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# घातक

## GHATAK SERIES

*Monthly Current Affairs Compilation*

## JUNE 2026

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**FOR DEFENCE EXAMS**

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## From the Director's Desk



Dear Cadets and Aspirants,

Welcome to the June 2026 edition of Ghatak Series — Dhaliwal's New Careers Academy's monthly current affairs compilation, meticulously crafted for defence exam warriors preparing for NDA, CDS, AFCAT, CAPF, SSB, and UPSC.

For nearly six decades, our academy has stood as a beacon in defence coaching. From my grandfather Late Lt. Col. Hardit Singh Dhaliwal who founded this institution in 1967, through my father Capt. Nirmal Dhaliwal, to my own leadership today, we have trained thousands of officers who now serve the tricolour with pride.

This compilation covers the period from 25 May 2026 to 24 June 2026 — a month of significant developments: SIPRI Yearbook 2026 on India's nuclear posture, DRDO's multi-layered ballistic missile defence breakthrough, 65 Years of the Antarctic Treaty, India at the G7 Summit, the 11th NITI Aayog Governing Council, and India's 100th Ramsar site.

Every fact is drilled with exam-oriented precision — decoded for maximum retention, tagged with likely PYQ patterns, and connected to strategic contexts your future roles as officers will demand.

Study it. Master it. Serve the nation.

— **Hartaj Dhaliwal**

Director, Dhaliwal's New Careers Academy

*Builder of Hardit AI*

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## SECTION 1 — POLITY & GOVERNANCE

### ■ Building Viksit Bharat Through Empowered Panchayats

Ministry of Panchayati Raj reviewed 12 years of rural governance under the Viksit Bharat vision.

#### Fiscal Devolution & Autonomy

- **15th FC (2020-26):** Rural Local Bodies received 94.98% of allocation — ₹2.82 lakh crore.
- **16th FC (2026-31):** Projected 84% increase — ₹4.35 lakh crore.
- **Own Source Revenue (OSR):** SAMARTH Panchayat Portal + Atmanirbhar Panchayat Program.

#### Capacity Building & Social Inclusion

- **RGSA:** Rashtriya Gram Swaraj Abhiyan — revamped 2022-23; trained 4.10 crore elected representatives.
- **Women Trained:** 33.55 lakh+ women representatives (FY 2022-23 to 2025-26).
- **PESA 1996:** Based on Bhuria Committee (1995); empowers Gram Sabhas in Fifth Schedule Areas.
- **PESA-GDP Portal:** Aligns local plans with PESA guidelines.
- **PESA Ranking Framework:** India's first — evaluates states & districts on objective metrics.
- **Sashakt Panchayat-Netri Abhiyan:** Women leadership training.
- **Model Youth Gram Sabha (MYGS):** Aligns with NEP 2020.

#### Technological & AI-Driven Governance

- **SabhaSaar:** AI tool using BHASHINI — Gram Sabha MoMs in 23 Indian languages (13 regional for transcription).
- **PAI:** Panchayat Advancement Index (April 2025) — 9 Localised SDG themes.
- **Hyper-Local Forecasting:** With IMD — India's first Gram Panchayat-level weather forecasting system.
- **Meri Panchayat App:** Crossed 1 crore downloads.

- **e-GramSwaraj + PFMS:** 2.59 lakh Gram Panchayats onboarded; ₹3.16 lakh crore digital transactions.
- **Gram Manchitra + GPSDP:** GIS-based spatial governance; One Nation One Map framework.

#### Persistent Challenges — The '3Fs' Deficit

- **Funds:** PRIs depend on devolved funds for up to 95% of revenues; generate only 1.1% from local taxes (RBI 2024).
- **Functions:** Devolution of 29 subjects (11th Schedule) incomplete; states bypass via SPVs/parastatals.
- **Article 243E:** Panchayat elections often delayed due to delimitation/census.
- **Functionaries:** Shortage of dedicated Panchayat cadres, engineers, accountants.
- **Proxy Representation:** 'Sarpanch Pati/Pradhan Pati' undermines women's reservation (33%+).
- **Irregular SFCs:** Delays in constituting State Finance Commissions.

#### Measures to Strengthen PRIs

- **'4Fs' Framework:** Functions, Funds, Functionaries and Freedom.
- **Granular Activity Mapping:** Replace vague delegation of 29 subjects with task-wise mapping.
- **Panchayat Bonds:** Credit-rate high-performing PRIs — drawing from Indonesia's Dana Desa system.
- **Social Audits:** Mani Shankar Aiyar Committee (2012); Meghalaya's Community Participation and Public Services Social Audit Act 2017.

 **EXAM POINT:** 73rd CAA 1993 = Panchayati Raj. 11th Schedule = 29 subjects. Article 243E = 5-year term. PESA 1996 (Bhuria Committee 1995). RGSA. Dana Desa = Indonesia's village fund system.

### ■ Challenges of Journalism in India

Amid rising misinformation, NEET 2026 paper leak controversy, and digital platform misuse — concerns over mainstream media (MSM) credibility have intensified.

#### Disruption by Social Media

- **Horizontal Information Flow:** Shift from vertical (MSM→masses) to horizontal (peer-to-peer).
- **Democratization vs Anarchy:** Enabled accountability but also information anarchy.

- ▶ **Misinformation & Unrest:** 2018 WhatsApp child-kidnapper rumours → mob lynchings.
- ▶ **Raj Narayan vs UP Government (1975):** Upheld right to information under Article 19.
- ▶ **Algorithmic Amplification:** Echo chambers + filter bubbles → polarisation.

### Crisis Facing Mainstream Media

- ▶ **'Attention Economy':** Clickbait, short-form content, sensational debates over substantive reporting.
- ▶ **'Murdochization':** Concentrated ownership + profit-driven journalism; studio theatrics replace ground reporting.
- ▶ **Yellow Journalism:** Sensationalism undermines deontological duty to inform.
- ▶ **Anti-Scientific Temper:** Prime-time content promotes superstition, pseudo-science — against DPSP (Article 51A(h)).

### Corporate Monopolization & 'Lawfare'

- ▶ **Conflict of Interest:** Corporate conglomerate acquisitions → self-censorship.
- ▶ **SLAPP Cases:** Strategic Lawsuits Against Public Participation — financially burden journalists.
- ▶ **Secretary, Ministry of I&B vs CAB (1995):** SC — airwaves are public property; State must prevent monopolization.

### State Coercion & Executive Overreach

- ▶ **Madhyamam Broadcasting Ltd vs UoI (2023):** SC struck down arbitrary 'national security' grounds + sealed-cover jurisprudence.
- ▶ **Lawfare Tools:** UAPA 1967, PMLA 2002, criminal defamation.
- ▶ **Advertising Leverage:** DAVP funds used to influence editorial compliance.
- ▶ **Bennett Coleman & Co vs UoI (1972):** Financial strangulation of press violates Article 19(1)(a); free press = 'Ark of the Covenant of Democracy.'

### Institutional & Regulatory Deficits

- ▶ **Press Council of India:** Press Council Act 1978 — quasi-judicial but lacks punitive powers; covers only print.
- ▶ **IT Rules 2021:** Self-regulation with government oversight — executive intrusion concerns.
- ▶ **Shreya Singhal vs UoI (2015):** Struck down Section 66A IT Act — vague laws create 'chilling effect.'
- ▶ **World Press Freedom Index 2026 (RSF):** India ranked 157th out of 180.

### Measures

- ▶ **Parliamentary Standing Committee on Communications & IT (2025):** Fact-checking mechanisms, internal ombudsmen, legal definition of 'fake news', mandatory labeling of AI-generated content.
- ▶ **Subscriber-Funded Models:** User-pays system to reduce corporate/political funding dependence.
- ▶ **Anti-SLAPP Laws:** Legal protection against malicious lawsuits.
- ▶ **Australia's News Media Bargaining Code:** Big tech must pay news publishers.
- ▶ **EU Digital Services Act (DSA):** Platform accountability + algorithmic transparency.

 **EXAM POINT:** Article 19(1)(a) = Freedom of Speech. Press Council Act 1978. Shreya Singhal (2015) = Sec 66A struck down. Bennett Coleman (1972). RSF = Reporters Sans Frontières. India 157/180 in WPFI 2026.

### ■ Telegram Ban and Section 69A of the IT Act, 2000

- ▶ Delhi HC upheld temporary blocking of Telegram ahead of NEET-UG 2026 re-examination.

#### Section 69A of IT Act 2000

- ▶ **Power:** Central Government can direct blocking of public access to information in any computer resource.
- ▶ **Grounds:** Sovereignty & integrity of India; Defence of India; Security of the State; Friendly relations with foreign States; Public order; Preventing incitement to cognizable offences.
- ▶ **Emergency Powers:** Rule 9 of IT (Blocking Rules) 2009 — bypass pre-decisional hearing in emergencies.
- ▶ **Shreya Singhal (2015):** SC upheld validity of Section 69A — adequate safeguards (recorded reasons + review committee).

#### Telegram as the 'New Dark Web'

- ▶ **Absolute Anonymity:** Hidden phone numbers + end-to-end encryption (secret chats) — 'going dark' challenge.
- ▶ **Retroactive Message Editing:** Post-delivery editing without visible history — used to fabricate exam paper leaks.
- ▶ **Large File Sharing:** Up to 2GB + automated bots → distribution of leaked PDFs.
- ▶ **Cyber Syndicates:** Marketplaces for 'mule' bank accounts, money laundering, extortion, illegal gambling.

## Concerns

- ▶ **Test of Proportionality:** India = Telegram's largest market (~150 million users).
- ▶ **Article 19(1)(a):** Blanket bans may infringe users' free speech.
- ▶ **'Band-Aid' Solution:** NEET-UG leaks reflect systemic institutional failures, not platform-only misuse.

🎯 **EXAM POINT:** Section 69A IT Act 2000 = blocking. Section 66A struck down (Shreya Singhal 2015). IT Blocking Rules 2009 (Rule 9 = emergency). IT Rules 2021 = digital media ethics code.

## ■ Farm Loan Waivers in India

- ▶ Tamil Nadu announced waiver of cooperative crop loans up to ₹75,000 amid debt burden of ₹13.18 lakh crore.

## Concerns

- ▶ **Political Economy vs Real Distress:** RBI Internal Working Group (2019) found high correlation between loan waivers and state election cycles.
- ▶ **Exclusion Error:** Benefits only formal credit holders — excludes tenant farmers, landless labourers, sharecroppers.
- ▶ **'Moral Hazard' Problem:** Weakens credit discipline; penalises honest repayers; encourages willful default.

## Impact on State Finances

- ▶ **High Debt-to-GDP:** States' outstanding debt ~27-29% of GDP vs 20% benchmark (FRBM Review Committee 2019).
- ▶ **Crowding Out Capex:** States cut capital outlays by ~1/3rd to fund waivers.
- ▶ **Revenue Deficit Trap:** Fiscal burden 0.1% to 4.5% of GSDP; payouts spread over 3-5 years.
- ▶ **Off-Budget Borrowings:** SPVs and PSUs bypass FRBM limits.
- ▶ **Spike in NPAs:** Anticipatory defaults increase agricultural NPAs.

## Alternatives

- ▶ **Direct Income Support:** PM-KISAN; Odisha's KALIA; Telangana's Rythu Bandhu — includes tenant farmers.
- ▶ **Institutional Credit:** Kisan Credit Card (KCC) expansion.

- ▶ **Market Reforms:** e-NAM, timely MSP procurement, FPOs.
- ▶ **Crop Insurance:** PMFBY expansion.
- ▶ **Capital Infrastructure:** Per Drop More Crop, warehousing, agro-processing.

🎯 **EXAM POINT:** FRBM Act 2003; FRBM Review Committee (N.K. Singh, 2019). PM-KISAN 2019 = ₹6,000/year. KALIA (Odisha), Rythu Bandhu (Telangana). PMFBY 2016. e-NAM 2016.

## ■ India's Journey Towards Universal Health Coverage

NSO 2025 survey highlights progress via increased public healthcare use, lower out-of-pocket expenditure (OOPE).

## Achievements — UHC & Insurance

- ▶ **AB-PMJAY (2018):** ₹5 lakh/family/year to 12 crore deprived families.
- ▶ **Coverage:** 44.14 crore+ Ayushman Cards; 12.03 crore hospitalisations; app in 19 languages.
- ▶ **Ayushman Bharat Vay Vandana (Oct 2024):** For 70+ citizens; 1.20 crore seniors enrolled; ₹3,000 crore treatments.

## Democratizing Primary Care

- ▶ **Ayushman Arogya Mandirs (AAMs):** 1.86 lakh+ facilities; 12 free services; 540 crore cumulative footfall.

## Affordable Medicines & Workforce

- ▶ **Jan Aushadhi Kendras:** 18,000+; generic drugs 50-90% cheaper.
- ▶ **AMRIT Pharmacies:** 255; saved patients ₹8,400 crore.
- ▶ **Free Diagnostics Initiative:** Up to 57 tests at district hospitals; model — AP's NTR Vaidya Pariksha.
- ▶ **Workforce:** Medical colleges doubled; 157 new nursing colleges.
- ▶ **AYUSH:** Integrated across 13,093 facilities; AYUSH Visa (July 2023).

## Pandemic Preparedness & Maternal-Child Health

- ▶ **PM-ABHIM:** 744 integrated public health labs + 631 critical care hospital blocks.
- ▶ **COVID-19:** 220 crore+ doses; ICU beds 2,168 → 1.45 lakh; ~300 million doses to 100 countries (Vaccine Maitri).

- ▶ **PMSMA:** 7.47 crore pregnant women examined.
- ▶ **JSSK:** Zero out-of-pocket costs for deliveries.
- ▶ **Mission Indradhanush:** 5.46 crore previously unimmunized children; zero-dose children at 0.06% (April 2026).
- ▶ **PM TB Mukh Bharat:** 20 crore screened; 3.78 lakh Nik-shay Mitras; food baskets to 20 lakh TB patients.
- ▶ **Malaria Mortality:** Dropped 78%; mother-to-child HIV transmission fell 74.5% since 2010.

### NCDs & Digital Health

- ▶ **AAM Screenings:** 41.5 crore hypertension; 41.3 crore diabetes; 60 crore+ for oral/breast/cervical cancers.
- ▶ **PMNDP:** 4 crore free hemodialysis sessions; cancer care in all 22 new AIIMS.
- ▶ **Bloomberg Award 2025:** India won for reducing tobacco use by 17.3% + National Tobacco QuitLine.
- ▶ **ABDM:** 20.49 crore+ ABHAs created.
- ▶ **U-WIN Portal:** 11.87 crore children + 3.96 crore pregnant women.
- ▶ **eSanjeevani:** 47 crore+ teleconsultations.
- ▶ **Tele-MANAS:** 53 cells in 20 languages.
- ▶ **ICMR i-DRONE:** 22,000 medicines across 7,700 km difficult terrain.
- ▶ **AI Diagnostics:** Cough Against TB (12-16% additional hidden cases); MadhuNetrAI (diabetic retinopathy).

### Challenges

- ▶ **Fiscal Deficits:** NHP 2017 target of 2.5% GDP by 2025 unfulfilled; Union health spending fell 0.37% (2020-21) → 0.29% (2025-26).
- ▶ **Union Share to States:** 75.9% (2014-15) → 43% (2024-25).
- ▶ **Low Per-Capita:** Bhutan 2.5x, Sri Lanka 3x, BRICS peers 14-15x, Thailand/Malaysia 10x more.
- ▶ **Siloed Operations:** Public health under Entry 6, State List, Seventh Schedule.
- ▶ **NITI Aayog Evaluation:** 65% PMJAY beneficiaries still incurred OOPEx; only 35% fully cashless.
- ▶ **NCD Burden:** 60% of all deaths in India.
- ▶ **No Right to Health Act:** India lacks centralized legally enforceable law.

📌 **EXAM POINT:** Ayushman Bharat 2018 = PM-JAY + Health & Wellness Centres (now Ayushman Arogya Mandirs). NHP 2017 = 2.5% GDP target. Entry 6, State List = public health. ABHA = 14-digit health ID. Vaccine

Maitri 2021.

### ■ EAC-PM Recommendations on Delimitation

- ▶ Economic Advisory Council to the PM released a working paper on India's next delimitation.
- ▶ **Recommendation:** Multi-factor criteria for 'targeted' splitting of seats, beyond population distribution.
- ▶ **Data Used:** Election data 2009-2024 — voter turnout, constituency size, 5 'compositional features'.
- ▶ **5 Features:** Urban share, SC share, ST share, linguistic polarisation, linguistic diversity.
- ▶ **Timing:** Should coincide with 'fresh booth rationalisation cycle', 2027 Census tabulations, gender-disaggregated electoral statistics.

### Delimitation

- ▶ **Article 82:** Parliament to enact Delimitation Act after each census.
- ▶ **Article 170:** Similar readjustment in State Legislative Assemblies.
- ▶ **Delimitation Commission:** 3 members — Chairperson (serving/retired SC Judge), CEC (or nominated EC), State Election Commissioners.
- ▶ **Legal Status:** Orders have force of law; cannot be challenged in any court or modified.
- ▶ **Constituted:** 4 times — 1952, 1963, 1973, 2002.
- ▶ **42nd CAA 1976:** Froze Lok Sabha seats on 1971 Census.
- ▶ **84th CAA 2001:** Extended freeze until first census after 2026.
- ▶ **2002 Commission:** Redrew internal boundaries (2001 Census); inter-state allocation still on 1971 data.

📌 **EXAM POINT:** Article 82 = Delimitation. Article 81 = LS composition. Article 170 = State Assemblies. 42nd CAA 1976 + 84th CAA 2001 = freeze. 131st CAA Bill 2026 = current delimitation context.

### ■ 11th Governing Council Meeting of NITI Aayog

- ▶ **Chaired By:** Prime Minister.
- ▶ **Landmark:** All 28 States and 5 UTs participated for the first time.
- ▶ **Theme:** 'Inclusive Human Development for Viksit Bharat @2047'.

## Sector-Specific Initiatives

- ▶ **Women's Empowerment:** Expand Lakhpati Didis from 3 → 6 crore; Nari Shakti protection.
- ▶ **Export & Manufacturing:** Promote ODOP, defence manufacturing policies.
- ▶ **Technology:** Data centres & AI infrastructure; skill workforce.
- ▶ **Agriculture & Environment:** El Niño response, water conservation, natural/organic farming; 100 aspirational agricultural districts.
- ▶ **District-Level GDP:** States to generate district-wise GDP metrics.
- ▶ **Grievance Redressal:** Fast-track investor grievance resolution for FDI.

## Governing Council

- ▶ **Established:** 1 January 2015 — replaced Planning Commission.
- ▶ **Composition:** PM (Chair), CMs of all States & UTs, Lt. Governors, NITI Vice-Chair, Members, Special Invitees.
- ▶ **Federal Mandate:** Cooperative federalism (dialogues) + competitive federalism (state rankings).
- ▶ **Regional Councils:** Handle localized cross-state issues; convened by PM or nominee.

## ■ Navigating Federalism in Higher Education

### Key Federal Concerns

- ▶ **Centralization:** Viksit Bharat Shiksha Adhishtan (VBASA) Bill 2025 may replace UGC, AICTE, NCTE with a single central body.
- ▶ **Financial Leverage:** Central funds (PM-USHA, NRF) tied to compliance.
- ▶ **NEP 2020 Impositions:** FYUP rollout; three-language formula resistance (Tamil Nadu).
- ▶ **VC Appointments:** Governors' unilateral appointments bypass state governments.
- ▶ **Digital Standardization:** Academic Bank of Credits (ABC) database may over-centralize.
- ▶ **Central Exams:** NEET bypasses state curricula.
- ▶ **Debt Risk:** Shift from UGC grants to HEFA loans pressures state universities.

### Regulatory Framework

- ▶ **Concurrent List:** Education moved from State → Concurrent List (42nd CAA 1976, Entry 25); Centre prevails (Article 254).

- ▶ **Entry 66 (Union List):** Institutions of national importance + higher education standards.
- ▶ **Modern Dental College vs State of MP (2016):** Centre sets minimum standards; States regulate admissions, fees.
- ▶ **Prof. Yashpal vs State of Chhattisgarh (2005):** Maintaining higher education standards = parliamentary domain.
- ▶ **T.N. v. Adhiyaman (1995):** Central laws (UGC, AICTE) override conflicting State laws.
- ▶ **Sarkaria Commission (1988):** Union sets norms; States implement.
- ▶ **Punchhi Commission (2010):** Depoliticize Governors as University Chancellors.

### Measures

- ▶ **Revive CABE & Inter-State Council:** Consensus-driven reforms.
- ▶ **Flexible Mandates:** Central rules should permit state-specific variations.
- ▶ **Decentralized Funding:** Support state universities to boost GER.
- ▶ **State Representation:** Rotational/state representation in apex bodies.

📌 **EXAM POINT:** 42nd CAA 1976 = Education to Concurrent List (Entry 25). Entry 66 Union List = higher education standards. Article 254 = Centre prevails. CABE = Central Advisory Board of Education. HEFA = Higher Education Financing Agency.

## ■ Report on Datasets for State Finance Commissions

- ▶ Ministry of Panchayati Raj (June 2026) identified data gaps in State Finance Commissions (SFCs).

### Key Findings

- ▶ **Systemic Bottlenecks:** Lack of consolidated accounts; fragmented departmental data.
- ▶ **Local Capacity Gaps:** Shortage of trained accounting staff at GP level.
- ▶ **Reporting Delays:** Average 16-month delay in SFC report submission.
- ▶ **Data Quality:** 16th FC found SFC reports largely unusable for central transfers.
- ▶ **Proposed Amendment:** 16th FC suggested dropping Articles 280(3)(bb) and 280(3)(c).

## Existing Data Sources & Limitations

- ▶ **eGramSwaraj:** Inconsistent, uneven data entry.
- ▶ **PAI 2.0:** Useful for performance but not fiscal devolution.
- ▶ **Census & SECC 2011:** Outdated.
- ▶ **CAG Audit / AuditOnline:** Reliable but lacks GP-level granularity.

## Key Recommendations

- ▶ **Restructure PAI:** Classify indicators by needs, performance, backwardness.
- ▶ **GP Databases:** Time-series GP-level financial data.
- ▶ **CAG Performance Audit:** Audit 73rd CAA implementation.
- ▶ **Permanent SFC Cells:** Continuous data updating outside SFC cycles.
- ▶ **Standardised Accounting Heads:** Uniform heads for local body transfers.
- ▶ **Common Reporting Format:** Template suggested by 13th Finance Commission.
- ▶ **NIRDPR Role:** Training, best practices, revive Panchayat Statistics.
- ▶ **SFC Manual:** Developed by NIPFP.

 **EXAM POINT:** Article 243I = State Finance Commission (Panchayats). Article 243Y = Municipalities. Article 280(3)(bb)/(c) = FC to recommend measures to augment State Consolidated Fund for local bodies. NIPFP = National Institute of Public Finance and Policy.

## ■ SIPRI Yearbook 2026

- ▶ India expanded its nuclear arsenal and, for the first time, placed some warheads in operationally deployed state.

### India

- ▶ **Fifth-Largest Military Spender:** USD 92.1 billion in 2025 (+8.9% from 2024); after US, China, Russia, Germany.

### Global

- ▶ **Nine Nuclear-Armed States:** US, Russia, UK, France, China, India, Pakistan, North Korea, Israel.
- ▶ **NATO Spending:** June 2025 — 5% of GDP by 2035 target (up from 2% in 2014).
- ▶ **Ukraine:** Highest military burden — 40% of GDP.
- ▶ **Global Inventory:** 12,187 warheads; ~9,745 in military stockpiles; 4,000+ deployed.

- ▶ **US-Russia:** Hold 86% of global warheads; New START expired Feb 2026 with no replacement.
- ▶ **Peacekeeping Setbacks:** Lithuania withdrew from Convention on Cluster Munitions (March 2025); Estonia, Finland, Latvia, Lithuania, Poland withdrew from Anti-Personnel Mine Convention.
- ▶ **Armed Conflicts:** Highest fatalities in Ukraine, followed by Gaza.
- ▶ **AI Battlefield Integration:** AI-assisted targeting + autonomous weapons in Gaza and Ukraine.
- ▶ **Operation Spider's Web:** June 2025 — Ukraine used 100+ smuggled drones to damage Russian aircraft.

## India's Nuclear Doctrine

- ▶ **Adopted:** 2003; core policy = No First Use (NFU).
- ▶ **Credible Minimum Deterrence:** Sufficient arsenal to make any nuclear strike against India unacceptable.
- ▶ **Disarmament:** Moratorium on nuclear tests; supports verifiable non-discriminatory disarmament.

## Evolution of India's Nuclear Posture

- ▶ **1947-1974:** Peaceful program under Homi J. Bhabha and Nehru; China's 1964 test prompted response.
- ▶ **Pokhran-I (18 May 1974):** Smiling Buddha — labelled Peaceful Nuclear Explosion (PNE).
- ▶ **1974-1998:** Refused NPT (1968) and CTBT (1996).
- ▶ **Pokhran-II (May 1998):** Operation Shakti — 5 underground tests; PM Vajpayee declared India a nuclear-weapon state.
- ▶ **1998-Present:** Doctrine drafted 1999, operationalized 2003; 2008 US-India Civil Nuclear Agreement + NSG waiver.
- ▶ **Export Control Regimes:** India member of MTCR, Wassenaar Arrangement, Australia Group; pursuing NSG.

 **EXAM POINT:** SIPRI = Stockholm International Peace Research Institute (1966). NFU = No First Use (2003 doctrine). Pokhran-I 1974, Pokhran-II 1998. New START expired Feb 2026. MTCR + Wassenaar + Australia Group = 3 of 4 regimes (NSG pending).

## ■ Ordinance-Created Supreme Court Posts and Judicial Independence

- ▶ 5 new SC judges appointed; 3 posts created via SC (Number of Judges) Amendment Ordinance 2026.

## Constitutional Mandate

- **Original Provision:** SC had CJI + not more than 7 judges.
- **Article 124(1):** Power to alter SC judge strength reserved for Parliament by law.
- **Past Increases:** SC (Number of Judges) Act 1956; raised to 31 in 2009 and 34 in 2019.
- **Process:** CJI proposal → Law Ministry → consultations → Cabinet → Amendment Bill → both Houses (simple majority) → Presidential assent.

### Article 123 (Ordinance-Making Power)

- **Power:** President promulgates Ordinance when Parliament not in session.
- **Force:** Same as an Act of Parliament.
- **Temporary:** Ceases 6 weeks after Parliament reassembles unless approved.

### SC Pronouncements on Ordinances

- **R.C. Cooper v UOI (1970):** President's satisfaction open to judicial review; can be struck down for mala fides.
- **D.C. Wadhwa v State of Bihar (1986):** Repeated re-promulgation = 'fraud on the Constitution'.
- **Gokaraju Rangaraju v State of AP (1981):** De Facto Doctrine — judge's decisions valid even if appointment later found defective.
- **Krishna Kumar Singh v State of Bihar (2017):** Ordinance power is not a parallel source of legislation.

### Concerns

- **Compromising Judicial Independence:** Judges on temporary posts may appear dependent on executive.
- **Conflict of Interest:** Union Government is the largest litigant before SC.
- **Contradiction with NJAC (2015):** SC held executive veto harms judicial primacy.
- **Lapsing Ordinance Anomaly:** If replacing Bill fails, SC sanctioned strength reverts to 34.
- **Flawed 'Pendency' Justification:** 93,000-case backlog cited; past expansions (2008, 2019) increased pendency; root issue = high SLP admission under Article 136.

### Measures

- **Define De Facto Doctrine Boundaries:** Temporary shield for past acts, not permanent cure.
- **Prudent Swearing-in:** Collegium could withhold swearing-in until Ordinance ratified.

- **Recusal in High-Stakes Cases:** Judges on Ordinance-dependent seats could recuse from Union Executive cases.

 **EXAM POINT:** Article 123 = Ordinance. Article 124(1) = SC strength. Article 136 = Special Leave Petition. NJAC judgment 2015 (99th CAA struck down). D.C. Wadhwa (1986) = 'fraud on Constitution'.

### ■ Additional Judges Appointed as Permanent Judges of Bombay HC

- **Action:** President appointed six Additional Judges as Permanent Judges.
- **Additional Judges (Article 224):** For temporary rise in work or pending arrears; max 2 years; cannot continue after 62.
- **Article 217:** HC judges appointed by President; consults CJI, Governor, and (for non-CJ) the HC Chief Justice.
- **Article 223:** Acting Chief Justice of HC.
- **Article 224(2):** Acting Judges.
- **Article 224A:** Ad hoc Judges — retired HC judge may be requested to sit; used to clear backlog.

 **EXAM POINT:** Article 217 = HC judge appointment. Article 223 = Acting CJ. Article 224(1) = Additional Judges (max 2 yrs). Article 224(2) = Acting Judges. Article 224A = Ad hoc Judges. HC judge retirement age = 62; SC = 65.

### ■ Scheme for Support to NCRPB — Old Trucks & Buses in Delhi-NCR

- **Outlay:** ₹9,585 crore; two-year initiative.
- **Nodal:** National Capital Region Planning Board (NCRPB) under MoHUA; implemented by MoRTH + MoPNG.
- **Funding:** ₹5,041 crore Central + ₹1,601 crore tax concessions from States.
- **Emission Impact (ARAI-TERI):** Trucks/buses = 3% of NCR fleet but 36% of transport PM2.5.
- **Pollution Ratio:** One pre-BS heavy vehicle = 14 BS-VI vehicles; BS-IV emits 2.7x more than BS-VI.
- **Scrapping:** BS-III or older scrapped at Registered Vehicle Scrapping Facilities (RVSFs); BS-IV may be sold outside NCR in non-NCAP cities.
- **Delhi Special:** LGVs must be 100% electric; buses BS-VI CNG or electric.

- ▶ **Central Incentives:** 5% interest subvention for 5 years; monthly fuel vouchers up to ₹4,800.
- ▶ **State Incentives:** Registration fee waiver; up to 100% motor vehicle tax concession for 10 years.
- ▶ **OEM Discount:** 8% on ex-showroom prices.
- ▶ **Monitoring:** Empowered Committee chaired by Cabinet Secretary; District Collectors execute.

 **EXAM POINT:** Air pollution initiatives: GRAP (Delhi), SAFAR Portal, AQI, Turbo Happy Seeder, NAMP, Polluter Pays principle, NCAP 2019.

## ■ India's Semiconductor Vision for 2035

- ▶ NITI Aayog's Frontier Tech Hub released 'Future of India's Semiconductor Industry'.
- ▶ **Goal:** USD 120-150 billion semiconductor value chain by 2035.

### Three Pillars

- ▶ **Strategic Self-sufficiency:** Dominate mature and compound semiconductor nodes.
- ▶ **Ecosystem Strength:** Global leader in chip design, OSAT, advanced packaging.
- ▶ **Global Indispensability:** Trusted supplier of wide-bandgap materials — Gallium Nitride (GaN) and Silicon Carbide (SiC).

### Quantified Targets by 2035

- ▶ **Market Share:** Capture 10-13% of global semiconductor chip market.
- ▶ **OSAT:** Top-3 global destination for OSAT and advanced packaging.
- ▶ **Self-Sufficiency:** 35-50% of domestic demand (up from 15-25% by 2030).
- ▶ **Value Retention:** 55-70% of value in every chip consumed in India.
- ▶ **IP:** 100+ advanced IPs in AI, quantum, HPC chip design.
- ▶ **Exports:** 5G/6G phones, edge CPUs, microcontrollers, sensors to 50+ nations.

### India's 5P Semiconductor Strategy

- ▶ **Pioneering:** Indigenous R&D in compound chips (SiC, GaN, diamond), 2.5D/3D integration; sovereign EDA tools; National Co-Design Platform; Centres of Convergence at IITs, IISc, CSIR.
- ▶ **Policy & Investment:** USD 135-180 billion cumulative capital over a decade; Centre anchoring ~1/3

(USD 45-60 bn); autonomous national nodal agency; Full Stack Incentive regime; National Capital Framework.

- ▶ **Production:** Wafer fabrication, advanced packaging/OSAT, critical substrates; National Semiconductor Zones (NSZs) with small modular nuclear reactors; National Centre for Advanced Packaging (NCAP).
- ▶ **Partnership:** Tech blocs (USA, Japan, EU, South Korea) for DUV and EUV lithography; global university linkages; IMEC/Fraunhofer-type consortia; raw-material offtake treaties with Africa.

### Global Landscape

- ▶ **Market Size:** USD 631 billion (2024) → projected USD 1.5 trillion by 2035; CAGR 8.5%.
- ▶ **Demand Drivers:** AI computing (GPUs, NPUs), 5G/6G, EVs & ADAS, data centres, industrial automation & IoT, edge computing.
- ▶ **Capital Barrier:** Analog fabs over USD 5 billion; advanced-node fabs exceeding USD 15 billion.
- ▶ **ISM 2.0:** Announced in Union Budget 2026 — shift from ecosystem initiation to deepening.

 **EXAM POINT:** ISM = India Semiconductor Mission (2021, ₹76,000 crore). ISM 2.0 = Budget 2026. OSAT = Outsourced Semiconductor Assembly and Test. EDA = Electronic Design Automation. DUV/EUV = Deep/Extreme Ultraviolet lithography (ASML). GaN + SiC = wide-bandgap materials.

## ■ 6 Years of PM SVANidhi Scheme

- ▶ **Nature:** First-of-its-kind micro-credit scheme — collateral-free working capital loans to street vendors.
- ▶ **Loan Tranches:** ₹15,000, ₹25,000, and ₹50,000 (progressive).
- ▶ **Interest Subsidy:** 7% annual for timely/early repayment.
- ▶ **Digital Incentives:** Cashback for retail and wholesale digital transactions.
- ▶ **Credit Expansion:** UPI-linked RuPay Credit Cards up to ₹30,000 after second tranche repayment.
- ▶ **Extended Timeline:** Until March 2030; target 1.15 crore street vendors including 50 lakh new.
- ▶ **Capacity Building:** Financial literacy, digital literacy, food safety & hygiene with FSSAI.
- ▶ **Implementing Agency:** SIDBI — manages credit guarantee trust fund.

### 'SVANidhi se Samridhhi'

- **Launched By:** MoHUA — links beneficiaries to 8 core central welfare schemes.
- **Schemes Covered:** PMJJBY, PMSBY, PM Jan Dhan Yojana, BoCW registration, PM Shram Yogi Maandhan, ONORC, Janani Suraksha Yojana, PMMVY.
- **Profiled:** 50 lakh+ vendor families; 1.52 crore+ benefits linked.

### Six-Year Impact

- **Loans:** 1.12 crore+ sanctioned to 75.5 lakh+ street vendors.
- **First-Time Credit:** ~95% accessed formal institutional credit for the first time; ~30% secured additional credit.
- **Income Growth:** Average 20% annual increase.
- **Social Inclusion:** 46% women beneficiaries; ~70% from marginalized communities.
- **Digital:** 55 lakh+ vendors onboarded; 841 crore digital transactions.

 **EXAM POINT:** PM SVANidhi 2020 (COVID response) under MoHUA. Street Vendors Act 2014 = legal framework. SIDBI = implementation partner. Extended to March 2030.

### ■ SARTHAK-PDS Scheme

- **Approved By:** Cabinet Committee on Economic Affairs (CCEA).
- **Outlay:** ₹25,530 crore for 2026-31.
- **Full Form:** Scheme for Assistance in Ration Transport and Handling-Income with Automation in PDS.
- **Technologies:** AI, Machine Learning, Blockchain, NLP.
- **Integrates:** Assistance for intra-State movement + FPS dealer margin under NFSA, and SMART PDS.

### Objectives

- **Technology-Driven Reform:** Real-time tracking of foodgrain movement.
- **Reduction of Leakages:** Transparency + beneficiary authentication.
- **Citizen-Centric Governance:** Interoperable unified PDS architecture.
- **Last-Mile Delivery:** Intra-State transportation, handling, FPS dealer margins.
- **Data-Driven Monitoring:** State Command and Control Centres for predictive analytics.

### India's PDS

- **About:** India's largest food security mechanism via Fair Price Shops (FPS) under Ministry of Consumer Affairs, Food and Public Distribution.
- **NFSA 2013:** Covers ~81.35 crore beneficiaries (Census 2011); human life-cycle approach.
- **AAY Households:** 'Poorest of the poor' — 35 kg foodgrains per household/month.
- **Priority Households (PHH):** 5 kg per person/month.
- **PMGKAY:** Free foodgrains under NFSA from 1 January 2023; extended 5 years from 1 Jan 2024; ₹11.80 lakh crore outlay.
- **Centre Role:** FCI handles procurement, storage, transportation, bulk allocation.
- **State Role:** Beneficiary identification, ration cards, intra-state distribution, FPS monitoring.
- **ONORC:** Aadhaar-based biometric authentication via ePoS.
- **Mera Ration 2.0:** Entitlement details, FPS info.

### Major Issues

- **Leakages:** 28% of PDS grains don't reach intended beneficiaries (Nov 2024 report).
- **Exclusion Errors:** 90 million+ eligible people excluded (2022 report).
- **Poor Infrastructure:** Storage losses; stock-outs in tribal Odisha/Jharkhand.
- **Fiscal Burden:** High food subsidy expenditure.
- **Technological Challenges:** Aadhaar authentication failures for elderly; weak rural internet.

### Measures

- **AI-Driven Anomaly Detection:** ML on real-time e-PoS data.
- **Biometric Resilience:** Multi-modal (iris + fingerprint).
- **GPS Transport Tracking:** FCI depots to FPSs.
- **Migrant Help Desks:** Strengthen ONORC at transit hubs.
- **DCP Expansion:** Decentralized Procurement.
- **Fortification Monitoring:** Fortified Rice Kernels (FRK) — Iron, Folic Acid, Vitamin B12.
- **OMSS-D:** Open Market Sale Scheme to release excess stock during inflation.

 **EXAM POINT:** NFSA 2013 = 75% rural + 50% urban coverage. AAY = 35 kg/household. PHH = 5 kg/person.

ONORC 2019. PMGKAY 2020. FCI 1965. FRK = Fortified Rice Kernels.

## ■ Article 142

- ▶ SC used Article 142 to elevate the Right to safe travel on National Highways as a fundamental right under Article 21.
- ▶ **Case:** In Re: Phalodi Accident vs National Highways Authority of India and Others (2025) — suo motu after two Nov 2025 accidents claiming 34 lives.

### Significance of Article 142

- ▶ **Constitutional Safety Valve:** Article 142(1) — SC may pass any decree for 'complete justice'; fills legislative gaps.
- ▶ **Inherent & Residuary Power:** Not conferred by ordinary statutes; inherent to apex court's constitutional role.
- ▶ **Delhi Judicial Service Association vs State of Gujarat (1991):** Statutory restrictions cannot limit Article 142 powers.
- ▶ **Canara Bank vs Debasis Das (2003):** Constitutional intent = substantive justice; natural justice must prevail.
- ▶ **Anil Kumar Jain vs Maya Jain (2009):** HC powers under Article 226 NOT co-extensive with Article 142.

### SC on Highway Safety

- ▶ **Disproportionate Fatalities:** NHs = 2% of road network but 30% of all road fatalities.
- ▶ **Constitutional Mandate:** Well-maintained roads now a justiciable mandate under Article 21.
- ▶ **'4Es' Framework:** Education, Engineering (roads and vehicles), Enforcement, Emergency Medical Services — target 50% accident reduction by 2030.

### Concerns

- ▶ **Separation of Powers:** Frequent invocation → judicial encroachment on Executive/Legislature.
- ▶ **Judicial Overreach:** Court as de facto legislature.
- ▶ **Activism Counter-Argument:** Progressive interpretation for evolving realities (live-in relationships, changing value systems).
- ▶ **Hitesh Bhatnagar vs Deepa Bhatnagar (2011):** SC itself mandated extraordinary caution before invoking Article 142.

 **EXAM POINT:** Article 142 = complete justice (SC only). Article 226 = HC writ jurisdiction (not co-extensive). Article 21 = Right to Life. Article 32 = Right to Constitutional Remedies. 4Es = Education, Engineering, Enforcement, Emergency care.

## ■ Supreme Court's Revival of Sedition Trials

- ▶ SC in Kamran v State of Madhya Pradesh (May 2026) — lower courts may proceed with Section 124A trials if accused explicitly consent.

### Background of the Sedition Law

- ▶ **Colonial Relic:** Drafted by Thomas Babington Macaulay in 1837; omitted when IPC enacted 1860.
- ▶ **Added 1890:** Section 124A via Special Act XVII to suppress nationalist dissent; life imprisonment.
- ▶ **Used Against:** Bal Gangadhar Tilak (thrice, for Kesari writings), Mahatma Gandhi (Young India, 1922).
- ▶ **Gandhi's Words:** 'Prince among the political sections of the Indian Penal Code designed to suppress the liberty of the citizen.'

### Judicial Pronouncements

- ▶ **Romesh Thapar v State of Madras (1950):** Mere criticism cannot justify restrictions unless it threatens State security.
- ▶ **Tara Singh Gopi Chand v The State (1951):** Punjab & Haryana HC declared 124A unconstitutional.
- ▶ **Ram Nandan v State of UP (1959):** Allahabad HC — colonial tool; declared unconstitutional.
- ▶ **Kedar Nath Singh v State of Bihar (1962):** Upheld validity but restricted — needs incitement to violence or intent to create public disorder.
- ▶ **Balwant Singh v State of Punjab (1995):** Casual anti-national sloganeering without public response ≠ sedition.
- ▶ **S.G. Vombatkere v Uol (2022):** Placed Section 124A in complete abeyance; no fresh FIRs, no investigations, no coercive measures.
- ▶ **I.R. Coelho v State of Tamil Nadu (2007):** Laws must be in step with the 'march of time.'

### Transition to BNS 2023

- ▶ **Word Removed:** 'Sedition' (Rajdroh) dropped from the new legal lexicon.
- ▶ **Section 152 BNS:** Penalizes acts endangering 'sovereignty, unity, and integrity of India.'

- ▶ **Shift in Focus:** 124A penalized disaffection towards Government; Section 152 penalizes acts threatening the State itself — secession, armed rebellion, subversive activities; up to life imprisonment or 7 years with fine.

## 22nd Law Commission (2020)

- ▶ **Recommendation:** Retain sedition law; 'colonial legacy' tag insufficient for repeal.
- ▶ **Amendments Proposed:** Incorporate Kedar Nath safeguard ('tendency to incite violence'); no FIR without preliminary inquiry by Inspector-level officer + prior government permission.
- ▶ **Warning:** Scrapping would force prosecution under more draconian laws like UAPA 1967.

## Concerns on Revival

- ▶ **Questionable Consent:** Accused facing prolonged imprisonment may 'consent' out of desperation for bail.
- ▶ **Co-Accused Problem:** Fragmented trials and contradictory judgments if some consent and others refuse.
- ▶ **Chilling Effect:** Misuse against journalists, activists, dissidents, students.
- ▶ **UK Precedent:** Abolished own sedition laws in 2009.

## Way Forward

- ▶ **Seven-Judge Bench:** Convene to definitively rule on constitutional validity.
- ▶ **Single Test for Sovereignty:** Unified standard separating political speech from security threats.
- ▶ **Shift Burden of Proof:** Disciplinary action against officers weaponizing charges.
- ▶ **Define Ambiguous Terms:** 'Subversive activities', 'electronic communication', 'feelings of separatist activities' in Section 152 BNS.

 **EXAM POINT:** Section 124A IPC = Sedition (added 1890). Kedar Nath (1962) = incitement test. Vombatkere (2022) = abeyance. BNS 2023 Section 152 = replaced sedition. 22nd Law Commission (2020) recommended retention with safeguards.

## ■ Judicial Decorum in the Digital Age

- ▶ CJI issued formal clarification after public outrage over sharp oral observations; 'Cockroach Janta Party' satire emerged after terms like 'cockroaches' and 'parasites' were used.

## Standards & Doctrines

- ▶ **Restatement of Values of Judicial Life (1997):** Item 8 — judge should not enter public debates or express views on political matters or pending issues.
- ▶ **Bangalore Principles of Judicial Conduct (2002):** UN-endorsed; complements 1985 UN Basic Principles on the Independence of the Judiciary.
- ▶ **Vijayabhaskar Standard (2021):** CEC vs M.R. Vijayabhaskar — dual doctrinal standard.
- ▶ **Epistemic Utility of Bench Speech:** Judicial questioning fosters 'spontaneity of thought'.
- ▶ **Primacy of Written Record:** 'Formal opinion of a judicial institution is reflected through its judgments and orders, not its oral observations.'
- ▶ **A.M. Mathur v Pramod Kumar Gupta (1990):** 'Judicial restraint and discipline are as necessary to the orderly administration of justice as they are to the effectiveness of the army'; judges must not use bench as pulpit for 'spasmodic sentiment'.
- ▶ **Supriyo vs Uol (2023):** Oral observations on gender led public to expect same-sex unions read into Special Marriage Act 1954; written judgment went the opposite way.

## International Precedents

- ▶ **Magna Carta of Judges (Council of Europe, 2010):** By CCJE — judicial independence requires impartiality; restrains reputational harm outside formal justice.
- ▶ **Cardozo Standard (US, 1921):** Storrs Lectures at Yale — judge must draw from 'consecrated principles', avoid 'spasmodic sentiment'.

## Implications

- ▶ **Erodes Public Trust:** Perception of bias and prejudgment.
- ▶ **Undermines Procedural Justice:** Harsh language makes sound judgments appear unfair.
- ▶ **Conflates Dialogue with Decree:** Real-time digital reporting treats exploratory questions as final opinions.
- ▶ **Chilling Effect:** Deters vulnerable citizens, minorities, young advocates.
- ▶ **Jeopardizes Independence:** Invites political demands for external regulation.

## Way Forward

- ▶ **Charter of Judicial Conduct for the Digital Age:** Update the 1997 Restatement for live-streamed proceedings.

- ▶ **National Judicial Academy:** Integrate Bangalore Principles into judicial education.
- ▶ **In-House Accountability:** CJJ or peer committees to advise against repeated intemperate remarks.
- ▶ **Responsible Legal Journalism:** Present oral observations as questioning, not final opinion.
- ▶ **AI-Based Court Transcripts:** Real-time transcription to prevent misreporting.

 **EXAM POINT:** *Restatement of Values of Judicial Life (1997). Bangalore Principles (2002, UN). UN Basic Principles on Independence of Judiciary (1985). CEC vs M.R. Vijayabhaskar (2021). A.M. Mathur (1990).*

## ■ Raghav Chadha Appointed Chairman of Rajya Sabha Committee on Petitions

### Committee on Petitions

- ▶ **Origin:** One of Parliament's oldest — from Council of State resolution, 15 September 1921 (Committee on Public Petitions).
- ▶ **Renamed:** 'Committee on Petitions' in 1933.
- ▶ **RS Committee:** First constituted 1952 — Chairman + 4 members; increased to 10 in 1964.
- ▶ **Status:** Standing Committee under Rule 147 of RS Rules of Procedure.
- ▶ **Appointment:** Members nominated by RS Chairman, who also appoints Committee Chairman; quorum 5; reconstituted annually.
- ▶ **Functions:** Examines petitions; reports to House; recommends remedies.
- ▶ **Powers:** Take evidence, call for papers, seek Ministry comments, examine witnesses, hear petitioners.
- ▶ **Format:** Prescribed form, addressed to Rajya Sabha, respectful language, concise statement + prayer, signed/thumb-impressed.
- ▶ **1964 Revision:** Petitions may be on matters of general public interest, not only Bills or pending business.
- ▶ **Procedure:** Advance notice to Secretary-General → admissibility check → Chairman admits → presented after papers laid on Table without debate → referred to Committee.

## ■ SC Review of Wetland Conservation Rules, 2017

- ▶ SC to examine constitutional validity of Wetlands (Conservation and Management) Rules 2017.

- ▶ **Core Allegation:** Rules arbitrarily exclude most human-made and artificial wetlands.
- ▶ **Rule 2(g) Conflict:** Violates Ramsar Convention (1971) which mandates protection of both natural and artificial wetlands, permanent or temporary.
- ▶ **Threat to Ramsar Sites:** 39 of India's 94 designated Ramsar wetlands risk losing protected status.
- ▶ **Exclusions:** Waterbodies for drinking water, irrigation, aquaculture, salt production, recreation.
- ▶ **Principle of Non-Regression:** 2017 rules weaken protections established by 2010 Rules which included human-made tanks, reservoirs, irrigation structures.
- ▶ **2010 vs 2017:** 2010 retained Central Wetlands Regulatory Authority (CWRA) + explicit prohibited activities list; 2017 decentralized to State Wetland Authorities (SWAs).
- ▶ **M.K. Balakrishnan v UOI (2017):** SC ordered statutory protection of all wetlands mapped in the National Wetland Atlas.
- ▶ **Definitional Shift:** From functional characteristics (hydrology, soil saturation, biodiversity, groundwater recharge) to origin (natural vs artificial) — contradicts ISRO's National Wetland Inventory and Assessment.

 **EXAM POINT:** *Ramsar Convention 1971 (Iran); India joined 1982. Wetlands Rules 2010 → 2017. CWRA vs SWAs. National Wetland Atlas by ISRO (SAC Ahmedabad). India now has 100 Ramsar sites.*

## ■ Delhi HC Recognises Right To Be Forgotten

- ▶ **Ruling:** RTBF is an intrinsic component of Right to Privacy under Article 21.
- ▶ **RTBF:** Allows individuals to seek removal of personal information from digital platforms when outdated, irrelevant, or privacy-infringing.
- ▶ **Global Origin:** Court of Justice of the EU (CJEU) — 2014 Google Spain case.
- ▶ **Enforceability Without Statute:** Constitutional courts can recognize and enforce even without statutory framework.
- ▶ **Mandated Action:** Search engine operators + legal databases to mask personal identifiers and disable 'name-based search functionality'; de-indexing operates globally.
- ▶ **Open Justice vs Dignity:** Open justice ensures transparency, not perpetual amplification of an individual's legal struggles.
- ▶ **Scope:** Individuals acquitted, discharged, or whose cases are quashed/settled have right to accurate

online reflection; identifiers masked but legal reasoning retained.

- ▶ **Exemptions:** Convictions for offences against women or children; breach of public trust by public servants, elected representatives, fiduciaries.

 **EXAM POINT:** Article 21 = Right to Privacy (K.S. Puttaswamy 2017). Google Spain case (CJEU 2014). DPDP Act 2023 = India's data protection law. GDPR Article 17 = Right to Erasure.

## ■ Amendments to the Immigration and Foreigners Rules, 2025

- ▶ **Notified By:** Ministry of Home Affairs (MHA).
- ▶ **Revised Registration Timeline:** Foreigners on visa of 180 days or less intending to extend must register 'any time before the expiry of the 180-day period' (earlier: within 14 days after expiry).
- ▶ **Multi-Entry Visas:** Those with visas valid over 180 days but each stay capped at 180 days must also register before the limit; permission granted only in emergent circumstances.
- ▶ **Relief for Newborns:** 30-day electronic intimation rule waived if one parent is an Indian citizen retaining child's Indian citizenship.
- ▶ **Delayed Foreign Citizenship:** Parents must inform registration officer within 30 days if child of mixed parentage acquires foreign citizenship.
- ▶ **Medical Compliance:** Updated reporting for hospitals, nursing homes, medical facilities hosting foreign nationals.
- ▶ **Broader Framework:** Draft amendments to Citizenship Rules 2009 (declarations on Pakistan/Afghanistan/Bangladesh passports) + Citizenship (Amendment) Rules 2026.

 **EXAM POINT:** Immigration and Foreigners Act 2025 replaced 4 laws: Passport (Entry into India) Act 1920, Registration of Foreigners Act 1939, Foreigners Act 1946, Immigration (Carriers' Liability) Act 2000. Citizenship Act 1955.

## SECTION 2 — NATION & STATES

### ■ Three-Language Formula and Nagaland's Linguistic Challenge

- **Context:** Nagaland faces difficulty implementing NEP 2020's three-language formula.
- **Three-Language Formula:** Originated in National Policy on Education 1968, based on Kothari Commission (1964-66).
- **NEP 2020 Position:** Two of three languages must be native to India; no language imposed on any state.
- **Nagaland's Challenge:** English is the sole official language; state has 17+ major tribal languages with no common link language.
- **Nagaland Official Language:** English — adopted since statehood (1963).
- **Tribal Diversity:** Each Naga tribe has a distinct language; Nagamese (creole) serves as lingua franca but lacks script/standardisation.
- **Constitutional Basis:** Article 343-351 (Official Language); Article 350A (mother tongue instruction at primary stage); Eighth Schedule (22 languages).
- **Resistance Elsewhere:** Tamil Nadu opposes three-language formula as Hindi imposition.
- **Article 371A:** Special provisions for Nagaland — protects Naga customary law, religious/social practices.

📌 **EXAM POINT:** Kothari Commission 1964-66. NPE 1968 = three-language formula. NEP 2020. Article 343-351 = official language. Article 350A = mother tongue instruction. Article 351 = promotion of Hindi. Eighth Schedule = 22 scheduled languages. Article 371A = Nagaland.

### ■ Evolving Drone Risks in Modern Warfare

#### Changing Nature of Drone Threat

- **Low-Cost Asymmetry:** Cheap commercial drones can neutralise high-value assets — cost asymmetry favours the attacker.
- **Swarm Attacks:** Coordinated multi-drone attacks overwhelm conventional air defence.
- **FPV Drones:** First-Person-View drones used as precision loitering munitions.

- **Fibre-Optic Drones:** Immune to electronic warfare jamming; spool-based control.
- **Operation Spider's Web (June 2025):** Ukraine used 100+ smuggled drones against Russian strategic aircraft — demonstrated deep-strike capability.
- **Non-State Actors:** Terror groups and smugglers use drones for weapons/narcotics delivery across the Punjab border.

#### India's Counter-Drone Framework

- **D4 System:** DRDO's Drone Detect, Deter and Destroy system — soft kill (jamming) + hard kill (laser).
- **Bhargavastra:** Indigenous micro-missile-based counter-drone system.
- **Integrated Drone Detection & Interdiction System (IDDIS):** BSF deployment on borders.
- **Akashteer:** Automated air defence control and reporting system.
- **Regulation:** Drone Rules 2021; Digital Sky Platform; airspace zones (Red/Yellow/Green).
- **Production Push:** Drone Shakti; PLI Scheme for drones; Namo Drone Didi.

📌 **EXAM POINT:** Drone Rules 2021 (liberalised from UAS Rules 2021). Digital Sky Platform. D4 = DRDO counter-drone. Bhargavastra. Akashteer. Operation Sindoor (2025) demonstrated integrated air defence.

### ■ Protecting Critical National Infrastructure

#### What is Critical Infrastructure

- **Definition:** Assets whose incapacitation would debilitate national security, economy, public health or safety.
- **Sectors:** Power grids, telecom, transport, banking & finance, strategic public enterprises, government networks.
- **CII:** Critical Information Infrastructure — defined under Section 70 of IT Act 2000.
- **NCIIPC:** National Critical Information Infrastructure Protection Centre — nodal agency, created 2014 under Section 70A, IT Act; functions under NTRO.

#### Threats

- **Cyberattacks:** Ransomware, supply-chain attacks, state-sponsored intrusions.
- **Physical Sabotage:** Drone strikes, IED attacks on pipelines/grids.

- **Legacy Systems:** SCADA/ICS systems designed without security.
- **Convergence of IT-OT:** Operational Technology exposed via IT networks.
- **AI-Enabled Attacks:** Automated vulnerability discovery; deepfake-based social engineering.

### India's Framework

- **CERT-In:** Indian Computer Emergency Response Team — national nodal agency (Section 70B, IT Act 2000).
- **NCCC:** National Cyber Coordination Centre.
- **Cyber Swachhta Kendra:** Botnet cleaning and malware analysis centre.
- **Defence Cyber Agency:** Tri-service military cyber warfare body.
- **National Cyber Security Policy 2013:** Under revision.
- **DPDP Act 2023:** Data protection obligations.

 **EXAM POINT:** NCIIPC = Section 70A IT Act 2000; under NTRO. CERT-In = Section 70B. I4C = Indian Cybercrime Coordination Centre (MHA). Defence Cyber Agency (2018). Cyber Swachhta Kendra.

### Assam UCC Bill 2026

- Assam Legislative Assembly passed the Uniform Civil Code (UCC) Assam Bill 2026 — first state in Northeast India and third in the country (after Uttarakhand and Gujarat).

### Key Provisions

- **Ban on Polygamy & Bigamy:** Strictly prohibited; up to 7 years imprisonment under Section 82 of BNS 2023.
- **Tribal Exemption:** Scheduled Tribes residing in Assam explicitly exempted; customary laws untouched.
- **Live-in Registration:** Mandatory within one month; failure attracts 3-month jail or fine.
- **Children of Live-in Unions:** Recognized as legitimate.
- **Maintenance Right:** Women deserted by live-in partners can claim maintenance.
- **Marriage Age:** 21 years for men, 18 for women; registration compulsory within 60 days.
- **Repeals:** Assam Compulsory Registration of Muslim Marriages and Divorces Act 2024.
- **Gender-Equal Inheritance:** Uniform order of preference for intestate inheritance among Class-1 heirs (spouse, children, parents) regardless of religion.

### Significance of Tribal Exemption

- Constitution already provides special protections to tribal areas.
- Preserves 'Unity in Diversity' — tribal societies governed by unwritten customary laws on marriage, land, succession.

### About UCC

- **Constitutional Basis:** Article 44 (DPSP, Part IV) — non-justiciable guiding principle.
- **Covers:** Marriage & Divorce; Inheritance & Succession; Adoption & Maintenance; Alimony & Child Custody.
- **Current System:** 'Differentiated citizenship' — Hindus/Sikhs/Jains/Buddhists under Hindu Code Bills (Hindu Marriage Act 1955, Hindu Succession Act 1956); Muslims under Muslim Personal Law (Shariat) Application Act 1937; Christians under Indian Christian Marriage Act 1872; Parsis under Parsi Marriage and Divorce Act 1936.
- **Goa:** Only state to continuously implement a UCC — Goa Civil Code (Portuguese legacy).

### Judicial Pronouncements

- **Mohd. Ahmed Khan vs Shah Bano Begum (1985):** 'Article 44 has remained a dead letter.'
- **Sarla Mudgal v UOI (1995) & John Vallamattom v UOI (2003):** Reiterated need for UCC.
- **Shayara Bano v UOI (2017):** Triple talaq unconstitutional; violated dignity and equality of Muslim women.
- **Jose Paulo Coutinho v Maria Luiza Valentina Pereira (2019):** Praised Goa as a 'shining example'.

### Arguments in Favor

- **Gender Justice:** Eradicates biases in inheritance, divorce, polygamy; gender-neutral framework.
- **Positive Secularism:** Shift from 'differentiated citizenship' to uniform civil laws for all.
- **Article 44 Fulfillment:** Framers' vision of national integration.
- **Protecting Modern Unions:** Legitimacy to children of live-in unions; maintenance for deserted partners.

### Arguments Against

- **Article 25:** Freedom of conscience and free profession, practice, propagation of religion.
- **Privacy Concerns:** Mandatory live-in registration + punitive measures may violate Right to Privacy (Puttaswamy 2017).

- **Implementation Challenges:** Complex exceptions for customary practices need robust administration.

### Measures to Strengthen UCC

- **Codify Existing Personal Laws First:** 21st Law Commission (2018) suggestion — exposes prejudices for testing against fundamental rights.
- **Balancing Rights:** Between Article 44 and Articles 25-28; reforms should emerge from within communities.
- **Safeguard Privacy:** Review mandatory live-in registration provisions.
- **Tribal Reforms:** Blanket ST exemption creates 'two-tier' citizenship leaving tribal women behind; work with tribal councils.
- **Dedicated UCC Commission:** Independent statutory body to study global models and draft national template.

 **EXAM POINT:** Article 44 = UCC (DPSP, non-justiciable). Article 25-28 = Freedom of Religion. Goa Civil Code = only continuous UCC. Uttarakhand (2024) = 1st state to enact; Assam = 3rd. *Shah Bano (1985)*, *Sarla Mudgal (1995)*, *Shayara Bano (2017)*, *Puttaswamy (2017)*.

## SECTION 3 — ECONOMIC SCENARIO

### ■ Ashtalakshmi Rising: Transforming the North-East

North-Eastern Region (NER) saw major development 2014-2026; known as Ashtalakshmi, now key to Act East Policy and Viksit Bharat.

#### North-East as 'Ashtalakshmi'

- **Symbolism:** Goddess Lakshmi's eight manifestations — wealth, happiness, prosperity.
- **Eight States:** Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura.
- **Paradigm Shift:** Region mainstreamed as India's gateway to Southeast Asia.

#### Connectivity Revolution

- **Roads:** National Highway network 10,905 km (2014) → 16,200+ km (2026) via Bharatmala + PMGSY.
- **Railways:** Arunachal, Meghalaya, Nagaland, Tripura, Mizoram achieved 100% track electrification; Assam nearing.
- **Engineering Marvels:** Bogibeel Bridge (Assam), Noney Bridge (Manipur), Sela Tunnel (Arunachal Pradesh).
- **Airways:** UDAN — operational airports 9 (2014) → 17 (2026); 78% rise.
- **Waterways:** National Waterways in NE 1 (2014) → 20 (2024); Brahmaputra + Barak routes revived.
- **Digital:** 6,350+ Gram Panchayats service-ready for high-speed internet.

#### Act East Integration

- **Key Projects:** India-Myanmar-Thailand Trilateral Highway; Kaladan Multi-Modal Transit Transport Project.
- **Border Trade Hubs:** ICPs like Moreh; Border Haats like Kamalasagar and Bholaganj.

#### Policy & Financial Architecture

- **PM-DevINE:** 100% centrally funded for high-impact infrastructure.
- **NESIDS:** Launched 2017-18, extended till March 2026 — Roads + Other Than Roads Infrastructure (OTRI).

- **North Eastern Council (NEC):** Region-specific development; bamboo livelihoods, tourism.
- **Special Development Packages:** For Assam and Tripura.
- **Mandatory Allocation:** Non-exempted Central Ministries must allocate at least 10% of annual budget for NER — 'Act East, Act Fast, Act First'.

#### Energy & Green Growth

- **Hydropower:** 2,880 MW Dibang Multipurpose Project (Arunachal); 2,000 MW Subansiri Lower Project.
- **North East Gas Grid:** 1,656 km pipeline integrating all eight states; includes Asia's longest underwater hydrocarbon pipeline beneath the Brahmaputra.

#### Socio-Economic Infrastructure

- **Water:** Arunachal Pradesh and Mizoram achieved 100% tap water coverage (Jal Jeevan Mission); all eight states ODF.
- **Housing:** 31 lakh+ houses under PMAY.
- **Health & Education:** AIIMS Guwahati; 12 new medical colleges; IITs, NITs, Eklavya Model Residential Schools.

#### Agricultural Diversification

- **Fisheries:** Inland fish production grew 68% in a decade; Assam contributes 70%; PMMSY + 501 Fish Farmer Producer Organizations.
- **Dairy:** NER's first cattle IVF Laboratory in Guwahati.
- **Agarwood:** NER has 90% of India's 150 million agarwood trees; Tripura alone ₹2,000 crore market potential.
- **Organic & GI:** 89 GI tags including Lakadong Turmeric and King Chilli; MOVCDNER covers 2.36 lakh hectares.
- **Brand North East:** Mizoram Ginger, Nagaland Coffee, Arunachal Kiwi, Tripura Queen Pineapple, Assam Muga Silk, Sikkim Organic Food, Meghalaya Lakadong Turmeric.

 **EXAM POINT:** Ashtalakshmi = 8 NE states. Act East Policy 2014 (from Look East 1991). PM-DevINE 2022. NESIDS. MOVCDNER = Mission Organic Value Chain Development for NER. Bogibeel = India's longest rail-road bridge.

### ■ India's Statistical Database Overhaul

## Significance

- ▶ **IMF 'C' Grade Warning:** Late 2025 — on quality, representativeness, timeliness of India's national accounts.
- ▶ **Structural Obsolescence:** Key metrics based on 2011-12 baselines; economy changed via GST-led formalisation, digital payments.
- ▶ **Consumption Realities:** CPI Base Year 2012 tracked VCRs, cassette tapes, portable radios — missing streaming services, CNG, PNG, high-speed internet.
- ▶ **Policy Precision:** RBI MPC uses CPI for inflation outlook; DA and Dearness Relief linked to inflation indices.

## GDP Upgrades

- ▶ **Base Year Reset:** MoSPI shifted national accounts base year to 2022-23.
- ▶ **'Double Deflator' Method:** Adopted for agriculture and manufacturing — deflates input and output prices separately.
- ▶ **Proportionate Sectoral Allocation:** Multi-activity enterprises' output distributed across respective sectors.
- ▶ **Administrative Data:** Integrates GST datasets and PLFS.

## Inflation Indicators

- ▶ **CPI Overhaul:** Base year shifted to 2024 using HCES 2023-24 weightages; basket expanded 299 → 358 items across 12 categories (from 6).
- ▶ **New CPI Items:** Rural house rent, online media streaming, CNG and PNG; removed tape recorders and radios.
- ▶ **Linking Factor:** Uses 2025 data under both old and new methods for back-series analysis.
- ▶ **WPI:** Base year to 2022-23; commodity count 697 → 957; crude petroleum & natural gas moved from Primary Articles to Fuel and Power.
- ▶ **PPI:** Introduced by Ministry of Commerce and Industry; excludes transport costs and indirect taxes; to replace WPI over 5 years.

## Persisting Challenges

- ▶ **Outdated Sampling Frames:** 2021 Census delay; surveys rely on 2011 population distribution.
- ▶ **Informal Sector Blindspot:** Informal sector employs ~80% of workforce; new GDP method relies on GST and MCA formal databases.
- ▶ **Institutional Autonomy:** CSO-NSSO merger into NSO (2019) diluted NSC oversight; Draft ISI Bill 2025 raised academic autonomy concerns.

- ▶ **Employment Data Vacuum:** PLFS/EPFO vs CMIE discrepancies; poverty line not updated since Tendulkar Committee (2011-12 data).
- ▶ **Granularity Gap:** Shortage of district/block-level statistics; lack of data by caste, gender, district.

## Measures

- ▶ **Census 2027:** India's first digital census with mobile app-based collection and optional self-enumeration; caste enumeration can replace SECC 2011.
- ▶ **NSC Autonomy:** Statutory, constitutional-level autonomy — aligns with C. Rangarajan Commission (2000) and Standing Committee on Finance (2025).
- ▶ **District Domestic Product (DDP):** MoSPI to standardise across states; link with block-level PLFS sampling.
- ▶ **SSS Scheme:** Support for Statistical Strengthening — AI-driven analytics, CAPI tablets, e-SIGMA validation.
- ▶ **Open Data:** e-Sankhyiki and Microdata Portal.

 **EXAM POINT:** MoSPI = Ministry of Statistics & Programme Implementation. NSO = National Statistical Office (CSO+NSSO merged 2019). NSC = National Statistical Commission (Rangarajan 2000). HCES = Household Consumption Expenditure Survey. PLFS = Periodic Labour Force Survey.

## RBI's Record Surplus Transfer

- ▶ **Transfer:** ₹2.87 lakh crore surplus to Union Government for FY26 (previous: ₹2.11 lakh crore).
- ▶ **Framework:** In line with the Economic Capital Framework (ECF).

## Structural Shift

- ▶ **From Windfall to Regular:** Earlier transfers ranged ₹30,000-65,000 crore.
- ▶ **Post-2019 ECF (Bimal Jalan Committee):** Transfers rose sharply to ₹2.11 lakh crore (FY24) and ₹2.87 lakh crore (FY26).
- ▶ **Balance Sheet:** Expanded 20.6% to ₹91.97 lakh crore (March 2026); gross income rose over 26%.
- ▶ **Frictionless Resource:** Fiscal space without taxation constraints or borrowing-linked debt.

## Implications

- ▶ **Fiscal Consolidation:** Buffer to Union Budget; helps meet FRBM targets.
- ▶ **Sovereign Debt Relief:** Lower G-Sec yields, reduced borrowing costs.

- **Shielding CapEx:** Sustained infrastructure funding.
- **'Indian Fiscalism' Model:** Unlike Western Quantitative Easing (QE), keeps central bank asset quality intact.

### Concerns

- **Federal Blind Spot:** RBI surplus is non-tax revenue of Centre; bypasses divisible tax pool under Article 270; states bear 60%+ of development spending but get no automatic share (Article 293 borrowing limits).
- **Institutional 'Distance':** Pressure to manage portfolios for higher yields rather than monetary stability.
- **Fiscal Dominance Risk:** Price stability mandate under Flexible Inflation Targeting (FIT) may be influenced.
- **Depletion of Buffers:** Higher payouts within Contingency Risk Buffer (CRB) limits weaken shock absorption.

### Measures

- **Earmarking for Asset Creation:** Use only for CapEx or debt repayment, not revenue deficits.
- **Revisiting Devolution:** Future FCs should account for cesses, surcharges, RBI dividends.
- **Core Mandates:** Portfolio and FX decisions driven by liquidity, stability, inflation — not profit.

 **EXAM POINT:** ECF = Economic Capital Framework (Bimal Jalan Committee 2019). CRB = Contingency Risk Buffer. Article 270 = divisible pool. Article 293 = state borrowing. FIT = Flexible Inflation Targeting (2016, 4% ±2%).

## ■ Transforming India Through Integrated Infrastructure Development

### Railways

- **Budgetary Support:** ₹32,000 crore (2014-15) → ₹2.78 lakh crore (FY 2026-27).
- **Electrification:** 20% (2014) → 99.6% (2026); 69,873 km.
- **Trains:** 162 Vande Bharat and 60 Amrit Bharat operational.
- **High-Speed Rail:** Mumbai-Ahmedabad bullet train under construction; 7 new corridors planned.
- **Amrit Bharat Station Scheme:** 208 of 1,338 stations modernised.
- **Kavach:** Deployed on 3,103 km; accidents fell 135 (2014-15) → 16 (2025-26).

- **Freight:** 139 operational cargo terminals; 300 approved under PM GatiShakti.

### Roads & Highways

- **Road Network:** 63.73 lakh km — 2nd-largest globally.
- **National Highways:** 91,287 km (2014) → 1,46,572 km (March 2026).
- **Four-Lane:** 18,371 km (2014) → 45,516 km (2026).
- **Expressways:** 3,644 km access-controlled.
- **PMGSY:** 99.6% of eligible habitations connected; allocation ₹386 crore (2014-15) → ₹19,000 crore (2026-27).
- **Bharatmala:** 22,590 km completed (2017 onwards).

### Civil Aviation

- **Airports:** 74 (2014) → 165 (2026).
- **UDAN:** 665 routes across 95 airports; 1.64 crore+ passengers.
- **Greenfield:** Mopa (Goa), Kannur (Kerala), Hollongi (Arunachal), Navi Mumbai, Jewar (Noida).
- **Digi Yatra + GAGAN:** GAGAN = GPS Aided GEO Augmented Navigation — world's first equatorial SBAS.

### Metro & Rapid Transit

- **Metro Network:** 248 km (2014) → 1,155 km (2026) across 26 cities — 3rd largest globally.
- **Metro Rail Policy 2017:** Integrated urban mobility, PPP, Make in India procurement.
- **Innovations:** Kolkata's underwater metro tunnel beneath Hooghly (2024); Kochi Water Metro; Namo Bharat Rapid Rail (2025) on Delhi-Meerut — India's first RRTS.

### Ports, Shipping & Waterways

- **Maritime Share:** ~95% of trade by volume, 70% by value.
- **Port Capacity:** 873 MMTPA (2014) → 1,726 MMTPA (2026); cargo 581 → 915 MMT; turnaround 94 → 48.8 hours.
- **Sagarmala (2015):** Port-led development.
- **National Waterways:** 5 (2014) → 111 (2026) covering 20,187 km; cargo 29 → 218 MMT; Ro-Pax traffic 10.55 crore.
- **Jal Marg Vikas & Arth Ganga:** NW-1 (Ganga-Bhagirathi-Hooghly).

- **Hydrogen Vessel:** India's first hydrogen fuel cell vessel operationalised in Varanasi (2025).

### Industrial Infrastructure

- **Industrial Parks:** 4,220 mapped covering ~6.98 lakh hectares.
- **Plug-and-Play:** 272 parks; 100 more planned under BHAVYA (2026).
- **Industrial Smart Cities:** 20 approved across 7 industrial corridors.
- **Sector Ecosystems:** 3 chemical parks, 7 PM MITRA textile parks, ₹10,000 crore Biopharma SHAKTI.
- **IILB:** India Industrial Land Bank — GIS-based platform.

### Logistics

- **PM GatiShakti (2021):** 58 Ministries/Departments; 3,202+ GIS data layers.
- **National Logistics Policy (2022):** LPI rank improved 54 → 38; target top 25 by 2030.
- **Digital Ecosystem:** ULIP (2022), Logistics Data Bank (2016), FASTag (2016).
- **PRAGATI Platform (2015):** Reviewed 382 infrastructure projects; resolved 2,958 issues.

### Water Infrastructure

- **Ministry of Jal Shakti (2019):** Integrated water governance.
- **Jal Jeevan Mission:** 15.86 crore households (June 2026); 81.94% rural homes; extended till 2028.
- **Ken-Betwa Link (2021):** First river interlinking project — Bundelkhand.
- **FloodWatch India App + Dam Safety Act 2021.**

### Housing & Energy

- **PMAY-U (2015):** ~98.10 lakh houses; ~96% allotted to women or jointly owned.
- **PMAY-G (2016):** ~3.06 crore rural houses; ~75% beneficiaries women.
- **SWAMIH Fund (2019):** ~63,000 stalled housing units; ₹15,531 crore corpus.
- **AMRUT & 2.0:** ₹2.79 lakh crore projects; 2.53 crore tap water connections.
- **Installed Power:** 532.74 GW (2026) vs 248 GW (2014); 40% non-fossil achieved nearly a decade early (COP21).
- **Power Shortages:** 4.2% (2014) → 0.03% (2025-26); rural supply 12.5 → 22.6 hours/day.

- **Saubhagya (2017):** ~2.86 crore households electrified.
- **LPG Coverage:** 55.9% (2014) → 107.2% (2026); consumers 14.51 → 33.39 crore.

### Digital Connectivity

- **Tele-density:** 75.23% (2014) → 86.23% (2025); internet connections 25.15 → 100.29 crore.
- **PM-WANI (2020):** 4.10 lakh public Wi-Fi hotspots; 5G reached 85% of population by 2026.
- **JAM + UPI:** ₹29.53 lakh crore real-time payments across eight countries.

### ■ Credit Guarantee Scheme for Microfinance Institutions-2.0 (CGSMFI-2.0)

- **Extension:** Till 31 August 2026 or until guarantees for ₹20,000 crore are issued, whichever is earlier.
- **Loan Limit:** Large NBFC-MFIs/MFIs increased from ₹300 crore to ₹1,000 crore, within 20% of AUM ceiling.
- **Sanctioned So Far:** ₹770 crore.
- **Launched:** March 2026 — guarantee coverage to Member Lending Institutions (MLIs).
- **Tiered Coverage:** Small MFIs 80%, medium 75%, large 70% (replacing flat 75%).
- **MFI Classification (AUM):** Small (<₹500 crore), Medium (₹500 crore-₹2,000 crore), Large (₹2,000 crore+).
- **Equity Requirement:** MLIs must ensure at least 5% of total loans to small MFIs and 10% to medium MFIs.
- **Loan Caps:** ₹100 crore (small), ₹200 crore (medium), ₹300 crore (large); disbursed within 3 months; max tenure 3 years with 1-year moratorium.
- **Operation:** Automatic approval via National Credit Guarantee Trustee Company Ltd (NCGTC).

### ■ 114th International Labour Conference

- **Venue:** Geneva; India led by Union MoS for Labour and Employment.

### India's Address Highlights

- **Consolidation:** 29 archaic Central Labour Laws into four Labour Codes, guided by 'Antyodaya'.
- **Youth Employability:** 34% (2014) → over 56% (2025).
- **Unemployment Rate:** 6% (2017) → 3.1% (2025).
- **Women's Workforce Participation:** 22% → 38.8%.

- ▶ **Social Protection:** 19% (2015) → 64.3% (2025); ILO estimates ~1,001 million (1 billion) people covered.
- ▶ **DPI as Soft Power:** National Career Service Portal and e-Shram showcased; technical assistance to Rwanda and Sri Lanka.
- ▶ **New Initiative:** Pradhan Mantri Viksit Bharat Rozgar Yojana.

#### Four Labour Codes

- ▶ Code on Wages 2019; Industrial Relations Code 2020; Code on Social Security 2020; OSH Code 2020.

#### Continued Vulnerability

- ▶ **Gig Workers in Grey Zone:** Code on Social Security 2020 mentions but doesn't recognize them as standard 'employees'; excluded from IR Code and OSH Code.
- ▶ **Algorithmic Tyranny:** Automated ratings, opaque dark-store allocation software dictate earnings without human recourse.
- ▶ **'Hire and Fire':** IR Code raised threshold for prior government permission from 100 to 300 workers.
- ▶ **Working Hour 'Flexibility':** OSH Code enforces 48-hour week but leaves daily shift limits ambiguous → 12-hour shifts under '4-day workweek' pretext.
- ▶ **Dilution of Collective Bargaining:** Union needs 51% of workers on muster roll; 60-day strike notice; strikes banned during conciliation.
- ▶ **OSH Exclusion:** Applies primarily to establishments with 10+ workers — excludes informal setups.
- ▶ **Wage Stagnation:** CPI-IW surged ~25% (2021-2026); states adjusted VDA but delayed base wage updates → real-wage erosion.

#### Measures

- ▶ **New Worker Category:** 'Dependent Contractor' or 'Platform Worker' inspired by EU's Platform Work Directive.
- ▶ **Rajasthan Model:** Rajasthan Platform-Based Gig Workers Act 2023 — welfare board with gig worker representation + welfare cess.
- ▶ **Digital Compliance:** Replace inspector-centric enforcement with data-driven monitoring.
- ▶ **e-Shram Convergence:** Link algorithmically with ONORC, Ayushman Bharat, PM-SYM.
- ▶ **Revive Indian Labour Conference:** Domestic ILC for tripartite dialogue.

 **EXAM POINT:** ILO 1919 (Treaty of Versailles); HQ Geneva; India a founding member. 4 Labour Codes replaced 29 laws. CPI-IW = Consumer Price Index for Industrial Workers. VDA = Variable Dearness Allowance.

## RBI Holds Repo Rate and Lowers GDP Growth Forecast

### June 2026 MPC Highlights

- ▶ **Repo Rate:** 5.25% (LAF) — status quo.
- ▶ **SDF Rate:** 5.00% (floor of LAF corridor).
- ▶ **MSF Rate:** 5.50% (ceiling).
- ▶ **Bank Rate:** 5.50%.
- ▶ **FY27 Real GDP Growth:** Revised down to 6.6% from 6.9%.
- ▶ **Headline CPI Inflation:** Up to 5.1% (+50 bps); Core Inflation 4.7%.
- ▶ **Stance:** Neutral — data-dependent.

### Key Macroeconomic Risks

- ▶ **Geopolitical & Input Cost:** Crude oil at USD 110/barrel (Apr-May 2026).
- ▶ **Climate & Food:** Sub-normal Southwest Monsoon and emerging El Niño.
- ▶ **Second-Round Effects:** Food/energy spikes may influence wages and inflation expectations.

### Measures to Attract Foreign Capital

- ▶ **LTCG & FPI Tax Waiver:** 12.5% LTCG and income tax on FPIs' G-Sec interest waived retroactively from 1 April 2026 (equity outflows ~₹2.6 lakh crore).
- ▶ **Fully Accessible Route (FAR):** Added 15-, 30-, 40-year G-Secs and Sovereign Green Bonds.
- ▶ **General Route Deregulation:** Removed short-term, concentration, security-wise caps; only macro ceilings remain (6% Central G-Secs, 2% State G-Secs).
- ▶ **Retail Equity:** Higher limits for NRIs, OCIs, PROIs without SEBI registration.
- ▶ **Concessional Forex Swaps:** Subsidized ECBs for PSUs until 30 Sep 2026.
- ▶ **FCNR(B) Hedging Subsidy:** Full hedging cost coverage for 3-5 year deposits.
- ▶ **Export Realization:** Timeline reduced from 15 to 9 months.
- ▶ **Forex Intervention:** No specific exchange rate target; reserves used to curb excessive volatility.

## ■ WPI Base Year Revised to 2022-23 and Producer Price Index

- **Announced By:** Office of Economic Adviser, DPIIT.
- **PPI Launch:** 15 June 2026.

### WPI (Base Year 2022-23)

- **Basket Expansion:** 697 → 957 items.
- **Renewable Energy:** Solar and Wind energy + Nuclear Electricity integrated under 'Electricity' Group.
- **Energy Reorganization:** Crude Petroleum and Natural Gas shifted from 'Primary Articles' to 'Fuel and Power'.
- **Methodology:** Gross Value of Output (GVO) replaces Net Traded Value (GVO + Imports – Exports).
- **Statistical Computation:** Short-term chain-based formulation; 'Targeted Mean Imputation' replaces 'Carry-forward'.

### About WPI

- **Nature:** Goods-based index; excludes services; captures first point of sale (supply-side inflation).
- **Components:** Manufactured Products (highest weight), Primary Articles, Fuel & Power.

### PPI Framework

- **Output PPI (OPPI):** Prices industries receive for final goods/services.
- **Input PPI (IPPI):** Trial, manufacturing sector — prices of raw materials purchased.
- **Service PPI:** Quarterly; 7 sectors — Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), Telecom.
- **Valuation:** WPI, OPPI, Service PPI use 'Basic Price' (excludes Net Tax and Trade & Transport Margins); Input PPI uses 'Purchaser's Price'.

### Significance

- **Removes 'Tax Illusion':** WPI included indirect taxes causing false inflation spikes.
- **Removes Imported Inflation Bias:** PPI measures only domestic production.
- **Global Standard:** US, UK, EU use PPI; aligns with IMF recommendations.
- **Transition:** WPI to be discontinued after a 5-year window.

🎯 **EXAM POINT:** WPI base year: 2011-12 → 2022-23.  
CPI base year → 2024. IIP base year → 2022-23. GDP

base year → 2022-23. PPI launched 15 June 2026. DPIIT = Department for Promotion of Industry and Internal Trade.

## ■ RBI Annual Report 2025-26

### Domestic Growth

- **Real GDP Growth:** 7.3% in 2025-26 (revised up from 6.5%).
- **Drivers:** Private Final Consumption Expenditure +7.7%; Gross Capital Formation +6.5%; Services GVA +8.7%; Manufacturing GVA +11.5% (strongest in recent years).

### Inflation

- **Headline CPI:** Revised down from 4.0% to as low as 2.0% (December 2025).
- **Core Inflation:** Stable around 4%.

### Government Finances

- **GFD 2025-26 (RE):** 4.4% of GDP, down from 4.8% in 2024-25.
- **GFD 2026-27:** Budgeted at 4.3% (from pandemic peak of 9.2% in 2020-21).
- **Gross Tax Revenue:** +7.4%; Non-tax revenue +24.4%.
- **Capital Expenditure:** 3.1% of GDP (2025-26 RE); to grow 11.5% in 2026-27.
- **Debt-to-GDP:** Centre's ratio budgeted to decline to 55.6% in 2026-27.
- **16th FC:** Retained states' share at 41% of divisible pool; new criterion — states' contribution to GDP (weight 10%); post-devolution revenue deficit grants discontinued.

### External Sector

- **Merchandise Trade Deficit:** USD 333.2 billion (2025-26) vs USD 282.5 billion prior year.
- **Trade Shift:** China overtook the US as India's largest trading partner in 2025-26.
- **Trade Agreements:** UK (CETA), Oman (CEPA), New Zealand (FTA); EU FTA negotiations concluded January 2026.
- **Services Exports:** Net services exports +15.3% (April-December 2025); software & business services = 77.8%.
- **Remittances:** +10.1% y-o-y; average cost of sending USD 200 to India at 5.3% (global average 6.4%; SDG target 3% by 2030).

- **CAD:** USD 30.2 billion (1.1% of GDP) April-December 2025.
- **Net FDI:** USD 7.7 billion; India ranked 2nd globally in greenfield FDI announcements (after US).
- **Forex Reserves:** Declined USD 30.8 billion; cover ~11 months of merchandise imports; ~90% of total external debt.
- **External Debt-to-GDP:** 20.4%.

### Monetary Policy & Banking

- **Repo Cut:** Cumulative 100 bps during 2025-26 → 5.25%.
- **CRR:** Reduced 100 bps (Sept-Nov 2025) to 3.0% of NDTL; injected ~₹2.5 lakh crore durable liquidity.
- **Policy Transmission:** WALRs on fresh and outstanding loans declined 95 bps and 78 bps.
- **MSE Credit:** Grew 33.1%.

### Prospects for 2026-27

- **IMF Projections:** Global growth to decelerate to 3.1%; global inflation up to 4.4%; trade volumes to 2.8%.
- **India's Targets:** Real GDP 6.9%; CPI 4.6%; repo retained at 5.25%; inflation target 4% (±2%) until 31 March 2031.
- **Economic Stabilisation Fund (ESF):** Established to buffer fiscal space.
- **Updated NDCs (2031-2035):** 60% electric capacity from non-fossil sources; 47% reduction in emission intensity of GDP by 2035.
- **Strategic Sectors:** Union Budget 2026-27 identified 7 (semiconductors, rare earths, biopharma among them).
- **FDI Measures:** 100% FDI in satellite manufacturing; tax holidays/safe harbors for data centers.
- **AI:** New Delhi Declaration on AI Impact adopted at AI Impact Summit 2026; India ranks 3rd globally for AI competitiveness.
- **Banking:** CBDC pilots, Unified Lending Interface (ULI), MuleHunter.ai; Payments Vision 2028; DPIP; NSFI 2025-30.

### Global Risks Identified

- **Geopolitical Risk:** Primary drag; West Asia conflict from end-February 2026.
- **Financial Market Risk:** Equity corrections via reassessment of elevated technology sector valuations.
- **Rupee Internationalization:** Expand Special Rupee Vostro Accounts (SRVAs) and Local Currency Arrangements (LCAs).

- **Bharat-VISTAAR:** AI-driven crop management and weather advisory for smallholders.

 **EXAM POINT:** Other RBI publications: Report on Trend and Progress of Banking in India; State Finances: A Study of Budgets; Report on Currency and Finance; Financial Stability Report; Monetary Policy Report; Handbook of Statistics on the Indian Economy.

## ■ Remittances Anchoring India's External Balances

### Role in External Balances

- **BoP Classification:** Current Account 'Invisibles' — private/personal transfers under Net Secondary Income (NSI).
- **Offsetting Trade Deficit:** Merchandise trade gap ballooned from ~USD 6 billion (2000-01) to USD 284 billion (2024-25); remittances covered 47.5% of it in 2024-25.
- **Since Mid-2013:** Remittance inflows on average financed more than the entire merchandise trade deficit.
- **Stabilizing the Rupee:** Unlike FPIs ('hot money'), remittances provide stable, continuous foreign currency supply.

### Significance

- **Non-Debt Creating:** Unlike ECBs or FDI — private, non-returnable transfers.
- **Forex Reserves:** Reduce RBI's need to intervene in forex market.
- **Socio-Economic:** Boost consumption, health, education; notable in Kerala, Maharashtra, Karnataka, Tamil Nadu.

### About Remittances

- **Driver:** 'Altruistic motives' (family obligations) rather than 'investment motives' — highly stable.
- **Regulatory Framework:** FEMA 1999; Liberalized Remittance Scheme (LRS) allows up to USD 250,000/year.
- **LRS Prohibits:** Gambling, speculative trading, terrorist financing.
- **Accounts:** NRE, NRO, FCNR.
- **World's Top Recipient:** India since 2008; USD 135 billion in 2024-25 — outpacing gross FDI.

### Structural Shift (RBI 2025 Survey, 2016-17 to 2023-24)

- **Advanced Economies:** US, UK, Singapore, Canada, Australia now account for over 50% of inflows.

- ▶ **Rise of the US:** Overtook UAE as single largest source; share 22.9% → 27.7%.
- ▶ **Decline of GCC:** Gulf countries' combined share slipped to 38%; UAE's share fell 26.9% → 19.2%.
- ▶ **Skill-Base Transformation:** High-wage skilled professionals in OECD countries out-remitting semi-skilled Gulf labour.

### Concerns

- ▶ Vulnerability to host-country immigration policies and tightening visa regimes.
- ▶ AI-driven automation in the West threatens high-wage white-collar tech jobs.
- ▶ Geopolitical friction in GCC and nationalization drives risk displacing blue-collar workers.

 **EXAM POINT:** India = world's largest remittance recipient since 2008. FEMA 1999. LRS = USD 250,000/year. SDG 10.c = reduce remittance transaction cost to <3% by 2030. NRE/NRO/FCNR accounts.

## ■ Two New Special Economic Zones (SEZs) in Puducherry

- ▶ **Cleared By:** Board of Approval for SEZs, Department of Commerce.
- ▶ **First ULB SEZ:** IT/ITES SEZ by Oulgaret Municipality at Thattanchavady village — first SEZ in India developed by a municipal body.
- ▶ **Scale:** 8.62 hectares; ₹725 crore investment; 3,500 direct and indirect jobs.
- ▶ **Multi-Sector SEZ:** By Pondicherry Industrial Promotion Development and Investment Corporation (PIPDIC) at Karasur village, Villianur Taluk.
- ▶ **Significance:** Boost to TAP Region (Tamil Nadu, Andaman & Puducherry); decentralized industrialization precedent.

### About SEZ

- ▶ **Definition:** Geographically delineated duty-free enclave, deemed foreign territory for trade operations, customs duties and tariffs.
- ▶ **DTA:** Domestic Tariff Area — rest of India outside SEZ; SEZ→DTA supplies treated as imports.
- ▶ **Evolution:** Asia's first EPZ at Kandla (1965); SEZ policy 2000; SEZ Act 2005; SEZ Rules 2006.
- ▶ **Baba Kalyani Committee (2018):** Proposed renaming SEZs as 3Es — Employment and Economic Enclave.

- ▶ **Section 5, SEZ Act 2005:** Proposals evaluated on additional economic activity, exports, employment, infrastructure, sovereignty and integrity.
- ▶ **Incentives:** Duty-free import/domestic procurement; supplies zero-rated under IGST Act 2017; single-window clearance.
- ▶ **Institutions:** Department of Commerce (policy + Board of Approval); Development Commissioner (Unit Approval Committee); Developers/Co-developers (Letter of Approval); SEZ Units.

### Reforms

- ▶ **Concessional DTA Sales:** Eligible units can sell prescribed share in DTA at concessional customs duty.
- ▶ **Semiconductor Focus:** SEZ Rules amended 2025 — relaxed land encumbrance and minimum area norms (Sanand Gujarat, Dharwad Karnataka).
- ▶ **RoDTEP Integration:** Extended to SEZs.
- ▶ **SEZ 2.0:** 17-member committee to draft policy, overhaul SEZ Act 2005, align with WTO norms.

### Current Status (2026)

- ▶ **Scale:** 368 notified SEZs with ~₹8 lakh crore investment (Dec 2025).
- ▶ **Exports:** ₹11.70 lakh crore during 2025-26 up to Dec 2025; 32% y-o-y growth.
- ▶ **Employment:** 31.73 lakh+ direct and indirect.

## ■ 10 Years of Insolvency and Bankruptcy Code 2016

### Achievements

- ▶ **Debt Recovery:** Till March 2026 — nearly ₹4.32 lakh crore realised for creditors; recovery rate 167% against liquidation value.
- ▶ **NPA Reduction:** Gross NPA ratio of Scheduled Commercial Banks to 12-year low of 2.1% (Sept 2025), from peak of 11.8% in 2017.
- ▶ **RBI Assessment:** IBC = single most effective tool for banks, outperforming SARFAESI Act 2002.
- ▶ **Rescue Over Liquidation:** ~58% companies successfully rescued.
- ▶ **'Deterrent Effect':** Over 30,000 cases involving ~₹14 lakh crore resolved at pre-admission stage before reaching NCLT.
- ▶ **Global Standing:** Resolution timelines slashed from 6-8 years to ~2 years; S&P Global Ratings upgraded India's insolvency framework from 'Group C' to 'Group B'.

## About IBC 2016

- **Origin:** Bankruptcy Law Reforms Committee (BLRC, 2015) headed by T.K. Viswanathan.
- **Consolidated:** Sick Industrial Companies Act 1985, SARFAESI Act 2002, Recovery of Debts and Bankruptcy Act 1993.
- **Paradigm Shift:** From 'debtor-in-possession' to 'creditor-in-control' model.
- **Mechanism:** Unified, creditor-driven, time-bound resolution of financial distress.

 **EXAM POINT:** IBC 2016. BLRC = T.K. Viswanathan Committee (2015). Pillars: IBBI (regulator), NCLT/DRT (adjudicating authorities), Insolvency Professionals, Information Utilities. CIRP timeline = 330 days.

## ■ High-Level Committee on Demographic Change

- **Constituted By:** Union Ministry of Home Affairs.
- **Mandate:** Study demographic changes arising from illegal immigration and other abnormal reasons.
- **Chairman:** Justice Prakash Prabhakar Navlekar, retired SC Judge and former Lokayukta of Madhya Pradesh; includes Census Commissioner.
- **Timeline:** Final report within one year (by May 2027), with six-month extension provision.

### Rationale

- **Sarbananda Sonowal vs Uoi (2005):** SC equated massive influx of illegal immigrants into Assam to 'external aggression' under Article 355; mandated stricter Foreigners Act 1946.
- **Assam Movement (1979-85):** Led to the Assam Accord.
- **Ethnic Conflict Link:** Manipur violence intertwined with influx of Chin-Kuki refugees after 2021 Myanmar coup; intensified Meitei insecurities on land rights.
- **Tribal Identity:** Santhal Pargana (Jharkhand), Sixth Schedule areas — Santhal Pargana Tenancy Act 1876 loopholes (benami transactions, marriages of convenience).
- **Electoral Integrity:** Illegal procurement of Aadhaar and Voter IDs; SIR of Electoral Rolls crucial.
- **Data Deficit:** Last Census 2011; study to provide baseline ahead of 2027 Census.

## India's Demographic Scenario

- **TFR:** Declined to 1.9 nationally (SRS Statistical Report 2023); rural touched replacement rate 2.1 for the first time; urban 1.5.
- **NFHS-5 (2019-21):** TFR 2.0 — below replacement level of 2.1.
- **Population Stabilization:** Expected around 2060-2070.
- **North-South Divide:** Kerala, Tamil Nadu TFR 1.6-1.7 (developed-nation levels, ageing); Bihar, UP above 2.4.
- **Demographic Dividend:** Median age 28.4 years (China ~40); working-age population to peak by 2041; elderly (60+) to rise from 149 million (10.5%) to 347 million (20.8%) by 2050.

## Way Forward

- **Census 2027 + Demographic Audits:** Bridge data deficit.
- **CIBMS:** Comprehensive Integrated Border Management System — conceptualized by Madhukar Gupta Committee (2016); shift from physical patrolling to sensor-based grid.
- **Deportation Mechanism:** Time-bound legal process under Immigration and Foreigners Act 2025.
- **Assam Sanmilita Mahasangha vs Uoi (2014):** SC directed time-bound NRC update in Assam.
- **Lt. Gen. S.K. Sinha Report (1998):** Silent demographic alteration severing Northeast from rest of India.
- **Upamanyu Hazarika Commission (2015):** Warned Assam's indigenous population would become a minority by 2047.

 **EXAM POINT:** Article 355 = Union duty to protect states. Assam Accord 1985. NRC. Foreigners Act 1946 → Immigration and Foreigners Act 2025. Sixth Schedule = tribal areas. CIBMS (Madhukar Gupta Committee 2016).

## ■ Index of Industrial Production and Revision of Base Year

- **Published By:** National Statistical Office (NSO) under MoSPI — monthly.
- **Nature:** Measures short-term changes in volume of industrial production.
- **Base Year Revision:** 2011-12 → 2022-23; index value for base year set at 100.
- **Expanded Basket:** 1,042 products mapped to 463 item groups (up from 839 items and 407 groups).

- ▶ **Weights:** Revised in alignment with updated GVA 2022-23 series.
- ▶ **Broadened Coverage:** Gas supply, water supply, sewerage and waste management included.
- ▶ **Energy Granularity:** Distinguishes renewable and non-renewable electricity; itemises mineral variations.

### **Sectoral Performance (April 2026)**

- ▶ **Manufacturing:** ~76% weight in IIP basket; grew 6.2%.
- ▶ **Mining and Quarrying:** Sharp contraction of over 5%.
- ▶ **Use-Based Trends:** Capital goods +16%; Infrastructure/Construction goods +7.1%; moderation in primary goods, consumer durables, non-durables.

## SECTION 4 — INTERNATIONAL RELATIONS

### ■ 65 Years of Antarctic Treaty

#### About the Treaty

- **Signed:** Washington, 1 December 1959; entered into force 23 June 1961.
- **Genesis:** After the International Geophysical Year (IGY), 1957-58.
- **Antarctica Day:** 1 December.
- **Scope:** Region south of 60° south latitude — ~10% of Earth.
- **Original Signatories:** 12 countries — Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, Soviet Union, UK, US.
- **Current Status:** 58 Parties — Consultative (voting, conducting substantial research) and Non-Consultative (non-voting).

#### Key Provisions

- **Article I:** Peaceful purposes only; military bases and weapons testing prohibited.
- **Articles II & III:** Freedom of science; results must be exchanged freely.
- **Article IV:** Freezes territorial claims — Argentina, Australia, Chile, France, New Zealand, Norway, UK.
- **Article V:** Nuclear-free zone; prohibits nuclear explosions and radioactive waste disposal.

#### Antarctic Treaty System (ATS)

- **CCAS (1972):** Convention for the Conservation of Antarctic Seals.
- **CCAMLR (1980):** Conservation of Antarctic Marine Living Resources — ecosystem approach, especially krill.
- **Madrid Protocol (1991):** Antarctica a natural reserve for peace and science; bans commercial mining.

#### India's Role

- **Diplomatic Status:** Signed 1983; got Consultative status same year; ratified Madrid Protocol 1998.
- **Dakshin Gangotri (1983):** India's first permanent station; now decommissioned as a supply base; first Antarctic post office set up here in 1984.

- **Maitri (1989):** In Schirmacher Oasis; India created Lake Priyadarshini nearby; post office established 26 January 1990; letters routed through NCPOR, Goa.
- **Bharati (2012):** Between Thala Fjord and Quilty Bay, ~3,000 km east of Maitri; second post office branch.
- **Maitri II:** In-principle approval for India's fourth station in East Antarctica by 2032; will replace Maitri as a larger green research base.
- **NCPOR:** Established 1998 in Goa under MoES; nodal agency for Indian Antarctic Programme; also manages Himansh (Himalayas) and Arctic stations.
- **Indian Antarctic Act 2022:** Domestic legal validity to Antarctic Treaty, Madrid Protocol and CCAMLR; extends Indian court jurisdiction; regulates tourism.
- **46th ATCM (Kochi, 2024):** India facilitated first focused working group discussions on regulating Antarctic tourism.

 **EXAM POINT:** *Antarctic Treaty 1959 (in force 1961). India joined 1983. Himadri = India's Arctic station (Ny-Ålesund, Norway, 2008). NCPOR = National Centre for Polar and Ocean Research. Indian Antarctic Act 2022.*

### ■ India's Logistics Support Agreements (LSAs)

- India-Russia RELOS (Reciprocal Exchange of Logistics Agreement) operationalised January 2026.

#### Key Provisions of RELOS

- **Reciprocal Base Access:** Mutual access to military facilities, airfields, ports for refueling, replenishment, maintenance, repairs.
- **Operational Scope:** Joint exercises, bilateral training, port calls, HADR missions.
- **Personnel & Asset Caps:** Up to 3,000 personnel, 5 warships, 10 aircraft; not for permanent stationing.
- **Logistical Services:** Food, water, accommodation, transport, POL, medical support, clothing, storage, spare parts, navigation.
- **Arctic Access:** Extends reach into Russia's High North infrastructure and Northern Sea Route.
- **Tenure:** Initial validity 5 years with automatic extension clauses.

#### India's LSA Network

- **Nine Countries:** US, Russia, UK, France, Japan, Australia, Vietnam, Singapore + defence cooperation with Oman.
- **Multi-Alignment:** Engage competing powers (US & Russia) without joining any bloc.

- **Extended Maritime Reach:** Rapid operational turnarounds during anti-piracy and long-range patrols (e.g., Gulf of Aden).
- **Counter to 'String of Pearls':** 'Invisible footprint' at chokepoints — Mozambique Channel (France), Strait of Malacca (Singapore), Lombok/Sunda Straits (Australia).
- **Access vs Bases:** Unlike China's physical bases, India gains access-based reach and maritime domain awareness (MDA).
- **Theater Commands:** External logistical infrastructure for Integrated Theater Commands.
- **Tactical Crisis Management:** 2020 Eastern Ladakh standoff — India used US logistics pact for high-altitude winter clothing for 50,000+ troops.
- **Reciprocal Benefits:** UK Royal Navy uses Indian shipyards for maintenance — boosting India's role as an IOR defence manufacturing hub.

## Challenges

- **Two-Front Balancing:** RELOS with Russia vs LEMOA (2016), COMCASA (2018) with the US; CAATSA sanction risk necessitates non-dollar mechanisms (rupee-ruble).
- **'Case-by-Case' Neutrality Trap:** LSAs lack mutual defence obligations (unlike NATO Article 5) but create pressure for logistical support.
- **China-Russia Axis Vulnerability:** In an India-China conflict, dependence on Russian Far East/Arctic infrastructure becomes uncertain.

 **EXAM POINT:** LEMOA 2016 (US), COMCASA 2018, BECA 2020, RELOS 2026 (Russia). CAATSA = Countering America's Adversaries Through Sanctions Act. NATO Article 5 = collective defence.

## ■ US-Iran Sign Islamabad MoU

- US and Iran signed a 14-point peace agreement — the Islamabad MoU — on the sidelines of the G7 Summit in France, mediated by Pakistan.
- **Effect:** Halts Operation Epic Fury hostilities; lifts US naval blockade on Iranian ports; opens Strait of Hormuz to unrestricted trade.

## Scope

- **Interim Framework:** Not a permanent treaty; 60-day negotiation process on nuclear proliferation, regional security, sanctions relief; final agreement via UNSC resolution.

- **Nuclear Downblending:** Iran to downblend highly enriched uranium (HEU) under IAEA supervision.
- **US Commitments:** Lifting naval blockade, easing oil export restrictions, sanctions relief talks; proposed USD 300 billion financial package for Iran's post-war recovery.
- **Iran Commitments:** Halting nuclear weapons development; free commercial shipping in Persian Gulf.
- **Strait of Hormuz:** Toll-free transit for all commercial vessels during the 60-day window; traffic restored to pre-conflict levels within 30 days.

## Global Implications

- **Oil Prices:** Brent crude fell over 2%; ends costly rerouting via Cape of Good Hope; reduces freight and war-risk insurance premiums.
- **Iran's Reintegration:** Unfrozen assets, crude export waivers, USD 300 billion reconstruction fund.

## Regional Implications

- **Israel's Strategic Isolation:** MoU mandates end of military operations including Lebanon, shielding Hezbollah; IDF continues southern Lebanon operations.
- **Gulf Security Dilemma:** GCC benefits from Strait reopening but fears Iran's financial gains strengthening missile programme and proxies.
- **Lebanon's Subordinated Sovereignty:** Ceasefire linkage freezes political situation, strengthening non-state armed actors.
- **'Axis of Resistance' Validation:** Iran retains key nuclear and ballistic missile capabilities.
- **US Paradigm Shift:** From 'maximum pressure' to pragmatic regional stability focus.
- **Alternative Mediators:** Pakistan's mediation backed by Qatar and Oman — growing role of regional middle powers.

## Implications for India

- **Macroeconomic Relief:** India imports ~85% crude oil; lower prices narrow CAD and ease fuel-led inflation.
- **Export Competitiveness:** Plastics, chemicals, textiles, engineering goods benefit from reduced logistics costs.
- **Maritime Workforce:** India contributes ~1/6th of global seafarers; reduced risk after incidents like the MT Settebello strike.
- **Connectivity Revival:** Enables Chabahar Port operationalisation and strengthens INSTC; slows IMEC due to Israel's isolation.

- **Diplomatic Tightrope:** Balance ties with Israel while engaging an emboldened Iran.
- **Pakistan's Mediator Role:** Strengthens Pakistan-Iran ties; may advance Iran-Pakistan Gas Pipeline.

 **EXAM POINT:** Strait of Hormuz = ~20% of global oil transit. IAEA 1957. JCPOA 2015. INSTC = International North-South Transport Corridor. IMEC = India-Middle East-Europe Corridor. Chabahar Port (Shahid Beheshti terminal).

## ■ India at the G7 Summit 2026

- **Event:** 52nd G7 Summit Outreach Session at Évian, France.
- **Theme:** 'Forging New Partnerships and Rebuilding International Solidarity'.

### India's Core Message

- **Global Trust Deficit:** Mutual trust is the key global strategic asset; crises arise more from a deficit of trust than resources.
- **Reforming Development Paradigm:** Shift from donor-recipient model to equal partnerships.
- **Voice of Global South:** Developing countries seek equitable participation in global governance, not just aid.
- **India-Africa:** Targeted, high-impact South-South cooperation.

### Bilateral Outcomes

- **India-Canada:** Expediting CEPA by end of 2026 to double bilateral trade by 2030 (2024 trade: USD 30.9 billion); GSOIA negotiations to begin; 'Raisina Americas' platform announced; IORA Dialogue Partner backing; CAD 2.6 billion uranium supply deal (2027-2035) between Cameco and India's DAE.
- **India-UK:** Reviewed India-UK Vision 2035; early implementation of CETA — technology, defence, education.
- **India-UAE:** Maritime security and free navigation through Strait of Hormuz; India invited UAE President to the 18th BRICS Summit (India host, 2026).

### About G7

- **Genesis:** Formed 1975 after the 1973 oil crisis as G6 (France, Germany, Italy, UK, Japan, US); Canada joined 1976; Russia joined 1998 (G8) but expelled 2014 after Crimea annexation.

- **EU Participation:** Non-enumerated member, represented by Presidents of European Council and European Commission.
- **Structure:** Informal grouping — no treaty, permanent secretariat, or headquarters; presidency rotates annually.
- **Economic Weight:** ~10% of global population but ~43% of global nominal GDP.

## ■ Seafarer Safety in Conflict Zones

- Death of 3 Indian seafarers aboard MT Settebello after a US military strike in the Gulf of Oman.

### Core Issues

- **Asymmetric Maritime Warfare:** Military-grade precision munitions, drone strikes, loitering munitions replacing traditional piracy.
- **Geopolitical Crossfire:** Civilian merchant vessels targeted for enforcing blockades.
- **Sanctions-Related Vulnerabilities:** Ships accused of violations lose Protection and Indemnity (P&I) insurance cover and port access.
- **Legal Gaps:** UNCLOS and MLC lack enforcement against drone/missile strikes by states or non-state actors (Houthis).

### Strategic Concern for India

- **Demographic Footprint:** 300,000+ trained seafarers (2025) — ~12% of global workforce; ranked 3rd after Philippines and China.
- **Maritime India Vision 2030:** Target 20% global share by 2030.
- **Persian Gulf Presence:** ~18,000 Indian sailors, including chokepoints Strait of Hormuz and Bab-el-Mandeb.
- **Flags of Convenience:** Panama, Liberia, Palau — Indian crew become collateral damage, limiting India's legal jurisdiction.
- **Economic Security:** 90%+ of trade by volume and 70% by value moves via sea; insecurity raises war risk insurance premiums.

### Legal Framework

- **UNCLOS 1982:** Freedom of navigation and transit passage through international straits.
- **MLC 2006 (ILO):** 'Seafarers' Bill of Rights' — working conditions, welfare, health, repatriation.
- **STCW 1978:** Standards of Training, Certification and Watchkeeping.

- ▶ **SOLAS 1974:** Safety of Life at Sea — construction, equipment, operation standards.
- ▶ **SAR 1979:** Maritime Search and Rescue.
- ▶ **Indian:** Merchant Shipping Act 1958; Directorate General of Shipping (DGS) under Ministry of Ports, Shipping and Waterways; IFC-IOR (Gurugram).

### Measures

- ▶ **Naval Deployments:** Expand Operation Sankalp for surveillance and SAR.
- ▶ **Risk-Based Approach:** Regular risk assessments, advisories, informed consent — not blanket restrictions.
- ▶ **Informed Consent:** DGS to audit Recruitment and Placement Services License agencies; legal protection for seafarers refusing war-risk deployment.
- ▶ **Inter-Ministerial Framework:** Regulators, MEA, defence, intelligence, shipowners, unions.
- ▶ **Multilateral Leverage:** IORA chairmanship and IMO engagement for binding protocols.

 **EXAM POINT:** UNCLOS 1982. MLC 2006 = Seafarers' Bill of Rights. IMO conventions: STCW 1978, SOLAS 1974, SAR 1979. IFC-IOR Gurugram (2018). Operation Sankalp (2019, Gulf of Oman).

### ■ India-Slovakia Comprehensive Partnership

- ▶ PM of India made a historic State Visit to Slovakia — first by an Indian PM since its independence in 1993.
- ▶ **Highest Civilian Honour:** Order of the White Double Cross (1st Class) — 33rd global honour conferred on the PM.
- ▶ **Elevation:** Ties elevated to a Comprehensive Partnership.

### Key Agreements

- ▶ **Defence:** LoI for joint development, production and industrial collaboration.
- ▶ **Labour Migration:** MoU for safe, legal and orderly mobility; working towards a Social Security Agreement.
- ▶ **Digital & Cybersecurity:** Critical infrastructure protection, post-quantum cryptography, cybercrime prevention.
- ▶ **Higher Education:** Student and academic mobility, especially STEM and humanities.
- ▶ **Counterterrorism:** Joint Working Group + Consular Dialogue Mechanism.
- ▶ **Multilateral Support:** Slovakia supported India's permanent UNSC membership and NSG membership.

- ▶ **Regional Connectivity:** Support via Visegrad 4 (V4) and Three Seas Initiative.

### Relations Snapshot

- ▶ **JEC:** Joint Economic Committee established 1995.
- ▶ **Trade:** €1.28 billion (2024), crossing the \$1 billion mark.
- ▶ **India Exports:** Mobile phones, footwear, garments, motor vehicle parts, medicaments, electrical apparatus.
- ▶ **Slovakia Exports:** Motor vehicles, machinery, pumps, transmission shafts, measuring instruments, bearings.
- ▶ **Space:** Slovakia's first satellite SKcube launched by India's PSLV-XL from Sriharikota in June 2017.
- ▶ **Challenges:** Low trade volume; delays in converting MoUs into defence projects; proximity to Russia-Ukraine conflict; absence of Social Security Agreement.
- ▶ **Opportunities:** Gateway to EU and Central European markets; India-EU FTA; Make in India joint production.

### ■ A New Phase in India-Nepal Relations

- ▶ Nepal PM acknowledged the Kalapani-Lipulekh-Limpiyadhura dispute is not one-sided and urged amicable resolution.

### Boundary Dispute

- ▶ **Treaty of Sugauli 1816:** Anglo-Nepalese War; Kali (Mahakali) River set as Nepal's western boundary; source not clearly defined.
- ▶ **Nepal's Claim:** River originates at Limpiyadhura; constitutional map updated 2020; featured on NPR 100 banknote.
- ▶ **India's Claim:** River originates near Kalapani; area part of Pithoragarh district, Uttarakhand.
- ▶ **Strategic Importance:** Close to China; Lipulekh Pass key for Kailash Mansarovar Yatra and trade.

### Nepal's Changing Approach

- ▶ **Pragmatism over Ideology:** Focus on economic gains — 10,000 MW hydropower export to India.
- ▶ **Sovereign Equality:** From 'special relationship' to balanced state-to-state ties.
- ▶ **Rational Border Handling:** Boundary issues as technical/diplomatic, not nationalist.

### Key Outcomes of Nepal FM Visit

- ▶ **Cross-Border Digital Payments:** UPI-NPI P2P linkage for real-time low-cost remittances.
- ▶ **Language Technology:** MoU between Digital India Bhashini and Kathmandu University for voice-first translation.
- ▶ **Judicial Cooperation:** India-Nepal MLAA in Criminal Matters operational.
- ▶ **Development Partnership:** India handed over 72 health facilities and 12 cultural heritage projects under post-2015 earthquake reconstruction.

### Bilateral Relations

- ▶ **Trade:** India = Nepal's largest trading partner; Nepal = India's 14th largest export destination (2024-25).
- ▶ **Defence:** Gorkha Regiment — ~32,000 Nepalese soldiers in Indian Army; annual exercise Surya Kiran.
- ▶ **Rail:** Jayanagar-Bardibas, Jogbani-Biratnagar; proposed Raxaul-Kathmandu.
- ▶ **Energy:** Motihari-Amlekhgunj pipeline — South Asia's first cross-border petroleum pipeline (2019).
- ▶ **Power Trade Agreement (2024):** Nepal exports 10,000 MW hydro to India over 10 years.
- ▶ **Digital:** UPI interoperability with Nepal's FonePay.
- ▶ **River Treaties:** Kosi (1954), Gandak (1959), Karnali & Mahakali (1996).
- ▶ **Border:** 1,751 km open border — Siliguri Corridor ('Chicken's Neck') security.

### Challenges & Measures

- ▶ **China Factor:** BRI engagement, trans-Himalayan railway, Pokhara Airport.
- ▶ **Historical Grievances:** 2015-16 Madhesi protests and alleged India blockade.
- ▶ **Measures:** Review EPG report and update 1950 Treaty of Peace and Friendship; complete Arun-III hydro; depoliticize boundary dispute via Boundary Working Group (BWG); fast-track Pancheshwar Project (5,040 MW).

 **EXAM POINT:** Sugauli Treaty 1816. Kalapani-Lipulekh-Limpiyadhura. 1950 Treaty of Peace and Friendship. EPG = Eminent Persons Group. Gorkha Regiment. Surya Kiran exercise. Pancheshwar Project 5,040 MW.

## India-France Adopt Innovation Roadmap 2030

- ▶ PM and French President Macron held talks in Nice — first meeting after elevation to Special Global Strategic Partnership.

### Key Outcomes

- ▶ **Innovation Roadmap 2030:** Blueprint for technological sovereignty — disruptive innovation and digital infrastructure.
- ▶ **'Trusted AI' Alliance:** India-France AI Working Group for safe, ethical, risk-based AI governance.
- ▶ **Globalisation of UPI:** Expansion in France including Paris airport and Nice.
- ▶ **Kanpur Aeronautics Center:** National Centre of Excellence for Skilling in Aeronautics at NSTI Kanpur.
- ▶ **Station F:** France to incubate 10 additional Indian startups; target 30,000 Indian students by 2030.
- ▶ **Economic Security Dialogue:** First launch — supply chain resilience in critical minerals, semiconductors, energy, cybersecurity; aim to double bilateral trade in 5 years.
- ▶ **Bharat Innovates 2026:** 3-day event in Nice showcasing 120 Indian deep-tech startups across 13 technology pillars.
- ▶ **Mobility:** French universities invited to set up campuses in India under NEP 2020.

### Relations Snapshot

- ▶ **Elevation:** Feb 2026 during Macron's visit for the AI Impact Summit 2026 and launch of India-France Year of Innovation 2026.
- ▶ **Guiding Framework:** Horizon 2047 Roadmap.
- ▶ **Defence:** France = India's 2nd-largest arms supplier after Russia; 26 Rafale-Marine jets, Scorpene-class submarines.
- ▶ **Indigenisation:** H125 Helicopter Final Assembly Line in Karnataka — TATA-Airbus JV, India's first private sector helicopter facility.
- ▶ **Trade:** France = India's 3rd-largest EU trading partner (after Netherlands & Germany); €13.59 billion (2025-26); 11th largest foreign investor.

### Challenges

- ▶ **Jaitapur Nuclear Project:** 9,900 MW delayed over EPR tariff and Civil Liability for Nuclear Damage (CLND) Act 2010 concerns.
- ▶ **Geostrategic Asymmetries:** France focused on Europe/Francophone Africa; India on Himalayas and IOR.
- ▶ **Digital Governance Clashes:** India's DEPA approach vs EU's GDPR and EU AI Act.

- **Suggestions:** Co-development of jet engines, UCAVs, space-based defence with shared IP; SMRs under 2025 Declaration of Intent; India-France-Australia and India-France-UAE trilaterals.

## ■ India-South Africa Technology Partnership and Africa Strategy

- India and South Africa upgraded their 31-year-old S&T partnership under the 1995 S&T Agreement from research cooperation to industrial co-production.

### Core Priorities

- **Emerging Technologies:** AI, Digital Public Infrastructure, Advanced Manufacturing; expansion into Quantum Technologies, Genomics, Cyber-Physical Systems.
- **Commercialisation:** Shift from theoretical research to scalable technology commercialisation.
- **Energy & Biotech:** Renewable energy, hydrogen technologies, vaccine development.
- **Space & Astronomy:** Continued cooperation on the Square Kilometre Array project.
- **Telangana Framework:** Built on Hyderabad's strengths in IT, GCCs, defence, aerospace, healthcare, pharmaceuticals; medical tourism, bulk drug and vaccine co-production.
- **Forum Engagement:** South Africa invited India to Science Forum South Africa 2026; India invited South Africa to BRICS STI Ministerial Meeting, Chennai, August 2026.

### India's Economic Realignment in Africa

- **Regional Trade Focus:** Paused continent-wide FTA plans; prioritising blocs like Southern African Customs Union (SACU) — Botswana, Eswatini, Lesotho, Namibia, South Africa.
- **Investment Protection:** Safeguard USD 80 billion Indian investments.
- **Supply Chain Diversification:** Fertilizer and energy partnerships with Algeria, Tunisia, Libya, Morocco.
- **Critical Minerals:** Lithium, cobalt, rare earths for EV manufacturing and National Green Hydrogen Mission.
- **AfCFTA Leverage:** USD 3.4 trillion market covering 1.4 billion people.
- **Co-Production Shift:** From USD 12 billion Lines of Credit across 42 African countries to industrial co-production.

### Geopolitical Significance

- **Global South Voice:** India and African Union push reforms in UNSC, Bretton Woods institutions, climate finance.
- **Maritime Security:** Under SAGAR — joint naval engagements, MDA, IFC-IOR information sharing.
- **Kampala Principles 2018:** Alternative to debt-trap diplomacy — transparent, demand-driven capacity building.
- **Peacekeeping:** Over 5,000 Indian peacekeepers in South Sudan and DRC.
- **Diplomatic Footprint:** 17 new missions opened, total 46 across Africa.
- **IAFS-IV:** Revives the continental roadmap.

### Challenges

- **Project Delays:** Bureaucratic delays in LoC disbursement.
- **Geopolitical Asymmetry:** Outscaled by China's BRI and FOCAC-linked mega-projects.
- **Political Instability:** Coups and insurgencies, especially in the Sahel and West Africa.
- **Diaspora Security:** Xenophobic violence threatens 3 million-strong Indian diaspora.
- **Paradiplomacy Limits:** Foreign affairs under Union List Entry 10, 7th Schedule.

 **EXAM POINT:** AfCFTA = African Continental Free Trade Area (2021). SACU = oldest customs union (1910). IAFS = India-Africa Forum Summit. Kampala Principles 2018. AU Agenda 2063. Square Kilometre Array = world's largest radio telescope.

## ■ Myanmar President's Visit to India

- Myanmar's President U Min Aung Hlaing undertook a five-day state visit — first official visit since the 2021 military coup.

### Key Highlights

- **Security Cooperation:** Myanmar assured its territory would not be used by anti-India insurgent groups NSCN-K and ULFA.
- **Past Operations:** Operation Sunrise (2019) and Operation Hot Pursuit (2015).
- **Trade:** Expand via Rupee-Kyat settlement mechanism (operational from 2024); investment in agro-processing, petroleum, energy, mining.

- **Connectivity:** Expedite Kaladan Multi-Modal Transit Transport Project and India-Myanmar-Thailand Trilateral Highway.
- **Policy Alignment:** Neighbourhood First, Act East, MAHASAGAR.
- **People-to-People:** Mekong Ganga ICCR scholarships increased from 36 to 100.
- **Critical Minerals:** Cooperation on critical minerals and rare earths.

### Bilateral Relations

- **Trade:** India = Myanmar's 4th largest trading partner; USD 2.1 billion in FY25; Indian medicines hold ~60% of Myanmar's pharma market.
- **Financial:** Special Rupee Vostro Accounts (SRVA).
- **Humanitarian:** Operation Sadbhav (2024) and Operation Brahma (2025).
- **Cultural:** Restoration of the Ananda Pagoda at Bagan; 1.5-2.5 million Indian diaspora.

### Strategic Importance

- **Geopolitical Gateway:** India's sole ASEAN neighbour sharing both a 1,643 km land border (Arunachal, Nagaland, Manipur, Mizoram) and a maritime boundary.
- **Northeast Security:** Intelligence sharing against NSCN-IM, ULFA; Golden Triangle narcotics.
- **Counterbalancing China:** China-Myanmar Economic Corridor (CMEC) and Kyaukpyu deep-sea port; heavy rare earth elements in Kachin state.
- **Maritime Domain Awareness:** Myanmar's Coco Islands near India's Andaman and Nicobar Islands.

### Challenges

- **Democracy vs Security Dilemma:** Balancing normative values with realist security interests.
- **FMR Suspension:** Free Movement Regime (16 km visa-free travel) suspended over illegal immigration, narcotics, insurgent infiltration; local communities view border as artificial colonial construct.
- **Infrastructural Bottlenecks:** Kaladan corridor cost overruns; Arakan Army dominance in Rakhine and Chin states.
- **Refugee Spillover:** Influx into Mizoram and Manipur post-2021 coup.
- **Reputational Damage:** USD 51 million in arms supplied to the junta since Feb 2021; UN labelled these a 'death trade'.

- **Measures:** De-risk connectivity investments; CIBMS deployment; upgrade NSA-level discussions; leverage soft power (Mahabodhi Temple visit).

## Canada-India Trade and Investment Forum

- Union Commerce and Industry Minister led the largest-ever Indian business delegation to Canada.

### Key Highlights

- **Forum Launch:** Platform for business leaders and two-way engagement.
- **CEPA:** Pragmatic approach focusing on 'low-hanging fruit', avoiding sensitive sectors (agriculture and dairy for India); Canada termed CEPA a 'game changer'.
- **Trade Target:** USD 50 billion by 2030; SMEs as operational backbone.
- **Team Canada Trade Mission:** To India later in 2026.
- **Strategic Sectors:** Clean energy, critical minerals, agri-food, advanced manufacturing, digital technologies, skills.
- **Critical Minerals MoU:** Signed May 2026 — secure and resilient supply chains, aligning with G7 Critical Minerals Action Plan.

### Significance

- **Critical Minerals:** Canada = tier-one supplier of potash, uranium, nickel.
- **Indo-Pacific:** Canada's Indo-Pacific Strategy recognizes India; aligns with India's MAHASAGAR vision.
- **Nuclear Security:** 2010 Nuclear Cooperation Agreement for Canadian uranium supply.
- **Low-Carbon Future:** Canadian capital and expertise in carbon capture, clean-tech, grid modernization for National Green Hydrogen Mission.

### Relations Snapshot

- **Strategic Partnership:** Upgraded 2018; 75+ years of diplomatic relations.
- **Merchandise Trade:** India enjoys surplus — USD 9.7 billion exports vs USD 3.9 billion imports.
- **Services Trade:** Favors Canada — USD 15.2 billion exports vs USD 4.5 billion imports, driven by education-related travel.
- **Diaspora:** 1.8 million+ (~4% of Canada's population); India = largest source of international students.

- **Security:** Joint Working Group on Counter Terrorism (1997), Framework for Cooperation on Countering Terrorism (2018), Extradition Treaty (1987), MLAT (1994).
- **ACITI:** Australia-Canada-India Technology and Innovation Partnership.
- **India's CEPAs:** Five in force — South Korea, Japan, Malaysia, UAE, Oman.

## ■ Quad Foreign Ministers' Meeting 2026

- 11th Quad Foreign Ministers' Meeting held in New Delhi.

### Maritime & Transnational Security

- **IPMSC:** Indo-Pacific Maritime Surveillance Collaboration — improve MDA using member tracking assets, focused on the IOR.
- **Common Operating Picture (COP):** Expanded IPMDA to stream real-time maritime data.
- **Interoperability:** India to host next Quad-at-Sea Ship Observer Mission; Australia to host Quad Counterterrorism Tabletop Exercise (June 2026) on state-sponsored terrorism and UAVs.

### Economic Prosperity

- **Quad Critical Minerals Initiative Framework:** Coordinate investments in mining, processing, recycling.
- **Indo-Pacific Energy Security Initiative:** Over USD 25 million for tech integration and supply chain resilience.
- **Pacific Island Outreach:** Partnered with Fiji to upgrade port infrastructure; commitment to connect all Pacific Island Forum countries through resilient undersea cables by 2026.

### Critical & Emerging Technology

- **Cross-Border Interoperability:** Technical 'translation guide' at Digital Identity Standards workshop.
- **AI-ENGAGE Initiative:** Over USD 6 million for AI, robotics, remote sensing to improve crop yields and food security.

### HADR

- **Disaster Response:** Based on lessons from the 2025 Honolulu tabletop exercise (TTX).
- **Health:** Over USD 50 million pledged to train health professionals.

### Relevance & Significance for India

- **Strategic Counterbalance:** Counters unilateral attempts to alter status quo in South China Sea, Taiwan Strait, LAC.
- **Supply Chain Resilience:** Supports China+1 strategy.
- **Countering China:** Counterbalance to String of Pearls in the IOR.
- **Strategic Autonomy:** Informal structure allows cooperation without a binding mutual-defense pact.
- **Net Security Provider:** IPMSC enables near real-time monitoring of illegal fishing and grey zone militia tactics.
- **Economic Opportunities:** Blue Dot Network and Supply Chain Resilience Initiative (SCRI).

### Challenges

- **Lack of Institutionalization:** No permanent secretariat or binding charter; no leader-level summits in 2025 and 2026.
- **Minilateral Competition:** US focus on AUKUS and the 'Squad' (US, Japan, Australia, Philippines).

 **EXAM POINT:** Quad = India, US, Japan, Australia (revived 2017; first leaders' summit 2021). IPMDA = Indo-Pacific Partnership for Maritime Domain Awareness (2022). AUKUS = Australia-UK-US (2021). Malabar Exercise.

## ■ India-Cyprus Strategic Partnership

- **EU Gateway:** As an EU member and holder of the Council of EU Presidency, Cyprus acts as India's bridge to Europe.
- **Normative Support:** Cyprus supports India's permanent UNSC membership and NSG entry.
- **Bilateral Trade:** ~USD 140 million in 2024-25.
- **FDI:** Among top 9 investors in India — cumulative FDI equity inflows USD 15.76 billion (April 2000-June 2025); services, software, auto, real estate, pharmaceuticals.
- **Category-I FPI:** SEBI notified Cyprus as eligible in May 2026.
- **Non-FATF Status:** One of only three non-FATF countries (with Mauritius and UAE) to receive this designation from India.
- **Turkey Factor:** Cyprus faces Turkey's occupation of Northern Cyprus.

### Challenges & Measures

- ▶ **Economic Corridors:** West Asian conflicts and proposed China-Pakistan-Russia-Turkey corridor threaten IMEC → operationalize IMEEC through Cyprus's 'clean ports' without Chinese state stakes.
- ▶ **Financial Integrity:** Past concerns over round-tripping → enforce revised DTAA and leverage Category-I FPI status.
- ▶ **Asymmetric Warfare:** India faces cross-border terrorism; Cyprus faces cyber espionage in the Levant → operationalize Joint Working Group on Counter-Terrorism.

## ■ Carbon Border Adjustment Mechanism (CBAM)

- ▶ **About:** EU import duty on carbon-intensive goods produced outside the EU through processes emitting more carbon than EU standards allow.
- ▶ **Part Of:** EU's 'Fit for 55' package — reduce GHG emissions by at least 55% by 2030 vs 1990 levels.
- ▶ **Objective:** Prevent 'carbon leakage'; ensure fair carbon price on imports; encourage cleaner production.
- ▶ **Coverage:** Iron and steel, cement, fertiliser, aluminium, electricity generation — with possible expansion.
- ▶ **Mechanism:** EU importers buy CBAM certificates priced in line with the EU Emissions Trading System (EU ETS); carbon price already paid in the producing country can be deducted.
- ▶ **Timeline:** Rolled out 2023; transitional phase 2023-2025; definitive fully enforceable phase from 1 January 2026.
- ▶ **Concerns:** India, China and other BRICS members view CBAM as unilateral, discriminatory and protectionist — weakening Common But Differentiated Responsibilities.
- ▶ **Global Trade Impact:** May benefit developed countries with EU-like emission standards while disadvantaging developing economies.

 **EXAM POINT:** CBAM = EU carbon border tax; definitive phase from 1 Jan 2026. 'Fit for 55' package. EU ETS = world's first major carbon market (2005). CBDR-RC principle (Rio 1992). India's carbon market = CCTS (Carbon Credit Trading Scheme).

## SECTION 5 — ENVIRONMENT & ECOLOGY

### ■ Climate Change and the Rising Cost of Living in India

#### Persistent Food Inflation

- ▶ **CPI Weight:** Food and beverages have 45.86% weight in CPI.
- ▶ **Yield Impact:** Heatwaves, delayed monsoon and rainfall deficit reduce yields and disrupt sowing.
- ▶ **2023 Example:** 6% rainfall deficit raised pulses and oilseed prices by 6-15% YoY.

#### Energy Strain

- ▶ **Cooling Demand:** May 2026 power demand hit 270.8 GW.
- ▶ **Tariff Impact:** Costly emergency fuel purchases raise tariffs and surcharges.

#### Water Scarcity & Health

- ▶ **Tanker Economy:** Urban water gaps create a costly private tanker economy.
- ▶ **Burden:** Highest on slums, informal settlements, Dalits and Adivasis.
- ▶ **Healthcare & OOP:** Heat stress, poor air quality, vector-borne diseases increase medical expenses.

#### Unequal Economic Burden

- ▶ **World Bank:** Climate change may reduce India's GDP by up to 2.8% by 2050.
- ▶ **Vulnerable States:** Chhattisgarh, Madhya Pradesh, Rajasthan, Uttar Pradesh, Maharashtra.
- ▶ **Regressive Tax:** Climate change hurts the poor and marginalised most.

#### Statutory & Scheme Limitations

- ▶ **Disaster Management Act 2005:** Heatwaves and cold waves not notified national disasters — limits NDRF aid.
- ▶ **Essential Commodities Act 1955:** Handles short-term price spikes, not climate-driven supply shocks.
- ▶ **India Cooling Action Plan:** Advisory only; no legal mandate for passive cooling in low-income housing.

- ▶ **PMFBY:** Village-level crop loss assessment misses localised damage.
- ▶ **PM-KISAN:** Fixed ₹6,000/year not linked to inflation or climate losses.
- ▶ **Heat Action Plans:** Exist in 250+ cities/districts but lack dedicated funds and statutory backing.

#### Key State-Level Innovations

- ▶ **Tamil Nadu:** Declared heatwaves a state-specific disaster for SDRF financing; Green Schools reduced classroom temperature by 3-4°C.
- ▶ **Maharashtra:** Multi-sectoral early warnings for Vidarbha and Marathwada.
- ▶ **Telangana:** Cool Roof Policy 2023-2028; linked with Haritha Haram and Mission Kakatiya.
- ▶ **Rajasthan:** District HAPs with shaded worksites; Jodhpur net-zero cooling station reduces temperature by 8-12°C.
- ▶ **Kerala:** Village-level heat planning integrated into State Action Plan on Climate Change 2023-2030.
- ▶ **Delhi & UP:** Delhi graded heat alerts for outdoor workers; UP district-specific thresholds, Miyawaki forests, sponge parks.

#### Measures

- ▶ **Legislation:** Enact a Climate Resilience and Adaptation Act; create a National Climate Adaptation Authority.
- ▶ **Rights:** Recognise Right to Thermal Comfort and Climate Safety under Article 21.
- ▶ **Climate-Risk Budgeting:** Similar to Gender Budgeting.
- ▶ **RBI Forecasting:** Include climate risks in inflation forecasting.
- ▶ **Municipal Heat Governance:** Local heat mapping, urban forests, cool roofs — like Germany's Kommunale Wärmeplanung.

🎯 **EXAM POINT:** Disaster Management Act 2005. NDRF/SDRF. India Cooling Action Plan 2019. PMFBY 2016. Article 21 = Right to Life. World Bank: 2.8% GDP loss by 2050.

### ■ Biochar and its Applications

- ▶ **Definition:** Highly porous, carbon-rich material like charcoal produced from organic biomass — agricultural waste, forestry residues, food processing waste.

- **Process (Pyrolysis):** Heating biomass in an oxygen-depleted environment at 300°C-700°C.
- **By-products:** Syngas and bio-oil, usable as renewable energy.
- **Soil Mechanism:** Porous structure holds water, aggregates soil particles, supports beneficial microorganisms.

### Significance & Applications

- **Agricultural Productivity:** Improves crop yields 10-30%; raises soil water-holding capacity 10-25%.
- **Waste Management:** India produces over 500 million tons of crop waste annually; converting stubble to biochar reduces open-field burning.
- **Municipal Waste:** Can convert biodegradable municipal solid waste (over 50% of India's 62 million tonnes annual urban waste) and sewage sludge.
- **Carbon Sequestration:** One ton of biochar can sequester 2.5 to 3 tons of CO<sub>2</sub> equivalent; stores carbon in soil for centuries.
- **Carbon Credits:** Each tonne of certified biochar can generate 2 to 2.8 tonnes of CO<sub>2</sub>-equivalent carbon credits.
- **Power Generation:** Pyrolysis can generate 20-30 million tonnes of syngas and 24-40 million tonnes of bio-oil; syngas can produce 8-13 TWh electricity annually; bio-oil can replace 12-19 million tonnes of diesel/kerosene.
- **Water Purification:** Chemically modified biochar filters chromium, arsenic and lead from wastewater.
- **Construction:** Adding 2-5% biochar to concrete improves strength, raises heat resistance by 20%, captures ~115 kg CO<sub>2</sub> per cubic metre.

### ■ Climate-Resilient Coral Reefs Ecosystems

- Study presented at the Our Ocean Conference in Mombasa (Kenya) found coral reefs off Kenya's coast recovering from 27% to 40% cover within a year despite severe 2024 bleaching.

### Key Findings

- **Extent:** About 1,66,000 sq km (nearly one-third of global coral reefs) are relatively climate-resilient.
- **IPCC Comparison:** Contradicts earlier IPCC projections of 70-90% coral loss at 1.5°C and up to 99% at 2°C.
- **Community Conservation:** Kenya's regulated fishing, patrolling, mangrove planting, waste management.

- **Resilience Mechanisms:** Cooler microclimates, genetic heat adaptation, faster post-bleaching recovery.
- **Mapping:** High-resolution mapping identified over three times more resilient reefs — concentrated in Australia, Indonesia, Philippines, Cuba, Bahamas.

### Coral Bleaching

- **Definition:** Loss of symbiotic algae (zooxanthellae) from corals due to stress, causing corals to turn white.
- **Cause:** Mainly rising ocean temperatures; also cold stress, pollution, runoff, excessive sunlight, extreme low tides.
- **Impact:** Loss of algae removes coral's food source and colour — weak, disease-prone, potential death.
- **Examples:** 2005 Caribbean bleaching; 2010 Florida Keys cold-stress event.
- **GCRMN Study (2021):** UN-supported Global Coral Reef Monitoring Network found 14% global coral loss (2009-2018).
- **Global Initiatives:** International Coral Reef Initiative; GCRMN; Global Coral Reef Alliance (GCRA); Global Coral Reef R&D Accelerator Platform.
- **India Initiatives:** Coral Bleaching Alert System (INCOIS); Artificial Reef Installation Programme; Coral Translocation Project (ZSI); PMMSY Artificial Reefs.

### ■ World Day to Combat Desertification and Drought 2026

- **Date:** 17 June — declared by UNGA in 1994, marking adoption of the UN Convention to Combat Desertification (UNCCD).
- **Objective:** Raise awareness on land degradation and promote Land Degradation Neutrality (LDN).
- **Theme 2026:** 'Rangelands: Recognize. Respect. Restore.'
- **IYRP 2026:** International Year of Rangelands and Pastoralists — declared by the UN, led by FAO and UNCCD.

### Rangelands

- **About:** Vast open landscapes of natural vegetation — grasslands, shrublands, deserts, tundras.
- **Scale:** World's largest land-use category — 54% of Earth's land surface; ~16% of global food production.
- **India:** ~1.21 million sq km, from Thar Desert to Himalayan meadows; ~40% of India's land used for grazing.

- ▶ **India Decline:** Grasslands fell from 18 million hectares to 12 million hectares (2005-2015); under 5% protected.
- ▶ **Human Footprint:** Support ~2 billion people, mainly indigenous and nomadic pastoral communities.
- ▶ **Degradation:** ~50% of global rangelands degraded or under stress.
- ▶ **Drivers:** Land-use change, agricultural expansion, overgrazing, climate-induced droughts.

### WDC-PMKSY 2.0

- ▶ **Evolution:** From Integrated Watershed Management Programme (IWMP) 2009-10, merged into PMKSY 2015-16.
- ▶ **Current Phase:** WDC-PMKSY 2.0 for 2021-2026; covers 49.50 lakh hectares.
- ▶ **Nodal Agency:** Department of Land Resources (DoLR), Ministry of Rural Development.
- ▶ **Springshed Rejuvenation:** Based on NITI Aayog recommendations; important for mountain regions.
- ▶ **Technology:** GIS and Remote Sensing mandated for planning and mapping in saturation mode.

### Land Degradation Initiatives

- ▶ **India's Status:** ~29.7% of India's Total Geographic Area undergoing land degradation (Desertification and Land Degradation Atlas, SAC-ISRO).
- ▶ **Bonn Challenge:** Restore 150 million hectares by 2020 and 350 million hectares by 2030.
- ▶ **Great Green Wall:** African Union-led initiative in the Sahel.
- ▶ **G20 Global Land Initiative:** Launched 2020 (Saudi G20 Presidency) — 50% reduction in degraded land by 2040; Gandhinagar Implementation Roadmap (GIR) adopted under India's 2023 Presidency.
- ▶ **SDG Target 15.3:** Land Degradation Neutrality by 2030.
- ▶ **UNCCD COP14 (2019, New Delhi):** India committed to restore 26 million hectares by 2030.
- ▶ **Aravalli Green Wall Project:** 5-km eco-buffer zone around the Aravalli range to check Thar Desert expansion; exceeded targets in FY 2025-26.
- ▶ **Others:** Desert Development Programme (DDP); National Mission for a Green India (GIM) under NAPCC.

 **EXAM POINT:** UNCCD 1994 (one of 3 Rio Conventions with UNFCCC and CBD). WDCDD = 17 June. IYRP 2026. LDN = SDG 15.3. India hosted UNCCD COP14 (2019). Aravalli Green Wall.

## ■ Economic Threat of El Niño to India

### Economic Implications

- ▶ **Monsoon Deficit:** El Niño weakens easterly trade winds, suppressing India's Southwest Monsoon.
- ▶ **Water Stress:** ~70% of India's annual rainfall comes from the monsoon.
- ▶ **Agricultural Shock:** Around half of net sown area is rain-fed; hits Kharif crops — rice, cotton, soybeans, pulses.
- ▶ **Higher Input Costs:** More groundwater use raises diesel and electricity costs.
- ▶ **Inflation:** Food supply shock raises cereal, vegetable and pulse prices; high food inflation in CPI reduces purchasing power.
- ▶ **Heat Economy:** Outdoor informal workers face reduced efficiency; ILO estimates a 1.5°C rise may cut 2.2% of total working hours by 2030 — nearly 80 million full-time jobs.
- ▶ **UHI Effect:** Unplanned concretization makes cities hotter; wealthier groups adapt with ACs while slums face exposure.
- ▶ **RBI Dilemma:** Stagflation risk — FY27 growth could slow to 6.5%; raising rates to control inflation increases borrowing costs.

### About El Niño

- ▶ **Definition:** Unusual warming of sea surface temperatures in the eastern and central equatorial Pacific Ocean.
- ▶ **ENSO Link:** Warm phase of the El Niño-Southern Oscillation.
- ▶ **Normal Conditions:** Strong trade winds push warm surface water toward Asia and Australia; cold nutrient-rich water rises near South America (upwelling).
- ▶ **El Niño Conditions:** Trade winds weaken or reverse; warm water moves east toward the Americas; upwelling reduced.
- ▶ **India Impact:** Suppressed Southwest Monsoon, deficient rainfall, higher temperatures, agricultural droughts.
- ▶ **Americas:** Warmer waters increase evaporation and rainfall — flooding and landslides on western coasts.
- ▶ **Australia & SE Asia:** Droughts, water shortages, forest fires.
- ▶ **Marine Ecosystems:** Reduced upwelling lowers nutrients, harming fish stocks.

### Forecast 2026

- ▶ **NOAA:** 82% probability of El Niño during May-July 2026; 96% chance of persistence through winter 2026-27.
- ▶ **IMD:** Southwest Monsoon rainfall projected at 92% of LPA — below normal bracket.

### Strategic Measures

- ▶ **Contingency Crop Planning:** ICAR's DACPs; shift from paddy and sugarcane to drought-tolerant pulses, oilseeds, millets (Shree Anna).
- ▶ **Micro-irrigation:** PMKSY - Per Drop More Crop.
- ▶ **Water Governance:** Mission Amrit Sarovar and Mission Kakatiya (Telangana) — Nizam's tank system as a climate adaptation model.
- ▶ **Statutory HAPs:** Legally enforce Heat Action Plans with altered work hours, shaded worksites, wage-loss compensation.
- ▶ **Urban Cooling:** Cool Roof policies and blue-green infrastructure.

 **EXAM POINT:** El Niño = warm phase of ENSO; La Niña = cold phase. IOD = Indian Ocean Dipole. LPA = Long Period Average. NOAA. Great Famine of 1876-78 linked to a strong El Niño.

### ■ World Environment Day 2026

- ▶ **Date:** 5 June.
- ▶ **Established:** By UNGA in 1972 to mark the opening of the Stockholm Conference on the Human Environment (1972).
- ▶ **First Observance:** 1973 with the inaugural theme 'Only One Earth'.
- ▶ **Organizing Body:** UNEP, headquartered in Nairobi, Kenya.
- ▶ **Host 2026:** Republic of Azerbaijan, in its capital Baku — strategic as it hosted UNFCCC COP29 in late 2024.
- ▶ **Theme 2026:** 'Inspired by Nature. For Climate. For Our Future.'
- ▶ **Inspired by Nature:** Promotes Nature-based Solutions (NbS) — afforestation, ecosystem restoration, wetland conservation.

### 'Ek Ped Maa Ke Naam' Campaign

- ▶ **Launched:** World Environment Day 2024 — 'A Tree in the Name of Mother'.
- ▶ **Behavioral Nudge:** Operationalizes Mission LiFE (Lifestyle for Environment).

- ▶ **Scale:** Uttar Pradesh surpassed its target of planting five crore (50 million) saplings across all 75 districts.
- ▶ **NDC Link:** Target of an additional carbon sink of 3.5 to 4.0 billion tonnes of CO<sub>2</sub> equivalent through forest and tree cover by 2035; as of 2025, India created 2.29 billion tonnes.
- ▶ **Constitutional Mandate:** Article 48A (DPSP — protection of environment and forests) and Article 51A(g) (Fundamental Duty).

 **EXAM POINT:** WED = 5 June (since 1973). Stockholm Conference 1972 → UNEP (Nairobi). Mission LiFE (2021, COP26 Glasgow). Article 48A + 51A(g) added by 42nd CAA 1976.

### ■ Mega Science Vision-2035 Report on Climate Research

- ▶ MSV Report warns India's capacity to build indigenous scientific instruments has declined, making the country heavily reliant on often un-calibrated imports.

#### Key Highlights

- ▶ **Loss of Instrument-Making:** Domestic climate instrument capacity nearly lost.
- ▶ **Data Quality:** Imported instruments often run uncalibrated, causing incorrect data in national/international journals.
- ▶ **Renewables Concern:** Rapid push toward 500 GW non-fossil capacity by 2030; long-term environmental impacts of solar and wind poorly understood.
- ▶ **Foreign Dependency for ESMs:** Indian Earth System Models adapted from US/Europe, poorly suited to regional climate.
- ▶ **Procurement Challenges:** GeM restrictions hindered access to custom high-precision instruments; Finance Ministry (June 2025) allowed purchases up to ₹200 crore outside GeM.
- ▶ **Other Gaps:** Insufficient carbon capture research; weak integration of environmental and public health data.

#### MSV Report

- ▶ **Nodal Institution:** Indian Institute of Science (IISc), Bengaluru.
- ▶ **Submitted To:** Office of the Principal Scientific Adviser (PSA).

#### Recommendations

- ▶ **Mega Projects:** 8 projects with observatories, satellites, field campaigns, in-situ networks, indigenous sensors, phased up to 2035.
- ▶ **Indigenous ESM:** Domestic Earth System Model using AI/ML for region-specific conditions.
- ▶ **Domestic Manufacturing:** Revive scientific instrument production and calibration technologies.
- ▶ **Monitoring Networks:** Expand weather stations, ocean buoys, GHG monitoring.
- ▶ **Polluter Pays:** Implement Social Cost of Carbon.

### Structural Constraints in Indian Forecasting

- ▶ **Geographical Asymmetry:** India's tropical climate more dynamic and less stable than temperate regions.
- ▶ **Climate Change Multiplier:** Shifting weather patterns reduce reliability of traditional predictive models.
- ▶ **Macro-Micro Gap:** Macro forecasts (monsoon, heatwaves) fairly accurate; hyper-local events (cloudbursts) remain hard to predict.
- ▶ **Initiatives:** Mission Mausam; Bharat Forecasting System (BharatFS); Impact-Based Forecasting (IBF); AI-Enabled Forecast of Monsoon Advance; Doppler Weather Radars.
- ▶ **SkyCast System:** Developed by MoES under Mission Mausam — advanced atmospheric remote sensing for aviation weather; integrates fog, aerosols, turbulence, moisture, visibility data.

### ■ Illegal Sand Mining in National Chambal Sanctuary

- ▶ SC expressed concern and directed UP, MP and Rajasthan to act, as mining damages the Chambal river ecosystem and threatens ghariahs.

#### About Sand Mining

- ▶ **Definition:** Extraction of sand and gravel from riverbeds, coasts and dunes mainly for construction.
- ▶ **Economic Drivers:** Rapid urbanization created a massive demand-supply gap; illegal mining avoids environmental clearances, royalties, compliance costs.
- ▶ **Governance Failures:** Nexus between sand mafias, local politicians and corrupt officials; inadequate manpower and surveillance.
- ▶ **Policy Gaps:** Outdated District Survey Reports; weak transport monitoring; slow adoption of Manufactured Sand.

#### Impacts

- ▶ **Ecological Degradation:** Riverbank erosion, destruction of aquatic habitats, biodiversity loss.
- ▶ **Hydrological Disruption:** Alters river flow, deepens riverbeds, lowers groundwater, increases flood risks.
- ▶ **Infrastructure:** Weakens bridges, embankments and public infrastructure.

#### Regulation

- ▶ **MMDR Act 1957:** Sand classified as a minor mineral — regulation primarily a State subject.
- ▶ **EIA Notification 2006:** Mandates prior environmental clearance.
- ▶ **Sustainable Sand Mining Management Guidelines 2016:** District Survey Reports.
- ▶ **Enforcement and Monitoring Guidelines 2020:** Drones, satellite tracking, barcoding of mineral transport vehicles.

#### Key Judgements

- ▶ **Deepak Kumar v State of Haryana (2012):** All sand mining including areas below 5 hectares must obtain environmental clearance.
- ▶ **State of UP v Gaurav Kumar (2025):** Valid finalized District Survey Report mandatory — 'No District Survey Report, No Sand-Mining'; draft DSRs legally invalid.
- ▶ **Public Trust Doctrine:** M.C. Mehta v Kamal Nath (1996) — natural resources belong to the public; State is only a trustee.
- ▶ **Precautionary Principle:** Vellore Citizens Welfare Forum v UoI (1996).

#### Measures

- ▶ **Digital Surveillance:** Satellite and drone monitoring; e-Transit Passes and QR-code barcoding with GPS tracking; Mining Surveillance System dashboards.
- ▶ **DSR Reform:** GIS mapping and annual replenishment studies; made public for social audits.
- ▶ **Separation of Duties:** Independent 'Anti-Illegal Mining Task Forces' reporting to state level.
- ▶ **Accountability of Financiers:** Trace the 'money trail' using PMLA.
- ▶ **Promote M-Sand:** Mandate Manufactured Sand in public sector projects.
- ▶ **Community Participation:** 'Village/River Committees' similar to Joint Forest Management.

#### National Chambal Sanctuary

► **About:** Tri-state protected area across Rajasthan, MP and UP along the Chambal River; declared 1978-79; ~5,400 sq km.

► **Species:** Gharials, Gangetic river dolphins, red-crowned roofed turtles, Indian skimmers, mugger crocodiles.

### Gharial

► **Scientific Name:** *Gavialis gangeticus* — fish-eating crocodilian.

► **IUCN:** Critically Endangered; WPA 1972 Schedule I.

► **Habitat:** Deep, fast-flowing rivers with undisturbed sandy banks; Chambal is a key habitat.

### Gangetic River Dolphin

► **Scientific Name:** *Platanista gangetica* ('Susu').

► **IUCN:** Endangered; WPA 1972 Schedule I.

► **Status:** India's National Aquatic Animal.

► **Habitat:** Deep river channels, confluences, meandering stretches in Ganga-Brahmaputra-Meghna system.

📌 **EXAM POINT:** MMDR Act 1957 = sand is a minor mineral (State subject). EIA Notification 2006. Deepak Kumar (2012). Gaurav Kumar (2025) = 'No DSR, No Sand-Mining'. Gharial = Critically Endangered. Gangetic Dolphin = National Aquatic Animal (2009).

### ■ Rare Dragonfly Rediscovered in Arunachal Pradesh

► **Species:** *Gynacantha khasiaca* — the long-tailed duskhawker.

► **Rediscovery:** In Changlang district after being last recorded from the erstwhile Abor Hills in 1914.

► **Location:** Namdapha National Park and Tiger Reserve, ~600 km east of the earlier location.

► **Order:** Odonata — dragonflies and damselflies; crucial to freshwater ecosystems as both predators and prey.

► **Features:** Two compound eyes, each with thousands of tiny lenses and photoreceptor clusters.

► **Genus *Gynacantha*:** Large dragonflies, pale brown and green, crepuscular; 92 species globally, ~30 in Southeast Asia, 10 in India.

► **Global Diversity:** Odonata has 6,442 species across 693 genera.

► **India:** 504 species and 27 subspecies across 152 genera and 18 families; Arunachal Pradesh has 110 species.

► **Other Species Recorded:** *Trithemis aurora*, *Neurothemis fulvia*, *Orthetrum glaucum*, *Aristocypha spuria*, *Neurobasis chinensis*.

► **Distribution:** Outside India — Bangladesh, Myanmar, Nepal; within India — Arunachal Pradesh, Assam, Maharashtra, Meghalaya, Uttarakhand, West Bengal.

### Namdapha National Park

► **Location:** Changlang district, Arunachal Pradesh, along the India-Myanmar border, between the Dapha Bum range of the Mishmi Hills and the Patkai range.

► **River:** Drained by the Noa-Dihing River, a tributary of the Brahmaputra.

► **Status:** Wildlife Sanctuary 1972; National Park and Tiger Reserve 1983.

► **Four Big Cats:** Tiger, leopard, snow leopard, clouded leopard.

► **Other Species:** Endangered Hoolock Gibbon (India's only ape), White-winged Wood Duck, Great Indian Hornbill.

► **Vegetation:** Tropical evergreen, moist deciduous, subtropical, temperate forests and alpine vegetation.

### ■ Jai Prakash Narayan Bird Sanctuary: India's 100th Ramsar Site

► **Designation:** Jai Prakash Narayan Bird Sanctuary (Surha Tal), Ballia district, Uttar Pradesh — announced on World Environment Day (5 June 2026).

► **Global Standing:** India now has the highest number of Ramsar Sites in Asia and ranks 3rd globally, after the UK (176) and Mexico (144).

► **UP's Contribution:** 13th Ramsar Site in Uttar Pradesh; earlier in 2026, Shekha Jheel Bird Sanctuary (Aligarh) and Patna Bird Sanctuary (Etah) were added.

### About the Sanctuary

► **Formation:** Large natural oxbow lake formed by the meandering Ganga; declared a bird sanctuary by UP in 1991; lies in the middle Ganga basin.

► **Hydrology:** Freshwater inflow through three primary channels; massive monsoon expansion over floodplains and marshes.

► **Avifauna:** Falls under the Central Asian Flyway — critical stopover and wintering ground for migratory birds from Siberia and Central Asia.

- ▶ **Notable Species:** Vulnerable common pochard (*Aythya ferina*), Indian river tern (*Sterna aurantia*), sarus cranes, bar-headed geese.
- ▶ **Aquatic Life:** 221+ plant species and 66 fish species including vulnerable Wallago attu and Bagarius bagarius.
- ▶ **Mammals:** Vulnerable fishing cat (*Prionailurus viverrinus*) uses the site as a prime feeding and breeding ground.

## Wetlands

- ▶ **Ramsar Definition:** Areas of marsh, fen, peatland or water — natural or artificial, permanent or temporary, static or flowing, fresh, brackish or saline, including shallow marine areas up to six metres deep at low tide.
- ▶ **India's Rules Exclusion:** Wetlands (Conservation and Management) Rules 2017 exclude river channels, paddy fields, drinking water tanks, and water bodies for aquaculture, salt production, recreation or irrigation.

 **EXAM POINT:** Ramsar Convention 1971 (Ramsar, Iran); India joined 1982. India = 100 Ramsar sites (3rd globally after UK 176, Mexico 144); highest in Asia. Central Asian Flyway. Montreux Record = wetlands under threat.

## SECTION 6 — SCIENCE & TECHNOLOGY

### ■ India's Emerging Technology Ecosystem

#### Digital India as Backbone

- **Context:** Digital India Programme (2015) created the base for technology-led growth.
- **Optical Fibre:** 19.35 lakh route km (2019) → 42.36 lakh route km (2025), reaching 99.9% of districts.
- **5G Rollout:** Services reached 99.9% of districts.
- **Internet Connections:** 25.15 crore (2014) → 102.86 crore (2026).
- **Broadband:** 6.1 crore (2014) → 99.56 crore (Dec 2025).
- **Affordable Data:** Cost fell from ₹269/GB to ₹8-10/GB.
- **Mass Adoption:** Monthly data use 61.66 MB (2014) → 24.01 GB (Dec 2025).

#### Frontier Technology Capabilities

- **Supercomputing:** National Supercomputing Mission 2015 — ₹4,500 crore; 38 supercomputers with 47 petaflops; PARAM Rudra supports indigenous HPC.
- **Semiconductors:** Semicon India Programme 2021 — ₹76,000 crore; ISM 2.0 — ₹1,000 crore initial; 12 projects worth ₹1.64 lakh crore approved by June 2026.
- **Quantum Technology:** National Quantum Mission 2023 — ₹6,003.65 crore; 4 thematic hubs, 43 organisations, 152+ researchers, 17 startups; 1,000-km secure quantum communication network demonstrated.

#### Skilling Initiatives

- **FutureSkills PRIME:** MeitY-NASSCOM 2018 — AI, Big Data, IoT, Cyber Security, Blockchain, AR/VR; 27.53 lakh+ registered, 17.14 lakh+ trained by March 2026; ~80% learners from Tier-2 and Tier-3 cities.
- **NIELIT:** 56 centres, 750 institutes, 9,000+ facilitation centres; became a Deemed University in July 2024.
- **AI Centres of Excellence:** 4 CoEs with ₹1,490 crore — traffic, flood prediction, disease detection, climate-smart agriculture.

- **SOAR:** Skilling for AI Readiness (July 2025) for Classes 6-12 via Skill India Digital Hub with NSQF-aligned credentials.
- **SIDH:** 1.5 crore+ registered candidates, 1,000+ courses in 23 languages by March 2026.
- **C2S Programme:** Chips to Start-up (2022) — ₹250 crore; aims to train 85,000 professionals.

#### Global Technology Credibility

- **Global Innovation Index:** India rose from 81st (2015) to 38th (2025).
- **GCCs:** 2,100+ across 3,728 units, employing 2.36 million professionals.
- **Bharat 6G Alliance:** Formed 2023; 7 Working Groups on spectrum, technology, applications, sustainability, use cases.
- **NEST Division:** Set up 2020 under MEA for technology diplomacy on 5G, 6G, AI, biotech, semiconductors, clean tech.
- **SEMICON India 2025:** 350+ companies from 48 countries; 13 MoUs signed.
- **India AI Impact Summit 2026:** Delegations from 100+ countries, 20 international organisations; declaration adopted by 92 countries; USD 200 billion+ AI investment commitments.
- **Pax Silica:** India joined in 2026 — coalition securing the silicon stack from critical minerals to AI infrastructure.
- **DPI:** India Stack (Aadhaar, UPI, DigiLocker, CoWIN, UMANG, GeM); DPI agreements with 23 countries; UPI works in Singapore, UAE, France, Nepal, Sri Lanka.

 **EXAM POINT:** Digital India 2015. National Supercomputing Mission 2015. Semicon India 2021. National Quantum Mission 2023. GII rank 38 (2025). Bharat 6G Vision. NEST = New Emerging and Strategic Technologies Division (MEA).

### ■ DRDO's Missile Breakthrough and Multi-layered BMD System

- DRDO conducted flight tests validating Multi-layered Ballistic Missile Defence (BMD) System Phase II, maiden test of NASM-MR, and flight test of LRLACM.

#### Multi-layered BMD System

- **Definition:** Integrated network of long-range radars, command-and-control centres, and interceptor missiles to detect, track and destroy incoming ballistic missiles.

- **Inception:** Initiated in 1999 by DRDO after regional escalation in nuclear and ballistic missile capabilities.
- **Elite Global Status:** India joins US, Russia, China, Israel in capability to intercept advanced ballistic missiles including ICBMs.
- **Two-tier Interceptor System:** Exo-atmospheric (outside atmosphere) and endo-atmospheric (within atmosphere) interceptors.
- **Mission Sudarshan Chakra:** Multi-layered missile defence shield for military installations and critical infrastructure.

### Phased Development

- **Phase-I (Completed 2019):** Intercepts SRBMs and MRBMs up to 2,000 km; Prithvi Defence Vehicle (PDV) for exo-atmospheric and Advanced Air Defence (AAD) for endo-atmospheric interception; relies on Long Range Tracking Radar (Swordfish radar).
- **Phase-II (Under Validation):** Targets IRBMs and ICBMs (3,000-5,500+ km); AD-1 (low exo- and endo-atmospheric) and AD-2 (long-range IRBM/ICBM-class).
- **Phase-III (Under Development):** AD-AH (Anti-Hypersonic) for hypersonic glide vehicles above Mach 5; AD-AM (Anti-Missile) countering MIRVs.

### NASM-MR

- **About:** Naval Anti-Ship Missile-Medium Range — subsonic, sea-skimming cruise missile to destroy small-to-medium warships (frigates, corvettes, destroyers).
- **Launch Platforms:** Ship, air and submarine variants; complements NASM-SR.
- **Propulsion:** Indigenous Small Gas Turbine Jet Engine (SGTJE); sea-skimming flight to evade radar.
- **Range & Payload:** Up to 350 km; 200+ kg warhead; all-weather.
- **Guidance:** Dual-mode terminal guidance — active radar seeker and imaging infrared (IR) seeker.

### LRLACM

- **About:** Long Range Land Attack Cruise Missile — fully indigenous.
- **Nodal Laboratory:** Aeronautical Development Establishment (ADE), Bengaluru.
- **Significance:** Long-range precision strike capability deep into enemy territory; supports Aatmanirbhar Bharat.

 **EXAM POINT:** BMD Phase-I: PDV (exo) + AAD (endo);

*Swordfish LRTR. Phase-II: AD-1, AD-2. Phase-III: AD-AH, AD-AM. Mission Sudarshan Chakra. NASM-MR (350 km). LRLACM by ADE Bengaluru. MIRV = Multiple Independently Targetable Re-entry Vehicles.*

## ■ Bundibugyo Virus Outbreak

- WHO declared the Ebola outbreak caused by the Bundibugyo virus in the DRC and Uganda as a Public Health Emergency of International Concern (PHEIC).
- **Gap Exposed:** No licensed vaccine or specific therapeutic for Bundibugyo virus.

### About Bundibugyo Virus

- **Classification:** One of the species of the Orthoebolavirus genus causing Ebola Virus Disease (EVD).
- **Reservoir:** Zoonotic — fruit bats considered the most likely natural reservoir.
- **Transmission:** Direct contact with infected wildlife (bats, non-human primates); then via blood, bodily fluids, secretions, contaminated surfaces.
- **High-Risk Settings:** Healthcare settings with weak infection prevention; unsafe burial practices.
- **Incubation:** 2 to 21 days; infected individuals generally contagious only after symptom onset.
- **Symptoms:** Fever, fatigue, headache, muscle pain, sore throat → gastrointestinal complications, organ failure, haemorrhagic symptoms.
- **Fatality Rate:** Past outbreaks in Uganda and DRC (2007 and 2012) recorded case fatality rates of ~30% to 50%.
- **Diagnosis:** Resembles malaria and other febrile illnesses; PCR testing and antigen/antibody assays essential.
- **Control:** Rapid case detection, isolation, supportive care, contact tracing, safe burial, community engagement.

## ■ Quark-Gluon Plasma

- Researchers at the Large Hadron Collider discovered the smallest known droplet of Quark-Gluon Plasma (QGP) that still exhibits fluid-like behaviour.

### Understanding QGP

- **Definition:** Extremely hot state of matter made up of quarks and gluons — the basic building blocks of matter.

- ▶ **Cosmic Origin:** Existed during the first few millionths of a second after the Big Bang, prior to the formation of protons and neutrons.
- ▶ **Temperature:** One of the hottest substances ever created — trillions of degrees Celsius.
- ▶ **Creation:** By smashing atomic nuclei together at very high speeds inside the LHC; mainly observed in collisions involving heavy elements like lead.

### Key Findings

- ▶ **Fluidity Paradox:** Despite only thousands of subatomic particles (vs quadrillions of molecules in water), QGP behaves like a near-perfect fluid with viscosity and flow, rather than a gas.
- ▶ **Oxygen Collision Breakthrough:** Oxygen nuclei collisions created QGP; oxygen is a crucial middle ground between light protons and heavy lead nuclei.
- ▶ **Quark Energy Loss:** Particles moving through QGP lose energy, showing it acts as a dense fluid.
- ▶ **Significance:** Helps understand how matter changes from a gas-like to a liquid-like state at the smallest scales.

### Large Hadron Collider

- ▶ **Location:** CERN (European Laboratory for Particle Physics) near Geneva, Switzerland — world's largest and most powerful particle accelerator.
- ▶ **Structure:** 27-kilometre underground ring of superconducting magnets.
- ▶ **Famous For:** Enabling the 2012 discovery of the Higgs boson.
- ▶ **India-CERN:** Under a 1996 Department of Atomic Energy (DAE)-CERN protocol, India joined the LHC project, contributing hardware, software, and skilled manpower.

### ■ IMI-Resistant Mustard Through Mutation Breeding

- ▶ India will start large-scale cultivation of IMI-resistant mustard hybrids in Rabi 2026-27 to control Orobanche and boost oilseed production.
- ▶ **Orobanche Threat:** Root-parasitic weed (Phelipanche) that drains water and nutrients, reducing mustard yields especially in arid northern India.
- ▶ **Economic Need:** India imported ~16 MT edible oils in 2024-25 (~₹1.6 lakh crore).
- ▶ **Non-GM Breakthrough:** Developed via mutation breeding, not genetic modification.

- ▶ **ALS Mechanism:** Mutation alters the Acetolactate Synthase (ALS) enzyme → mustard survives IMI herbicides which kill Orobanche.

### Mutation Breeding vs Genetic Modification

- ▶ **Mutation Breeding:** Seeds/tissues exposed to physical (X-rays, gamma) or chemical (EMS) mutagens; desirable traits selected. No foreign DNA; random; accelerates natural mutations; treated as conventional breeding — no GEAC approval needed.
- ▶ **Genetic Modification:** Specific gene inserted directly into plant DNA (Agrobacterium, gene gun); highly precise; creates non-natural gene combinations; requires GEAC approval and biosafety assessment; e.g., Bt Cotton, GM Mustard, Golden Rice.

 **EXAM POINT:** IMI = Imidazolinone herbicide. ALS = Acetolactate Synthase. Orobanche = broomrape (root parasite). GEAC = Genetic Engineering Appraisal Committee (MoEF&CC). Bt Cotton = only GM crop commercially approved in India.

## SECTION 7 — HISTORY, ART & CULTURE

### ■ India's Cultural Heritage Conservation

#### Heritage and Growth Integration

- **Framework Shift:** From monument protection to linking heritage with tourism, livelihoods and cultural diplomacy.
- **Adopt a Heritage 2.0:** Launched Sept 2017, revamped Sept 2023 — allows private companies, PSUs, NGOs, trusts to develop visitor amenities at Protected Monuments of National Importance through CSR.
- **PRASHAD Scheme:** Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive (January 2015); IIM Rohtak's 2021 evaluation confirmed improved visitor satisfaction; key projects — Somnath Promenade, Kedarnath upgrades.
- **Swadesh Darshan 1.0:** 2014-15 — thematic circuits (heritage, spiritual, coastal, desert, Buddhist, tribal, eco-tourism); revamped into Swadesh Darshan 2.0 (destination-centric).
- **Challenge Based Destination Development:** Introduced under Swadesh Darshan 2.0 in March 2024.

#### Archaeology & Monument Preservation

- **ASI:** Premier body functioning through ~38 regional Circles; protects 3,686 centrally protected monuments (April 2026).
- **NMMA:** National Mission on Monuments and Antiquities — documented 1.84 lakh monuments and 17.20 lakh antiquities as of March 2026.
- **HRIDAY Scheme:** Heritage City Development and Augmentation Yojana (Jan 2015) — Ajmer, Amaravati, Badami, Amritsar, Gaya, Varanasi, Warangal, Puri, Kancheepuram, Mathura, Velankanni; ended 31 March 2019.

#### Museums

- **Shift:** From static displays to virtual museums, theme-based museums and Virtual Experiential Museums.
- **Vadnagar Museum:** Archaeological Experiential Museum opened Jan 2025 in Vadnagar, Gujarat — India's first; ₹298 crore; 5,000+ artefacts, food grains, DNA samples, skeletal remains.

- **Yuge Yugeen Bharat National Museum:** Being developed in North and South Blocks, New Delhi, under the Central Vista Redevelopment Project.
- **Museum Grant Scheme:** Financial assistance for new museums and modernising/digitising existing ones.

#### Technology for Heritage

- **Gyan Bharatam Mission (2025):** Preserve, digitise and disseminate manuscript heritage — 8 lakh+ manuscripts digitised, 1.29 lakh on the National Digital Repository; National Manuscript Survey 2026 launched.
- **Tech Tools:** LiDAR, GIS mapping, drone surveys; AI for large heritage datasets.
- **Vedic Heritage Portal (2023):** Digital repository for Rigveda, Yajurveda, Samaveda, Atharvaveda; 500+ hours of audio-visual content; linked with UNESCO Memory of the World Register.
- **NFHM:** National Film Heritage Mission — 1,469 titles or 4.3 lakh minutes digitised as of Dec 2025; preserved by National Film Archives of India.
- **NMIC:** National Museum of Indian Cinema, Mumbai (2019).

#### Heritage Diplomacy

- **Repatriation:** Piprahwa relics of Lord Buddha returned in 2025 after 127 years; Goddess Annapurna idol from Canada in 2021 after 108 years; Rama, Sita and Lakshmana idols from the UK in 2020.
- **Antiquities Retrieved:** 653 since 2014 (as of May 2026), including 613 in the last five years.
- **Custody:** Given or loaned to IGNCA, National Museum and Indian Institute of Heritage.
- **Global Exposition of Relics:** Vietnam 2025 (15 million+ devotees); Kalmykia, Russia (90,000+ visitors); Bhutan 2025; Sri Lanka 2026; Delhi and Ladakh 2026.

 **EXAM POINT:** ASI 1861 (Alexander Cunningham). AMASR Act 1958. Antiquities and Art Treasures Act 1972. IGNCA = Indira Gandhi National Centre for the Arts. Adopt a Heritage 2.0. PRASHAD + Swadesh Darshan 2.0.

### ■ International Day of Yoga 2026

- **Occasion:** 12th International Day of Yoga (21 June); Ministry of Ayush's Yoga Sangam Portal recorded over 6 lakh organisations registering.
- **Theme 2026:** 'Yoga for Healthy Ageing' — physical vitality, mental resilience, holistic wellness.

- **Alignment:** WHO Decade of Healthy Ageing (2021-2030).
- **Yoga Sangam:** Nationwide synchronized yoga sessions based on the Common Yoga Protocol (CYP).

### About IDY

- **UNGA Declaration:** In 2014, the UN General Assembly adopted an India-led resolution declaring 21 June as IDY.
- **Why 21 June:** Summer Solstice — longest day in the Northern Hemisphere, linked to the origin of Yogic science.
- **IDY 2015 (First):** Theme 'Yoga for Harmony and Peace' at Rajpath, New Delhi; two Guinness World Records — largest yoga class (35,985 participants) and maximum participating nationalities (84).
- **Logo:** Represents unity of consciousness with Earth, Nature, Water, Fire and Sun.
- **Nodal Ministry:** Ministry of Ayush.

### About Yoga

- **Definition:** Spiritual discipline based on subtle science, bringing harmony between mind and body; one of the six orthodox schools of Indian philosophy.
- **Etymology:** From the Sanskrit root 'Yuj' — to join, yoke, or unite.
- **Goal:** Self-realization leading to Moksha/Kaivalya; one who experiences this oneness is a yogi.
- **The First Yogi:** Shiva revered as Adiyogi and Adi Guru, who imparted yogic knowledge to the Saptarishis near Lake Kantisarovar.
- **Traditional Schools:** Jnana, Bhakti, Karma, Raja, Hatha, Kundalini, Mantra, Jain, Buddhist Yoga.

### Chronological Evolution

- **Pre-Vedic / IVC (c. 2700 BC):** Earliest evidence in seals (Pashupati Seal); early Tantra Yoga symbols.
- **Vedic & Upanishad:** Referenced in 4 Vedas, Upanishads, Smritis, Epics, Puranas; practiced as Upasana; early Surya Namaskara and Pranayama.
- **Classical (500 BC-800 AD):** Most significant phase; influenced by Mahavira's Pancha Mahavratas and Buddha's Eightfold Path; Bhagavad Gita and Patanjali's Yoga Sutras (Ashtanga Yoga — Eight Limbs).
- **Post-Classical (800-1700 AD):** Shankaracharya, Ramanujacharya, Madhavacharya; Bhakti saints Mirabai, Tulsidas, Surdas, Purandaradasa; Hatha Yoga Pradipika (15th century, Swatmarama).

- **Modern (1700-Present):** Ramakrishna Paramhansa, Vivekananda, Ramana Maharshi, Yogananda; T. Krishnamacharya and disciples B.K.S. Iyengar and Pattabhi Jois developed Iyengar Yoga and Ashtanga Vinyasa.

### Yoga Diplomacy

- **Countering TCM:** Yoga and Ayurveda as strategic tools against China's Traditional Chinese Medicine push; WHO Global Centre for Traditional Medicine (Jamnagar); G20 Science-20.
- **De-hyphenation:** Projects India beyond the India-Pakistan conflict lens as a Vishwabandhu (global benefactor).
- **Conservative Geographies:** Recognition of Yoga in countries like Saudi Arabia.
- **Economic Conversion:** MHA e-Tourist Visas for wellness travel; Ministry of AYUSH's 'Heal in India' for Medical Value Travel; 'New Yoga Economy' hubs — Rishikesh, Kashi, Kerala.
- **Narrative Control:** Certified yoga instructors deployed abroad; Namaste Yoga app.

 **EXAM POINT:** IDY = 21 June (UNGA 2014, India-led resolution). First IDY 2015. Patanjali's Yoga Sutras = Ashtanga (8 limbs). Hatha Yoga Pradipika (Swatmarama). Ministry of Ayush = nodal. WHO GCTM Jamnagar (2022).

### ■ V. V. S. Aiyar

- Vice President of India paid homage to V. V. S. Aiyar on his death anniversary, 3 June.
- **Early Life:** Born in Tiruchirappalli on 2 April 1881; went to London in 1907 to study law but became a committed revolutionary.
- **India House & Savarkar:** Core member of India House; worked with V. D. Savarkar in the Abhinav Bharat Society.
- **Pondicherry Trio:** Escaped to French Pondicherry in 1910; formed a revolutionary network with Subramania Bharati and Aurobindo Ghosh.
- **Ashe Assassination (1911):** Secretly trained Vanchinathan, who assassinated Robert Ashe, British Collector of Tirunelveli.
- **Journalism:** During World War I moved closer to the INC, edited the Tamil daily Desabhaktan; imprisoned for sedition in 1921.
- **Nationalist Conviction:** Refused the barrister title as it required allegiance to the British Crown.

- **Ideological Shift:** Called a 'fierce anarchist' by Mahatma Gandhi in 1907; later adopted Ahimsa.
- **Literary Pioneer:** Father of the Tamil Short Story; wrote Mangayarkkarasiyin Kaadhal, including the landmark story Kulathangarai Arasamaram.
- **Translations:** Translated Thirukkural and Kamba Ramayanam into English; supervised the English translation of Savarkar's The Indian War of Independence, 1857; regarded Kamban as superior to Valmiki and Vyasa.
- **Biographies:** Wrote Tamil biographies of Giuseppe Garibaldi, Guru Gobind Singh, and Napoleon.
- **Nationalist Education:** Established Bharadwaja Ashrama, a Tamil Gurukulam at Cheranmahadevi in 1922.
- **Death:** 3 June 1925 — drowned in Papanasam falls while trying to save his daughter.

## ■ Telangana Statehood Day

- **Date:** 2 June.
- **Formation:** 2 June 2014 after bifurcation of Andhra Pradesh; became India's 29th State (now among India's 28 States).
- **Legal Basis:** Andhra Pradesh Reorganisation Act, 2014.
- **Historical Context:** Part of princely Hyderabad under the Nizam; peasant rebellion began in 1945 against the jagirdari system; Hyderabad integrated into India through Operation Polo, 1948.
- **Linguistic Reorganisation:** SRC 1953 suggested keeping Telangana separate initially, but the States Reorganisation Act 1956 merged it with Andhra State to form Andhra Pradesh.
- **Mulki Rules:** Protected local jobs; protests began 1952, intensified 1969 over alleged violations of Mulki Rules and the Gentlemen's Agreement 1956.
- **Later Developments:** Telangana Praja Samiti formed 1969; linked to the Jai Andhra movement, President's Rule 1973, and the 32nd Constitutional Amendment (zonal employment reservations, repeal of Mulki Rules).
- **Revival:** Movement revived with TRS in 2001; gained momentum 2009; Justice B.N. Srikrishna Committee formed 2010.
- **Creation:** Telangana created as a separate State with Hyderabad as capital.

## ■ Goa Statehood Day

- **Date:** 30 May — Goa became the 25th state of India in 1987.

- **Ancient Origins:** Part of the Mauryan Empire (3rd century BC) under Ashoka; Buddhist monks laid early religious foundations.
- **Early Medieval Rulers:** From the 2nd century BCE to the 10th century CE — Satavahanas, Western Kshatrapas, Bhojas, Chalukyas of Badami, Rashtrakutas.
- **Religious Patronage:** The Kadambas (feudatories of the Chalukyas of Kalyani) notably patronized Jainism in Goa.
- **Sultanates & Empires:** Delhi Sultanate (1312), then Harihara I of the Vijayanagara Empire (1370), Bahmani sultans of Gulbarga (1469), and the Adil Shahis of Bijapur.
- **Portuguese Rule (1510-1961):** Commenced 1510 when Afonso de Albuquerque seized Goa from Yusuf Adil Shah of Bijapur; regime endured 451 years; capital moved from Velha Goa to Panjim in 1843.
- **British Interlude:** Goa temporarily occupied by the British (1812-1815) during the Napoleonic Wars.
- **Nationalist Resistance:** Goa National Congress established in 1928 by Tristão de Bragança Cunha during the INC's Calcutta session.
- **1946 Agitation:** Dr. Ram Manohar Lohia spearheaded a historic rally in Goa demanding civil liberties and integration with India.
- **Operation Vijay (1961):** Indian armed forces liberated Goa, Daman and Diu on 19 December 1961 after diplomatic channels were exhausted.
- **Diplomatic Recognition:** India and Portugal signed a bilateral treaty in 1974 formally recognizing India's sovereignty (including Dadra & Nagar Haveli).
- **12th CAA 1962:** Incorporated Goa, Daman and Diu as a Union Territory under the First Schedule.
- **Statehood:** The Goa, Daman and Diu Reorganisation Act 1987 granted statehood to Goa on 30 May 1987; Daman and Diu remained a separate UT.

 **EXAM POINT:** Goa = 25th state (30 May 1987). Operation Vijay 1961. Operation Polo 1948 (Hyderabad). Telangana = 29th state (2 June 2014). 12th CAA 1962 = Goa, Daman & Diu as UT. Goa Civil Code = only continuous UCC in India.



## SECTION 8 • SOCIAL ISSUES & GOVERNANCE

### ■ Empowering Farmers for Sustainable Agriculture

- **Sectoral Weight:** Agriculture contributes ~18% to GVA and supports nearly half of India's workforce; foodgrain production rose from 265.05 MT (2013-14) to a record 357.73 MT (2024-25).
- **Global Standing:** India is the world's largest producer of rice, milk, pulses and spices, and a leading exporter of agricultural commodities.
- **Income Support:** PM-KISAN gives ₹6,000/year to 9.44 crore+ farmers; PMFBY has insured 4 crore+ farmers; MSP now covers 22 crops fixed at 50%+ above cost since 2018-19.
- **Allied Growth:** Livestock GVA grew from ₹5.10 lakh crore to ₹15.06 lakh crore; agri exports rose from USD 37.29 bn to USD 51.1 bn.

#### 🔑 Key Initiatives

- Digital Agriculture Mission — 7.63 crore Farmer IDs generated for targeted delivery.
- Namo Drone Didi — drones for women SHGs for spraying and precision farming.
- PM-KUSUM — solar pumps and grid-connected solar for farmers.
- Kisan Credit Card, e-NAM, FPOs and soil-health-based nutrient management.

🎯 **EXAM POINT:** Foodgrain 357.73 MT (2024-25 record); PM-KISAN ₹6,000/yr to 9.44 cr; MSP 22 crops at 50%+ over cost; agri ~18% of GVA.

### ■ Empowering the Poor: A Decade of Inclusive Transformation

- **Poverty Decline:** About 25 crore people escaped multidimensional poverty; the headcount fell from 29.17% (2013-14) to 11.28% (2022-23).
- **Basic Amenities:** Jal Jeevan Mission reached 15.84 crore rural homes (~82% coverage); Swachh Bharat built 12.11 crore toilets; Ujjwala provided 10.57 crore LPG connections.

- **Housing & Health:** PMAY-U sanctioned 98.10 lakh and PMAY-G 3.03 crore houses; Ayushman Bharat issued 43.93 crore cards; MMR fell from 130 to 88.

#### 🔑 Flagship Coverage

- Saubhagya — near-universal household electrification.
- PMGKAY — free foodgrain to ~81 crore beneficiaries.
- PM-JANMAN — saturation coverage for 75 PVTG communities.
- EMRS — Eklavya Model Residential Schools scaled from 129 to 499.

🎯 **EXAM POINT:** Poverty 29.17%→11.28% (2013-14 to 2022-23); ~25 crore escaped poverty; Jal Jeevan 15.84 cr homes; Ayushman 43.93 cr cards.

### ■ From Women's Welfare to Women-Led Development

- **Paradigm Shift:** Policy moved from welfare-centric schemes to women-led development, treating women as active drivers of growth.
- **Political Empowerment:** 106th Constitutional Amendment (Nari Shakti Vandan Adhiniyam, 2023) reserves 33% of Lok Sabha and Assembly seats; Articles 243D and 243T secure local-body reservation.
- **Armed Forces:** Babita Puniya case (2020) secured permanent commission for women; NDA opened to women (2021); Operation Sindoor was fronted by Col Sofiya Qureshi and Wing Cdr Vyomika Singh.

#### 🔑 Enabling Schemes

- BBBP — improved sex ratio at birth (1,020 in latest data).
- PMMVY — maternity benefit to 4.92 crore women; PMSMA — 6.85 crore antenatal check-ups.
- PMKVY — 45% women trainees; PMMY (Mudra) — loans from ₹1.37 to ₹40.07 lakh crore.
- Womaniya & SHE-Mart on GeM; Mission Shakti; NEP 2020 Gender Inclusion Fund.

🎯 **EXAM POINT:** 106th CAA 2023 = 33% women's reservation (Nari Shakti Vandan); Babita Puniya 2020; NDA opened to women 2021.

### ■ Prison Statistics India 2024 (NCRB)

► **Occupancy:** National occupancy at 112.7% (a decade-low), across 1,333 jails; sanctioned capacity 4.53 lakh vs 5.11 lakh actual inmates.

► **Undertrials:** Undertrials form ~73% of the prison population (87%+ in Delhi and Bihar); convicts are just 26.6%.

### Reform Framework

- Landmark cases: Hussainara Khatoon (1979), Sunil Batra (1980), Arnesh Kumar (2014), Satender Kumar Antil (2022).
- Nelson Mandela Rules (UN Standard Minimum Rules for Treatment of Prisoners).
- BNSS 2023 Section 479 — release provisions for undertrials.
- Model Prisons and Correctional Services Act, 2023.
- Committees: Mulla (1980), All India Jail Reforms (1980-83), Krishna Iyer (1987), Amitava Roy (2018).

 **EXAM POINT:** Occupancy 112.7%; undertrials ~73%; BNSS Sec 479; Model Prisons Act 2023; Nelson Mandela Rules.

 **EXAM POINT:** NFHS-6: MMR 130→88; institutional deliveries 90.6%; TFR 2.0; stunting 29.3%; conducted by IIPS Mumbai.

## NFHS-6 (2023-24): Key Findings

| Indicator                | NFHS-5 | NFHS-6 |
|--------------------------|--------|--------|
| Institutional deliveries | 88.6%  | 90.6%  |
| Maternal Mortality Ratio | 130    | 88     |
| Total Fertility Rate     | 2.0    | 2.0    |
| Contraceptive Prevalence | 66.7%  | 69.1%  |
| Child stunting           | 35.5%  | 29.3%  |
| Full immunisation        | 83.8%  | 87.1%  |
| C-section rate           | 21.5%  | 27.2%  |
| Women internet use       | 33.3%  | 64.3%  |

► **Concerns:** C-sections surged (private 54.1% vs public 16.9%); obesity rose among women (24%→30.7%, urban 42.8%) and men (22.9%→27.3%); the anaemia biomarker was removed, drawing criticism.

► **Nodal Body:** Conducted by IIPS Mumbai; NFHS was first launched in 1992-93.

## SECTION 9 • FACTS FOR UPSC

A rapid-revision compendium of prelims-oriented facts from 25 May – 24 June 2026, grouped by theme for quick recall before the exam.

### ❖ Reports, Indices & Data ❖

#### 📌 World Gold Council Survey 2026

- ▶ Central banks are buying ~1,000 tonnes of gold per year, sustaining record demand.
- ▶ The WGC was formed in 1987 and is headquartered in London.
- ▶ Reflects a global shift toward gold as a reserve hedge amid geopolitical uncertainty.

#### 📌 India Tops Global Heat-Vulnerability List

- ▶ Oxford/205-city study places 14 Indian cities among the most heat-vulnerable.
- ▶ Ahmedabad ranked 2nd, Nagpur 4th and Madurai 7th globally.
- ▶ Highlights urban heat-island effects and the need for Heat Action Plans.

#### 📌 Provisional GDP FY25-26

- ▶ Real GDP growth estimated at 7.7%; manufacturing grew 10.7%.
- ▶ Computed on the new base year 2022-23.
- ▶ India remains the fastest-growing major economy.

#### 📌 Logistics Port Performance Index FY24-25

- ▶ Released under the Sagar Aankalan framework; Paradip, Sikka and Mundra topped efficiency.
- ▶ India climbed from 44th to 22nd on the World Bank International Shipments indicator.
- ▶ Signals improving turnaround times and trade competitiveness.

#### 📌 Anti-Dumping Duties Report

- ▶ DGTR flagged 56 products causing an ₹11,938 crore loss to domestic industry.
- ▶ DGTR functions under the Ministry of Commerce as a quasi-judicial body.

- ▶ Anti-dumping duty protects domestic producers from below-cost imports.

#### 📌 Rise of Non-Communicable Diseases (SRS 2024)

- ▶ NCDs now cause ~60% of all deaths in India; cardiovascular disease alone accounts for 32.1%.
- ▶ Youth suicide share rose from 16.3% to 19%.
- ▶ Most risk factors are preventable through lifestyle change and early detection.

### ❖ Awards & Honours ❖

#### 📌 Srishti Kiran — U-13 Tennis World No. 1

- ▶ Bengaluru's Srishti Kiran became ITF Under-13 World No. 1.
- ▶ The ITF, founded in 1913, governs world tennis and the four Grand Slams.
- ▶ Professional circuits are run by the ATP (men) and WTA (women).

#### 📌 Major Abhilasha Barak — UN Gender Advocate Award 2025

- ▶ Served as UNIFIL Female Engagement Team Commander; 3rd Indian after Suman Gawani (2019) and Radhika Sen (2023).
- ▶ India's first woman combat helicopter pilot.
- ▶ Award linked to UNSC Resolution 1325 on Women, Peace and Security.

#### 📌 2026 Padma Awards

- ▶ 65 awards announced in total.
- ▶ Padma Vibhushan: K.T. Thomas, P. Narayanan.
- ▶ Padma Bhushan: Shibu Soren (posthumous), Vijay Amritraj, Mammooty, Alka Yagnik.
- ▶ Padma Shri: Rohit Sharma, Savita Punia, R. Madhavan, Satish Shah (posthumous).

### ❖ Important Days & Personalities ❖

#### 📌 International Sickle Cell Day (19 June)

- ▶ Marks the National Sickle Cell Anaemia Elimination Mission (NSCEM), targeting elimination by 2047.
- ▶ Mission launched in 2023, covering 17 high-burden

states.

- ▶ Sickle cell disease is an inherited red-blood-cell disorder.

### World Refugee Day (20 June)

- ▶ Rooted in the 1951 Refugee Convention and its 1967 Protocol.
- ▶ Core principle: non-refoulement — no forced return to danger.
- ▶ UNHCR estimates ~41.6 million refugees worldwide.

### Birsa Munda — Martyr's Day (9 June)

- ▶ Born 15 Nov 1875; led the Ulgulan (Great Tumult) with the slogan 'Abua Raj'.
- ▶ His movement led to the Chotanagpur Tenancy Act, 1908.
- ▶ Died in Ranchi Jail on 9 June 1900; his birth anniversary is Janjatiya Gaurav Divas.

### Ahilyabai Holkar (b. 31 May 1725)

- ▶ Maratha queen of Malwa from Chondi; ruled from Maheshwar near Indore.
- ▶ Rebuilt the Kashi Vishwanath and Somnath temples.
- ▶ Maheshwari sarees from her capital carry a GI tag.

### Veer Savarkar (b. 28 May 1883)

- ▶ Born in Bhagur; died 26 Feb 1966. Founded Mitra Mela (1899), later Abhinav Bharat (1904).
- ▶ Set up the Free India Society in London (1906) and worked from India House.
- ▶ Authored 'The Indian War of Independence, 1857' and the tract 'Hindutva'.

## ❖ Defence & Security ❖

### Three Indigenous Naval Ships Commissioned

- ▶ INS Dunagiri — Project 17A stealth frigate (BrahMos + MR-SAM).
- ▶ INS Sanshodhak — SVL survey vessel; INS Agray — Arnala-class ASW ship.
- ▶ Built by GRSE Kolkata with 75%+ indigenous content.

### Lt Gen Dhiraj Seth — New Army Chief

- ▶ Takes over as COAS from 30 June 2026, succeeding Gen Upendra Dwivedi.
- ▶ From the Armoured Corps; led Southern Command during Operation Sindoor.

### Admiral Krishna Swaminathan — 27th CNS

- ▶ Assumed charge as Chief of the Naval Staff, succeeding Admiral Dinesh Kumar Tripathi.

### India Receives 4th S-400 Squadron

- ▶ S-400 'Triumf', designated 'Sudarshan' in Indian service.
- ▶ USD 5.43 bn deal signed in 2018; engagement range 40-400 km.
- ▶ Integrates with DRDO's BMD and Project Kusha; used in Operation Sindoor.

### Project Kusha (DRDO)

- ▶ Extended Range Air Defence System developed at Hyderabad's Advanced Weapon System Complex.
- ▶ Interceptors: M1 (150 km), M2 (250 km), M3 (350-400 km).
- ▶ Aims for an indigenous long-range, multi-layered air-defence umbrella.

### RudraM-II Missile Flight-Tested

- ▶ Indigenous air-to-surface anti-radiation missile for SEAD (Suppression of Enemy Air Defence).
- ▶ Fired from Su-30MKI; tested via ITR Chandipur, Odisha.
- ▶ Developed by DRDO's Research Centre Imarat (RCI), Hyderabad.

### Oreshnik Missile

- ▶ Russian hypersonic intermediate-range ballistic missile, linked to the RS-26 Rubezh.
- ▶ Reported speed around Mach 10; used a third time in the Ukraine conflict.

### India's Border Security Grid

- ▶ Combines a Quadrangular Security Grid with a Smart Border Security Project.
- ▶ Focus on Sir Creek and Harami Nala marshlands (Gujarat) and the 2,216.7 km Indo-Bangladesh border in

West Bengal.

- ▶ Shifts from force-centric guarding to whole-of-government territorial security.

### **BrahMos to Vietnam**

- ▶ India advancing a BrahMos deal with Vietnam; the Philippines was the first buyer (USD 375 mn, 2022).
- ▶ Discussed around the Shangri-La Dialogue (Singapore), the key Indo-Pacific security forum.

### **10th India-Thailand Defence Dialogue**

- ▶ Held in Bangkok; builds on the 2025 Strategic Partnership and the 2012 Defence Cooperation MoU.

### **NATO Strengthens Eastern Flank**

- ▶ German-Netherlands Corps (HQ Muenster) to command allied troops in Estonia and Latvia.
- ▶ Creates an added command zone in the Baltic region against a possible Russia conflict.

### **US Blocks BLA & Majeed Brigade Listing (UN 1267)**

- ▶ US blocked a Pakistan-China bid to designate the BLA and Majeed Brigade under UN 1267.
- ▶ UNSC Resolution 1267 (1999) is the Al Qaeda/ISIL Sanctions Committee (asset freeze, travel ban, arms embargo).

### ❖ **Summits, Conferences & Diplomacy** ❖

### **16th BRICS NSA Meeting (India Chair)**

- ▶ India hosted the meeting as BRICS Chair for the 4th time; led by NSA Ajit Doval.
- ▶ Theme: 'Building for Resilience'.

### **Exercise Khaan Quest 2026**

- ▶ 23rd iteration held in Mongolia with 18 countries.
- ▶ Focus on UN Chapter VII peacekeeping operations; began in 2003 (US-Mongolia).

### **SAPLING Dialogue 2026**

- ▶ MoFPI + World Bank event in Ahmedabad — South

Asian Policy Leadership for Improved Nutrition.

- ▶ AgriConnect aims to reach 300 million farmers by 2030; targets processing growth from 10% to 17%.

### **National Conference on Agriculture — Kharif 2026**

- ▶ Record foodgrain target of 376.563 MT (rice 154.024, wheat 120.657, maize 55.092 MT).
- ▶ Oilseeds target set at 43.059 MT.

### **73rd NEC Plenary**

- ▶ North Eastern Council set up 8 task forces; NEC works under the NEC Act, 1971 (MDoNER).
- ▶ Union Home Minister is ex-officio Chairman; DoNER budget rose from ₹1,000 cr to ₹6,500 cr.
- ▶ Matabari and Sohra tourism circuits highlighted.

### **Jharkhand Wins 11 GI Tags**

- ▶ Includes Bhoya Saree, Kuchai Silk, Kesaria Kalakand, Dokra Craft, Munda Jewellery, Tussar Silk, Jadopatia Painting and Pancho Saree.
- ▶ Adds to the earlier Sohrai Painting GI.

### **Estonia — Trade & Defence Ties**

- ▶ Baltic state (capital Tallinn); highest point Suur Munamägi (318 m).
- ▶ India recognised Estonia in 1921 and re-recognised it in Sept 1991.
- ▶ Member of the EU, Eurozone, NATO and Nordic-Baltic Eight (NB8).

### **Project Nimbus**

- ▶ USD 1.2 bn cloud contract (2021) by Google and Amazon for the Israeli government.
- ▶ Raised surveillance and human-rights concerns.

### **Abu Dhabi Dialogue (ADD)**

- ▶ State-led consultative process (est. 2008) on safe, orderly labour migration.
- ▶ 11 countries of origin (incl. India) and 7 destination countries; UAE is permanent secretariat.
- ▶ Built on a temporary labour-migration model tying residency to employment.

### **Khalilur Rahman — President of 81st UNGA**

- ▶ Bangladesh's FM elected UNGA President, defeating Andreas Kakouris of Cyprus.
- ▶ Bangladesh's 2nd UNGA presidency (last in 1986-87); term begins Sept 2026.
- ▶ Session theme: 'Restoring Trust, Managing Transformation'.

### **India at WTO Trade & Environment Week 2026**

- ▶ Showcased the Carbon Credit Trading Scheme (CCTS) at Geneva on World Environment Day.
- ▶ Non-fossil installed capacity reached 53.21% (March 2026); emissions intensity down 37.38% (2005-22).
- ▶ Guided by UNFCCC's CBDR-RC principle.

### **5 Countries Elected to UN Security Council**

- ▶ Austria, Portugal, Trinidad & Tobago, Zimbabwe and Kyrgyzstan — two-year terms from 1 Jan 2027.
- ▶ Kyrgyzstan joins the UNSC for the first time since 1992.

### **Failure of the UN NPT Review Conference**

- ▶ Ended without a consensus document amid a US-Iran standoff over Iran's nuclear programme.
- ▶ 3rd consecutive review-conference failure (the 2022 review collapsed over Zaporizhzhia references).

### **UN Adds Israel & Russia to Sexual-Violence Blacklist**

- ▶ UN added Israel and Russia to its conflict-related sexual-violence blacklist; Hamas was listed after the Oct 2023 attacks.
- ▶ Part of the UN Secretary-General's annual report — listing brings reputational damage, not automatic sanctions.
- ▶ Israel listed over 31 verified cases (2023-25); the annex names 77 parties and ~10,000 cases worldwide.

### ❖ **Polity, Governance & Judiciary** ❖

### **NDMA — 'Resilient India 2047' Initiative**

- ▶ Drive to build ministry-level, hazard-specific disaster plans under the DM Act, 2005 (Sections 35 & 37).
- ▶ NDMA was established in 2005; PM is Chairperson

with 9 members.

- ▶ Shifts focus from relief-and-response to resilience as core national development.

### **SC: Right to Walk is a Fundamental Right**

- ▶ In Maniyar Iliyas v. P. Ayyappan (2026), safe footpaths were held part of Articles 19(1)(d) and 21.
- ▶ Pedestrian deaths rose ~163% (2015-24); their share of road fatalities went 9.5%→20.61%.
- ▶ Court criticised the Motor Vehicles Act, 1988 for treating pedestrians as incidental.

### **SC: DNA Test vs Right to Privacy**

- ▶ SC balanced a child's right to know parentage with the alleged father's Article 21 privacy (post-Puttaswamy, 2017).
- ▶ Legitimacy presumption under Sec 112 IEA (now Sec 116 Bharatiya Sakshya Adhiniyam).
- ▶ Key cases: Goutam Kundu (1993), Nandlal Wasudeo (2014), Rohit Shekhar v. N.D. Tiwari (2014), Ivan Rathinam v. Milan Joseph (2025).

### **SC: Right to Travel Abroad vs Speedy Trial**

- ▶ Right to travel abroad under Article 21 is not absolute; subject to 'procedure established by law'.
- ▶ Courts must balance an accused's liberty with the victim's right to a speedy trial.

### **SC Upholds GST on Online Gaming**

- ▶ Upheld 28% GST on online money-gaming as 'betting and gambling' (actionable claims).
- ▶ Even skill-based games become taxable/regulable when money is staked on uncertain outcomes.
- ▶ Affirmed states' power to regulate or ban wager-based online gaming.

### **Finance Ministry Approves ED Cadre Restructuring**

- ▶ Sanctioned strength up ~60%, from 2,029 to 3,256 posts; new adjudication wing created.
- ▶ ED (est. 1 May 1956) enforces PMLA 2002, FEMA 1999 and FEOA 2018 under the Dept of Revenue.

### **National Sports Board & Sports Tribunal Rules, 2026**

- ▶ Notified under the National Sports Governance Act, 2025.
- ▶ Board (Chair + 2 members) recognises National Sports Bodies and enforces governance/financial norms.
- ▶ Sports Tribunal offers single-window, digital dispute resolution, cutting reliance on civil courts.

### Operation Mule Hunt 1.0

- ▶ Gujarat Police uncovered ₹2,289 crore of cyber fraud across 913 mule bank accounts.
- ▶ Used I4C, NCRP and the 1930 helpline; IDPIC runs an AI risk-scoring system and mulehunter.ai registry.

### 42nd Anniversary of Operation Bluestar

- ▶ June 1984 Army operation at the Golden Temple to remove militants under Jarnail Singh Bhindranwale.
- ▶ Vijayanta tanks were used against the Akal Takht; followed by Indira Gandhi's assassination and 1984 riots.

### ❖ Economy, Schemes, Portals & Apps ❖

### VB-GRAM G Scheme (replaces MGNREGS)

- ▶ Viksit Bharat–Guarantee for Rozgar & Aajeevika Mission (Gramin); effective 1 July 2026.
- ▶ Guarantees 125 days of wage employment/year; interim allocation ₹95,692 crore.
- ▶ Funding 60:40 (90:10 for NE/Himalayan states); planning via Yuktdhara portal linked to PM Gati Shakti.

### 4 Years of Jan Samarth Portal

- ▶ Single-window platform (June 2022) for 16 credit-linked government schemes; 269 lending institutions onboarded.
- ▶ Available in 8 languages; integrated with UDYAM, UIDAI, AgriStack, CDBT, GST and CGTMSE.

### BHAVYA — Bharat Audyogik Vikas Yojana

- ▶ Develops 100 world-class 'plug-and-play' industrial parks; outlay ₹33,660 crore (2026-27 to 2031-32).
- ▶ Implemented via NICDC under a 51:49 Centre-State model; DPIIT released operational guidelines.
- ▶ Testing tie-ups with BIS, EIA and FSSAI.

### PM-AJAY Portal & Mobile App

- ▶ Ministry of Social Justice digitises PM-AJAY (Adarsh Gram, Grant-in-Aid, Hostel components).
- ▶ Tracks 47,000+ SC-majority villages and 4 million+ beneficiaries.

### PM-WANI Gets Citizen-Friendly Upgrade

- ▶ DoT reforms make public Wi-Fi simpler — QR-based authentication and 15/30/60-minute 'sachet-style' plans.
- ▶ Standardised PMWANI-branded SSIDs help users identify authentic hotspots.
- ▶ PM-WANI (launched 2020) expands public Wi-Fi, especially in rural areas, under Digital India.

### M1xchange — TReDS Platform

- ▶ RBI-approved (2015) digital invoice-discounting marketplace under the PSS Act, 2007.
- ▶ Enables collateral-free MSME financing; M1NXT (ITFS) launched in GIFT City for global liquidity.

### 10 Years of PMSMA

- ▶ Pradhan Mantri Surakshit Matritva Abhiyaan (launched 9 June 2016) offers free antenatal care on the 9th of each month.
- ▶ 7.5 crore+ check-ups; MMR fell from 130 (2014-16) to 87 (2022-24).

### PM-KISAN — 23rd Instalment Released

- ▶ ₹18,880 crore+ released to 9.44 crore farmers (2.18 crore+ women) via DBT on PM-KISAN Utsav Diwas (WB).
- ▶ Central Sector Scheme (2019): ₹6,000/year in three ₹2,000 instalments; FY 2026-27 budget ₹60,000 crore.

### ATF Price Stabilisation Fund for Airlines

- ▶ One-time ₹10,000 crore support to OMCs to stabilise aviation turbine fuel prices for Indian carriers.
- ▶ ATF can be ~40% of airline operating costs; arrangement runs three years.

### Navachar Mantra Initiative

- ▶ MSDE programme to identify and scale grassroots innovators from Tier-2/3 and aspirational districts.
- ▶ Run by NIESBUD with FITT, IIT Delhi; priority sectors include AgriTech, HealthTech and climate.

### 📌 Mission Senehjori (Assam Muga Silk)

- ▶ MDoNER cluster initiative for Muga — the world's only naturally golden silk (*Antheraea assamensis*).
- ▶ Muga is India's first GI-tagged silk; outlay ₹396-411 crore over three years; supports ~2.6 lakh families.

### 📌 Khet Bachao Abhiyan

- ▶ Nationwide soil-health drive (1-30 June 2026) launched in Raipur, MP.
- ▶ Promotes Soil Health Cards, balanced nutrients and natural farming; motto 'Save the Soil, Save Farming, Save Farmers'.

### 📌 India's 1st Blue Bond

- ▶ Sagarmala Finance Corporation to issue India's first blue bond for maritime/coastal projects.
- ▶ Seychelles issued the first sovereign blue bond (2018); Belize used a debt-for-ocean swap (2021).

### 📌 Sustainability Bonds

- ▶ Fund a mix of green and social projects; recognised by ICMA (2018) within GSS+ bonds.
- ▶ SEBI-regulated in India with use-of-proceeds reporting and third-party verification.
- ▶ Distinct from Sustainability-Linked Bonds, which tie financial terms to KPIs.

### 📌 India-UK Critical Minerals Supply Chain Observatory

- ▶ Built by TEXMin (IIT-ISM Dhanbad) with the University of Cambridge under the India-UK Tech Security Initiative.
- ▶ Monitors critical-mineral flows; supports the National Critical Mineral Mission and India-UK CETA.

### 📌 Status of Gold Mining in India

- ▶ India is the 2nd-largest gold consumer (~800 tonnes/yr) but produces under 1% domestically; import bill ~USD 72 bn (FY26).
- ▶ Hutti & Uti (Karnataka) and Jonnagiri (AP, first large-scale private mine since Independence).

### 📌 Green Hydrogen Certification Portal (GHCI)

- ▶ MNRE portal for transparent green-hydrogen

certification under the National Green Hydrogen Mission (2023).

- ▶ NGHM targets 5 MMT production, 125 GW RE and ₹8 lakh crore investment by 2030 via the SIGHT programme.

### 📌 US Proposes 12.5% Tariff on India (Forced Labour)

- ▶ USTR proposed the tariff via a Section 301 probe (US Trade Act, 1974) over alleged forced-labour-linked goods.
- ▶ India bans forced labour (Article 23 + Bonded Labour System (Abolition) Act, 1976); tariffs not final.

### 📌 E85 Fuel Rollout

- ▶ Flex-fuel push (World Environment Day, Delhi); E85 is 80-85% ethanol for flex-fuel vehicles.
- ▶ Launched at 48 OMC outlets (→500 by Dec 2026); supports ~26% ethanol blending by 2030-31.

### 📌 Sarvam AI — India's Newest AI Unicorn

- ▶ Bengaluru's Sarvam AI became India's first full-stack AI unicorn (USD 1 bn+).
- ▶ Under the IndiaAI Mission it builds an indigenous LLM (Sarovam-Large/Small/Edge, up to 70B params).
- ▶ India has 131 unicorns — 3rd after the US and China.

### 📌 RBI Forms Q-SAFE Committee

- ▶ 8-member panel on a Quantum Secure & Adaptive Financial Ecosystem.
- ▶ Assesses crypto agility via a Cryptography Bill of Materials (CBOM); reports within 6 months.

### 📌 'Memflation' Hits Electronics Sector

- ▶ AI demand diverts memory-chip (DRAM/NAND) supply to High-Bandwidth Memory, raising phone prices 15-20%.
- ▶ India is vulnerable due to import dependence and a still-developing ESDM ecosystem (per IESA).

### 📌 Uzbekistan — 10th Member of NDB

- ▶ First Central Asian member of the BRICS New Development Bank (Fortaleza 2014; operational 2015; HQ Shanghai).

- Aligns with India's Connect Central Asia Policy; NDB authorised capital USD 100 bn.

### **Bimal N. Patel Elected ITLOS Judge**

- Elected to the International Tribunal for the Law of the Sea for 2026-2035.
- ITLOS (est. 1996 under UNCLOS 1982; HQ Hamburg) has 21 members; Neeru Chadha was the first Indian woman judge.

### **IORA — Canada's Dialogue Partner Bid**

- Indian Ocean Rim Association has 23 members and 12 dialogue partners; idea proposed by Nelson Mandela (1995), formed 1997.
- Reviewing Canada's dialogue-partner application for its maritime expertise.

### **AYUSHEXCIL & Spices Board MoU**

- Promotes Ayush products and medicinal spices globally ('Spice and Heal' branding).
- Spices Board (est. 1987) promotes 52 scheduled spices; AYUSHEXCIL is a 2022 Section-8 export council.

### **Pyroprocessing**

- High-temperature process used in cement-making (clinker at ~1,450°C), metallurgy (roasting/smelting/calcining) and nuclear fuel reprocessing.
- In cement, limestone releases CO<sub>2</sub> near 900°C before clinker forms.

## **Science, Technology & Health**

### **SOLAR-1 — US Space-Weather Satellite**

- NOAA's first dedicated space-weather satellite (formerly SWFO-L1), at Sun-Earth L1.
- Launched Sept 2025 on a SpaceX Falcon 9; delivers CME imagery within 30 minutes.
- Protects power grids, satellites, GPS and aviation from solar storms.

### **Kudankulam NPP Unit-5 Milestone**

- NPCIL installed the ~320-tonne Reactor Pressure Vessel using the 'open-top' method.

- Russian VVER-1000 (PWR) technology under the 1988 IGA (Rosatom/ASE).
- On completion of 6 units KKNPP will reach 6,000 MWe; India targets 100 GW nuclear by 2047.

### **Chandrayaan-2 Finds Possible Subsurface Ice**

- PRL Ahmedabad used the DFSAR (L- & S-band) radar to detect ice signatures at the lunar south pole.
- Strongest evidence from a 1.1 km crater inside Faustini; doubly-shadowed craters near 25 K.
- Chandrayaan-2 orbiter (2019) continues to return data.

### **MAVEN Mars Mission Ends**

- NASA's MAVEN (launched 2013) concluded after 11+ years studying how Mars lost its atmosphere.
- Measured solar-wind erosion, new proton auroras and dust-storm water loss; observed comet 3I/ATLAS.

### **Artemis III**

- NASA unveiled a 4-member crew; restructured as a 2027 Earth-orbit (LEO) test flight.
- Lunar South Pole landing shifted to Artemis IV (2028); uses Orion/SLS with Blue Moon and Starship landers.

### **GRAPES-3 Cosmic-Ray Tracker**

- Muon detector at Ooty, Tamil Nadu; 16 modules with 232 proportional counters each.
- Uses 22+ years of data to study cosmic rays and the upper atmosphere.

### **India-Japan Joint Crediting Mechanism**

- MoEFCC adopted JCM implementation rules under Article 6.2 of the Paris Agreement.
- Transfers ITMOs with third-party verification; supports India's Net Zero by 2070.

### **Post-Quantum Cryptography (PQC)**

- DST task force urges phased PQC adoption for critical infrastructure (transition 2027, full by 2029).
- Counters Shor's Algorithm threat to Public Key Infrastructure; uses lattice/code/hash-based methods.

### **WHA Passes 1st Resolution on Stroke**

- ▶ World Health Assembly's first-ever stroke resolution urges prevention, acute care and rehab.
- ▶ Stroke affects ~12 million/yr; ~87% of deaths occur in low- and middle-income countries.
- ▶ India incidence ~108-172 per 100,000/year.

### 📌 Global Mapping of Arbuscular Mycorrhizal Fungi

- ▶ A Science study mapped AM fungi (phylum Glomeromycota) symbiotic with 70-90% of land plants.
- ▶ Store ~300 million tonnes of carbon; ~40% of networks are in grasslands (incl. Banni, India).

### 📌 Brain-Eating Amoeba Surge in Kerala

- ▶ Rise in Amoebic Meningoencephalitis — PAM (*Naegleria fowleri*) and GAE (*Acanthamoeba*).
- ▶ India had ~24 cases since 1971; Kerala issued the first state SOP in 2024.
- ▶ Infects via the nose during water exposure; not spread person-to-person.

### 📌 Nipah Virus (Kozhikode)

- ▶ Zoonotic Henipavirus; fruit bats are the natural reservoir; first identified in Malaysia (1998-99).
- ▶ A BSL-4 pathogen; Kerala cut mortality from 91% (2018) to ~33% (2023-25) using monoclonal antibodies and Remdesivir.

### 📌 Shigellosis Outbreak in Kerala

- ▶ Bacillary dysentery caused by *Shigella* (first isolated by Kiyoshi Shiga, 1897).
- ▶ Spreads by the faeco-oral route; highest risk in children under five; MDR strains rising.

### 📌 Dengue Vaccine DengiAll — Concerns

- ▶ Adverse events in Brazil's Butantan-DV trial raise antibody-dependent enhancement (ADE) worries.
- ▶ DengiAll is a live-attenuated tetravalent vaccine (DENV 1-4) needing balanced immunity.

### 📌 Smart Village Initiative (CSIR)

- ▶ AI-enabled wild-animal/crocodile alert system deployed in Kusunpur, Odisha.

- ▶ Part of CSIR's lab-to-land 'Smart Village' model with infrastructure upgrades.

### 📌 Floating Solar PV Potential

- ▶ MNRE estimates 102 GW of floating-solar potential on ~1,946 km<sup>2</sup> of reservoir surface.
- ▶ 'Land-neutral'; Omkareshwar (Narmada) is India's largest floating solar park.

### 📌 MAHA Water Mission

- ▶ ANRF-MoJS mission (₹200 cr over 5 yrs) backing water-sector startups and innovators.
- ▶ Covers water assessment, drinking water, quality, use-efficiency and climate resilience.

### 📌 SkyCast System

- ▶ India inaugurated its first SkyCast System at Delhi's IGI Airport (Jewar next) — the 19th country to deploy it.
- ▶ Gives real-time atmospheric intelligence to cut weather-related delays, diversions and cancellations.
- ▶ Combines Radar Wind Profiler, SODAR, Microwave Radiometer, GFAS and Lidar Ceilometer up to 3 km; built on the WiFEX project (IITM-IMD, 2015) under Mission Mausam.

## ❖ Environment, Places & Species ❖

### 📌 Philippines Earthquake & Ring of Fire

- ▶ A 7.8-magnitude quake off Mindanao (near Sarangani) triggered a 1-metre tsunami.
- ▶ The Pacific Ring of Fire holds ~75% of volcanoes and ~90% of earthquakes over ~40,000 km.

### 📌 Zojila Tunnel Breakthrough

- ▶ 13.14-14.15 km tunnel (~11,578 ft) for all-weather Kashmir-Kargil-Ladakh connectivity.
- ▶ One of three Ladakh corridors, with the Rohtang and Shinku La routes.

### 📌 Sambhar Lake

- ▶ India's largest saline wetland (Jaipur-Nagaur, Rajasthan); Ramsar site since 1990.
- ▶ Fed by 6 rivers; hosts flamingos (Nov-Feb) and

supports major salt production.

### 7th Regional Meteorological Centre at Jammu

- ▶ India's 7th RMC (Lucknow announced next); earlier 6: Mumbai, Chennai, Delhi, Kolkata, Nagpur, Guwahati.
- ▶ Covers J&K, Ladakh and Himachal for flash-flood and avalanche early warning.

### Kerala HAWK — Wildlife Crime System

- ▶ India's first fully digitised, judiciary-integrated wildlife-offence system (with WTI).
- ▶ Launched in Kerala (2019); later Karnataka (2022), Tamil Nadu & Odisha (2025).

### Lake Chad Basin

- ▶ ISWAP has overtaken Boko Haram as the strongest jihadist group in the basin.
- ▶ Endorheic basin across Nigeria, Niger, Chad, Cameroon and Benin; fed by the Logone-Chari.

### Assam-Meghalaya Border Conflict

- ▶ Farming resumed in the disputed Tapat-Lapangap sector via a crop-sharing arrangement (Karbi & Khasi-Pnar farmers).
- ▶ 855 km border with 12 disputed sectors; a 2022 pact resolved 6.

### Beaufort Castle & Litani River

- ▶ Beaufort Castle (Qalaat al-Shaqif) is a 900-year-old Crusader fortress in south Lebanon near Nabatieh, under UNESCO enhanced protection (2024).
- ▶ It overlooks the Litani — the longest river entirely within Lebanon, draining to the Mediterranean near Tyre.

### Padma Barrage & Farakka Barrage

- ▶ Bangladesh's Padma Barrage (2.1 km, 78 gates, 113 MW) responds to reduced flows linked to Farakka.
- ▶ Farakka (Murshidabad/Malda, WB) diverts water to the Bhagirathi-Hooghly for Kolkata Port; Ganges Water Treaty (1996) expires Dec 2026.

### Kishau Dam & Tons River

- ▶ Multipurpose project on the Tons (Yamuna tributary); 6 states signed a water-sharing MoU (Centre bears 90% water cost).
- ▶ The Tons is the longest Himalayan tributary of the Yamuna (from Bandarpunch, 6,315 m).

### Mekedatu Project & Cauvery

- ▶ Karnataka's proposed Cauvery balancing reservoir (Ramanagara; 400 MW) opposed by Tamil Nadu.
- ▶ The Cauvery ('Ganga of the South') rises at Talakaveri; SC (Nov 2025) left it to CWMA/CWC review.

### Western Ghats — Eco-Sensitive Tag

- ▶ Centre moving to notify ~56,000 sq km of ESA across 6 states under the EPA, 1986.
- ▶ Follows the Gadgil (2011) and Kasturirangan (2013) committees; a UNESCO World Heritage site.

### Great Nicobar Project — R&R Census

- ▶ Rehabilitation & Resettlement census notified for the ~₹92,000 crore mega project (timeline to 2050).
- ▶ ICTT at Galathea Bay via ANIIDCO/NITI Aayog; strategic for Act East and the Indo-Pacific.

### Cuba

- ▶ In news amid an economic and energy crisis; largest island of the Greater Antilles.
- ▶ Home to the bee hummingbird (world's smallest bird); rich in nickel and cobalt; a communist state.

### Hutti Gold Mines

- ▶ India's only fully functional state-owned gold mine (HGML), in Raichur, Karnataka.
- ▶ Produces ~1.5-2 tonnes/year of Gold Dore Bars at IBJA rates; mining dates to the pre-Ashokan era.

### Ammonia Gas Leak in Tamil Nadu

- ▶ Leak at a Thiruvallur seafood unit caused deaths and injuries.
- ▶ Ammonia is a toxic gas made industrially by the Haber-Bosch process; governed by the Chemical Accidents Rules, 1996.

### **Mombasa Declaration on Illegal Fishing**

- ▶ Adopted at the 11th Our Ocean Conference (Kenya) against IUU fishing (India is not a signatory).
- ▶ IUU fishing costs the world up to USD 50 bn/year; backed by the Global Charter for Fisheries Transparency.

### **Shri Ambabai Temple Development (Kolhapur)**

- ▶ ~₹1,500 crore corridor project under 'Vikas Bhi, Virasat Bhi'; conserves 41 smaller temples.
- ▶ The Ambabai Mahalaxmi temple is a revered Shakti Peetha in Hemadpanti style.

### **African Grey Foam-Nest Tree Frog**

- ▶ Chiromantis xerampelina of sub-Saharan Africa builds aerial foam nests over water.
- ▶ Polyandrous breeding; IUCN Least Concern.

### **Tylosaurus Rex**

- ▶ A giant mosasaur (marine reptile), not a dinosaur, from ~80 million years ago (Cretaceous).
- ▶ Largest specimen 'Bunker' (~13.2 m) exceeds T. rex 'Sue' (~12.2 m).

### **Dolphin Conservation in Gujarat**

- ▶ 680+ dolphins recorded along a 4,087 km coastline — Indo-Pacific Humpback (Endangered) and Bottlenose.
- ▶ Protected under WPA Schedule I and CITES Appendix I/II; centred on the Gulf of Kutch.

### **New Cascade Frog — Nagaland**

- ▶ Amolops kamal ('Nagaland cascade frog') found near Kiphire by ZSI.
- ▶ The Amolops genus has 90 species (20 in India), indicating clean, oxygen-rich streams.

### **Humboldtia Nairiana**

- ▶ A new evergreen tree (family Fabaceae) endemic to Kerala's Agasthyamala Biosphere Reserve.
- ▶ Extremely fragile — under 10 mature trees across less than 2 sq km.

### **Babesia Infection in Asiatic Lions**

- ▶ Suspected tick-borne Babesia killed 8 lion cubs in the Gir landscape.
- ▶ Protozoan parasite infects red blood cells, causing anaemia; controlled via tick-removal and surveillance.

### **Success of Chhattisgarh's Korea 5% Model**

- ▶ Under Jal Sanchay Jan Bhagidari, Korea district villagers dedicate 5% of farmland to soak pits for groundwater recharge.
- ▶ Soak pits scaled from 2,000 to 30,000 in a year; a '30-40 Model' digs contour trenches on barren land.
- ▶ Groundwater rose from 6.6 m to 3.89 m below ground level (2024→2025), driven by 'Neer Nayikas' and 'Jal Doots'.

## END OF GHATAK SERIES — JUNE 2026

### Revision is the Real Weapon

You've now covered the complete current-affairs landscape for 25 May – 24 June 2026. The candidates who convert this into marks are not those who read it once, but those who revise it in tight, timed loops until recall becomes reflex.

#### Suggested Revision Plan

- ▶ Day 1-2: Read every section once, marking unfamiliar facts.
- ▶ Day 3: Re-read only the  fact-boxes and  exam points.
- ▶ Day 5: Self-test — cover the answers and recall each fact-box from its title alone.
- ▶ Day 7: Attempt a timed MCQ set on this month before the next Ghatak drops.
- ▶ Keep a one-page 'weak facts' list and revise it the night before any test.

 **EXAM POINT:** Focus your final revision on: SIPRI Yearbook 2026, 11th NITI Aayog GC, India's 100th Ramsar site, WPI→PPI shift, 10 Years of IBC, DRDO multi-layered BMD, Assam UCC Bill, and the new Service Chiefs (Lt Gen Dhiraj Seth, Admiral Krishna Swaminathan).

जय हिंद • जय भारत

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— Team NCA, Dhaliwal's New Careers Academy