceptable harm.
- No exploitation application has been filed; members agree commercial mining should not start without ISA rules.
- **ITLOS** allowed the ISA's inquiry into contractors suspected of helping the **US unilateral licensing** push (a 2025 US executive order; the US is not party to UNCLOS) to continue, with procedural safeguards.
- **IUCN Red List 2026:** 175,909 species assessed, 49,505 threatened (~28%). The Indian Ocean vent snail *Lirapex felix* became **Critically Endangered**; ~62% of endemic hydrothermal-vent molluscs are threatened by mining.
- **BBNJ (High Seas Treaty):** in force since **17 January 2026**; its **first COP** is set for **11-22 January 2027** at UN HQ, New York.

Key details

- ISA: created by **UNCLOS (1982)** and the 1994 Implementation Agreement; regulates mineral activity in “**the Area**” (seabed beyond national jurisdiction), the “common heritage of mankind”.
- Deep-sea resources: **polymetallic nodules** (Mn, Ni, Co, Cu), **polymetallic sulphides** (at hydrothermal vents), cobalt-rich crusts.
- India holds ISA contracts for nodules in the **Central Indian Ocean Basin** and sulphides on Indian Ocean ridges; Deep Ocean Mission (Samudrayaan).
- BBNJ covers marine genetic resources, area-based tools (high-seas MPAs), EIAs and capacity-building.

Prelims traps

- The ISA governs the seabed (“the Area”); BBNJ governs biodiversity in the water column and the high seas.
- ITLOS sits in Hamburg; the ISA in Kingston.
- The US is not a party to UNCLOS.

4. UN Declaration on Sea-Level Rise

OCEANS · 24 SEP

In news: At a UNGA high-level meeting on **24 September 2026**, member states, including the US, agreed the **first UN declaration on sea-level rise**.

- **Statehood continues:** losing territory or coastline to sea-level rise does not by itself end a state's statehood.
- **Maritime zones** drawn under UNCLOS can be kept even as coasts retreat, with the right to update them.
- Calls for multi-hazard early warning, adaptation finance for small island states, and nature-based defences (mangroves, seagrass).

Key details

- Builds on the **ICJ advisory opinion (July 2025)** on climate obligations, which said a state would not necessarily lose statehood if one traditional element disappeared.
- ~770 million people live less than 5 m above high-tide level; global mean sea level rose a record 5.9 mm in 2024.

Prelims traps

- The declaration is political, not a binding treaty.
- The rule it supports is to keep, not redraw, maritime boundaries as the sea rises.

Static / map linkage

- Statehood (Montevideo Convention, 1933): permanent population, defined territory, government, capacity for relations.
- Most exposed: Tuvalu, Kiribati, Marshall Islands, Maldives.

5. IMO Net-Zero Framework — global carbon price for shipping

SHIPPING

In news: The IMO's adjourned session will meet on **4 December 2026** to decide on adopting the **Net-Zero Framework**, after the October 2025 vote was postponed for a year (57-49) under US pressure.

- It would be the **first sector-wide global carbon price**, set through amendments to **MARPOL Annex VI**.
- It applies to ocean-going ships over **5,000 gross tonnage** (which emit most of shipping's CO₂).
- In August 2026 Japan proposed softer post-2030 targets, which could push adoption into 2027.

Key details

- Metric: **GHG Fuel Intensity (GFI)** on a well-to-wake basis (gCO₂e/MJ), against the 2008 baseline.
- Two-tier pricing: ships missing targets buy remedial units at **\$100** (Tier 1) or **\$380** per tonne CO₂e (Tier 2).
- Revenue goes to an **IMO Net-Zero Fund** for clean fuels and for SIDS and LDCs.
- IMO goal (2023 strategy): net-zero shipping emissions “by or around” **2050**.

Prelims traps

- It is not yet adopted — the vote is due in December 2026.
- International shipping and aviation emissions sit outside national NDC totals.

Static / map linkage

- IMO: UN agency, HQ **London**; MARPOL (1973/78) Annex VI covers air pollution from ships.
- Aviation's counterpart is ICAO's **CORSIA** offsetting scheme.

6. Road to COP31 and India's NDC 3.0

CLIMATE

In news: *COP31 will be held in **Antalya, Türkiye**, on **9-20 November 2026**. Türkiye holds the presidency; **Australia leads the negotiations** under a Türkiye–Australia partnership.*

- India's **NDC 3.0 (for 2031–35)** was approved by the Cabinet in March 2026.
- Target 1: cut the **emissions intensity of GDP by 47%** from 2005 levels by 2035.
- Target 2: **60%** of installed power capacity from **non-fossil** sources by 2035 (52.6% reached by Feb 2026, beating the 50%-by-2030 goal).
- Target 3: an additional carbon sink of **3.5–4.0 bn t CO₂e** through forest and tree cover by 2035.

Key details

- Paris Agreement: NDCs every 5 years, each more ambitious (“ratchet”); the first Global Stocktake was at COP28 (2023).
- Climate finance goal (NCQG, COP29 Baku): **\$300 bn a year by 2035**, inside a \$1.3 trillion aspiration.
- India's earlier targets (2022 update): 45% intensity cut and 50% non-fossil capacity by 2030; net zero by **2070**.

Prelims traps

- India's targets are on emissions intensity, not absolute emissions.
- 60% applies to installed capacity, not to electricity generated.
- COP31 is in Türkiye, not Australia.

PART B · CLIMATE & ATMOSPHERE**7. El Niño 2026 and record global heat**

CLIMATE · COPERNICUS

In news: *Copernicus reported an all-time high sea-surface temperature of **29.70 °C in the Niño 3.4 region** in September 2026 — above the peaks of 1982–83, 1997–98 and 2015–16. Japan's weather agency called it the strongest El Niño on record.*

- September 2026 was the **second-warmest September**: 16.27 °C, **1.63 °C above pre-industrial** (1850–1900) — the second month in a row above 1.5 °C.
- Global average sea-surface temperature hit a **record 21.05 °C** for September.
- 2026 may become the hottest year on record, and 2027 may beat it, because El Niño warms the globe most in the year after its peak.

Key details

- **El Niño**: weaker trade winds let warm water spread east across the Pacific; upwelling off Peru weakens. The **Southern Oscillation** is the matching atmospheric pressure see-saw (together: ENSO).
- Niño 3.4 region: 5°N–5°S, 170°W–120°W. El Niño is declared when its anomaly stays $\geq +0.5$ °C (the Oceanic Niño Index).
- India: El Niño usually **weakens the southwest monsoon**; a positive Indian Ocean Dipole can offset it.

Prelims traps

- Copernicus is the EU's Earth-observation programme (the climate service is C3S), not a WMO body.
- One month above 1.5 °C does not mean the Paris 1.5 °C limit is breached — that is measured over ~20-year averages.

8. Monsoon 2026 — the weakest since 2015

CLIMATE · IMD

In news: IMD said the **southwest monsoon (June–September 2026)** ended with **759.4 mm, about 87% of the Long Period Average** (868.6 mm) — a ~12–13% shortfall blamed largely on El Niño.

- Worst hit: **East and Northeast India** (–25.6%, the driest monsoon there since 1901) and the **southern peninsula** (–24.3%).
- Northwest India –5.9%; Central India –2.6%; 17 of 36 meteorological subdivisions were deficient.
- IMD declared the **northeast monsoon** onset over south peninsular India on **15 October**, forecasting 88% of its LPA.

Key details

- IMD categories (all-India): **Deficient < 90%** of LPA · Below normal 90–95% · Normal 96–104% · Above normal 105–110% · Excess > 110%. So 2026 counts as **“deficient”**.
- The LPA (868.6 mm) is based on 1971–2020 data.
- The **northeast monsoon** (Oct–Dec) is the main rainy season for Tamil Nadu, coastal Andhra and south interior Karnataka.

Prelims traps

- A 12–13% deficit falls in the “deficient” category, not “below normal”.
- The northeast monsoon brings rain mainly to the southeast coast, not to North-East India.

9. Antarctic ozone hole 2026

ATMOSPHERE

In news: Copernicus (CAMS) reported that the Antarctic ozone hole reached **~25 million km² on 12 September 2026**, about 5 million km² above average for that date.

- It crossed 15 million km² by end-August, slightly earlier than average, after a sudden stratospheric cooling ~20 km above the South Pole.
- Other measures (minimum ozone column, ozone mass deficit) stayed close to normal.
- Record: **29.6 million km²** on 9 September 2006.

Key details

- Mechanism: in the polar winter, **polar stratospheric clouds** form below about -78°C ; their surfaces turn stable chlorine compounds into active forms; when **spring sunlight** returns (Sep-Oct), chlorine and bromine destroy ozone.
- Paradox: global warming warms the lower atmosphere but **cools the stratosphere**, which can favour these clouds.
- **Montreal Protocol (1987)** phased out CFCs; the **Kigali Amendment (2016)** phases down HFCs (which are greenhouse gases, not ozone-depleters). The Antarctic ozone layer is expected to recover around the 2060s.

Prelims traps

- The ozone hole forms in the Antarctic spring (Sep-Oct), not in summer.
- HFCs do not deplete ozone — Kigali targets them for their warming effect.
- Ozone loss here is in the stratosphere; ground-level (tropospheric) ozone is a pollutant.

Static / map linkage

- 16 September = World Ozone Day (the Montreal Protocol was signed in 1987). Also: Antarctic sea-ice maximum 2026 (17.59 million km^2 , 14 Sep) was the third-lowest on record.

PART C · INDIA: WETLANDS, WILDLIFE & BIODIVERSITY**10. Two new Ramsar sites take India to 103**

WETLANDS · 15 OCT

In news: On **15 October 2026**, **Sukhna Wetland (Chandigarh)** and **Sauj Jheel (Uttar Pradesh)** were designated Ramsar sites, taking India's total to **103**.

- **Sukhna** (~565 acres; Ramsar Site no. 2602): an urban wetland at the foot of the **Shivalik hills**, on the **Central Asian Flyway**. Threats: siltation, catchment erosion, invasive species.
- **Sauj Jheel**: a shallow lake in the **Ganga floodplain** near **Saman Bird Sanctuary**, with sacred lotus (*Nelumbo nucifera*) and wild sugarcane (*Saccharum spontaneum*).
- Other 2026 additions include Patna, Shekha Jheel and Jai Prakash Narayan bird sanctuaries (UP), Chhari-Dhand (Gujarat) and Glaw Lake (Arunachal).

Key details

- Most sites: **Tamil Nadu (20)**, then **Uttar Pradesh (14+)**.
- Ramsar Convention: signed **1971** at Ramsar, Iran; in force 1975; India joined in **1982**. India's first sites: **Chilika** and **Keoladeo** (1981).
- **Montreux Record**: list of sites facing adverse ecological change — India's are **Keoladeo** and **Loktak**.
- 2 February = World Wetlands Day. India: Wetlands (Conservation and Management) Rules, 2017; Amrit Dharohar scheme.

Prelims traps

- Sukhna is in a Union Territory (Chandigarh), not in Punjab or Haryana.
- Ramsar designation does not by itself make a site a legally protected area under the Wildlife (Protection) Act.
- The Ramsar Convention is not part of the UN system.

11. Project Cheetah at four

WILDLIFE · 17 SEP

In news: A four-year review (17 Sep 2022 – 17 Sep 2026) put India's cheetah population at **52: 49 in Kuno National Park** and **3 in Gandhi Sagar Wildlife Sanctuary** (both Madhya Pradesh).

- **32 India-born** cubs and juveniles so far.
- At Kuno, 17 roam free and 32 are in soft-release enclosures (bomas), including 19 cubs under a year old.

- Founders: Namibia (Sep 2022), **South Africa (12, Feb 2023)** and **Botswana (9, Feb 2026)** — the last added for genetic diversity.
- Next release sites: **Nauradehi WLS (MP)** and **Banni grasslands (Gujarat)**.

Key details

- Species reintroduced: the **African cheetah** (*Acinonyx jubatus*, IUCN Vulnerable). The **Asiatic cheetah** (Critically Endangered) survives only in Iran.
- The cheetah was declared **extinct in India in 1952** — the only large carnivore lost since Independence.
- Run by the **NTCA** with the Wildlife Institute of India; Kuno is in Sheopur district; Gandhi Sagar lies on the Chambal (Mandsaur-Neemuch).

Prelims traps

- India's cheetahs are African, not Asiatic.
- Gandhi Sagar is a wildlife sanctuary, not a national park or tiger reserve.

12. Tigers and eco-sensitive zones

WILDLIFE

In news: The **6th All India Tiger Estimation** (begun January 2026) is in its field phases, with results due in 2027. In September, a fresh draft **eco-sensitive zone (ESZ)** was notified around **Nagarahole Tiger Reserve**.

- Tiger census phases: sign surveys and habitat assessment → camera trapping (40–60 days) → DNA analysis. Early counts: **Amrabad TR (Telangana)** found 42 tigers, up from 36.
- Baseline (2022): **3,682 tigers**, ~75% of the world's wild tigers.
- **Nagarahole ESZ draft** (notified 2 Sep): **573.95 km²** covering 101 villages, with a 60-day window for objections. Width ranges from ~24 km to zero where the reserve adjoins Bandipur and Wayanad.

Key details

- ESZs are notified under the **Environment (Protection) Act, 1986**, with activities graded as prohibited, regulated or promoted. Default width is up to 10 km (2011 guidelines).
- Census every 4 years since 2006; run by **NTCA + WII** using the M-STRIPES app.
- Nagarahole (Rajiv Gandhi NP) lies in Kodagu-Mysuru, Karnataka, on the **Kabini** river, and is part of the **Nilgiri Biosphere Reserve**, India's first (1986).

Prelims traps

- ESZs fall under the EP Act, 1986 — not the Wildlife (Protection) Act.
- Being in an ESZ does not mean eviction; it regulates activities.
- Biosphere reserves are UNESCO MAB recognitions, separate from World Heritage sites.

13. Living Planet Report 2026

REPORTS · OCT

In news: WWF and the **Zoological Society of London** released the biennial **Living Planet Report 2026**.

- The **Living Planet Index** shows an average **73.2% decline** in monitored vertebrate populations between **1970 and 2022** (~2.5% a year).
- By ecosystem: **freshwater –85%**, terrestrial –69%, marine –59%.
- By region: **Latin America & Caribbean –95%**, Africa –80%, Asia-Pacific –49%, North America –28%, Europe & Central Asia –23%.
- About half the monitored populations are stable or growing.

Key details

- The index measures the **average change in population size** — not the share of species or animals lost.
- India data cited: Asiatic lions 674 (2020) → **891 (2025)**; Nilgiri tahr 1,303 → **1,364 (2026)**; MP vultures 8,397 (2019) → **12,981 (2025)**; snow leopards **718**; dugong baseline **270**.

Prelims traps

- “73% decline” does not mean 73% of species have gone extinct.
- Freshwater, not marine, shows the steepest fall.
- The report is biennial and comes from WWF and ZSL, not UNEP.

14. Species in news

SPECIES

In news: Species and wildlife-trade stories from July–October 2026.

- **Ingerana aizawl** (Sep 2026): a new tiny frog from a stream on the Mizoram University campus, Aizawl; earlier confused with *Ingerana borealis*.
- **Orangutans**: five smuggled infants rescued in **Balasore, Odisha** (Sep) were quarantined at Nandankanan; Indonesia sought their return after DNA checks. In October, a trafficked male rescued in Thane became India's first repatriation of a wild animal to another country. Orangutans (*Pongo*) live only on **Borneo and Sumatra**; Critically Endangered; CITES Appendix I.
- **Dugong**: a drone survey by WII counted **270** in Tamil Nadu (Palk Bay 158, Gulf of Mannar 112). Vulnerable (IUCN); Schedule I; CITES Appendix I. India's first Dugong Conservation Reserve is in Palk Bay (2022).
- **Lirapex felix**: an Indian Ocean hydrothermal-vent snail, now Critically Endangered owing to mining exploration (topic 3).

Key details

- CITES (1973, Washington): Appendix I = trade banned except in exceptional cases; Appendix II = trade regulated by permits; Appendix III = protected in at least one country that asked for help.
- Wildlife (Protection) Act 1972, amended 2022: Schedules cut to four (I and II animals, III plants, IV CITES species).

Prelims traps

- Orangutans are great apes native to Indonesia and Malaysia — not to India's Northeast (India's only ape is the hoolock gibbon).
- Dugongs are marine mammals (sea cows), related to manatees, not to dolphins.

PART D · INDIA: CARBON, ENERGY & POLLUTION

15. Carbon Credit Trading Scheme goes live

CARBON MARKET

In news: About **490–500 obligated entities** filed their first compliance reports by **31 July 2026**, and trading of **Carbon Credit Certificates (CCCs)** is opening in **October 2026** on India's power exchanges.

- Trading happens monthly, only on exchanges (**IEX, PXIL, HPX**), with no over-the-counter deals at launch.
- The first targets (notified Oct 2025) cover **aluminium, cement, chlor-alkali, pulp and paper**; other sectors such as steel, refineries, petrochemicals, fertilisers and textiles are being phased in.
- Targets are cuts in **GHG emission intensity** (tonnes CO₂e per tonne of product) from a **2023–24 baseline**, for FY 2025–26 and 2026–27.

Key details

- Legal base: **Energy Conservation (Amendment) Act, 2022**; CCTS notified in **June 2023**.
- Roles: **BEE** administers · **Grid-India** keeps the registry · **CERC** regulates trading · a National Steering Committee (chaired by the Power Secretary) oversees.
- Two parts: a **compliance mechanism** (obligated entities beat targets → earn CCCs; miss them → buy CCCs) and an **offset mechanism** (voluntary projects by others earn credits).
- It replaces the **PAT** (Perform, Achieve and Trade) energy-efficiency scheme.

Prelims traps

- CCTS is an intensity-based scheme — no absolute cap like the EU ETS.
- BEE administers; CERC regulates; Grid-India runs the registry — a classic matching trap.
- It is separate from the Green Credit Programme, which rewards actions such as tree planting under the EP Act.

Static / map linkage

- The EU, China and Brazil launched an **Open Coalition on Compliance Carbon Markets** (Florence, May 2026); India has not joined. Paris Agreement **Article 6** governs international carbon trading.

16. Green Energy Corridor Phase-III

ENERGY · 30 SEP

In news: The Union Cabinet approved **GEC-III** on **30 September 2026** with an outlay of **₹1,86,405 crore** for FY 2027–2033.

- Builds **intra-state** transmission to evacuate ~**135 GW** of renewable power, and funds **50 GWh** of **battery energy storage (BESS)**.
- Split: ₹1,36,378 cr for transmission + ₹50,000 cr for batteries; central assistance **₹54,082 cr** to keep transmission charges down.
- State transmission utilities implement it; it supports the target of **~900 GW non-fossil capacity by 2035**.

Key details

- The Green Energy Corridor began in **2015** (Phase I) with German KfW support; Phase II was approved in 2022.
- Pumped storage: 7.43 GW operational (Aug 2026), with ~100 GW more planned by 2035-36 (CEA).

Prelims traps

- GEC-III is mainly intra-state (state grids), not the inter-state transmission system.
- BESS capacity is in GWh (energy), while renewable capacity is in GW (power).

17. Amazon deforestation falls sharply

FORESTS · BRAZIL

In news: Brazil's **DETER** alerts showed Amazon deforestation down **36.9%** (Aug 2025–Jul 2026) to **2,874 km²** — the lowest since 2013. A later reading put the 12-month figure at 3,335 km², the lowest in the series.

- PRODES (calendar 2025): Brazil-wide deforestation down 20.1%; Pantanal –65%; Amazon –15.8%; Cerrado –11.5%.
- Brazil aims for zero illegal deforestation by 2030.

Key details

- Both satellite systems are run by **INPE** (Brazil's National Institute for Space Research): **DETER** = near-real-time alerts; **PRODES** = the official annual rate.
- COP30 (Belém, 2025) launched the **Tropical Forest Forever Facility (TFFF)**, which pays countries for standing forests.

Prelims traps

- DETER gives alerts; PRODES is the official annual figure.
- The Cerrado (savanna) is now losing more vegetation than the Amazon.

18. Pollution, courts & one-liners

MISC

- **Delhi:** an AI-enabled Integrated Command and Control Centre for air quality opened at Shastri Park on **1 October** (56 monitoring stations). A ₹104-crore pilot will test anti-pollution technology at 40 public sites, aiming for a 20% cut in PM10/PM2.5.
- **Mumbai** (16 Oct): AQI 152; the main pollutant was **ground-level ozone** — a secondary pollutant formed from NOx and VOCs in sunlight.
- **NGT** (26 Sep) stayed the environmental and CRZ clearances for **Mormugao Port** (Goa) channel deepening. An NGT committee found collusion in illegal **sand mining** in Bhind-Datia (MP).
- **Access & benefit-sharing:** the National Biodiversity Authority released ₹1.19 crore to 29 State Biodiversity Boards under the Nagoya Protocol mechanism.
- **FSSAI** proposed maximum residue limits in tea for acetamiprid and imidacloprid (neonicotinoid insecticides).
- **Satellite megaconstellations** (Starlink, OneWeb, Guowang) leak radio emissions that interfere with radio astronomy (SNIFFLES study, Oct 2026).

QUICK REVISION TABLE

Item	Where / when	Key number	One-line hook
CBD COP17	Yerevan, 19–30 Oct	23 targets; 30×30	First KMGBF global review
UNCCD COP17	Ulaanbaatar, ends 28 Aug	\$1.2 bn rangelands	No drought protocol; COP18 Egypt 2028
ISA session	Kingston, 13–31 Jul	Code still unfinished	Roadmap for 2027
BBNJ	In force 17 Jan 2026	COP1: Jan 2027	UN HQ, New York
Sea-Level Declaration	UNGA, 24 Sep	770 mn below 5 m	Statehood & maritime zones kept
IMO Net-Zero	Vote 4 Dec 2026	\$100 / \$380 per t	MARPOL Annex VI; ships > 5,000 GT
COP31	Antalya, 9–20 Nov	NCQG \$300 bn	Türkiye host; Australia negotiates
India NDC 3.0	Cabinet, Mar 2026	47% / 60% / 3.5–4 bn t	By 2035
El Niño	Sep 2026	Niño 3.4: 29.70 °C	Record; 2026 may be hottest year
Monsoon 2026	Jun–Sep	87% of LPA	“Deficient”; E&NE driest since 1901
Ozone hole	12 Sep	~25 mn km ²	Record 29.6 mn km ² (2006)
Ramsar	15 Oct	103 sites	Sukhna (Chandigarh), Sauj Jheel (UP)
Project Cheetah	17 Sep (4 years)	52 cheetahs	Kuno 49, Gandhi Sagar 3
Nagarahole ESZ	Draft 2 Sep	573.95 km ²	EP Act, 1986
Living Planet	Oct 2026	–73.2% (1970–2022)	Freshwater –85%
CCTS	Trading Oct 2026	~490 entities	BEE / CERC / Grid-India
GEC-III	30 Sep	₹1.86 lakh cr	135 GW + 50 GWh BESS
Amazon	Aug 2025–Jul 2026	–36.9% (DETER)	INPE; lowest since 2013

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AIPMT-4	31 Jan 2027
AIPMT-5	28 Feb 2027

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Science & Technology

July – October 2026 · India and the World · Prelims short notes · GS-III

#	Topic	Area	#	Topic	Area
1	Vikram-1 (Skyroot)	Space – private	9	ORV Sagar Manthan	Ocean research
2	EOS-05 / GISAT-1A	Space – EO	10	Other India items	Misc
3	NVS-03 & NavIC	Space – PNT	11	Roman Space Telescope	Astronomy
4	Gaganyaan G1	Human spaceflight	12	Tianwen-2	Asteroid sample return
5	Mission Drishti (OptoSAR)	Space – private	13	Perseverance record	Mars
6	National Quantum Mission	Quantum	14	AI governance	AI / policy
7	Semiconductors: ISM 2.0	Electronics	15	Earth & planetary bits	Climate / space
8	6G Call to Action	Telecom			

Each note: *In news* → key facts → **technical points** → **Prelims traps** (likely wrong-statement angles) → static linkage. Quick revision table at the end. Nobel science prizes: see **Awards — Nobel Prizes 2026**.

PART A · INDIA

1. Vikram-1 — India's first private orbital rocket

SPACE · PRIVATE

In news: Skyroot Aerospace's **Vikram-1** reached orbit on its maiden flight, **Mission Aagaman** ("arrival"), on **18 July 2026**.

- Developer: **Skyroot Aerospace**, Hyderabad (founded by ex-ISRO engineers). Named after **Vikram Sarabhai**.
- Launched from the **First Launch Pad, SDSC-SHAR, Sriharikota**; launch authorisation by **IN-SPACe**; ISRO gave technical support and infrastructure.
- Payloads injected into a **~450 km LEO** (planned 60° inclination). India reported as the **3rd country** with private orbital launch capability.
- Payloads: Grahaa Space (EO nanosatellites), CosmoServe (space-debris removal demo), D-Cubed (components), Skyroot's own SCOPE (flight data).

Technical points

- 4 stages:** three solid + one liquid.
- Stage 1 **Kalam-1200** (solid, ~120 t peak thrust) → Stage 2 **Kalam-250** (solid) → Stage 3 **Kalam-100** (solid, ~100 kN, flex-nozzle thrust vectoring).
- Stage 4 **Raman** cluster: liquid **hypergolic** (MMH fuel + NTO oxidiser), **3D-printed** engines; final orbit trimming and attitude control.
- ~20 m tall, 1.7 m diameter; **all-carbon-composite** structure; payload up to ~350 kg to LEO (some sources quote higher figures).
- Next: Vikram-2 with a 3D-printed cryogenic **Dhawan** upper-stage engine.

Prelims traps

- It is NOT all-solid — the upper stage is liquid hypergolic.
- Vikram-S (Mission **Prarambh**, 18 Nov 2022) was **sub-orbital**; Vikram-1 is the first **orbital** one.
- Launched from ISRO's pad, not a private spaceport.
- Kalam = solid motors; Raman = liquid engines; Dhawan = cryogenic (Vikram-2).

Static linkage

- Hypergolic propellants ignite on contact — no igniter; storable at room temperature.
- IN-SPACe (2020) authorises and supervises non-government space activity; Indian Space Policy 2023.
- Other private launcher: **Agnikul** (Agnibaan, semi-cryogenic 3D-printed engine).

2. EOS-05 (GISAT-1A) — India's first imager in geosynchronous orbit

SPACE · EO

In news: **GSLV-F17** placed **EOS-05** into orbit at 02:55 IST on **4 September 2026** — ISRO's **first successful launch of 2026**.

- Launched from the **Second Launch Pad**, SDSC-SHAR. **19th GSLV** flight; reported as the **107th launch** from Sriharikota.
- Mass **2,367 kg** — the heaviest satellite launched by any GSLV.
- Injected into a **sub-GTO**; climbs with its own propulsion to geosynchronous altitude (~36,000 km).
- India's **first Earth-imaging satellite designed to operate from geosynchronous orbit**.
- Replaces **GISAT-1 / EOS-03**, lost on **GSLV-F10 (12 Aug 2021)** when the cryogenic upper stage failed to ignite.
- Uses: near-real-time monitoring of cyclones, floods, cloudbursts, forest fires, agriculture, water and strategic surveillance.

Technical points

- **700 mm Ritchey-Chrétien** telescope.
- Multispectral VNIR (6 bands): **~42 m** resolution — the finest reported for any GEO imager.
- Hyperspectral VNIR: **158 bands**, ~318 m (0.375–1.0 µm).
- Hyperspectral SWIR: **256 bands**, ~191 m (0.9–2.5 µm).
- Design cadence: a selected field every few minutes; the whole Indian landmass about every **30 min**.
- GSLV Mk II: S139 solid core + 4 L40 liquid strap-ons → GS2 (Vikas) → CUS with indigenous **CE-7.5** cryogenic engine; 4 m ogive fairing; lift-off mass ~420.5 t.

Prelims traps

- GEO imaging = **high temporal, coarse spatial** resolution. It complements LEO imagers (Cartosat), it does not replace them.
- EOS-05 is the **2nd GISAT**; GISAT-1 never reached orbit.
- Launched by **GSLV Mk II**, not LVM3, and not PSLV (PSLV failed in May 2025 and Jan 2026).
- “Geosynchronous” ≠ “sun-synchronous”.

Static linkage

- Hyperspectral = hundreds of narrow contiguous bands → identifies materials (minerals, crop stress, pollutants).
- ISRO's 2026 setbacks: **PSLV-C62/EOS-N1** (12 Jan 2026) failed — PS3 third-stage anomaly; **PSLV-C61/EOS-09** (May 2025) failed earlier.

3. NVS-03 and the NavIC revival

SPACE · NAVIGATION

In news: ISRO targeted **15–20 October 2026** to launch **NVS-03** on **GSLV-F18** to restore NavIC's standalone service. Check the launch outcome before the exam.

- NVS-03 = **IRNSS-1L**; the 3rd second-generation NavIC satellite and the **12th IRNSS** satellite overall.
- ~2.2 t (≈2,232 kg), **I-2K bus**, built by URSC with SAC payloads; design life **12 years** (first generation: 10).
- Only **3** satellites currently give PNT service: IRNSS-1B, IRNSS-1I and NVS-01. A standalone fix needs **at least 4**; full service needs **7**.
- **NVS-02** (GSLV-F15, 29 Jan 2025, ISRO's **100th launch** from Sriharikota) reached orbit but could not be raised to its GEO slot.
- NVS-04 and NVS-05 are to follow in close succession.

Technical points

- Navigation payload in **L1, L5 and S** bands; C-band ranging payload (CDMA two-way ranging).
- Carries an **indigenous rubidium atomic clock** (first flown on NVS-01, May 2023). First-generation satellites failed largely because imported clocks failed.
- **L1** adds interoperability with GPS/Galileo and use in consumer handsets.
- Goes to GTO, then its own propulsion lifts it to geostationary orbit.

Prelims traps

- NavIC is **regional**: India plus ~1,500 km beyond — not global like GPS.
- Two services: **SPS** (civilian, open) and **RS** (restricted, encrypted, for the armed forces).
- The old name IRNSS is still used for satellite designations.
- NVS-02's problem was in the **satellite**, not the rocket — GSLV-F15 performed nominally.

Static linkage

- Kargil (1999) GPS denial is the classic rationale for NavIC.
- Original constellation: **3 GEO + 4 GSO** (inclined geosynchronous) satellites.
- Other GNSS: GPS (US), GLONASS (Russia), Galileo (EU), BeiDou (China); regional: QZSS (Japan).

4. Gaganyaan G1 — first uncrewed orbital test**HUMAN SPACEFLIGHT**

In news: In **June 2026** the ISRO chairman said **G1** is expected in **Q4 2026**, after repeated slips.

- G1 will carry the humanoid robot **Vyommitra** on the human-rated LVM3 (**HLVM3**).
- Plan: three uncrewed flights (G1-G3), then the crewed **H1 in 2027**.
- Crewed goal: **3 astronauts, ~400 km LEO, 3 days**, return to Earth with splashdown at sea.
- **10 April 2026:** Gaganyaan-1 crew module passed an **air-drop (parachute) test**.
- Astronaut-designates: Prasanth Balakrishnan Nair, Ajit Krishnan, Angad Pratap, **Shubhanshu Shukla** (Shukla flew to the ISS on **Axiom-4** in 2025).

Technical points

- Orbital Module = **Crew Module** (pressurised, double-walled, thermal protection system) + **Service Module** (unpressurised: propulsion, power, thermal control).
- G1 validates aerodynamics of the human-rated vehicle, orbital operations, re-entry, recovery, life support and the crew-escape system.
- Earlier tests: **TV-D1** (Oct 2023) tested crew escape at transonic speed.

Prelims traps

- The first test flight is **uncrewed**; Vyommitra is a humanoid, not an astronaut.
- Launcher is **LVM3** (formerly GSLV Mk III), not GSLV Mk II.
- Orbit ~400 km **LEO** — not GEO.

Static linkage

- Next steps: **Bharatiya Antariksh Station** (first module targeted 2028); Indian on the Moon by **2040**; **third launch pad** approved at Sriharikota (~₹3,985 cr, for NGLV/LVM3).

5. Mission Drishti — world's first OptoSAR satellite lost**SPACE · PRIVATE**

In news: On **8 July 2026**, GalaxEye said it had lost contact with Drishti after a **geomagnetic (solar) storm**.

- Builder: **GalaxEye**, Bengaluru (incubated at **IIT Madras**).
- Launched **3 May 2026** on a SpaceX **Falcon 9** from **Vandenberg**, California.
- Billed as the world's **first OptoSAR** satellite and India's largest privately built EO satellite.
- Radiation from the storm likely damaged a critical onboard system during the final stage of **LEOP**. Contact became intermittent, then was lost; recovery chances are low.
- GalaxEye plans two ~300 kg OptoSAR satellites within 24 months.

Technical points

- **OptoSAR** = multispectral optical + SAR on one platform, producing fused, analysis-ready imagery.
- SAR is **active microwave** imaging: it works day/night and through clouds. Optical gives spectral (colour) information.
- **LEOP** = Launch and Early Orbit Phase: deployment, first contact, initial checks.
- Several subsystems were validated before the loss: power, attitude control, onboard computing, communications.

Prelims traps

- It was a **commercial** mission, not an ISRO mission, and it did not launch from India.
- The cause was **space weather**, not a launch failure.
- SAR is **active** remote sensing; optical is **passive**.

Static linkage

- Space-weather effects: single-event upsets, surface charging, GPS errors, HF radio blackouts, extra atmospheric drag on LEO satellites.
- **Solar Cycle 25** is near its maximum; **Aditya-L1** (L1 point) monitors the Sun.

6. National Quantum Mission — 1,000 km milestone

QUANTUM

In news: On **30 Sep 2026**, at **PRAGATI Q-Foundry 2026**, the S&T Minister said India had crossed **1,000 km of quantum-secure communication** and launched **9 new startups**.

- More than half of the 8-year communication target was reached in under 3 years.
- Ecosystem: **14** technical groups, **17** project teams, **150+** researchers, **43** institutions in **17 states and 2 UTs**.
- **PRAGATI Q-Foundry**: a lab-to-market and investor platform for quantum materials and devices.
- The 1,000 km network was first announced in **April 2026**; startup **QNu Labs** contributed.

Technical points

- Approved **19 April 2023**; **₹6,003.65 crore**; 2023-24 to 2030-31; run by **DST**.
- Four **T-Hubs**: quantum computing · communication · sensing & metrology · materials & devices.
- Targets: **50-1,000 physical qubits** in 8 years; **satellite QKD over 2,000 km** within India and with other countries; inter-city QKD; magnetometers and atomic clocks.
- QKD security rests on physics: measuring a quantum state disturbs it (**no-cloning**), so eavesdropping is detectable.

Prelims traps

- QKD distributes **keys**, not the data itself; the data still travels over normal channels.
- The 2,000 km target includes **satellite** links, not only fibre.
- Nodal department is **DST**, not MeitY.

Static linkage

- **QpiAI-Indus**: India's first full-stack 25-qubit superconducting computer (Apr 2025).
- **Amaravati Quantum Valley** opened Feb 2026, anchored by an IBM Quantum System Two.
- Post-quantum cryptography (PQC) roadmap: Feb 2026.

7. Semiconductors — ISM 2.0 and fabs going live

ELECTRONICS

In news: In **Aug 2026** the MeitY Secretary said **5-6 chip projects** could be in commercial production by end-2026. **3 ISM 1.0 projects** are already producing; the first was inaugurated on **28 Feb 2026**.

- Cabinet approved **ISM 2.0** (announced in Budget 2026-27; **₹1,000 cr** provision for FY27).
- ISM 2.0 scope: equipment, chemicals, gases and materials; full-stack Indian IP; chip design; compound semiconductors, silicon photonics, power semiconductors, sensors and advanced packaging; workforce.

- Goal: meet ~70–75% of domestic chip demand by **2029**; market expected at **\$100–110 bn by 2030**.
- **ASML** (Dutch lithography major) began India operations in Sep 2026. **SEMICON India 2026** was held 17–19 Sep in Delhi.

Technical points

- ISM 1.0 outlay: **₹76,000 crore** (fabs, display fabs, ATMP/OSAT, design).
- Key units: **Micron ATMP (Sanand, Gujarat)**; Tata OSAT (Jagiroad, Assam); CG Semi OSAT (Sanand); **Tata-PSMC fab (Dholera, Gujarat; 28 nm and above)**.
- Design Linked Incentive (**DLI**) scheme: 24 projects supported; 23 tape-outs reported.
- **OSAT/ATMP** = assembly, testing, marking, packaging — back-end, not wafer fabrication.

Prelims traps

- An OSAT is NOT a fab; the **Dholera** fab is India's first commercial front-end fab.
- ASML makes **lithography machines** (it holds the EUV monopoly), not chips.
- Mature nodes (28 nm+) serve autos, power and IoT, not leading-edge AI chips.

Static linkage

- Lithography types: DUV vs **EUUV (13.5 nm wavelength)**.
- Compound semiconductors: **GaN, SiC** (EVs, power electronics, RF).

8. India joins the 6G “Call to Action”

TELECOM

In news: India endorsed the **Call to Action for 6G Leadership and Security** (announced **9 Sep 2026**), joining **24 other nations**.

- Announced on the sidelines of the **G20 Innovation Ministerial, Chapel Hill, North Carolina** (1–2 Sep 2026, US G20 Presidency).
- Principles: openness, interoperability, security, resilience, resource efficiency, innovation-led competition.
- The **Department of Telecommunications (DoT)** leads India's engagement.
- India keeps its independent positions in standards and spectrum fora.

Technical points

- **Bharat 6G Vision:** March 2023; commercial 6G targeted by **2030**.
- **Bharat 6G Alliance:** launched 3 July 2023; partnered with the US Next G Alliance.
- India's aim: **10%** of global 6G patents/standards.
- Building blocks: indigenous 4G/5G stack (C-DOT), **TSDSI** (Indian SDO, 2013), ITU Area Office in New Delhi.

Prelims traps

- It is a **non-binding** political call, not a treaty.
- Nodal body is **DoT**, not MeitY or TRAI.
- The forum was a **G20** ministerial meeting, not the ITU.

Static linkage

- 6G bands: sub-THz / THz; key ideas include AI-native networks, integrated sensing and communication, and non-terrestrial networks.
- **IMT-2030** = the ITU framework for 6G.

9. ORV Sagar Manthan — indigenous ocean research vessel

OCEAN · MOES

In news: **GRSE** launched the Ocean Research Vessel **Sagar Manthan** at Rishi Bankim Shipyard, Kolkata, on **9 Sep 2026**.

- Built for **NCPOR** (National Centre for Polar and Ocean Research, Goa) under the **Ministry of Earth Sciences**.
- Funded under **Vertical-4 (Deep Ocean Survey & Exploration)** of the Deep Ocean Mission; **~₹840 crore**.
- Will replace **ORV Sagar Kanya** (acquired from Germany, 1983). Service life ~30 years; delivery expected **2028**.
- Uses: exploring Indian Ocean mid-ocean ridges for **polymetallic hydrothermal sulphides**; climate, tsunami and environmental research; can operate in the Southern Ocean.

Technical points

- 89.5 m long × 18.8 m wide; ~5,900 GT; 14 knots.
- Surveys to **6,000 m** depth: swath multibeam bathymetry, multichannel seismic, sub-bottom profiler.
- Dynamic positioning; can deploy ROVs and AUVs; CTD profiling, coring, moorings, upper-air observation.

Prelims traps

- **Launched ≠ commissioned** — the vessel enters service around 2028.
- Builder is **GRSE** (Kolkata), not Cochin Shipyard.
- It is a research ship, not a warship.

Static linkage

- **Deep Ocean Mission**: 2021, ₹4,077 cr, MoES; **Samudrayaan** uses the crewed submersible **Matsya-6000** (6,000 m).
- Bathymetry measures seabed depth; seismic surveys image the layers beneath the seabed.

10. Other India items (one-liners)

MISC

- **BIO-NIVESH** (3 Sep 2026): Jitendra Singh launched a platform linking biotech startups with investors.
- **Agentic AI Skilling Programme** (Sep 2026): Intel India with NIELIT (under MeitY).
- **IESO 2026** (International Earth Science Olympiad), Turin, Italy: India won **9 medals**.
- ISRO launch tally: after EOS-05, the chairman said ISRO is targeting **six more launches** in 2026.

PART B · WORLD**Nobel science prizes 2026**

The Medicine (optogenetics), Physics (IceCube neutrinos) and Chemistry (chiral amplification) prizes are covered in full in the section **Awards — Nobel Prizes 2026**, together with Literature, Peace and Economics.

11. Nancy Grace Roman Space Telescope launched

NASA · ASTRONOMY

In news: Launched **30 Aug 2026** (07:26 EDT) on a SpaceX **Falcon Heavy** from **LC-39A, Kennedy Space Center** — about 8 months earlier than the committed date.

- Destination: **Sun-Earth L2** (~1.5 million km), alongside JWST and ESA's Euclid; roughly a 100-day cruise.
- Formerly **WFIRST**; named after NASA's first chief astronomer, called the “**mother of Hubble**”.
- Mission: 5 years, with a possible 5-year extension. Its 300-MP camera has been powered on; first public images are targeted for early 2027.
- Science goals: **dark energy, exoplanets, infrared astrophysics**; it will measure light from about a billion galaxies.

Technical points

- **2.4 m** primary mirror — the same size as Hubble's.
- **Wide Field Instrument (WFI)**: 300-megapixel near-infrared camera made of 18 detectors; field of view ~0.28 sq deg, **≥100× Hubble's**, at Hubble-like sharpness.
- **Gravitational microlensing** survey of the inner Milky Way, expected to find >1,000 exoplanets.
- **Coronagraph Instrument** (technology demonstrator): deformable mirrors and masks suppress starlight by ~10⁸–10⁹ to image exoplanets directly; it paves the way for the Habitable Worlds Observatory.

Prelims traps

- Roman's advantage is **field of view**, not a bigger mirror (its mirror is much smaller than JWST's 6.5 m).
- It orbits at **L2**, not in low Earth orbit like Hubble.
- The coronagraph is a **demo**, not its main instrument.

Static linkage

- Lagrange points: **L1** (solar observatories — Aditya-L1, SOHO); **L2** (JWST, Euclid, Gaia, Roman).
- Microlensing: a foreground star's gravity briefly magnifies a background star; a planet adds a blip to that brightening.

12. Tianwen-2 at asteroid Kamo'oalewa

CHINA · CNSA

In news: China's first asteroid sample-return probe reached Earth's **quasi-moon 469219 Kamo'oalewa (2016 HO3)**, closing to ~20 km on **4 July 2026**, and began survey operations.

- Launched **29 May 2025** on a **Long March 3B** from **Xichang**.
- The probe's images suggest the asteroid is only **~20 m** across — about half of the smallest ground-based estimate (40–100 m). It rotates in **~28 minutes**.
- Plan: collect samples → depart **April 2027** → capsule lands in the **Gobi Desert, Nov 2027**.
- The spacecraft then flies on to main-belt comet **311P/PANSTARRS** (~2035).

Technical points

- A **quasi-satellite** orbits the **Sun**, not Earth, but in 1:1 resonance it appears to stay near Earth.
- Big question: is Kamo'oalewa **ejecta from the Moon**? Earlier spectra looked reddened, lunar-like; new spectra look more like an ordinary silicate asteroid. The samples should decide.
- Sampling options: touch-and-go or anchor-and-attach, chosen after surface-strength surveys.

Prelims traps

- China would be the **3rd** country to return asteroid samples, after **Japan** and the **US**.
- Kamo'oalewa is **not a true moon** of Earth.
- 311P is a **main-belt comet** (active asteroid), not a Kuiper-belt object.

Static linkage

- Japan: **Hayabusa** (Itokawa, 2010) and **Hayabusa2** (Ryugu, 2020). US: **OSIRIS-REx** (Bennu, samples delivered 2023).
- China's lunar sample returns: **Chang'e-5** (near side, 2020) and **Chang'e-6** (far side, 2024).

13. Perseverance sets off-world driving record

NASA · MARS

In news: On **12 Oct 2026**, NASA said Perseverance had become the **most-travelled vehicle on another world's surface**, at about **45.22 km**.

- It passed **Opportunity's** ~45.16 km Mars record; the Soviet **Lunokhod-2** drove ~39 km on the Moon.
- The real milestone is **autonomous navigation**: the rover plans its own path.

Technical points

- Perseverance landed in **Jezero crater** (an ancient river delta) in Feb 2021.
- It is caching rock cores for **Mars Sample Return**; **MOXIE** made oxygen from CO₂; the **Ingenuity** helicopter flew 72 times.

Prelims traps

- The record is for distance on another world's **surface** — not for distance travelled through space.
- **Curiosity** (Gale crater) and **Perseverance** (Jezero) are different rovers in different craters.

14. AI governance — key moves

AI · POLICY

In news: A run of AI regulation and export-control moves in **Sep-Oct 2026**.

- **California:** an Oct 2026 executive order requires independent verification of AI models and **kill switches** for rogue AI agents. New child-protection AI laws were signed on 9 Sep 2026; the **California AI Transparency Act** took effect in Aug 2026.

- **China (16 Oct 2026)**: a **draft** export-restriction list of **40 technologies**, **23 of them AI-related** (advanced models, agents, computing systems).
- **EU**: the AI Board continues preparing for phased AI Act implementation.

Technical points

- **EU AI Act** = a risk-based regime: **unacceptable risk** (banned) · **high risk** · **limited risk** (transparency duties) · **minimal risk**.
- **“Kill switch”** = the ability to halt or shut down an AI system or agent.
- **Agentic AI** = systems that take multi-step actions on their own (browse, code, transact), not just answer questions.

Prelims traps

- China's list is a **draft**, not yet in force.
- The EU AI Act is a **regulation**, applied in phases since 2024 — not a directive.

Static linkage

- India: **IndiaAI Mission** (2024, ~₹10,372 cr); **India AI Governance Guidelines** (MeitY, Nov 2025); **AI Impact Summit**, New Delhi (Feb 2026), where **BharatGen** was showcased.

15. Earth & planetary bits

CLIMATE · SPACE

- **Antarctic sea ice**: the annual maximum (~17.59 million sq km, 14 Sep 2026) was the **third-lowest** in the satellite record (NASA Earth Observatory). The Arctic minimum comes in September; the Antarctic maximum comes in September.
- **BepiColombo** (ESA-JAXA): Mercury arrival operations began **3 Sep 2026** with separation of the transfer (propulsion) module; orbit insertion is due late 2026. It carries two orbiters: **MPO** (ESA) and **Mio/MMO** (JAXA).
- **Artemis II** (April 2026) carried four astronauts around the Moon — the first crewed lunar flight since **Apollo 17 (1972)**.

QUICK REVISION TABLE

Item	Agency / who	Vehicle / site	Key number	Key “first” / point
Vikram-1	Skyroot	First Launch Pad, SHAR	~450 km orbit; 4 stages	1st Indian private orbital rocket
EOS-05 (GISAT-1A)	ISRO	GSLV-F17, 2nd pad	2,367 kg; 42 m	1st Indian GEO imager; heaviest on GSLV
NVS-03 (IRNSS-1L)	ISRO	GSLV-F18	4th PNT satellite	Restores standalone NavIC
Gaganyaan G1	ISRO	HLVM3	Q4 2026 target	Vyommitra; uncrewed
Mission Drishti	GalaxEye	Falcon 9, Vandenberg	Launched 3 May 2026	1st OptoSAR; lost to a solar storm
NQM	DST	—	1,000 km QKD; ₹6,003.65 cr	4 T-Hubs; 9 new startups
ISM 2.0	MeitY	—	ISM 1.0: ₹76,000 cr	3 units producing; 5-6 by end-2026
6G Call to Action	DoT	G20 Innovation Ministerial	India + 24 nations	Target 10% of 6G patents
Sagar Manthan	GRSE / NCPOR	Kolkata	6,000 m; ~₹840 cr	Replaces Sagar Kanya
Roman telescope	NASA	Falcon Heavy, LC-39A	2.4 m; 300 MP	≥100× Hubble's field of view; L2
Tianwen-2	CNSA	LM-3B, Xichang	~20 m asteroid	Samples land Nov 2027
Perseverance	NASA	Jezero crater	~45.22 km	Off-world distance record

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Internal Security & Disaster Management

July – October 2026 · Extremism, borders, cyber, terror finance, disasters and DM law · GS-III

#	Topic	Area	#	Topic	Area
1	Left-wing extremism after the deadline	LWE	10	Heatwave & lightning notified	DM finance
2	Jammu & Kashmir	Terrorism	11	DM law & the 261st PSC report	DM governance
3	AFSPA extension & Manipur	North-East	12	Floods & urban deluges	Hydro-met
4	India-Myanmar border	Borders	13	Drought 2026	Hydro-met
5	Ladakh talks	Borders / polity	14	Bay of Bengal systems	Cyclones
6	Cross-border drones	Borders	15	Langtang-Lirung disaster, Nepal	Himalaya
7	Cyber fraud & “digital arrest”	Cyber	16	Global disasters	World
8	FATF & terror financing	Money laundering	17	Frameworks to remember	Static
9	Police modernisation	Policing			

Each note: *In news* → key facts → **technical points** → **Prelims traps** → static linkage.

PART A · INTERNAL SECURITY

1. Left-wing extremism after the March 2026 deadline

LWE

In news: The government's target of ending Naxalism by **31 March 2026** was declared met. In April, the MHA told states that **no district now falls in the “LWE-affected” category**. The focus has shifted to legacy and thrust districts to stop a comeback.

- LWE-affected districts fell from **126 (2014)** to about **7** in early 2026; the last “most affected” were **Bijapur, Sukma and Narayanpur** (all Chhattisgarh).
- Violent incidents fell ~**88%** (1,936 in 2010 → 234 in 2025); deaths fell ~**90%** (1,005 → 100).
- Over **10,000 cadres** surrendered since 2014. Small hardcore groups may remain in **Abujmahar**.
- **31 legacy and thrust districts** keep central support and security deployment.

Technical points

- Strategy: **SAMADHAN** doctrine (2017) — Smart leadership, Aggressive strategy, Motivation & training, Actionable intelligence, Dashboard KPIs, Harnessing technology, Action plan per theatre, No access to financing.
- Schemes: **SRE** (Security Related Expenditure), Special Central Assistance, Road Requirement Plans, the 4G mobile-tower saturation drive, Dharti Aaba Janjatiya Gram Utkarsh Abhiyan, PM-JANMAN.
- Forces: **CoBRA** (CRPF), **Greyhounds** (Andhra/Telangana), **District Reserve Guard** (Chhattisgarh); forward operating bases pushed into former “liberated zones”.

Prelims traps

- “No LWE-affected district” is an **administrative category** — security forces are still deployed in legacy districts.
- Greyhounds belong to **Andhra/Telangana police**, not the CRPF.
- Police and public order are **State List** subjects; the Centre supports states.

Static / map linkage

- The movement began at **Naxalbari** (West Bengal, 1967); **CPI (Maoist)** formed in 2004 and is banned under UAPA. The “Red Corridor” ran from Andhra-Telangana through Chhattisgarh-Jharkhand to Bihar.

2. Jammu & Kashmir — violence at historic lows

TERRORISM

In news: J&K police data showed **zero terror incidents in August 2026** (and earlier in June). The **Amarnath Yatra** (3 Jul-28 Aug) passed without a terror incident.

- August 2026: no civilian, security-force or terrorist deaths recorded; however, suspected Pakistani drones were seen near **Kathua and Poonch**, and IEDs and arms were recovered (**Surankote, Sopore**).
- Amarnath Yatra: **57 days, 4.8 lakh+ pilgrims**; suspended briefly from 9 Aug due to heavy rain.
- **NIA (7 Sep)** searched the home of an accused in the “white-collar” terror module — linked to doctors — behind the **November 2025 Red Fort blast**.
- The J&K Assembly passed a resolution seeking **restoration of statehood**.

Technical points

- J&K became a UT **with** a legislature, and Ladakh a UT **without** one, under the **J&K Reorganisation Act, 2019**. The Supreme Court upheld the abrogation of **Article 370 (Dec 2023)** and recorded the Centre's assurance on statehood.
- Under the UT set-up, police and public order are with the **Lieutenant Governor**, not the elected government.
- **NIA**: set up under the NIA Act 2008 (after 26/11); its **2019 amendment** allows it to probe offences abroad and cyber-terrorism and human trafficking.

Prelims traps

- AFSPA in J&K comes under a **separate 1990 Act**, not the 1958 Act.
- The Amarnath cave shrine is in the **Lidder valley** (Anantnag/Ganderbal); the yatra routes are **Pahalgam and Baltal**.

3. AFSPA extended in the North-East; Manipur

NORTH-EAST · 1 OCT

In news: The MHA extended the **Armed Forces (Special Powers) Act, 1958** for **six months from 1 October 2026** in designated “disturbed areas” of Manipur, Nagaland and Arunachal Pradesh.

- **Manipur**: the whole state **except** the areas of **13 police stations in five valley districts** (Imphal West, Imphal East, Thoubal, Bishnupur, Kakching).
- **Nagaland**: 9 districts plus 21 police stations in five others. **Arunachal**: Tirap, Changlang and Longding, plus three police stations in Namsai.
- Manipur: **President's Rule (from 13 Feb 2025)** ended in early February 2026, when **Yumnam Khemchand Singh** became Chief Minister; sporadic incidents continue (e.g. houses torched at Kanto Sabal, Imphal West, 11 July).

Technical points

- **Section 3**: the Centre or the Governor of the state can declare an area “disturbed”.
- **Section 4** powers: use force (even lethal, after warning), arrest and search without warrant, destroy hideouts.
- **Section 6**: no prosecution of personnel without central government sanction.
- Upheld with safeguards in **Naga People's Movement of Human Rights v. Union of India (1997)**. The **Justice Jeevan Reddy Committee (2005)** recommended repeal.
- AFSPA has been withdrawn from **Tripura (2015)**, **Meghalaya (2018)** and most of Assam.

Prelims traps

- Who declares the area: **Centre or Governor** — not the Army.
- AFSPA is **not** in force across the whole of Manipur — valley police-station areas are excluded.
- President's Rule under **Article 356** needs Parliament's approval every **6 months**; normally a maximum of **3 years**.

4. India-Myanmar border: talks, fencing and the FMR

BORDERS · 7-8 JUL

In news: India and Myanmar held their **23rd National-Level Meeting** in New Delhi on **7-8 July 2026**. Myanmar assured that its territory will not be used against India's security interests.

- Agreed: more intelligence sharing and operational coordination; both reaffirmed the **Kaladan** project and the **India-Myanmar-Thailand Trilateral Highway**.
- India was led by Home Secretary **Govind Mohan**.

Technical points

- Border length: **1,643 km** — Arunachal (520), Mizoram (510), Manipur (398), Nagaland (215). Guarded by **Assam Rifles**.
- **Free Movement Regime**: formalised in 2018 (visa-free up to 16 km); scrapping announced Feb 2024; now limited to **10 km** with border passes at **43 crossing points**.
- Full fencing approved in principle (Sept 2024): ~**₹31,000 crore** over ~10 years; a pilot stretch at **Moreh** (Manipur).

Prelims traps

- The India-Myanmar border is guarded by **Assam Rifles** — not the BSF or SSB.
- **Mizoram**, not Manipur, has the second-longest stretch.

Static / map linkage

- Border guarding forces: Pakistan & Bangladesh — **BSF**; China — **ITBP**; Nepal & Bhutan — **SSB**; Myanmar — **Assam Rifles**.

5. Ladakh — talks on autonomy

BORDERS / POLITY · SEP

In news: The **Leh Apex Body (LAB)** and **Kargil Democratic Alliance (KDA)** met the MHA's High-Powered Committee on **9 September 2026**.

- Their demands: **statehood**, inclusion in the **Sixth Schedule**, withdrawal of cases against protesters, compensation for those killed in the 2025 protests.
- The MHA called statehood a “long-term aspiration” and floated a “**sui generis**” model with protections under **Article 371**, plus an elected UT-level body.
- Steps by the Lieutenant Governor: a **High Court bench** in Ladakh, the **Nautor Regularisation Rules 2026** (land rights), and hill councils for **all seven districts (210 elected posts)**.

Technical points

- **Sixth Schedule** (Articles 244(2) and 275(1)): autonomous district councils in **Assam, Meghalaya, Tripura and Mizoram** only.
- **Article 371** (371A–371J): special provisions for specific states, e.g. 371A for Nagaland, 371G for Mizoram.
- Ladakh has two hill development councils (**Leh, Kargil**); five new districts were announced in 2024.

Prelims traps

- The Sixth Schedule covers only **four states** — not Manipur or Ladakh.
- Article 371 is **not** the same as the Sixth Schedule.

6. Cross-border drones on the Punjab front

BORDERS · DRONES

In news: Drones carrying narcotics and weapons from Pakistan remain a major threat; a **September 2026** analysis traced patterns from **1,200+ intercepted drones**.

- Interceptions along the Punjab border: **294 (2024)** and **287 (2025)**.
- Most flights are at night (**10 pm–4 am**), reaching **3.5–10 km** inside India. Most drones are **Chinese-made**, and newer models have anti-jamming and satellite links.

- Punjab's **"Baaz Akh" (2025)** is the first state-level anti-drone grid (8–10 km range: detect, track, jam, neutralise).
- A key challenge: jamming can trigger **"return to home"**, so the drone flies back to Pakistan with the evidence.

Technical points

- Counter-drone options: **soft kill** (RF jamming, GNSS spoofing) vs **hard kill** (lasers, guns); DRDO's **D4** anti-drone system.
- **Drone Rules, 2021** (under the Aircraft Act); India banned import of foreign drones in **2022** to encourage domestic manufacture.
- Village defence committees report sightings.

Prelims traps

- The Punjab border is guarded by the **BSF**; the fence (built late-1980s/1990s, ~462 km in Punjab) does not stop aerial intrusion.

7. Cyber fraud: "digital arrest" and policing gaps

CYBER

In news: In **August 2026** the Supreme Court issued directions to curb "digital arrest" scams. A September report (**SPIR 2026**) showed cybercrime rising and under-reported.

- SC directions: **RBI** to issue an SOP for temporary debit holds on **mule accounts**; states to roll out the **e-Zero FIR** mechanism and notify **Cyber Crime Coordination Centres** within four weeks; the **CBI** to consider taking up organised frauds below its ₹10-crore threshold.
- The **Money Restoration Mechanism** (RBI Innovation Hub + I4C) covers **69 banks** and has restored **₹18 crore in 36,290 cases**.
- Digital-arrest complaints (I4C): **1,23,672 (2024) → 58,249 (2025) → 16,377 (Jan-Jun 2026)**.
- **SPIR 2026** (Lokniti-CSDS and Common Cause): cybercrime cases rose **17.9%** (2023→24, NCRB) while total crime fell ~6%. Only **49%** of victims filed a complaint, and **27%** of complainants paid a bribe.

Technical points

- "Digital arrest" is a con: fraudsters pose as police, CBI or customs officials on video calls. There is **no legal procedure** called "digital arrest".
- **I4C** (Indian Cyber Crime Coordination Centre, 2020) is under the **MHA**; national helpline **1930**; cybercrime.gov.in portal.
- **CERT-In** (IT Act s.70B) is under **MeitY**; **NCIIPC** (s.70A) protects critical information infrastructure under the **NTRO**. **Sanchar Saathi** tackles fraudulent SIMs.

Prelims traps

- I4C is under the **MHA**; CERT-In is under **MeitY** — a frequent mix-up.
- **Zero FIR** = an FIR registered regardless of jurisdiction (now under **BNSS s.173**); **e-Zero FIR** converts cyber-fraud complaints to FIRs automatically.

8. FATF and terror financing

MONEY LAUNDERING

In news: At the **June 2026 FATF plenary (Paris)**, the UK's **Giles Thomson** was named President (Jul 2026–Jun 2028) and India's **Vivek Aggarwal** became Vice-President (2026–27).

- Grey list: **Iraq and Bosnia & Herzegovina added; Algeria and Namibia removed**.
- **Recommendation 6** updated so that sanctions do not block humanitarian aid; reports planned on terror financing through **social media** and on **hawala**.

Technical points

- FATF: created in **1989 (G7, Paris)**; **40 Recommendations**; “grey list” = jurisdictions under increased monitoring; “black list” = call for action (**North Korea, Iran, Myanmar**).
- India: member since **2010**; its **2024 mutual evaluation** placed it in “regular follow-up”, the top category.
- India's laws: **PMLA 2002** (Enforcement Directorate), **UAPA 1967** (terror funding), **FIU-IND** (suspicious transaction reports).
- Plenaries are held three times a year (**Feb, Jun, Oct**).

Prelims traps

- The grey list is “increased monitoring” — **not sanctions**.
- Pakistan left the grey list in **October 2022**.

9. Police modernisation

POLICING · SEP

In news: The Centre told the Supreme Court (**Sept 2026**) it will spend **₹24,000 crore over five years** on a **Police Modernisation Mission** under the umbrella Modernisation of Police Forces (MPF) scheme.

- Aim: modern weapons, communications and forensics for state police and CAPFs, so states rely less on the Army and CAPFs for internal security.
- The submission came in a **suo motu case on CCTV in police stations** (following **Paramvir Singh Saini, 2020**).

Technical points

- “Police” and “public order” are **State List** subjects (**Entries 2 and 1, List II**).
- **Prakash Singh v. Union of India (2006)**: seven directives — State Security Commission, fixed tenure for the DGP, separating investigation from law and order, Police Complaints Authority, etc.
- Allied: **CCTNS** (crime records network), **NATGRID** (intelligence database), **e-Sakshya** (evidence app under the new criminal laws).

Prelims traps

- Police is a State subject — **CAPFs** are Union forces under the MHA (**Union List, Entry 2A**).
- The new criminal laws (**BNS, BNSS, BSA**) came into force on **1 July 2024**.

PART B · DISASTER MANAGEMENT**10. Heatwave and lightning become notified disasters**

DM FINANCE · AUG

In news: In **August 2026** the Union government added **heatwaves and lightning** to the list of notified natural calamities eligible for **SDRF/NDRF** funding for **2026-31**, following the **16th Finance Commission**.

- The list grows from **12 to 14**: cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold wave, **heatwave, lightning**.
- States can now pay relief for heat and lightning deaths from the SDRF; heat-mitigation projects can draw on the **Disaster Mitigation Funds**.

Technical points

- Before this, states could only use up to **10% of SDRF** funds for “state-specific” local disasters (several states had already notified heat or lightning that way).
- SDRF funding is **75:25** (Centre:State) for general states and **90:10** for NE and Himalayan states; the NDRF tops it up for “severe” disasters.
- Lightning is among India's biggest natural killers; heat action plans (HAPs) began with **Ahmedabad (2013)**.

Prelims traps

- Heatwave was **not** on the central list before 2026, even though some states had notified it.
- The **Finance Commission recommends** the list; the **Union government notifies** it.

Static / map linkage

- IMD heatwave: $\geq 40^{\circ}\text{C}$ in the plains and departure $\geq 4.5^{\circ}\text{C}$; severe $\geq 6.5^{\circ}\text{C}$; or actual $\geq 45^{\circ}\text{C}$.

11. DM law and the 261st Parliamentary Committee report

DM GOVERNANCE · AUG

In news: The Parliamentary Standing Committee's **261st report (Aug 2026)** said India's DM policy lags behind the **DM (Amendment) Act, 2025** and urged a shift from **relief to prevention**.

- Gaps found: the **National Policy (2009)** and **NDMP (2016/2019)** predate the 2025 amendments; only **Karnataka** has set up an Urban Disaster Management Authority; only **10 states** adopted the 2019 Model Fire Services Bill.
- Recommendations: ward-level hyperlocal warnings; one platform joining **IMD, CWC, INCOIS and NRSC**; a mandatory **Disaster Risk Impact Assessment** for big projects; **two NDRF regional response centres** for the Western and Eastern Himalayas (landslides, GLOFs, flash floods); scale up **Aapda Mitra**.

Technical points

- **DM (Amendment) Act 2025:** statutory status for the **NCCM** (Cabinet Secretary) and the **High-Level Committee** (Home Minister); **UDMAs** for state capitals and big cities (chaired by the Municipal Commissioner); national and state disaster databases; states may form their own SDRF forces.
- **DM Act 2005:** NDMA (chaired by the **PM**), SDMA (CM), DDMA (Collector); NDRF (raised 2006, now **16 battalions**); NIDM.

Prelims traps

- NDMA is chaired by the **PM**, not the Home Minister — the Home Minister chairs the HLC.
- NDRF the **force (s.44)** is different from NDRF the **fund** (National Disaster Response Fund, **s.46**).

12. Floods and urban deluges

HYDRO-MET

In news: Despite a **deficient monsoon** overall, India saw severe local floods: Assam in July, a Bay of Bengal low-pressure system in July–August, and urban floods in **Lucknow and Chennai** in October.

- **Assam (July):** at least **62 dead** and **~11 lakh** people affected; Brahmaputra tributaries above danger level.
- **BOB 03 (26 Jul–1 Aug):** a Bay of Bengal system that crossed near **Digha** (West Bengal); **~31 deaths** across India, Bangladesh and Myanmar.
- **Lucknow** (early Oct): **Gomti** floods, blamed on encroached floodplains and blocked drains.
- **Chennai (18 Oct):** some north Chennai gauges topped 300 mm in 24 h (**361.9 mm at Parrys**).
- **Ganga floodplain order (Aug 2026):** defined an “active floodplain” (**1-in-5-year flood**) and zones up to the **100-year flood line**; critics say it dilutes river protection.

Technical points

- IMD rainfall terms (24 h): heavy **64.5-115.5 mm**; very heavy **115.6-204.4 mm**; extremely heavy **≥204.5 mm**. A **cloudburst** is **≥100 mm** in an hour over a small area.
- Flood forecasting: **Central Water Commission**; urban flooding is a municipal function (**12th Schedule**).

Prelims traps

- Flood control is **not** a Union subject — “water” is in the State List (**Entry 17**), subject to Union List **Entry 56** for inter-state rivers.

13. Drought 2026

HYDRO-MET

In news: The **El Niño**-weakened monsoon drove drought declarations across the south.

- **Karnataka (27 Aug): 101 taluks** declared drought-hit (89 severe, 12 moderate); the state's deficit was **31%** (1 Jun-26 Aug). Later reports put the number above 200.
- **Andhra Pradesh: 388 mandals** declared drought-hit. **Telangana:** rainfall ~28% below normal; drought in **315 of 621 mandals**.
- **Tamil Nadu: 79%** of irrigation tanks dry or below 25% capacity before the northeast monsoon.

Technical points

- Drought is declared by the **state government**, using the **Manual for Drought Management (2016, updated 2020)**: rainfall deficit and dry spells as the trigger, then vegetation index, soil moisture, crop sowing, reservoir and groundwater levels.
- Types: **meteorological → hydrological → agricultural → socio-economic**.
- Relief: SDRF/NDRF, extra work under the rural jobs scheme, fodder banks, drinking-water tankers.

Prelims traps

- **States — not IMD** — declare drought.
- **Meteorological** drought is defined from rainfall alone; **agricultural** drought looks at soil moisture and crops.

14. Bay of Bengal systems and cyclone naming

CYCLONES

In news: A Bay of Bengal system reported as **“Arnab”** crossed the north Andhra-south Odisha coast near **Kalingapatnam** around **24 September 2026**, weakening over Odisha-Chhattisgarh. Thousands were evacuated.

- Reports differ on whether it reached cyclonic-storm strength; IMD bulletins tracked it as a **deep depression** near landfall (winds 45-55 km/h, gusting 65).
- “Arnab” (Bengali for “ocean”) is a name contributed by **Bangladesh**.

Technical points

- Names come from a list of **169 names** (13 each from 13 countries) adopted in **2020** by the **WMO/ESCAP Panel on Tropical Cyclones**; IMD's **RSMC in New Delhi** assigns them.
- A name is given only when a system reaches **cyclonic storm** strength (**≥62 km/h**). Scale: depression (31-49) · deep depression (50-61) · cyclonic storm · severe · very severe · extremely severe · super cyclonic (**≥222 km/h**).
- The Bay of Bengal has more cyclones than the Arabian Sea (warmer water, lower salinity, remnants of Pacific typhoons); peaks are **Apr-May and Oct-Dec**.

Prelims traps

- Names are assigned only at cyclonic-storm stage, so watch for **“named depression”** traps.
- RSMC New Delhi serves **13 countries** of the north Indian Ocean.

15. Langtang-Lirung rock-ice avalanche and flood, Nepal

HIMALAYA · 26 AUG

In news: On **26 August 2026**, a massive rock-and-ice avalanche fell from **Langtang Lirung (7,234 m)** in Langtang National Park, setting off a debris flow and flood of nearly **100 km** down the **Lhende Khola-Bhote Koshi-Trishuli** rivers.

- Toll (Nepal govt, 7 Sep): **~1,355 bodies** recovered and **~5,000 missing**, including **~900 hydropower workers**; China reported **43 dead and 519 missing** in Tibet.
- Destroyed: the **Rasuwagadhi customs complex** and **Nepal-China Friendship Bridge**; **13 hydropower projects (~783 MW)** hit; **105 bridges** damaged.
- Volume **~25-40 million m³**. Its seismic signal matched a **M5.2** quake, but scientists say the collapse caused the signal, not an earthquake. It was **not a GLOF**.
- **India and China** led the international relief effort.

Technical points

- Himalayan cascading hazards: **GLOF** (glacial lake breach) vs **rock-ice avalanche** (slope failure) vs **landslide-dam outburst**. Similar to **Chamoli, Feb 2021 (Ronti peak)**.
- India: the NDMA's GLOF programme for **~189 high-risk lakes**; **South Lhonak (Sikkim) GLOF of Oct 2023** destroyed the **Teesta-III** dam.
- No glacier early-warning system existed at the Nepal site, despite earlier signs such as cracks and faster slope movement.

Prelims traps

- It was a **rock-ice avalanche**, not a glacial lake outburst.
- **Trishuli** is a tributary of the **Narayani (Gandak)**, which flows into the Ganga in India.

16. Global disasters, July-September 2026

WORLD

In news: Major disasters abroad in this period.

- Earthquakes: **Colombia (Chocó) M7.4, 10 Aug** — **~335 dead**; **Indonesia (Flores, East Nusa Tenggara) M7.8, 14 Aug** — **136 dead**; **Japan (off Kumamoto) M6.8, 28 Jul**.
- **Typhoon Maysak** (1-7 Jul): crossed Hainan and northern Vietnam; **171+ deaths**.
- **Hurricane Genevieve** (east Pacific, late July) peaked at **~260 km/h**.

Technical points

- Indonesia and Japan lie on the Pacific **"Ring of Fire"**; Colombia's Chocó coast sits on the **Nazca-South American** subduction zone.
- Names: **"hurricane"** (Atlantic and NE Pacific), **"typhoon"** (NW Pacific), **"cyclone"** (Indian Ocean and South Pacific).

Prelims traps

- **Magnitude** (energy released, logarithmic) is different from **intensity** (shaking felt, e.g. the Modified Mercalli scale).

PART C · STATIC FRAMEWORKS & REVISION

17. Frameworks to remember

STATIC

- **Sendai Framework (2015-2030): 7 targets, 4 priorities** (understand risk; strengthen risk governance; invest in resilience; preparedness and "build back better"). It replaced the **Hyogo Framework (2005-15)**.
- **CDRI** (Coalition for Disaster Resilient Infrastructure): launched by India at the **UN Climate Action Summit, 2019**; Secretariat in New Delhi.
- UN **"Early Warnings for All"**: warnings for everyone by **2027**. India: Common Alerting Protocol (**SACHET**) and cell broadcast alerts by NDMA and C-DOT.

- **PM's 10-point agenda on DRR (2016)** and the **NDMP (2016, revised 2019)**, aligned to Sendai, the SDGs and Paris.
- **IDRN** (India Disaster Resource Network): an online inventory of equipment and skilled staff — the committee wants states to update it quarterly.
- **UAPA 1967** (2019 amendment lets the Centre designate **individuals** as terrorists); **NSA 1980** (preventive detention up to **12 months**).

Quick revision table

REVISION

Item	When	Key number	One-line hook
LWE status	Post-31 Mar 2026	126 → 0 districts	31 legacy & thrust districts remain
J&K	Aug 2026	Zero incidents	Amarnath Yatra 4.8 lakh pilgrims
AFSPA	From 1 Oct 2026	6 months	Manipur minus 13 valley police stations
Manipur	Feb 2026	CM Y. Khemchand Singh	President's Rule from Feb 2025 ended
India-Myanmar	7–8 Jul	1,643 km; FMR 10 km	Guarded by Assam Rifles
Ladakh talks	9 Sep	7 hill councils	Art. 371-type “sui generis” offer
Punjab drones	2024 / 2025	294 / 287 seized	Baaz Akh anti-drone grid
Digital arrest (SC)	Aug 2026	RBI SOP in 4 weeks	Mule-account holds; e-Zero FIR
SPIR 2026	Sep 2026	Cybercrime +17.9%	49% of victims reported
FATF	Jun 2026 plenary	India's Vivek Aggarwal VP	Iraq, BiH added to grey list
Police modernisation	Sep 2026	₹24,000 cr / 5 yrs	Prakash Singh (2006) directives
Notified disasters	Aug 2026	12 → 14	+ heatwave, lightning (16th FC)
261st PSC report	Aug 2026	2 Himalayan NDRF centres	Only Karnataka has a UDMA
Assam floods	Jul 2026	62+ dead	Brahmaputra tributaries in spate
Karnataka drought	27 Aug	101 taluks	States declare (Drought Manual)
“Arnab” system	~24 Sep	Near Kalingapatnam	Name from Bangladesh; RSMC New Delhi
Langtang-Lirung	26 Aug	~1,355 dead; ~5,000 missing	Rock-ice avalanche, not GLOF
Colombia quake	10 Aug	M7.4; ~335 dead	Indonesia M7.8 on 14 Aug

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Places in News with Maps

20 July – 20 October 2026 · 16 maps (world, 13 regional, India) · ~45 places · every place with its map anchor and static linkage

#	Topic	Area	#	Topic	Area
1	Larak Island	West Asia	27	Attunli HEP (680 MW)	Arunachal
2	Sohar Port (Oman)	West Asia	28	Chamkharchhu-I (Bhutan, 770 MW)	Bhutan
3	Pickaxe Mountain (Iran)	West Asia	29	27 standard names (Arunachal)	Arunachal
4	Perim (Mayun) Is. & Mocha	West Asia	30	Gogra & Hot Spring	Ladakh
5	Riyadh	West Asia	31	Aksai Chin names	Ladakh
6	Tabuk	West Asia	32	New districts (2026)	Ladakh
7	Tigray (Ethiopia)	Africa	33	Sukhna (Chandigarh)	Chandigarh
8	Black Sea	Europe	34	Sauj Jheel (Mainpuri, UP)	UP
9	Turkish Straits (Bosporus)	Europe	35	Dal Lake	J&K
10	Moldova	Europe	36	Bakhira (Sant Kabir Nagar)	UP
11	Kamchatka (Russia)	NW Pacific	37	Mount Mukut (7,045 m)	Uttarakhand
12	Okinotori Island (Japan)	NW Pacific	38	Ghepan Ghat Lake (Lahaul)	HP
13	Sea of Japan (East Sea)	NW Pacific	39	Kishau project	Tons R.
14	Taklamakan (Xinjiang, China)	Central Asia	40	Salal Dam	J&K
15	Aral Sea	Central Asia	41	Poompuhar	Tamil Nadu
16	Panama	Americas	42	Mudumal (Telangana)	Telangana
17	Masaya (Nicaragua)	Americas	43	Nagarjuna Sagar	Telangana-AP
18	Lake Ontario	Americas	44	Buckingham Canal	Coromandel
19	Lake Mead	Americas	45	Vallur TPP	Tamil Nadu
20	Naoero (formerly Nauru)	Oceania	46	Buxa TR (West Bengal)	East India
21	Christmas Island (Australia)	Oceania	47	Singhbhum Craton	East India
22	Lord Howe Island (Australia)	Oceania	48	Ichamati	West Bengal
23	Rasuwa — Bhote Koshi	Nepal	49	Sone	Bihar-Jharkhand
24	Trishuli → Gandak	Nepal/India	50	Barda WLS (Gujarat)	West India
25	Budhi Gandaki	Nepal	51	Desert NP (Rajasthan)	West India
26	Siang Upper Multipurpose Project (11,200 MW)	Arunachal	52	Jawahar Dweep (Mumbai)	West India

Each place: map pin → *In news* → key facts → **Static / map linkage** (neighbours, water bodies, features). Cover the labels on the maps and recall each pin.

PART A · World at a glance

How to read the maps

Coloured numbered pins = places in news (colour = theme, number = the note below the map); small grey dots = reference points; arrows show flows, routes or moves; dashed lines are indicative. Lat/long grid, north arrow and an approximate scale are on every map. Boundaries follow India's official map. **Theme colours:** ● Conflict / security · ● Disaster / natural event · ● Environment / wildlife · ● Infrastructure / economy · ● Heritage / naming / diplomacy. Coverage: 20 July – 20 October 2026 · 14 regional maps · ~45 places.



Map 1 · World at a glance — cover the key and name each pin.

#	Place	#	Place	#	Place	#	Place
1	Larak Island	7	Kamchatka quake	13	Masaya volcano	19	Rasuwa (Nepal)
2	Perim (Mayun) Is.	8	Okinotori Is.	14	Lake Ontario	20	Chamkharchhu (Bhutan)
3	Riyadh	9	Sea of Japan	15	Lake Mead	21	Sohar Port
4	Mekelle (Tigray)	10	Taklamakan	16	Naoero (Nauru)	22	Pickaxe Mt.
5	Black Sea	11	Aral Sea	17	Christmas Is.	23	Nevados de Chillán
6	Moldova	12	Panama quake	18	Lord Howe Is.	24	Yenisei R. (Siberia)

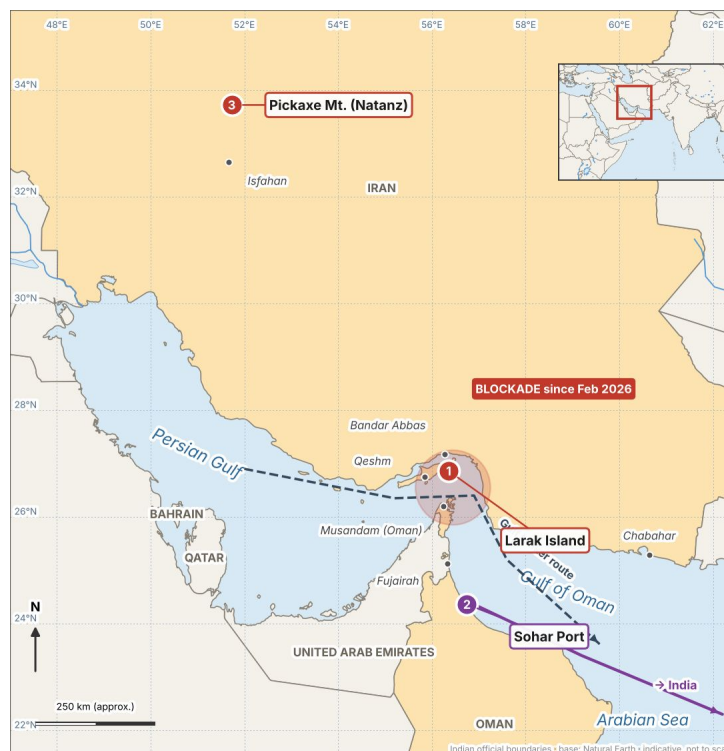
Pins 23 (Nevados de Chillán) and 24 (Yenisei R., Siberia) appear only on the world map; they have no regional card in the source.

PART B · World: regional maps

WEST ASIA · Jul-Sep 2026

Strait of Hormuz under blockade

Themes on this map: Conflict / security · Infrastructure / economy



Map 2 · Strait of Hormuz: 1 Larak Island · 2 Sohar Port · 3 Pickaxe Mt. (Natanz). Blockade since Feb 2026.

1. Larak Island · Strait of Hormuz

In news: US strike on Larak drew Iranian missiles on US bases in Jordan (~1 Sep); Indian-crewed tankers attacked in Aug → India's '**Seafarer-First**' plan.

- Strait under blockade since Feb 2026 (map label).

Static / map linkage

- Hormuz: **Persian Gulf ↔ Gulf of Oman**; Iran (N), Musandam-Oman (S).
- Larak lies **S of Hormuz Is., SE of Qeshm** (largest Gulf island); Bandar Abbas is the Iranian port on the strait.
- Map reference points: Bahrain, Qatar, UAE (Fujairah), Oman (Musandam), Chabahar (Iran, on the Gulf of Oman).

2. Sohar Port (Oman)

WEST ASIA · INFRASTRUCTURE

In news: Oman pitched Sohar to India (Sep) as a **Hormuz bypass** for Gulf energy.

Static / map linkage

- On the **Gulf of Oman — outside the strait**, like Fujairah (UAE) & Chabahar (Iran).
- Trap: Bandar Abbas is *on* the strait, not outside it.

3. Pickaxe Mountain (Iran)

WEST ASIA · CONFLICT

In news: US strike threats (late Jul) over suspected **deep nuclear tunnels**.

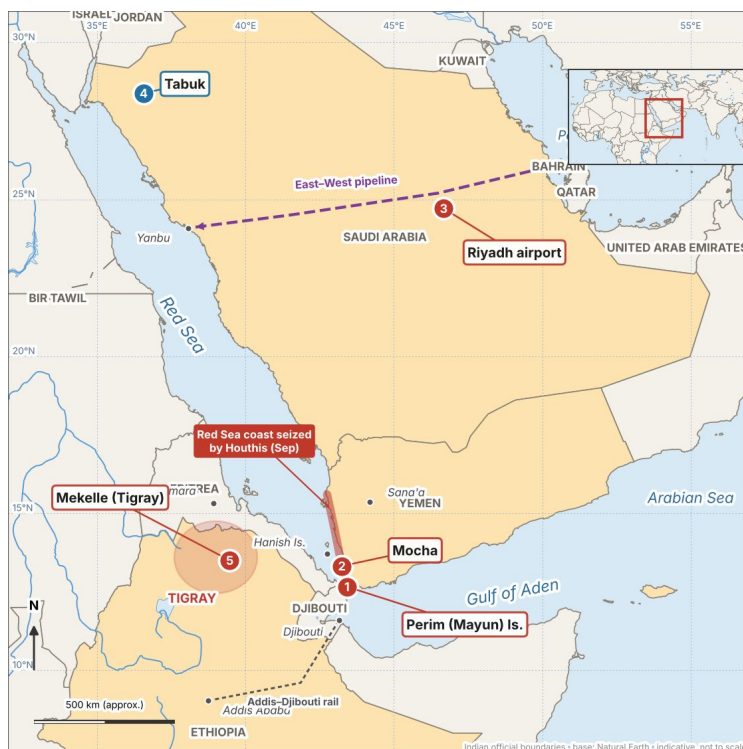
Static / map linkage

- Beside the **Natanz** enrichment site (central Iran, N of Isfahan); **Fordow** is near Qom — don't swap them.

WEST ASIA & AFRICA · Jul-Oct 2026

Red Sea arc: Bab-el-Mandeb, Saudi Arabia, Tigray

Themes on this map: Conflict / security · Heritage / naming / diplomacy



Map 3 · Red Sea arc: 1 Perim (Mayun) Is. · 2 Mocha · 3 Riyadh airport · 4 Tabuk · 5 Mekelle (Tigray). Red Sea coast seized by Houthis (Sep).

4. Perim (Mayun) Is. & Mocha · Bab-el-Mandeb

WEST ASIA · CONFLICT

In news: Houthis took **Perim and the Hanish Is. on 11 Sep**, after **Mocha (10 Sep)**; blockade on Saudi ships since Jul.

- Map pins 1 (Perim) and 2 (Mocha) — Yemen's Red Sea coast seized by the Houthis (Sep).

Static / map linkage

- Perim (~13 km²) **splits the strait into two channels.**
- Strait: **Yemen ↔ Djibouti/Eritrea; Red Sea ↔ Gulf of Aden.**
- Hanish Is. lie further N in the southern Red Sea; Addis-Djibouti rail links landlocked Ethiopia to Djibouti port.

5. Riyadh

WEST ASIA · CONFLICT

In news: Missiles hit the airport's domestic terminals, **10-11 Oct** (13 dead, one Indian).

Static / map linkage

- With Hormuz shut, Saudi crude flows west by the **East-West pipeline to Yanbu** (Red Sea coast).

6. Tabuk

WEST ASIA · DIPLOMACY

In news: UAE-Israel flight made an **emergency landing here, 30 Sep.**

Static / map linkage

- **NW Saudi Arabia**, near the **Gulf of Aqaba** (Jordan, Israel to the north).

7. Tigray (Ethiopia) · Mekelle

AFRICA · CONFLICT

In news: Worst fighting since 2022: **TPLF left Mekelle 3-4 Oct**; Ethiopia-Eritrea ties broken.

- Separately, an **Amhara landslide killed 14 (Aug).**

Static / map linkage

- Ethiopia **landlocked since 1993** (Eritrea's independence); trades via **Djibouti.**
- Ethiopia's neighbours: Eritrea, Djibouti, Somalia, Kenya, South Sudan, Sudan (not Uganda).

EUROPE · Jul-Sep 2026

Black Sea shipping war & Moldova

Themes on this map: Conflict / security · Infrastructure / economy · Heritage / naming / diplomacy



Map 4 · Black Sea: 1 Black Sea (ship strikes, x = indicative) · 2 Bosphorus · 3 Chişinău (Moldova); dashed = 2022 grain corridor (Odesa → Bosphorus).

8. Black Sea

EUROPE · CONFLICT

In news: 25+ Turkish-owned ships hit since late Jun; Türkiye sent Russia & Ukraine a **draft memorandum (17 Sep)** modelled on the **2022 grain deal**.

Static / map linkage

- **6 littorals:** Türkiye, Bulgaria, Romania, Ukraine, Russia, Georgia.
- **Kerch Strait → Sea of Azov;** ports on map: Odesa, Constanţa, Novorossiysk.

10. Moldova

EUROPE · DIPLOMACY

In news: **First-ever visit by an Indian President** (22 Jul).

Static / map linkage

- **Landlocked** between the **Prut & Dniester**; borders **Romania, Ukraine** only. Capital Chişinău.
- **Transnistria:** breakaway strip **E of the Dniester**.

9. Turkish Straits (Bosphorus)

EUROPE · INFRASTRUCTURE

In news: Türkiye's **leverage over passage**.

Static / map linkage

- **Bosphorus → Sea of Marmara → Dardanelles** (to the Aegean).
- **Montreux Convention 1936** governs passage through the straits.

NORTH-WEST PACIFIC · Jul-Oct 2026

Kamchatka quake, Okinotori drills, Sea of Japan missiles

Themes on this map: Disaster / natural event · Conflict / security



Map 5 · NW Pacific: 1 Kamchatka M7.0 · 2 Okinotori Island (200-nm EEZ claimed by Japan) · 3 Sea of Japan (missile arcs).

11. Kamchatka (Russia) NW PACIFIC · DISASTER

In news: **M7.0 quake on 16 Oct** at ~130-150 km depth; **no tsunami**.

Static / map linkage

- Pacific Plate subducts at the **Kuril-Kamchatka Trench**; nearest city Petropavlovsk-Kamchatsky.
- Deep focus** → **less damage**; the July 2025 M8.8 was shallow.
- Peninsula between the **Sea of Okhotsk** (W) and the Pacific / Bering Sea (E).

12. Okinotori Island (Japan) NW PACIFIC · CONFLICT

In news: **Chinese & Russian live-fire drills** nearby (late Jul).

Static / map linkage

- Coral atoll in the **Philippine Sea**.
- Japan claims a **200-nm EEZ**; China calls it a 'rock' (**UNCLOS Art. 121(3)**): rocks that cannot sustain habitation get no EEZ).

13. Sea of Japan (East Sea) NW PACIFIC · CONFLICT

In news: **N. Korea fired two missiles** into it (~22 Sep).

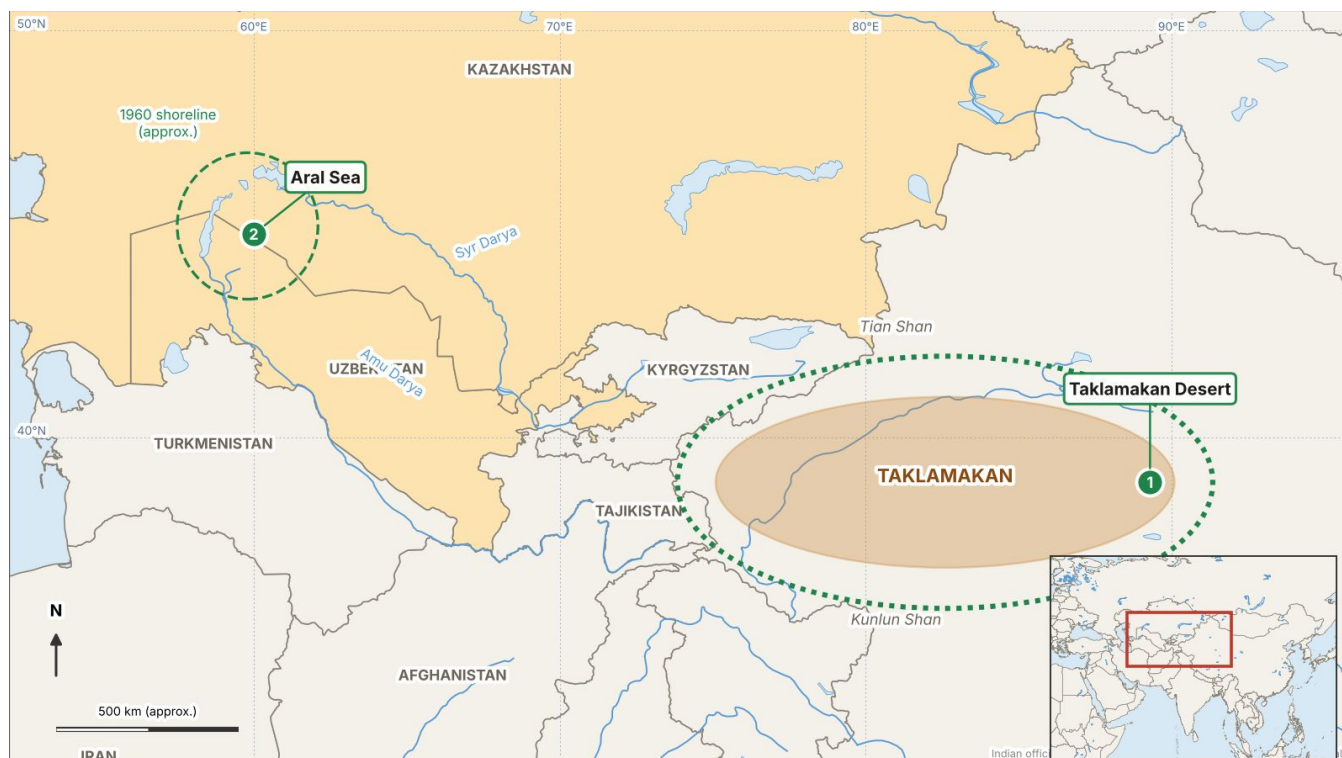
Static / map linkage

- Tsushima Strait** → **East China Sea**; **La Pérouse** → **Sea of Okhotsk**.
- Littorals: Russia, North Korea, South Korea, Japan.

CENTRAL ASIA · Jul-Sep 2026

Taklamakan green belt & the dying Aral

Themes on this map: Environment / wildlife



Map 6 · Central Asia: 1 Taklamakan Desert · 2 Aral Sea (dashed = 1960 shoreline, approx.).

14. Taklamakan (Xinjiang, China)

CENTRAL ASIA · ENVIRONMENT

In news: China's **rim tree belt** to stop shifting sands (Sep).

Static / map linkage

- Fills the **Tarim Basin** between the **Tian Shan (N) & Kunlun (S)**.
- Map neighbours to the W: Kyrgyzstan, Tajikistan.

15. Aral Sea

CENTRAL ASIA · ENVIRONMENT

In news: Dried bed has released **200+ Tg of carbon** (Jul study).

Static / map linkage

- **Kazakhstan (N) / Uzbekistan (S)**; fed by the **Amu Darya & Syr Darya**.
- Shrunk far inside its 1960 shoreline (Soviet-era irrigation diversions).

AMERICAS · Aug-Oct 2026

Panama quake, Masaya volcano, renamed & shrinking lakes

Themes on this map: Disaster / natural event · Heritage / naming / diplomacy · Environment / wildlife



Map 7 · Americas: 1 Panama M7.7 · 2 Masaya Volcano · 3 Lake Ontario · 4 Lake Mead.

16. Panama

AMERICAS · DISASTER

In news: **M7.7 shallow quake on 9 Oct**, then M6.6 + 100+ aftershocks; emergency declared, **Canal unaffected**.

Static / map linkage

- Isthmus between **Costa Rica & Colombia**; Canal links Caribbean Sea ↔ Pacific.
- **Cocos-Nazca-Caribbean** plate junction.

17. Masaya (Nicaragua)

AMERICAS · DISASTER

In news: **Magma shifting between reservoirs** (Oct study).

Static / map linkage

- Caldera ~**20 km SE of Managua**; Nicaragua lies between Honduras (N) and Costa Rica (S).

18. Lake Ontario

AMERICAS · NAMING

In news: **US order to call it 'Lake America'** (~1 Sep); Canada objected.

Static / map linkage

- **Smallest Great Lake by area**; drains via the **St Lawrence** to the Atlantic.
- Shared by the USA and Canada.

19. Lake Mead

AMERICAS · ENVIRONMENT

In news: **Lowest level since filling**, ~90 years ago (Aug).

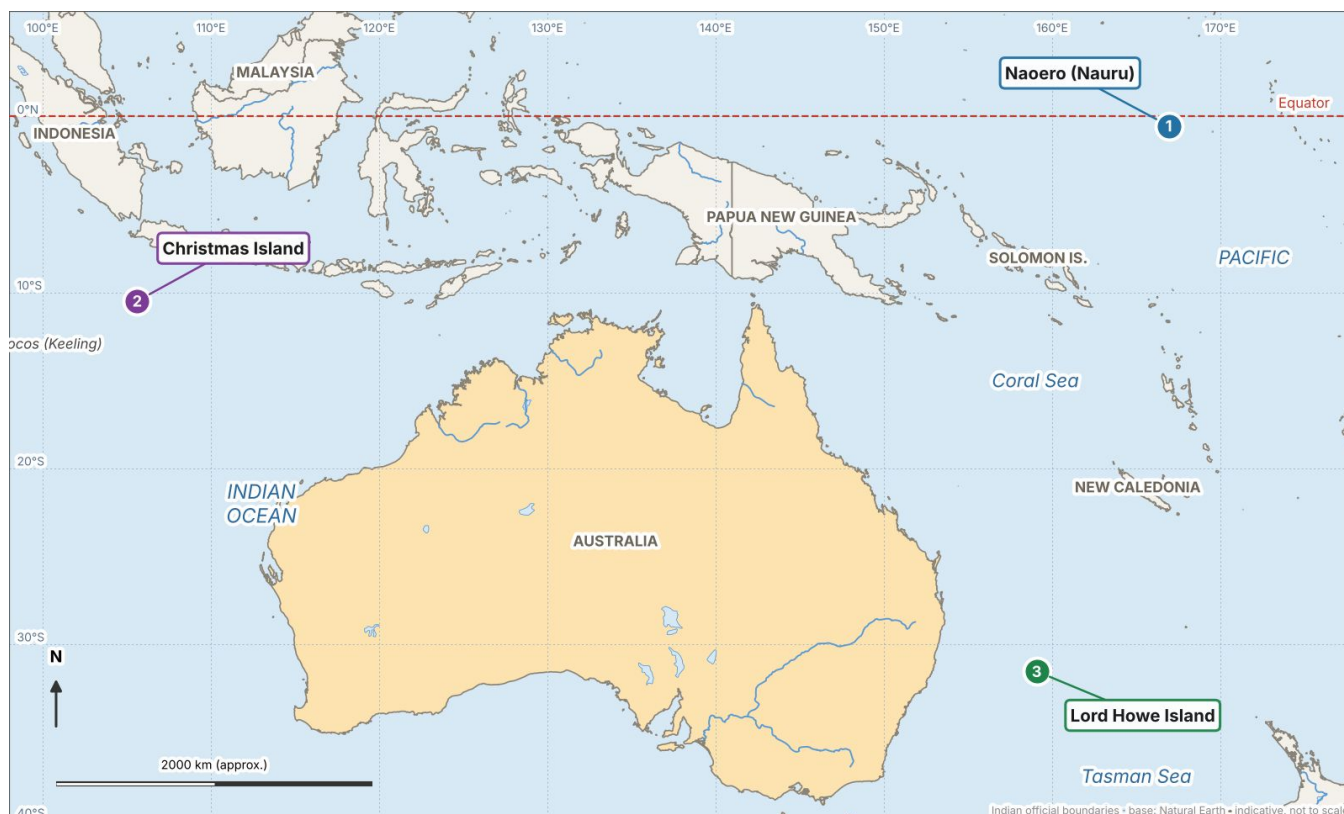
Static / map linkage

- **Hoover Dam** reservoir on the **Colorado** River (Nevada-Arizona).

OCEANIA · Aug-Sep 2026

Naoero, Christmas Island, Lord Howe Island

Themes on this map: Heritage / naming / diplomacy · Infrastructure / economy · Environment / wildlife



Map 8 · Oceania: 1 Naoero (Nauru) · 2 Christmas Island · 3 Lord Howe Island.

20. Naoero (formerly Nauru)

OCEANIA · NAMING

In news: Adopted its **indigenous name** (Aug).**Static / map linkage**

- ~21 km² coral island **just S of the Equator** (central Pacific); **phosphate** history.

22. Lord Howe Island (Australia)

OCEANIA · ENVIRONMENT

In news: Record plastic in seabird chicks (Sep).**Static / map linkage**

- **Volcanic**, in the **Tasman Sea**; **UNESCO** World Heritage site.

21. Christmas Island (Australia)

OCEANIA · INFRASTRUCTURE

In news: **SpaceX Starship** towed **here** after 24 days adrift (Aug).**Static / map linkage**

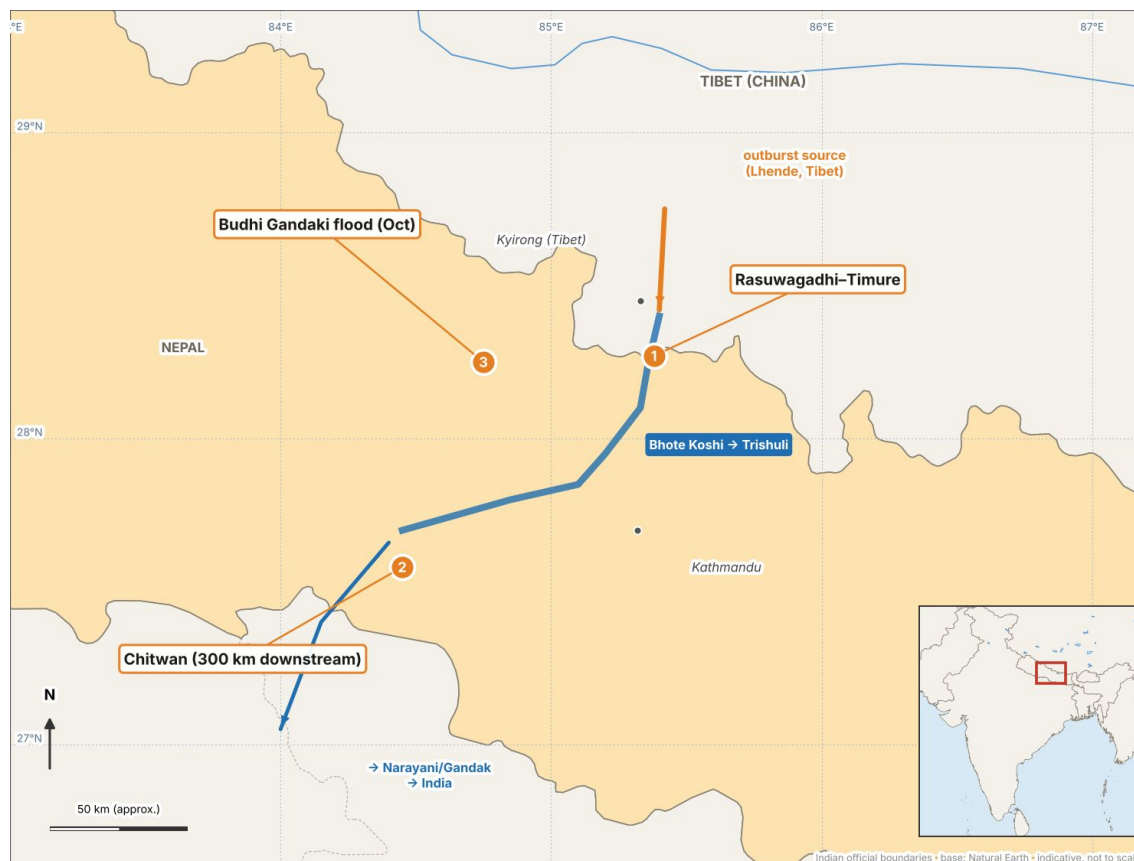
- **Indian Ocean**, **S of Java**; famous **red crab migration**. Cocos (Keeling) Is. lie further W.

PART C · Neighbourhood & India: regional maps

NEIGHBOURHOOD · Aug-Oct 2026

Rasuwa (Nepal): outburst flood from Tibet

Themes on this map: Disaster / natural event



Map 9 · Nepal: 1 Rasuwagadhi-Timure · 2 Chitwan (300 km downstream) · 3 Budhi Gandaki flood (Oct). Outburst source: Lhende, Tibet.

23. Rasuwa — Bhote Koshi

NEPAL · DISASTER

In news: 26 Aug: ice-rock avalanche/supraglacial-lake outburst in Tibet sent an **8-10 m wave** down the Bhote Koshi; **788 dead, 2,500+ missing** by 31 Aug.

Static / map linkage

- Lhende + Kyirong Tsangpo → Trishuli at Rasuwagadhi (Nepal-China trade point).

24. Trishuli → Gandak

NEPAL/INDIA · DISASTER

In news: Bodies found **300 km downstream** (Chitwan); India's **NDRF on alert on the Gandak**.

Static / map linkage

- Trishuli → Narayani → Gandak (enters India at Valmiki Nagar) → Ganga at Patna.

25. Budhi Gandaki

NEPAL · DISASTER

In news: Flash flood swept **35+ homes in Gorkha** (Oct).

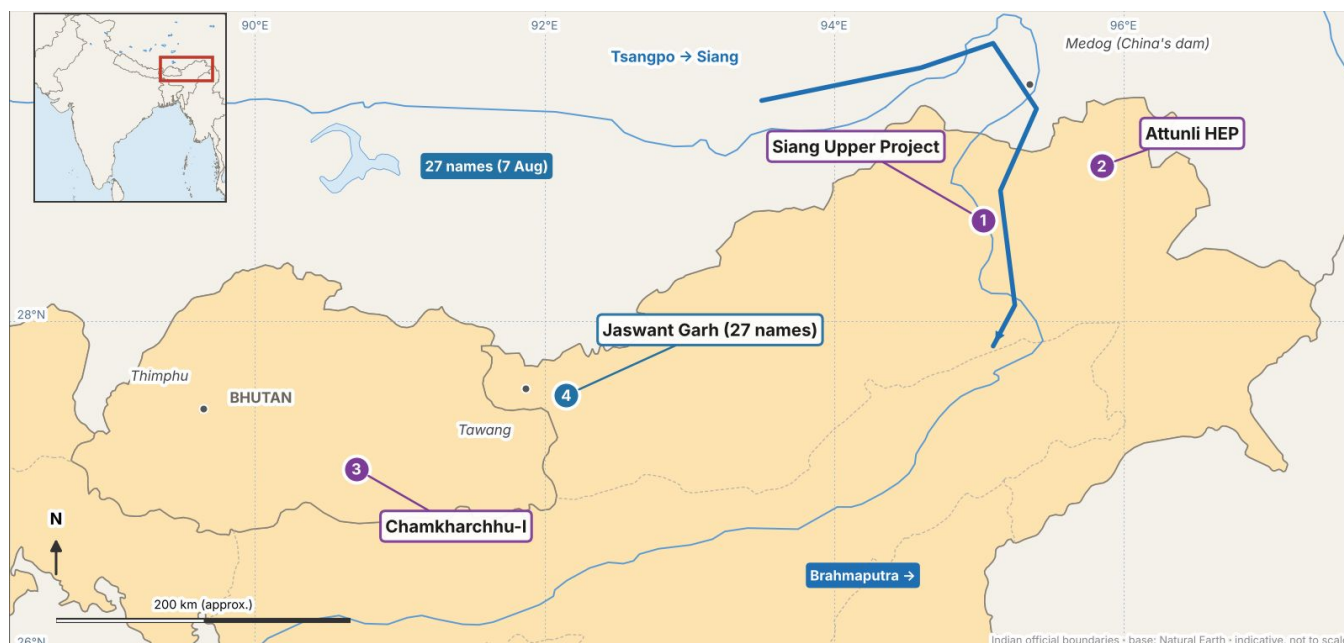
Static / map linkage

- GLOFs can strike with no local rain.

NEIGHBOURHOOD / INDIA · Aug-Oct 2026

Bhutan & Arunachal: dams and map names

Themes on this map: Infrastructure / economy · Heritage / naming / diplomacy



Map 10 · Bhutan & Arunachal: 1 Siang Upper Project · 2 Attunli HEP · 3 Chamkharchhu-I · 4 Jaswant Garh (27 names, 7 Aug). Medog = China's dam.

26. Siang Upper Multipurpose Project (11,200 MW)

ARUNACHAL · INFRASTRUCTURE

In news: *Adi protests*; 4 detained on 10 Oct.

Static / map linkage

- **Tsangpo → Siang** after the Great Bend; Siang + **Dibang + Lohit = Brahmaputra**.
- Buffer vs China's **Medog** dam.

27. Attunli HEP (680 MW)

ARUNACHAL · INFRASTRUCTURE

In news: *EAC cleared it (Sep).*

Static / map linkage

- **Dibang Valley**; run-of-river project.

28. Chamkharchhu-I (Bhutan, 770 MW)

BHUTAN · INFRASTRUCTURE

In news: *Adani-DGPC agreement*, 7 Oct.

Static / map linkage

- **Zhemgang** district; **Manas system** → **Brahmaputra**.

29. 27 standard names (Arunachal)

ARUNACHAL · NAMING

In news: *MHA put 27 names on Survey of India maps, 7 Aug*, countering China.

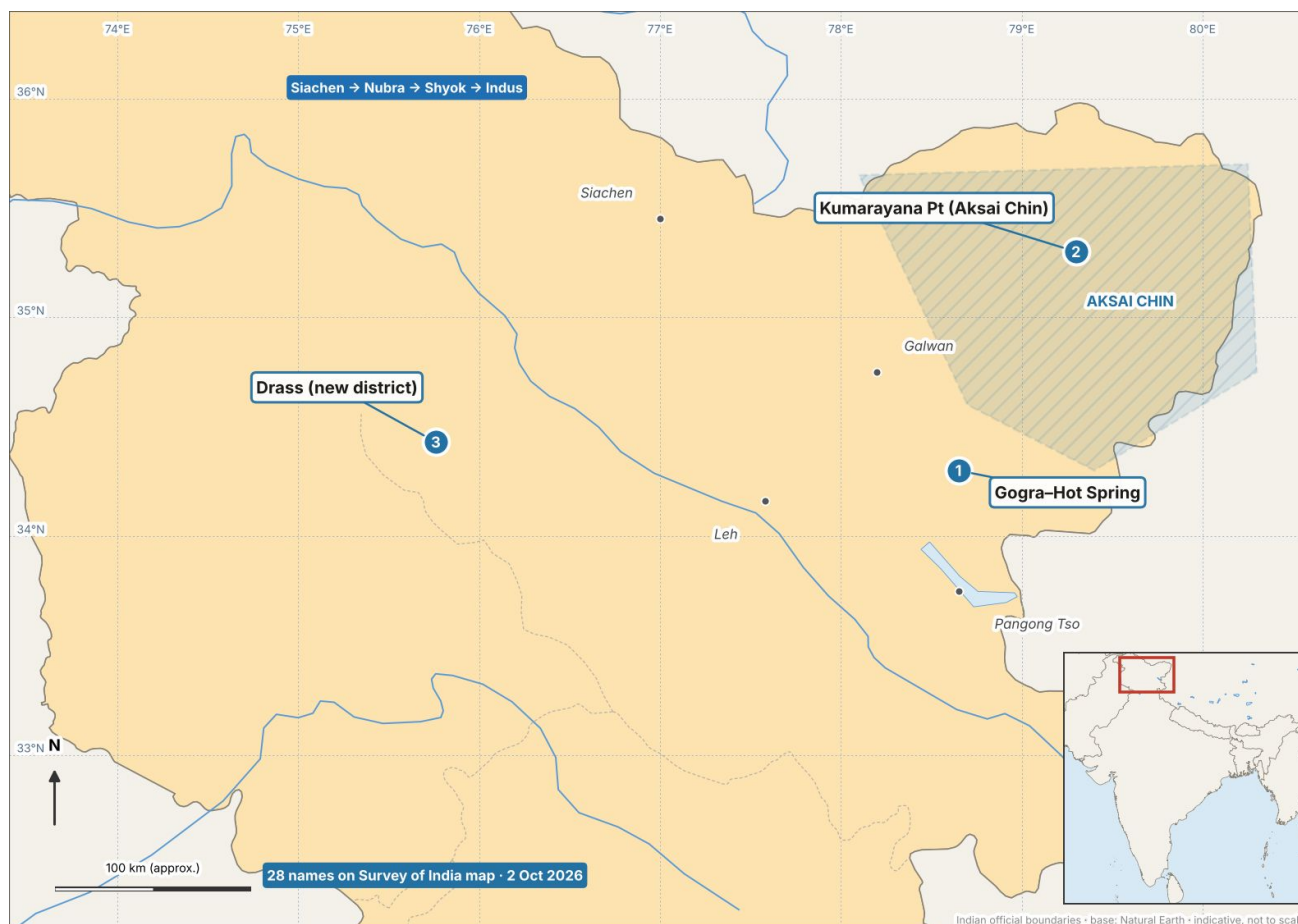
Static / map linkage

- **21 places, 4 passes, Sambho Sarovar, Sher-e-Thapa Memorial** (map pin: Jaswant Garh, near Tawang).

INDIA · Oct 2026

Ladakh: 28 names on the official map

Themes on this map: Heritage / naming / diplomacy



Map 11 · Ladakh: 1 Gogra-Hot Spring · 2 Kumarayana Pt (Aksai Chin) · 3 Drass (new district). 28 names on Survey of India map, 2 Oct 2026.

30. Gogra & Hot Spring

LADAKH · NAMING

In news: Among **28 features named on 2 Oct**; 2020 standoff points.

Static / map linkage

- **Galwan clash 15 Jun 2020**; other map points: Pangong Tso, Leh, Siachen.

31. Aksai Chin names

LADAKH · NAMING

In news: Several new names lie in **Aksai Chin**, India's territory under Chinese occupation.

Static / map linkage

- **Kanishka & Zorawar peaks, Guru Rinpoche Lake, Yangpa R.** (map pin: Kumarayana Pt).

32. New districts (2026)

LADAKH · ADMIN

In news: **Sham, Nubra, Changthang, Zaskar, Drass.**

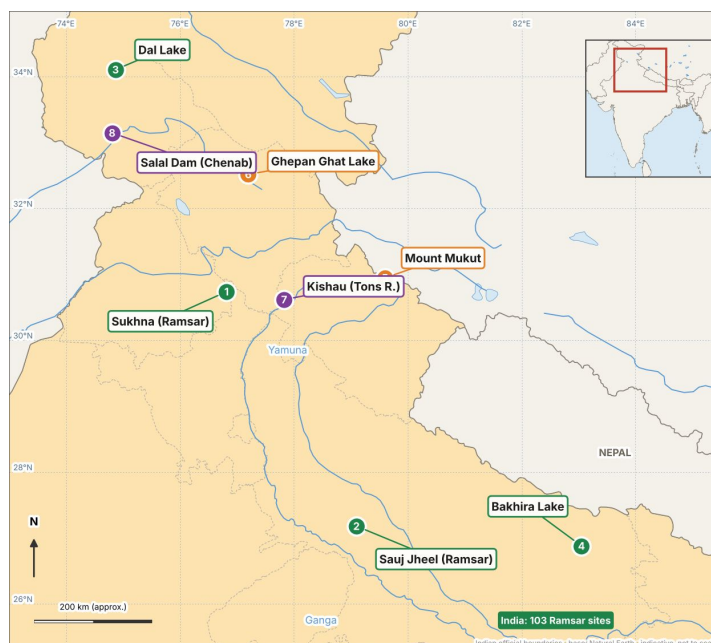
Static / map linkage

- River chain: **Siachen → Nubra → Shyok → Indus.**

INDIA · Jul-Oct 2026

North India: Ramsar sites, lakes, peaks & dams

Themes on this map: Environment / wildlife · Disaster / natural event · Infrastructure / economy



Map 12 · North India: 1 Sukhna · 2 Sauj Jheel · 3 Dal Lake · 4 Bakhira Lake · 5 Mount Mukut · 6 Ghepan Ghat Lake · 7 Kishau (Tons R.) · 8 Salal Dam. India: 103 Ramsar sites.

33. Sukhna (Chandigarh)

CHANDIGARH · RAMSAR

*In news: Ramsar site; India's tally **103** (15 Oct).***Static / map linkage**

- Shivalik foothills; on the **Central Asian Flyway**.

34. Sauj Jheel (Mainpuri, UP)

UP · RAMSAR

*In news: Ramsar site (designated with Sukhna).***Static / map linkage**

- **Ganga floodplain**; Mainpuri's **2nd** Ramsar site after **Saman** (UP — not Haryana).

35. Dal Lake

J&K · LAKE

*In news: HC banned motorboats & jet skis (Oct).***Static / map linkage**

- Srinagar, Kashmir Valley (Jhelum basin).

36. Bakhira (Sant Kabir Nagar)

UP · WETLAND

*In news: Floodplain wetland in news (Sep).***Static / map linkage**

- **Ghaghara-Rapti** plain, eastern UP.

37. Mount Mukut (7,045 m)

UTTARAKHAND · PEAK

*In news: Coast Guard team summited (Oct).***Static / map linkage**

- **Garhwal** Himalaya, near **Kamet**.

38. Ghepan Ghat Lake (Lahaul)

HP · GLOF

*In news: GLOF risk flagged (Sep).***Static / map linkage**

- **Chandra + Bhaga** → **Chenab**.

39. Kishau project

TONS R. · DAM

*In news: 6-state MoU (Sep).***Static / map linkage**

- On the **Tons**, the largest Himalayan tributary of the Yamuna.

40. Salal Dam

J&K · DAM

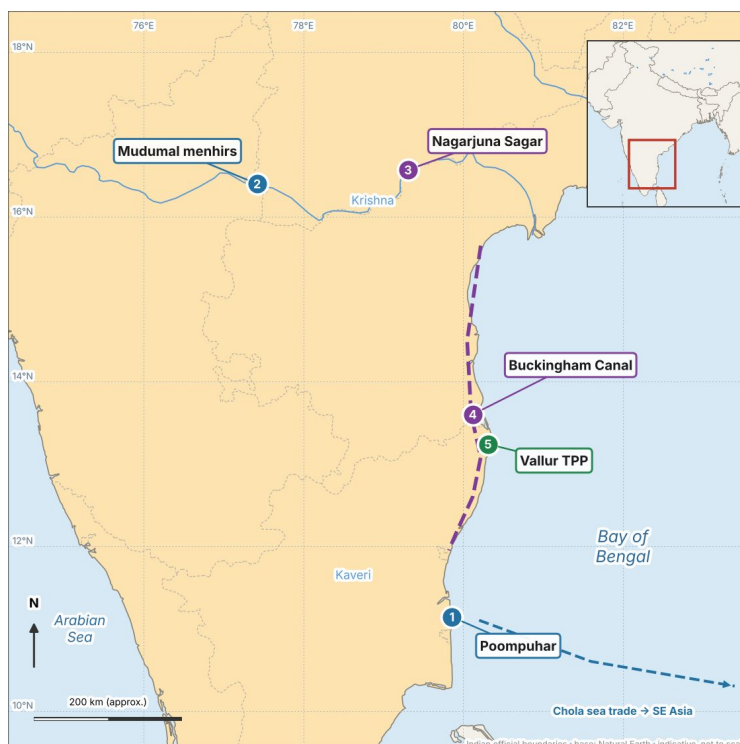
*In news: All gates opened after rain (Jul).***Static / map linkage**

- **690 MW**, on the **Chenab** (an IWT western river).

INDIA · Jul-Oct 2026

Peninsula: Poompuhar, Mudumal, Krishna & Coromandel

Themes on this map: Heritage / naming / diplomacy · Infrastructure / economy · Environment / wildlife



Map 13 · Peninsula: 1 Poompuhar · 2 Mudumal menhirs · 3 Nagarjuna Sagar · 4 Buckingham Canal · 5 Vallur TPP. Arrow = Chola sea trade → SE Asia.

41. Poompuhar

TAMIL NADU · HERITAGE

In news: Undersea survey (Sep): **torpedo-jar piece, 4 ring wells, 250+ shards**.

Static / map linkage

- At the **Kaveri mouth**; early Chola port **Puhar** (Kaveripattinam).

42. Mudumal (Telangana)

TELANGANA · HERITAGE

In news: Excavation tender (14 Oct) for **UNESCO bid**.

Static / map linkage

- ~80 **menhirs** on the **Krishna**; on the **Tentative List 2025**.

43. Nagarjuna Sagar

TELANGANA-AP · INFRASTRUCTURE

In news: Completed **59 years** (Aug).

Static / map linkage

- **Masonry dam** on the **Krishna** (Telangana-AP).

44. Buckingham Canal

COROMANDEL · INFRASTRUCTURE

In news: **TN revived restoration** (Aug).

Static / map linkage

- **Coastal canal** via Chennai to **Marakkanam**.

45. Vallur TPP

TAMIL NADU · ENVIRONMENT

In news: NGT case: **hot effluent into the Kosasthalaiyar** (Sep).

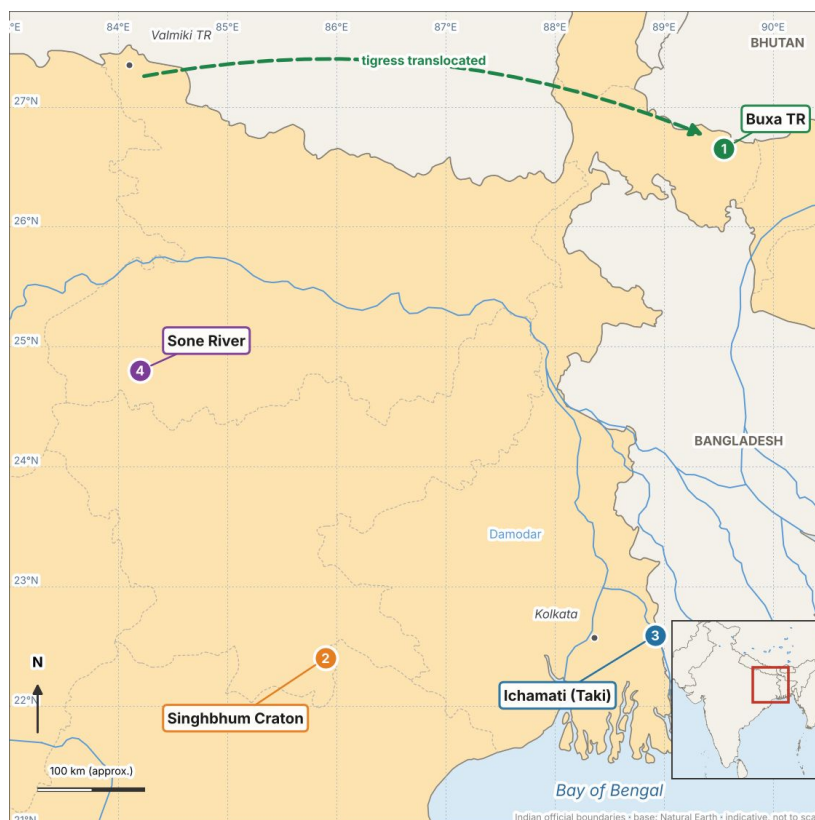
Static / map linkage

- North of Chennai, Coromandel coast (Bay of Bengal).

INDIA · Jul-Oct 2026

East India: Buxa tigress, Singhbhum, Ichamati, Sone

Themes on this map: Environment / wildlife · Disaster / natural event · Heritage / naming / diplomacy · Infrastructure / economy



Map 14 · East India: 1 Buxa TR (tigress translocated from Valmiki TR) · 2 Singhbhum Craton · 3 Ichamati (Taki) · 4 Sone River.

46. Buxa TR (West Bengal)

EAST INDIA · ENVIRONMENT

In news: *Tigress from Valmiki released (2 Oct) — reintroduction.***Static / map linkage**

- Borders **Bhutan**; **Manas** to the east. Valmiki TR is in Bihar (W Champaran).

47. Singhbhum Craton

EAST INDIA · GEOLOGY

In news: *3.5-bn-yr rocks may hold earliest traces of life (Aug).***Static / map linkage**

- Jharkhand-Odisha.**

48. Ichamati

WEST BENGAL · BORDER

In news: *Border curbs changed immersion at Taki (Oct).***Static / map linkage**

- Marks part of the **India-Bangladesh border.**

49. Sone

BIHAR-JHARKHAND · INFRASTRUCTURE

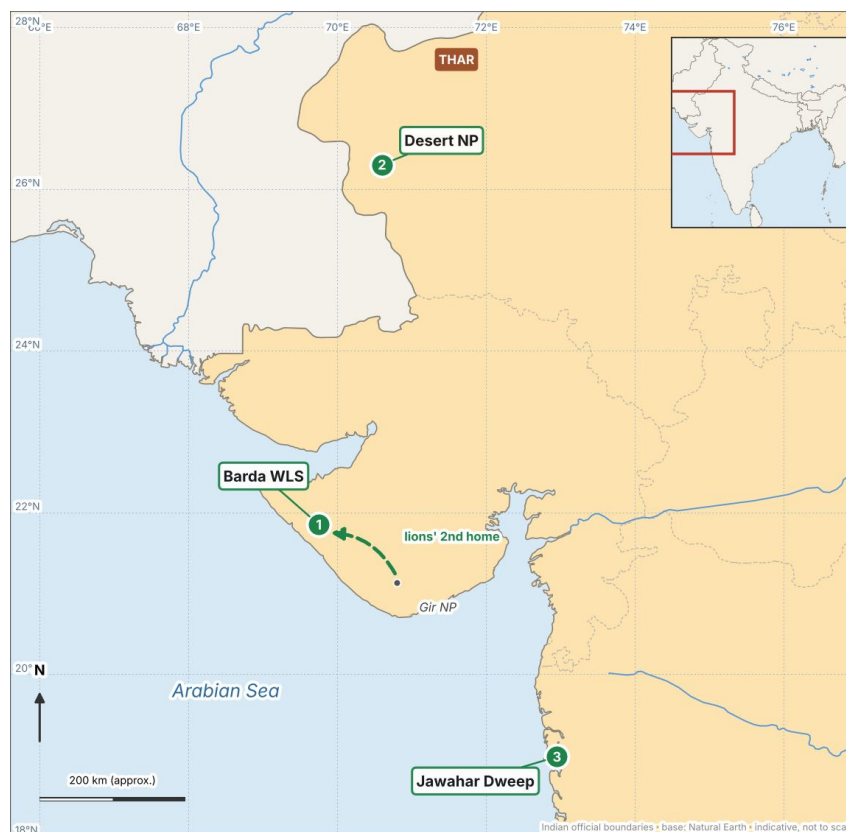
In news: *Bihar-Jharkhand water-sharing pact (Jul).***Static / map linkage**

- Rises at **Amarkantak**; joins the **Ganga near Patna.**

INDIA · Aug-Oct 2026

West India: Barda lions, Desert NP bustards, Jawahar Dweep

Themes on this map: Environment / wildlife



Map 15 · West India: 1 Barda WLS (lions' 2nd home, from Gir NP) · 2 Desert NP (Thar) · 3 Jawahar Dweep.

**50. Barda WLS
(Gujarat)**

WEST INDIA · ENVIRONMENT

In news: ₹15 lakh/family relocation of *maldharis* (Oct) for lions' 2nd home.**Static / map linkage**

- Porbandar-Devbhumi Dwarka; W of Gir NP on the Saurashtra peninsula.

**51. Desert NP
(Rajasthan)**

WEST INDIA · ENVIRONMENT

In news: First captive-bred Great Indian Bustards released (4 Oct).**Static / map linkage**

- Jaisalmer-Barmer (Thar); GIB Critically Endangered.

**52. Jawahar
Dweep (Mumbai)**

WEST INDIA · INFRASTRUCTURE

In news: India's first plastic-free oil terminal (Oct).**Static / map linkage**

- Butcher Island, Mumbai harbour.

PART D · Revision: India at a glance



Map 16 · India at a glance — cover the key and name each pin.

#	Place	#	Place	#	Place	#	Place
1	Gogra-Hot Spring (Ladakh)	7	Dal Lake	13	Poompuhar	19	Buxa TR
2	Arunachal (27 names)	8	Bakhira Lake	14	Mudumal	20	Sone River
3	Siang Upper Project	9	Mount Mukut	15	Nagarjuna Sagar	21	Barda WLS
4	Attunli HEP	10	Ghepan Ghat Lake	16	Buckingham Canal	22	Desert NP
5	Sukhna Wetland	11	Kishau project	17	Singhbhum Craton	23	Jawahar Dweep
6	Sauj Jheel	12	Salal Dam	18	Ichamati (Taki)	24	Bhavani-Kaveri

Pin 24 (Bhavani-Kaveri) appears only on the India map; it has no regional card in the source.

Quick revision table

Place	Where / map anchor	Why in news
Larak Island	S of Hormuz Is., SE of Qeshm; Strait of Hormuz	US strike → Iranian missiles on US bases in Jordan (~1 Sep)
Sohar Port	Oman, Gulf of Oman (outside strait)	Pitched to India as Hormuz bypass (Sep)
Pickaxe Mountain	Beside Natanz, Iran	US threats over deep nuclear tunnels (late Jul)
Perim / Hanish / Mocha	Bab-el-Mandeb, Yemen	Seized by Houthis 10–11 Sep
Riyadh	Saudi Arabia	Airport domestic terminals hit, 10–11 Oct
Tabuk	NW Saudi Arabia, near Gulf of Aqaba	UAE-Israel flight emergency landing, 30 Sep
Mekelle (Tigray)	N Ethiopia	TPLF left, 3–4 Oct
Black Sea	6 littorals; Kerch Str. → Azov	25+ Turkish ships hit; draft memorandum 17 Sep
Turkish Straits	Bosporus–Marmara–Dardanelles	Türkiye's leverage; Montreux 1936
Moldova	Between Prut & Dniester	First Indian Presidential visit, 22 Jul
Kamchatka	Kuril–Kamchatka Trench	M7.0 deep quake, 16 Oct; no tsunami
Okinotori	Philippine Sea	China–Russia drills (late Jul); EEZ dispute
Sea of Japan	Tsushima / La Pérouse straits	Two DPRK missiles (~22 Sep)
Taklamakan	Tarim Basin, Xinjiang	Rim tree belt (Sep)
Aral Sea	Kazakhstan / Uzbekistan	200+ Tg carbon from dried bed (Jul)
Panama	Costa Rica–Colombia isthmus	M7.7 quake 9 Oct; Canal unaffected
Masaya	~20 km SE of Managua	Magma shifting (Oct study)
Lake Ontario	US–Canada; St Lawrence	'Lake America' order (~1 Sep)
Lake Mead	Colorado R., Hoover Dam	Lowest level in ~90 yrs (Aug)
Naoero	Just S of Equator	Nauru adopts indigenous name (Aug)
Christmas Island	Indian Ocean, S of Java	Starship towed in (Aug)
Lord Howe Island	Tasman Sea; UNESCO	Record plastic in seabird chicks (Sep)
Rasuwa / Bhote Koshi	Nepal–Tibet border	Outburst flood 26 Aug; 788 dead
Trishuli → Gandak	Enters India at Valmiki Nagar	NDRF alert; bodies 300 km downstream
Budhi Gandaki	Gorkha, Nepal	Flash flood, 35+ homes (Oct)
Siang Upper (11,200 MW)	Siang, Arunachal	Adi protests; 4 detained 10 Oct
Attunli HEP (680 MW)	Dibang Valley	EAC clearance (Sep)
Chamkharchhu-I (770 MW)	Zhemgang, Bhutan	Adani-DGPC deal, 7 Oct
27 names (Arunachal)	Survey of India maps	MHA, 7 Aug
28 names (Ladakh)	Incl. Gogra, Hot Spring, Aksai Chin	Named 2 Oct
Sukhna / Sauj Jheel	Chandigarh / Mainpuri (UP)	Ramsar; tally 103 (15 Oct)
Dal Lake	Srinagar	HC ban on motorboats, jet skis (Oct)
Bakhira	Sant Kabir Nagar, UP	Floodplain wetland (Sep)
Mount Mukut (7,045 m)	Garhwal, near Kamet	Coast Guard summit (Oct)
Ghepan Ghat Lake	Lahaul, HP	GLOF risk (Sep)
Kishau	Tons R.	6-state MoU (Sep)
Salal Dam (690 MW)	Chenab	All gates opened (Jul)
Poompuhar	Kaveri mouth	Undersea survey finds (Sep)
Mudumal	Krishna, Telangana	Excavation tender 14 Oct; UNESCO bid
Nagarjuna Sagar	Krishna (Telangana–AP)	59 years (Aug)
Buckingham Canal	Coromandel, via Chennai	Restoration revived (Aug)
Vallur TPP	Kosasthalaiyar, TN	NGT case (Sep)
Buxa TR	WB, borders Bhutan	Valmiki tigress released 2 Oct
Singhbhum Craton	Jharkhand–Odisha	3.5-bn-yr rocks, early life (Aug)
Ichamati	India–Bangladesh border	Immersion at Taki changed (Oct)
Sone	Amarkantak → Ganga near Patna	Bihar–Jharkhand pact (Jul)
Barda WLS	Porbandar–Devbhumi Dwarka	Maldhari relocation (Oct)
Desert NP	Jaisalmer–Barmer	Captive-bred GIBs released 4 Oct
Jawahar Dweep	Butcher Is., Mumbai	First plastic-free oil terminal (Oct)

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Awards — Nobel Prizes 2026

Announced October 2026 · category-wise Prelims technicalities: core concepts, key terms, linked facts and likely traps

#	Topic	Area	#	Topic	Area
1	Physiology or Medicine — Optogenetics	Nobel · Science	5	Peace — Navi Pillay	Nobel · Peace
2	Physics — Neutrino astronomy (IceCube)	Nobel · Science	6	Economic Sciences — New Keynesian macro	Nobel · Economics
3	Chemistry — Chirality & homochirality	Nobel · Science	7	General Nobel technicalities	Static
4	Literature — Anne Carson	Nobel · Literature			

Each note: *In news* → key facts → **technical points** → **Prelims traps** → static linkage.

PART A · SCIENCE PRIZES

1. Physiology or Medicine 2026 — Optogenetics

NOBEL · 5 OCT

In news: **Karl Deisseroth** (USA; Stanford/HHMI), **Peter Hegemann** (Germany; Humboldt University, Berlin) and **Georg Nagel** (Germany; University of Würzburg).

- Citation: “for their discoveries concerning **light-gated ion channels and optogenetics**”.
- Awarded by the **Nobel Assembly at Karolinska Institutet**; prize **SEK 12 million** (raised from 11 million in 2025).
- Optogenetics lets scientists switch individual nerve cells on or off with light in a living brain, to map circuits for memory, emotion and behaviour.

Term	What to know
Optogenetics	Optics + genetics: genes for light-sensitive proteins inserted into specific neurons → neurons switched on/off by light with millisecond precision
Opsins	Light-sensitive membrane proteins; family includes rhodopsin of the human eye (a GPCR), microbial opsins (ion channels/pumps)
Channelrhodopsin (ChR1, ChR2)	Light-gated cation channel from the green alga <i>Chlamydomonas reinhardtii</i> (eyespot helps the alga swim toward light — phototaxis). ChR2 opens under blue light (~470 nm)
Halorhodopsin	Light-driven chloride pump (from archaea, <i>Natronomonas</i>); yellow light ; silences neurons
Archaeorhodopsin	Light-driven proton pump ; also silences neurons
Depolarisation	Influx of positive ions (Na ⁺ , Ca ²⁺) makes membrane less negative → action potential (neuron fires)
Gene delivery	Usually via harmless viral vectors — AAV (adeno-associated virus) , lentivirus; cell-type specificity via promoters
Light delivery	Implanted optical fibres / LEDs; red-shifted opsins penetrate tissue deeper
Chemogenetics (DREADDs)	Related tool — engineered receptors activated by designer drugs , not light (slower, non-invasive)

Technical points

- Channelrhodopsin comes from the single-celled green alga *Chlamydomonas*, which uses it to swim towards light.
- **Blue light** opens the channel → cations flow in → the membrane **depolarises** → an electrical impulse fires.
- **Nagel** expressed the algal gene in **frog eggs (oocytes)** → **channelrhodopsin-2**.
- **2003**: shown to work in human cells. **2005**: Deisseroth used it in rat neurons. **2006**: the term “optogenetics” was coined.
- The gene is delivered into target neurons (usually by viral vectors), and light reaches them through optical fibres.

Prelims traps

- Source organism is an **alga** (protist) — not the human retina, a bacterium, fungus or jellyfish (GFP — 2008 Chemistry Nobel — came from jellyfish).
- Optogenetics **requires genetic modification**: it is a genetic + optical method, not a drug, electrical stimulation or just shining light on the brain.
- Clinical use is still **experimental** — most advanced in **vision restoration (retinitis pigmentosa)**.

Static linkage

- Related Nobels: **2014** (place & grid cells — brain's GPS), **2017** (circadian rhythm), **2021** (TRPV1/Piezo — temperature & touch receptors).
- **2025** Medicine Nobel: Brunkow, Ramsdell and Sakaguchi — peripheral immune tolerance (regulatory T cells).

2. Physics 2026 — IceCube and cosmic neutrinos

NOBEL · 6 OCT

In news: **Francis Halzen** (born 1944 in Tienen, Belgium; University of Wisconsin-Madison), the **sole laureate**.

- Citation: “for decisive contributions to the **IceCube Neutrino Observatory** and the discovery of **high-energy neutrinos of astrophysical origin**”.
- He is the first sole Physics laureate since **Georges Charpak (1992)**.
- Halzen proposed using South Pole ice as a neutrino detector in **1988**. IceCube was completed in **2011**; the first astrophysical neutrinos were detected in **2013**.
- He was principal investigator of the precursor **AMANDA** and then of IceCube.

Term	What to know
Neutrino	Elementary particle; lepton ; no electric charge , tiny but non-zero mass ; spin $\frac{1}{2}$ (fermion); interacts only via weak force and gravity
Flavours	Three — electron, muon, tau neutrinos (+ antineutrinos)
Neutrino oscillation	Neutrinos change flavour while travelling → proves they have mass (Nobel 2015)
Sources	Sun (fusion), nuclear reactors, cosmic-ray collisions in atmosphere, supernovae, blazars/active galactic nuclei , Big Bang relics
Why useful	Uncharged → not bent by magnetic fields ; weakly interacting → not absorbed ; point straight back to source
Cherenkov radiation	Blue light emitted when a charged particle travels faster than light in that medium (not faster than light in vacuum) — the detection signal
Why deep ice/water/underground	Huge, transparent detection volume; overburden blocks cosmic-ray “noise”
IceCube	South Pole; 1 km³ of ice; 5,160 optical sensors on 86 strings, 1,450–2,450 m deep; completed 2011 ; predecessor AMANDA
Key results	2013 first cosmic high-energy neutrinos · 2017 blazar TXS 0506+056 · 2022 galaxy NGC 1068 · 2023 neutrino view of the Milky Way
Multi-messenger astronomy	Combining light (EM waves), neutrinos , cosmic rays and gravitational waves (LIGO, Nobel 2017)

Technical points

- IceCube instruments **1 cubic km of Antarctic ice** at the geographic South Pole with strings of optical sensors; more sensors were added in an **early-2026 upgrade**.
- A neutrino rarely interacts with matter; when it does, it produces fast charged particles that emit **Cherenkov light**, which the sensors record.
- Neutrinos: electrically neutral, tiny mass, interact only via the weak force, 3 flavours (e, μ , τ), oscillate between flavours.
- They travel unabsorbed and undeflected, so they point back to cosmic accelerators (blazars, active galaxies) — the basis of **neutrino astronomy**.

Prelims traps

- IceCube is at the **South Pole** (Antarctica), not in Greenland or deep underground in a mine.
- The detector medium is **ice**; it detects **light**, not the neutrino directly.
- Prize is **unshared (1/1)**, unlike the usual 2–3 laureates.
- Neutrinos are **not** charged and **not** dark-matter candidates of the standard kind (they are “hot”, relativistic).
- India's **Kolar Gold Fields (1965)** — early detection of atmospheric neutrinos.
- Neutrino Nobels: **1995** Reines (discovery), **2002** Davis & Koshiba (cosmic neutrinos), **2015** Kajita & McDonald (oscillation), **2026** Halzen.

Other neutrino detectors	Location / medium
Super-Kamiokande / Hyper-K	Kamioka mine, Japan — ultra-pure water
SNO / SNOLAB	Sudbury, Canada — heavy water
KM3NeT	Mediterranean Sea — seawater
Baikal-GVD	Lake Baikal, Russia — fresh water
DUNE	USA (Fermilab → South Dakota) — liquid argon
INO (proposed)	Bodi West Hills, Theni, Tamil Nadu — 50 kt magnetised iron calorimeter (ICAL); detects atmospheric neutrinos

Static linkage

- 2025** Physics Nobel: macroscopic quantum tunnelling in electric circuits.

3. Chemistry 2026 — How one-handedness amplifies

NOBEL · 7 OCT

In news: **Henri B. Kagan** (France; Université Paris-Saclay/Paris-Sud, Orsay) and **Kenso Soai** (Japan; Tokyo University of Science) — **equal shares**.

- Citation: “for the discovery of **non-linear effects** and **autocatalysis** in **asymmetric organic synthesis**”.
- Their work explains how **homochirality** (life uses only one mirror form) could arise spontaneously from a tiny initial imbalance.
- It matters for **drug manufacture**, where only one mirror form (enantiomer) is usually wanted.

Term	What to know
Chirality	Molecule not superimposable on its mirror image (Greek <i>cheir</i> = hand); usually due to a carbon with four different groups (stereocentre)
Enantiomers	The two mirror-image forms; same formula, melting point, boiling point; differ in rotating plane-polarised light and in biological action
Optical activity	Dextrorotatory (+, d) rotates light right; laevorotatory (–, l) left. Labels R/S and D/L describe structure, not necessarily rotation direction
Racemic mixture	50:50 mixture → net optical rotation zero
Enantiomeric excess (ee)	Excess of one form over the other (pure = 100% ee; racemic = 0%)
Homochirality	Life uses one hand only: L-amino acids in proteins, D-sugars (ribose, deoxyribose) in RNA/DNA

Asymmetric synthesis	Producing mainly one enantiomer, often using a chiral catalyst
Non-linear effect (Kagan, 1986)	Product ee is higher (or lower) than expected from catalyst ee — not a straight-line relation
Asymmetric autocatalysis (Soai, 1995)	Product catalyses its own formation with the same handedness → tiny imbalance amplified to near-100% ee (Soai reaction : diisopropylzinc addition to a pyrimidine aldehyde)
Catalyst vs autocatalyst	Catalyst speeds a reaction without being consumed; autocatalyst is a product of the reaction it speeds

Technical points

- Chirality: molecules that are non-superimposable mirror images (enantiomers), like left and right hands.
- **Kagan — non-linear effect (NLE)**: the purity (ee) of the product is not proportional to the ee of the chiral catalyst. In a **positive NLE** the product ends up purer than the catalyst — **chiral amplification**.
- **Soai — asymmetric autocatalysis** (the Soai reaction, 1995): alkylation of a **pyrimidine-5-carbaldehyde** with **diisopropylzinc** in which the product is its own chiral catalyst, so a tiny excess snowballs to near-pure single-handed product.
- Experimentally validated **Frank's 1953** model of spontaneous asymmetric synthesis.

Prelims traps

- **NLE is Kagan's** contribution; **autocatalysis is Soai's**.
- Autocatalysis means the product catalyses its own formation, not that the reaction runs without any catalyst.
- Life uses **L-amino acids** and **D-sugars**.
- Enantiomers have **identical physical properties** except interaction with polarised light and other chiral molecules — a common statement-based trap.
- **Louis Pasteur (1848)** first separated mirror-image crystals (tartaric acid); **Charles Frank (1953)** proposed the theoretical model of spontaneous homochirality.

Static linkage

- Asymmetric-chemistry Nobels: **2001** asymmetric catalysis (Knowles, Noyori, Sharpless); **2021** asymmetric organocatalysis (List, MacMillan). **2025** Chemistry: MOFs.
- **Thalidomide**: one enantiomer was a sedative, the other caused birth defects — why single-enantiomer drugs matter.

PART B · LITERATURE, PEACE, ECONOMICS**4. Literature 2026 — Anne Carson**

NOBEL · LITERATURE

In news: **Anne Carson** (Canada, b. 1950, Toronto) — poet, essayist, translator, classicist.

- Citation: bold and inventive oeuvre in playful dialogue with the **classical tradition**, creating **new forms** for contemporary literature.

Work	Year	Prelims tag
<i>Eros the Bittersweet</i>	1986	Essay on Sappho and desire — first book
<i>Autobiography of Red</i>	1998	Novel in verse; myth of Geryon & Herakles (via poet Stesichorus)
<i>The Beauty of the Husband</i>	2001	“Fictional essay in 29 tangos”; T. S. Eliot Prize
<i>If Not, Winter</i>	2002	Translation of Sappho's fragments
<i>Nox</i>	2010	Elegy for brother; accordion-folded book in a box
<i>Antigonick</i>	2012	Version of Sophocles' <i>Antigone</i>
<i>Red Doc></i>	2013	Sequel to <i>Autobiography of Red</i>

Technical points

- Key genre term: **verse novel** (narrative told in poetry).
- **“Oeuvre”** = whole body of work, not a single book.
- Classical sources recur: Sappho, Stesichorus, Sophocles.

Prelims traps

- Second Canadian Literature laureate after **Alice Munro (2013)** (Saul Bellow, 1976, was Canadian-born but a US citizen).
- Recent: 2025 László Krasznahorkai (Hungary), 2024 Han Kang (S. Korea), 2023 Jon Fosse (Norway), 2022 Annie Ernaux (France).

Static linkage

- India: **Tagore** (1913, *Gitanjali*) — first non-European and only Indian Literature laureate.

5. Peace 2026 — Navanethem “Navi” Pillay

NOBEL · PEACE

In news: **Navi Pillay** (South Africa; b. 1941, Durban; Indian Tamil origin). Announced in **Oslo** by the **Norwegian Nobel Committee**.

- Citation: efforts to promote **peace and international law**.

Institution / term	What to know
ICTR	International Criminal Tribunal for Rwanda — created by UNSC resolution (1994) under Ch. VII; seat Arusha, Tanzania ; closed 2015. Pillay: judge 1995–2003, President 1999–2003
Akayesu case (1998)	First international judgment that rape can constitute genocide ; also first conviction for genocide by an international court
ICC	Permanent court under Rome Statute (1998) , in force 2002, The Hague ; tries individuals for genocide, war crimes, crimes against humanity, aggression. India, USA, China, Russia not parties . Pillay: Appeals judge 2003–08
ICJ	Principal judicial organ of the UN (1945), The Hague; settles disputes between states ; 15 judges. Pillay: judge ad hoc in <i>The Gambia v. Myanmar</i> (Rohingya, Genocide Convention)
Judge ad hoc	Appointed by a party state to a case when it has no national judge on the ICJ bench (Gambia appointed Pillay)
OHCHR	UN High Commissioner for Human Rights — post created 1993 (Vienna Declaration); HQ Geneva . Pillay = 5th High Commissioner (2008–14)
UNHRC	UN Human Rights Council (2006, Geneva; 47 members) — distinct from OHCHR; set up the Commission of Inquiry on OPT & Israel that Pillay chaired (2021–25)
Genocide Convention	1948 ; defines genocide as acts intended to destroy a national, ethnical, racial or religious group; India is a party

Technical points

- Career arc: ICTR (judge, President) → ICC (Appeals) → OHCHR (5th High Commissioner) → UNHRC Commission of Inquiry → ICJ judge ad hoc.
- Akayesu (1998) is her landmark: rape as an act of genocide.

Prelims traps

- Pillay was **not** the first UN High Commissioner (that was **José Ayala-Lasso, 1994**).
- ICC ≠ ICJ: ICC tries **persons**, ICJ hears **states**; only ICJ is a **UN organ**.
- Peace Prize is the only one awarded in **Oslo**, by a committee appointed by the **Norwegian Parliament (Storting)**.

Static linkage

- South African Peace laureates: Luthuli 1960, Tutu 1984, Mandela & de Klerk 1993, Pillay 2026.
- **2025** Peace laureate: María Corina Machado.

6. Economic Sciences 2026 — New Keynesian macroeconomics

NOBEL · ECONOMICS

In news: **Robert E. Hall** (Stanford) and **Michael Woodford** (Columbia) — USA.

- Citation: **microeconomic foundations of macroeconomic stabilisation.**

Term	What to know
Stabilisation policy	Monetary & fiscal measures to smooth the business cycle — limit inflation and unemployment swings
Microfoundations	Building macro models from behaviour of individual households and firms (optimising, forward-looking)
Stagflation	High inflation + high unemployment + low growth together (1970s oil shocks) — broke the old Phillips-curve trade-off
Phillips curve	Inverse relation between inflation and unemployment (short run); the New Keynesian Phillips curve adds expected future inflation
Lucas critique (1976)	Policy changes alter people's expectations, so models without micro-behaviour mispredict (Robert Lucas, Nobel 1995)
Rational expectations	Agents use all available information to forecast the future
Permanent income hypothesis	Consumption depends on expected long-run income (Milton Friedman). Hall (1978): consumption follows a random walk
Sticky prices	Firms change prices infrequently (menu costs) → monetary policy has real short-run effects (Woodford)
Forward guidance	Central bank signals future policy path to shape expectations today
DSGE models	Dynamic Stochastic General Equilibrium — workhorse models of central banks, built on New Keynesian foundations
Taylor rule	Policy rate set according to inflation gap and output gap

Technical points

- Hall: consumption as a random walk (1978) — rational-expectations version of the permanent income hypothesis.
- Woodford: sticky prices + forward-looking expectations → interest-rate policy and forward guidance work through expectations.

Prelims traps

- Economics prize is **not** an original Nobel — instituted by **Sveriges Riksbank (1968)**, first awarded **1969**; still announced by the Royal Swedish Academy of Sciences.
- New Keynesian ≠ Monetarist: monetarists (Friedman) stressed money-supply rules; New Keynesians stress **interest-rate policy + expectations + price rigidities**.
- 2025 Economics: Mokyr, Aghion & Howitt (innovation-led growth). Indian-origin: Amartya Sen 1998, Abhijit Banerjee 2019.

Static linkage

- **India link — Flexible Inflation Targeting: RBI Act amended 2016** (Sec. 45ZA/45ZB), **6-member MPC**, CPI target **4% ± 2%**, reviewed every 5 years; recommended by **Urjit Patel Committee (2014)**.

PART C · STATIC & REVISION

7. General Nobel technicalities

STATIC

Point	Fact
Awarding bodies	Royal Swedish Academy of Sciences — Physics, Chemistry, Economics · Karolinska Institutet (Nobel Assembly) — Medicine · Swedish Academy — Literature · Norwegian Nobel Committee — Peace
Will / first award	Alfred Nobel's will 1895 ; first prizes 1901
Ceremony	10 December — Stockholm (five prizes), Oslo (Peace)
Limit on laureates	Max three per prize; Peace may go to organisations
Posthumous	Not allowed since 1974, unless death occurs after announcement
Prize money 2026	12 million SEK per category
Nomination secrecy	Nominee lists sealed for 50 years

QUICK REVISION TABLE

Prize	Laureate(s)	Awarding body	Key term / number	Key point
Medicine	Deisseroth, Hegemann, Nagel	Karolinska	SEK 12 mn; ChR2 ~470 nm blue	Channelrhodopsin from algae
Physics	Halzen (sole)	Royal Swedish Academy; IceCube, South Pole	1 cubic km of ice; 5,160 sensors	Sole winner since 1992
Chemistry	Kagan, Soai	Royal Swedish Academy	NLE 1986; Soai reaction 1995	Chiral amplification
Literature	Anne Carson (Canada)	Swedish Academy	<i>Autobiography of Red</i> 1998	2nd Canadian after Munro
Peace	Navi Pillay (S. Africa)	Norwegian Nobel Committee	ICTR President 1999–2003; 5th UN HCHR	Akayesu: rape as genocide
Economics	Hall, Woodford (USA)	Royal Swedish Academy (Riksbank prize)	Hall 1978 random walk	Microfoundations of stabilisation

Sports Current Affairs

Major sports events · July – October 2026 · high-yield facts with Prelims traps

#	Topic	Area	#	Topic	Area
1	Commonwealth Games, Glasgow (23rd)	Multi-sport	5	FIH Hockey World Cup	Hockey
2	20th Asian Games — the event	Multi-sport	6	46th Chess Olympiad, Samarkand	Chess
3	20th Asian Games — India's show	Multi-sport	7	US Open Tennis	Tennis
4	5th Asian Para Games	Multi-sport	8	FIFA World Cup 2026	Football

Each note: *In news* → key facts → **technical points** → **Prelims traps** → static linkage.

PART A · MULTI-SPORT GAMES

1. Commonwealth Games, Glasgow — 23rd edition

MULTI-SPORT · 23 JUL-2 AUG

In news: The **23rd Commonwealth Games** were held at **Glasgow** (Scotland), **23 July - 2 August 2026**; **Australia** topped the table and **India finished 4th** with 39 medals (13 G).

- **Glasgow replaced Victoria (Australia)**, which withdrew over costs. It was Glasgow's **2nd time as host** (after **2014**).
- A **scaled-down Games: 10 sports + 6 integrated para sports, 74 nations, no athletes' village**.
- The opening at the **OVO Hydro** was the **first indoor opening ceremony** in CWG history. Mascot: **Finnie**.
- **Dropped:** hockey, cricket, wrestling, shooting, badminton, table tennis.
- **Medal table:** Australia 1st (**70 G, 171 total**). **India 4th: 13 G, 17 S, 9 B = 39**.
- India and **Scotland both won 13 golds**; India placed higher on **silvers**.
- **Boxing** gave India **7 golds (10 medals)**, and India **topped the boxing table**.
- **Mirabai Chanu** won the **women's 48 kg** weightlifting — a **hat-trick of CWG golds**.
- **Judo:** India's **first-ever CWG judo gold**.
- **Next: Ahmedabad 2030** — India's **2nd time as host** (after **Delhi 2010**).

Technical points

- Edition: 23rd · Host: Glasgow (2nd time; 2014) · Original host: Victoria.
- 10 sports + 6 integrated para sports · 74 nations · no athletes' village.
- First indoor opening ceremony (OVO Hydro) · Mascot: Finnie.
- India: 4th · 13 G / 17 S / 9 B = 39 · boxing 7 G (10 medals) · athletics 10 medals · weightlifting 8 medals.

Prelims traps

- India's **hockey and cricket golds** this year came at the **Asian Games**. Neither sport was held at the CWG.
- **Boxing and athletics** each gave India **10 medals**. Weightlifting gave only **8**.
- Glasgow was **not the original host**; Victoria was.
- India-Scotland tie (13 G each) was broken on **silvers**.

Static linkage

- Commonwealth Games are governed by the **Commonwealth Games Federation (CGF)**; first held in **1930 at Hamilton (Canada)** as the British Empire Games.
- India's earlier hosting: **Delhi 2010** (19th CWG). Ahmedabad 2030 will be the centenary edition (1930 → 2030).

2. 20th Asian Games, Aichi-Nagoya — the event

MULTI-SPORT · 19 SEP-4 OCT

In news: The **20th Asian Games** were held at **Aichi-Nagoya, Japan, 19 September – 4 October 2026**; **China** topped the table with **341 medals**.

- **Japan's 3rd time as host (Tokyo 1958, Hiroshima 1994).**
- The Games marked the **75th anniversary of New Delhi 1951** (the inaugural Asian Games).
- **Mascot: HONOHON**, inspired by the **Shachihoko of Nagoya Castle**. **Motto: "Imagine One Asia"**.
- **43 sports, 469 events. Mixed martial arts (MMA) made its debut.**
- Governing body: **Olympic Council of Asia (OCA)**, headquartered in **Kuwait City**.
- **Future hosts: Doha 2030, then Riyadh 2034.**

Technical points

- Japan hosts: Tokyo 1958 → Hiroshima 1994 → Aichi-Nagoya 2026.
- 43 sports · 469 events · MMA debut.
- OCA — HQ Kuwait City.
- India hosted twice: **1951** and **1982**, both in **New Delhi**.

Prelims traps

- Asian Games **2030 is in Doha; Riyadh hosts in 2034.**
- Mascots: **HONOHON** (Asian Games), **Uzumin** (Asian Para Games), **Finnie** (CWG). The **Shachihoko is HONOHON's inspiration, not a mascot.**

3. 20th Asian Games — India's performance

MULTI-SPORT · INDIA

In news: **India finished 4th with 21 G, 27 S, 37 B = 85 medals** — below its record haul of **107 at Hangzhou 2022**.

- India and **Uzbekistan both won 21 golds**; India placed higher on **silvers**.
- **Firsts:** the **women's hockey team won its first-ever gold** (beat **China 1-0**). **Suchika Tariyal** won India's **first MMA medal (bronze)**. **Archery** produced India's **first individual recurve gold**.
- **Retained titles:** **men's hockey** (beat **Malaysia 5-1**), **men's and women's cricket**, **men's kabaddi**.
- **Athletics:** India's **largest medal source (24)**, but its **only gold** was the **women's 4×400 m relay**.

Technical points

- India: 4th · 21 / 27 / 37 = 85 · record remains 107 (Hangzhou 2022).
- Firsts: women's hockey gold · MMA medal (bronze, Suchika Tariyal) · individual recurve archery gold.
- Retained: men's hockey · men's & women's cricket · men's kabaddi.
- Athletics: 24 medals, 1 gold (women's 4×400 m relay).

Prelims traps

- The men's hockey, cricket and kabaddi golds were **retained titles, not firsts**. The women's hockey gold and the MMA medal were India's firsts.
- The India-Uzbekistan tie was broken on **silvers, not bronzes**.
- 85 medals is **fewer** than Hangzhou 2022 (107).

4. 5th Asian Para Games, Aichi-Nagoya

MULTI-SPORT · PARA

In news: The **5th Asian Para Games** are being held at **Aichi-Nagoya, 18-24 October 2026**.

- It is **Japan's first time hosting** the Asian Para Games.
- **Mascot: Uzumin.**

Technical points

- Edition: 5th · Dates: 18-24 Oct 2026 · Host: Aichi-Nagoya.

Prelims traps

- Japan has hosted the Asian Games thrice but the **Asian Para Games for the first time**.
- Uzumin = Para Games mascot; HONOHON = Asian Games mascot.

PART B · WORLD CHAMPIONSHIPS & TOURNAMENTS

5. FIH Hockey World Cup

HOCKEY · 15-30 AUG

In news: The **FIH Hockey World Cup** (men's and women's), **15-30 August 2026**, was **co-hosted by Belgium and the Netherlands**; **Germany** (men) and **Argentina** (women) won.

- **Men: Germany 1-0 Spain** (final at **Wavre**). Germany **retained its 2023 title**.
- This was **Germany's 4th title, equalling Pakistan's record of 4**.
- **Women: Argentina beat the Netherlands 3-1 in a shoot-out** (1-1 in regulation). It was **Argentina's 3rd title** and **ended the Dutch run of three straight titles**.
- **India men: 8th**. India's only title came in **1975 (Kuala Lumpur, beat Pakistan)**.
- **India women: 5th**, their best finish since **4th in 1974**, which **remains their best ever**.

Technical points

- Men: Germany (4 titles) = Pakistan (4) — joint record.
- Women: Argentina 3rd title; Dutch three-in-a-row ended.
- India men: only title 1975 (Kuala Lumpur) · India women: best ever 4th (1974).

Prelims traps

- Germany **equals** Pakistan's record; it does not hold it alone.
- Back-to-back men's titles are not new: **Pakistan (1978, 1982)**, **Germany (2002, 2006)** and **Australia (2010, 2014)** have all done it.
- India's best years are **1975 (men, champions)** and **1974 (women, 4th)**. 5th place in 2026 is **not** the women's best.

Static linkage

- Hockey World Cup is conducted by the **FIH (International Hockey Federation)**, headquartered at **Lausanne**; India hosted the men's World Cup in 2018 (Bhubaneswar) and 2023 (Bhubaneswar-Rourkela).

6. 46th Chess Olympiad, Samarkand

CHESS · FIDE · 15-27 SEP

In news: The **46th Chess Olympiad** (FIDE) was held at **Samarkand, Uzbekistan, 15-27 September 2026**; India won **Open silver** and **Women's bronze**.

- **Open: Uzbekistan won gold** (its **2nd**, after **Chennai 2022**). India took silver on tie-break over Germany.
- **Women: China won gold (its 7th)**, Kazakhstan silver, India bronze.
- India won the **Nona Gaprindashvili Trophy** (best combined Open + Women result) for the **3rd straight edition: 2022, 2024 and 2026**.
- It was the **largest Olympiad ever**, with **205 Open teams**.

Technical points

- Open: Uzbekistan (G, 2nd title) · India (S, on tie-break over Germany).
- Women: China (G, 7th) · Kazakhstan (S) · India (B).
- Gaprindashvili Trophy to India: 2022, 2024, 2026 · 205 Open teams (record).

Prelims traps

- The host city was **Samarkand, not Tashkent** (Tashkent appeared in early announcements).
- India won **double gold at Budapest 2024, not 2026**. In 2026 it won silver and bronze.

Static linkage

- **FIDE** (International Chess Federation) — organiser of the biennial Chess Olympiad; India hosted the 44th Olympiad at **Chennai (Mamallapuram), 2022**.

7. US Open Tennis

TENNIS · ENDED 13 SEP

In news: The **US Open** (New York), the **last Grand Slam of the year**, ended on **13 September 2026**; **Zverev** and **Rybakina** won the singles titles.

- **Men: Alexander Zverev (GER) beat Ben Shelton (USA)**. It was Zverev's **2nd Slam of 2026**; his **maiden Slam was Roland Garros 2026**.
- **Women: Elena Rybakina (KAZ) beat two-time defending champion Aryna Sabalenka**, for her **first US Open title**.
- The US Open is played on **acrylic hard courts** at **Flushing Meadows**.

Technical points

- Men: Zverev (GER) d. Shelton (USA) · Women: Rybakina (KAZ) d. Sabalenka.
- Venue: Flushing Meadows, New York · surface: acrylic hard court.

Prelims traps

- The US Open was **not Zverev's first Grand Slam** (that was Roland Garros 2026).
- Surfaces: **Australian Open** and **US Open** are hard courts, the **French Open** is clay, **Wimbledon** is grass.

8. FIFA World Cup 2026

FOOTBALL · FINAL 19 JUL

In news: Final on **19 July 2026**, just before the window: **Spain 1-0 Argentina after extra time** (Ferran Torres, 106th minute).

- It was **Spain's 2nd title** (after **2010**).
- This was the **first 48-team World Cup** and the **first co-hosted by three nations**: the **USA, Canada and Mexico**.
- Spain now holds the **men's and women's World Cups at the same time** (women's: **2023**).
- The **2030 World Cup** goes to **Morocco, Spain and Portugal**.

Technical points

- Spain 1-0 Argentina (a.e.t.) · scorer Ferran Torres (106').
- 48 teams (first) · 3 co-hosts (first): USA, Canada, Mexico.
- Spain titles: 2010, 2026 · women's champions 2023.

Prelims traps

- Spain's title was its **2nd, not first**.
- 2030 hosts: **Morocco, Spain, Portugal** — not the USA/Canada/Mexico trio.

PART C · QUICK REVISION

Event	Edition · Host	Winner(s)	India
Commonwealth Games (23 Jul–2 Aug)	23rd · Glasgow	Australia	4th · 39 (13 G)
FIH Hockey World Cup (15–30 Aug)	Belgium + Netherlands	Men: Germany · Women: Argentina	Men 8th · Women 5th
US Open (ended 13 Sep)	New York	Zverev · Rybakina	—
Chess Olympiad (15–27 Sep)	46th · Samarkand	Open: Uzbekistan · Women: China	Open silver · Women bronze
Asian Games (19 Sep–4 Oct)	20th · Aichi-Nagoya	China	4th · 85 (21 G)
Asian Para Games (18–24 Oct)	5th · Aichi-Nagoya	—	—
FIFA World Cup (final 19 Jul)	USA · Canada · Mexico	Spain	—

Mascot / symbol	Event
HONOHON (inspired by Nagoya Castle's Shachihoko) · motto "Imagine One Asia"	20th Asian Games
Uzumin	5th Asian Para Games
Finnie	23rd Commonwealth Games

Next hosts	
Commonwealth Games 2030	Ahmedabad (India's 2nd; Delhi 2010)
Asian Games 2030 / 2034	Doha / Riyadh
FIFA World Cup 2030	Morocco, Spain, Portugal

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PRELIMS & CRASH COURSES

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EthicSure5 (crash)	26 Oct 2026
Essay crash (MIGP)	2 Nov 2026
Public Admin. crash	16 Nov 2026

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