SIX SIGMA IAS

Dream | Dare | Deliver

DREAM FOR NATION | DARE TO SERVE | DELIVER WITH INTEGRITY

DAILY CURRENT AFFAIRS

ENGLISH FILE

BEST FOR UPSC | UP PCS EXAM

DATE : AUGUST 31, 2026

Comprehensive Coverage | Exam-Focused Analysis | Concept Clarity & Insights | Practice MCQs with Explanation | Daily Updates, Better Results

CONTACT INFO:
+91 92896 33341 | +91 96679 33341

EMAIL ID:
info@sixsigmaias.com

WEB PAGE:
www.sixsigmaias.com

ADDRESS:
C-6, GROUND FLOOR, SECTOR 2,
NEAR SECTOR 15 METRO STATION, NOIDA – 201301, UTTAR PRADESH

Table of Contents

SIXSIGMA IAS
Dream | Dare | Deliver

1. India, Uzbekistan Upgrade Ties, Agree on Uranium Deal

Key Highlights & Summary

- **Elevation to Comprehensive Strategic Partnership:** Marking 15 years of their strategic partnership, India and Uzbekistan elevated their bilateral relationship to a Comprehensive Strategic Partnership during PM Narendra Modi's visit to Tashkent.
- **Long-Term Uranium Supply Framework:** Both nations established a framework for long-term supply of uranium from Uzbekistan to fuel India's civil nuclear energy program.
- **Ambitious Bilateral Trade Target:** Set a target to scale annual bilateral trade fivefold to \$5 billion by 2030, expanding from current volumes of over \$1 billion by addressing market access, banking, and payment systems.
- **High-Level Institutional Upgrades:** Decided to set up a Coordination Council at the Foreign Ministers' level and elevated the existing Joint Commission from the secretary level to the ministerial level.

- **Signing of Key Agreements:** Inked 11 agreements spanning critical minerals, mining, defense, agriculture, pharmaceuticals, digital public infrastructure (including UPI integration), and education.
- **Defense & Cultural Engagement:** Reaffirmed joint defense co-production, zero-tolerance toward terrorism/extremism, and signed a Letter of Intent to conserve ancient Buddhist heritage sites at Fayaz Tepa and Kara Tepa.

Essential Definitions

- **Comprehensive Strategic Partnership:** An elevated bilateral governance framework that broadens defense, economic, diplomatic, and energy alignment through structured, multi-sectoral institutional cooperation.

- **Civil Nuclear Cooperation Agreement:** A bilateral arrangement facilitating procurement of nuclear fuel (uranium) and technology for peaceful energy production under international safeguards.

Legal and Constitutional Framework

- **Article 51 (Directive Principles of State Policy):** Mandates the Union to foster international peace, maintain honorable state relations, and respect treaty obligations.
- **Atomic Energy Act, 1962:** Provides legal framework for central control over development, control, and peaceful utilization of atomic energy and nuclear fuel imports.
- **Foreign Trade (Development and Regulation) Act, 1992:** Regulates export-import policies, facilitating trade expansion mechanisms and institutional payment settlements.

Conclusion Upgrading ties to a Comprehensive Strategic Partnership reinforces Uzbekistan's position as the pivot of India's Central Asian engagement. Securing long-term uranium supplies alongside UPI deployment and critical mineral access consolidates India's strategic footprint, energy resilience, and economic integration across Eurasia.

UPSC Relevance

- **GS Paper II:** India and its Extended Neighborhood; Bilateral, Regional, and Global Groupings involving India; Effect of Policies of Developing Nations on India's Interests.
- **GS Paper III:** Energy Security (Nuclear Energy); Infrastructure, Digital Public Infrastructure, and Critical Minerals Value Chains.

2. Complete Migration to VB-G RAM G and Relaxation of Mandatory e-KYC

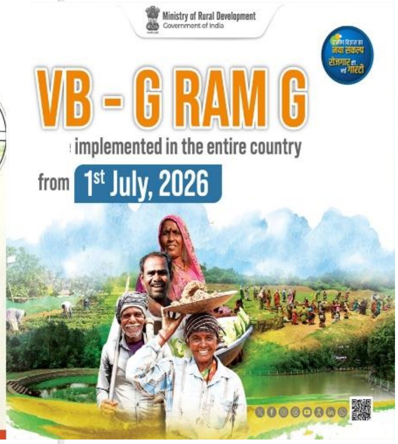
Key Highlights & Summary

- **Universal Scheme Migration:** The Ministry of Rural Development has announced that all workers registered under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have been migrated to the Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) [VB-G RAM G] scheme.

- **e-KYC Not a Precondition for Work:** Pending electronic Know Your Customer (e-KYC) process does not prevent any registered worker from demanding or receiving guaranteed employment, treating e-KYC strictly as a database-authentication measure rather than a prerequisite for statutory rights.
- **Significant Authentication Coverage:** High coverage has been achieved, with e-KYC completed for 15.89 crore workers (~95%), including 10.27 crore out of 10.84 crore active workers, leaving around 57 lakh active workers with pending e-KYC.
- **Streamlined Exception Mechanisms:** Appropriate exception handling mechanisms are established at local administrative levels to ensure continuous work allocation for workers whose digital verification remains incomplete.
- **Responsibility of States & UTs:** The Ministry clarified that completing worker e-KYC remains the administrative responsibility of State and Union Territory governments, supported and monitored continuously by the Centre.
- **Uninterrupted Livelihood Guarantee:** Over 2.11 crore workers have already been offered employment under VB-G RAM G, ensuring zero disruption during the operational transition from MGNREGA.

Essential Definitions

- **VB-G RAM G Act:** Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) Act, a statutory overhaul replacing MGNREGA to align rural employment with long-term infrastructure creation and livelihood security.
- **e-KYC (electronic Know Your Customer):** A remote, paperless process that uses Aadhaar-based biometric or OTP verification to authenticate a worker's identity and update official databases.



Legal and Constitutional Framework

- **Statutory Guarantee of Right to Work:** Replaces the 100-day entitlement under MGNREGA with an enhanced 125-day statutory wage employment guarantee per rural household in each financial year.
- **Article 41 (Directive Principles of State Policy):** Directs the State to secure the right to work, to education, and to public assistance in cases of unemployment or unmerited want within limits of economic capacity.
- **Article 21 (Right to Life and Livelihood):** Interpreted by the Judiciary to encompass the right to livelihood, placing an obligation on the state to uphold non-discriminatory access to social security schemes without administrative exclusion.

Conclusion De-linking mandatory e-KYC compliance from immediate work allocation strikes a crucial balance between administrative database integrity and basic rural social protection. By preventing technological barriers from overriding statutory welfare rights, the policy safeguards vulnerable rural households while preserving systemic efficiency under the modernized VB-G RAM G framework.

UPSC Relevance

- **GS Paper II:** Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; Issues relating to the development and management of Social Sector/Services relating to Poverty and Hunger; Governance, Transparency, and Accountability.
- **GS Paper III:** Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System objectives and limitations; Inclusive growth and issues arising from it; Infrastructure development and employment generation.

3. Cauvery Water Dispute: Tamil Nadu Moves Supreme Court for Backlog Release

Key Highlights & Summary

- **Petition in Supreme Court:** Tamil Nadu has approached the Supreme Court seeking directives to Karnataka to release a balance quantity of 17.604 tmc ft of Cauvery water, calculating the shortfall based on the pro-rata formula.
- **Demand for Daily Release:** Tamil Nadu urged the court to order Karnataka to release 9,000 cusecs of water between August 26 and September 8 at Billigundulu, the inter-state border point.
- **Inadequacy of CWRC/CWMA Directions:** The State highlighted that the Cauvery Water Regulatory Committee (CWRC) and Cauvery Water Management Authority (CWMA) failed to address the accumulated backlog of 17.415 tmc ft while directing a release of only 9,000 cusecs per day.

- **Impact on Delta Farmers:** The non-release of due shares has severely affected Kuruvai crops in Tamil Nadu's Cauvery Delta region, leaving the Mettur Dam unable to open for timely agricultural supply.
- **Failure to Comply with Regulatory Orders:** Tamil Nadu contended that Karnataka failed to ensure the required inter-state water flows mandated by CWMA between August 27 and August 30.
- **Judicial Review:** A Supreme Court Bench is scheduled to hear the matter on August 31 to resolve the operational deadlock between the riparian states.

Essential Definitions

- **Pro-Rata Formula:** A distress-sharing allocation mechanism where water releases are reduced proportionately among sharing states based on the percentage shortfall of rainfall and inflows in a deficit year.
- **TMC FT & Cusec:** 'Thousand Million Cubic Feet' (tmc ft) is a unit measuring large volumes of water storage, while 'cusec' represents flow rate measured in cubic feet per second.

Legal and Constitutional Framework

- **Article 262:** Authorizes Parliament to enact legislation for the adjudication of inter-state river water disputes, excluding original Supreme Court jurisdiction over tribunal decisions.
- **Inter-State River Water Disputes Act, 1956:** Provides the statutory framework for establishing water disputes tribunals (e.g., Cauvery Water Disputes Tribunal) whose final awards are binding.
- **Cauvery Water Management Scheme, 2018:** Formulated by the Centre under Supreme Court directions, establishing the CWMA and CWRC to monitor water regulation and implementation of award allocations.

Conclusion The recurrent dispute between Tamil Nadu and Karnataka over Cauvery water shares during deficit months underlines the weakness of dynamic distress-sharing protocols. Adopting objective, data-driven pro-rata operational rules monitored continuously by CWMA remains essential to mitigate agrarian distress and avoid political friction between upper and lower riparian states.

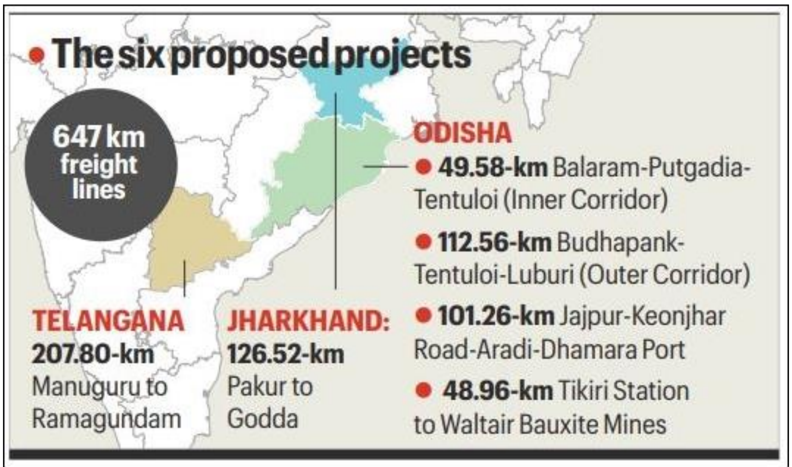
UPSC Relevance

- **GS Paper II:** Inter-State river water disputes, Federal structure and challenges, Constitutional mechanisms under Article 262, and role of regulatory bodies like CWMA.
- **GS Paper III:** Water resource management, agricultural water security, cropping patterns (Kuruvai crop season), and climate-induced distress allocation mechanisms.

4. Indian Railways to Build Six Freight Lines via Hybrid Annuity Model

Key Highlights & Summary

- **First-Ever Rail HAM Project:** The Public Private Partnership Appraisal Committee (PPPAC) under the Ministry of Finance approved six freight railway lines spanning 647 km under the Hybrid Annuity Model (HAM), marking its debut in railway infrastructure.
- **Geographical Distribution:** The projects cover key mining belts: four in Odisha (Balaram-Putgadia-Tentuloi, Budhapank-Tentuloi-Luburi, Jajpur-Keonjhar Road to Dhamara Port, and Tikiri to Waltair Bauxite Mines), one in Telangana (Manuguru-Ramagundam), and one in Jharkhand (Pakur/Nagarnabi to Godda).
- **Risk-Sharing Mechanism:** Transitioning from the DBFOT model based on market feedback, Indian Railways will bear all traffic and tariff risks while funding 40% of the bid cost during construction as a capital grant.
- **Financing Structure:** Private developers finance the remaining 60% of construction costs, which Indian Railways will reimburse through periodic annuity payments along with interest over a 17 to 19 year concession period.
- **Freight Commodity Focus:** These dedicated corridors are strategically planned to haul critical



industrial bulk materials, including coal, iron ore, bauxite, coke, cement, chemical fertilizers, and food grains.

- **Capital Outlay:** The project aggregate bid cost stands at ₹15,976 crore, with a total lifecycle capital cost projected at ₹40,866 crore across the concession period.

Essential Definitions

- **Hybrid Annuity Model (HAM):** A public-private partnership framework blending EPC (Engineering, Procurement, and Construction) and BOT-Annuity models, where the government pays 40% of the project cost during construction and the developer recovers the remaining 60% through fixed semi-annual annuities post-commissioning.
- **Public Private Partnership Appraisal Committee (PPPAC):** A specialized committee under the Department of Economic Affairs, Ministry of Finance, responsible for evaluating and approving central sector PPP infrastructure proposals before Cabinet clearance.

Legal and Constitutional Framework

- **Article 246 (Seventh Schedule, Union List, Entry 22):** Grants the Parliament exclusive legislative power over the regulation, operation, and expansion of National Railways.
- **The Railways Act, 1989:** Establishes the legal architecture governing railway construction, freight tariff determination, asset maintenance, and concessionaire operational boundaries.
- **Participative Policy for Railway Infrastructure (2012, updated):** The administrative framework governing private sector equity participation, non-state railway operations, and joint-venture models in freight rail logistics.

Conclusion Adopting the Hybrid Annuity Model for rail freight corridors bridges historical funding deficits while insulating private investors from demand fluctuations. By de-risking capital investments in mineral-rich belts, Indian Railways effectively leverages private efficiency to accelerate capacity expansion, lower national logistics costs, and modernize freight corridors without overburdening public balance sheets.

UPSC Relevance

- **GS Paper II:** Government policies and interventions for development in crucial sectors; Public Private Partnership (PPP) governance frameworks and institutional approval mechanisms.
- **GS Paper III:** Infrastructure (Railways, Freight Corridors); Investment Models (HAM, BOT, EPC); Mobilization of Resources, Economic Growth, and Supply Chain Logistics Efficiency.

5. Introduction of Polymer Banknotes in India: BRBNMPL Bidding and Security Mandates

Key Highlights & Summary

- **Global EOI for Polymer Substrates:** Bharatiya Reserve Bank Note Mudran (P) Ltd (BRBNMPL), a Wholly Owned Subsidiary of the Reserve Bank of India, issued a global Expression of Interest (EOI) for an immediate requirement of approximately 68,000 reams of polymer substrate sheets with inbuilt security features.

SIXSIGMA IAS
Dream | Dare | Deliver

- **Strict Animal Tallow Certification:** Participating bidders must explicitly certify that the polymer substrate contains no animal tallow content or animal DNA, addressing past public controversies faced in foreign jurisdictions like the UK.
- **Geopolitical Firewall Mandate:** Bidders are required to execute an integrity pact, confidentiality contract, and no-agent pact, alongside a mandatory undertaking to strictly firewall their Indian operations from any business presence in China and Pakistan.
- **Pilot Target Denominations:** The RBI proposes an initial rollout of polymer-based notes in low denominations of ₹10 and ₹20, testing sample durability across diverse Indian climatic zones before final tender awards.
- **Key Bidders & Technical Partnerships:** Major contenders include Indian manufacturer Cosmo First (partnered with UK-based De La Rue), Australia's CCL Secure (supplying 40 central banks), and Vietnam's Q&T Hi-tech Polymer Company.
- **Durability and Lifecycle Advantages:** Polymer banknotes, made from biaxially oriented polypropylene (BOPP), last up to six times longer than traditional cotton-rag currency paper, offering cleaner, counterfeit-resistant, and cost-effective alternatives.

Essential Definitions

- **Polymer Substrate:** A non-fibrous, non-porous plastic film—typically Biaxially Oriented Polypropylene (BOPP)—used as a base material for printing currency, enhancing durability and security.
- **Bharatiya Reserve Bank Note Mudran (P) Ltd (BRBNMPL):** A wholly owned subsidiary of the Reserve Bank of India established in 1995 to manage banknote production and security printing infrastructure in India.

Legal and Constitutional Framework

- **The Reserve Bank of India Act, 1934:** Section 22 grants RBI the sole right to issue banknotes in India, while Section 25 empowers the Central Government, on RBI Central Board recommendations, to approve currency design, form, and material composition.
- **Public Procurement (Preference to Make in India) Order:** Governs security printing tenders, balancing domestic manufacturing incentives with national security vetting for critical financial infrastructure.
- **Seventh Schedule (Union List, Entry 36):** Reserves exclusive legislative and regulatory power over currency, coinage, legal tender, and foreign exchange to the Parliament of India.

Conclusion The transition toward polymer banknotes marks a major structural modernization in India's currency management. By enforcing strict non-animal tallow certifications, rigorous security firewalls against sensitive nations, and advanced anti-counterfeiting features, the RBI ensures that currency innovation aligns with both socio-cultural sensitivities and national security imperatives.

UPSC Relevance

- **GS Paper II:** Government policies and interventions for development in crucial sectors; Statutory, regulatory, and quasi-judicial bodies (Reserve Bank of India).

- **GS Paper III:** Indian Economy (Currency Management and Monetary Infrastructure); Security challenges and their management; Counterfeit currency prevention and technological advancements in financial security.

6. Sri Lanka Waives Legal Barriers for Returning Refugees in Tamil Nadu

Key Highlights & Summary

- **Removal of Legal Obstacles:** The Sri Lankan government approved a cabinet decision waiving immigration prosecution for refugees who fled the civil war before May 19, 2009, without valid passports or through unauthorized departure points.
- **Security Clearance Procedure:** Returnees with established Sri Lankan nationality can enter through authorized ports after receiving security clearance from the State Intelligence Service, removing fear of detention upon arrival.
- **UN Welcome and Intent:** The United Nations welcomed the decision as a crucial milestone toward facilitating a "safe and dignified return" for displaced persons who had faced legal prosecution risks as recently as late 2025.
- **Demographic Footprint in Tamil Nadu:** Nearly 90,000 Sri Lankan refugees reside in India, including over 58,000 spread across 103 official rehabilitation camps in 29 districts of Tamil Nadu, alongside 30,000 living outside camps under police monitoring.
- **Intergenerational Disconnect:** Over three decades of displacement have created a generational gap; while older refugees retain ties to their homeland, younger generations born or raised in Tamil Nadu identify primarily with India.
- **Livelihood and Integration Realities:** Despite government resettlement offers, refugees face major socio-economic hesitation regarding land ownership, housing stability, employment, children's education, and starting life anew from scratch in Sri Lanka.

SIXSIGMA IAS
Dream | Dare | Deliver

Essential Definitions

- **Refugee Status:** A legal designation under international principles for individuals forced to flee their country due to war, persecution, or violence, lacking protection from their state of origin.
- **Voluntary Repatriation:** The constitutional and international right of refugees to return to their country of origin voluntarily under conditions of safety, dignity, and socio-economic security.

Legal and Constitutional Framework

- **Foreigners Act, 1946 & Passport (Entry into India) Act, 1920:** Primary Indian statutes governing the entry, stay, camp registration, and movement restrictions of non-citizens, including Sri Lankan Tamil refugees.
- **Article 21 of the Indian Constitution:** Guarantees the right to life and personal liberty to all persons (citizens and non-citizens alike), ensuring basic shelter, dignity, and protection against arbitrary detention.

- **1951 Refugee Convention & 1967 Protocol:** Though India and Sri Lanka are non-signatories, customary international law emphasizes the principle of *non-refoulement* (prohibiting forced return to unsafe environments).

Conclusion Sri Lanka's policy intervention addresses critical legal barriers, yet voluntary repatriation remains deeply constrained by economic uncertainties and generational assimilation in India. A holistic strategy incorporating bilateral rehabilitation packages, property restoration, and sustainable livelihood support is required to ensure genuine integration or dignified return.

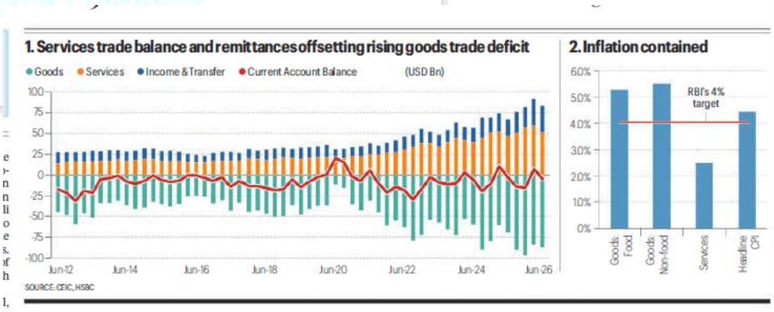
UPSC Relevance

- **GS Paper II:** India and its neighborhood relations; Bilateral developments affecting Indian interests; Issues relating to foreign policy, human rights, and refugee governance frameworks.
- **GS Paper III:** Internal security challenges, border management issues, cross-border migration, and socio-economic impacts of protracted displacement in coastal states.

7. India's Macroeconomic Landscape: Resiliency vs. Underlying Risks

Key Highlights & Summary

- **Growth Resilience:** India's GDP growth is projected to sustain near 7%–7.5% for Q1 2025–26, defying initial fears of economic disruption caused by the West Asia conflict and high domestic temperatures.
- **Services Sector as a Cushion:** Accounting for 55% of India's GDP, strong services exports and steady remittances are offsetting the widening goods trade deficit, keeping the Current Account Deficit (CAD) manageable at around 0.3% of GDP.
- **Monetary Transmission:** A 125-basis-point reduction in the repo rate between December 2024 and December 2025 has spurred private credit growth, lower borrowing costs, and economic activity.
- **Fiscal Stimulus Impact:** Past rationalizations in Goods and Services Tax (GST) rates improved consumer purchasing power, while front-loaded manufacturing production helped absorb external shocks.



- **Vulnerabilities:** Growth relies heavily on short-term factors like gold loans and working capital needs, while inflation dynamics remain vulnerable to rising services inflation and weather disruptions affecting agriculture.

Essential Definitions

- **Goldilocks Economy:** A state of optimal economic performance characterized by steady growth, low unemployment, and low inflation—neither overheating nor contracting.
- **Current Account Deficit (CAD):** A measurement of a country's trade where the total value of imported goods, services, and transfers exceeds the total value of exports.

- **Repo Rate & Monetary Transmission:** The rate at which the Reserve Bank of India (RBI) lends short-term funds to commercial banks. Transmission refers to how effectively changes in the policy rate are passed on to consumers and businesses via bank lending rates.

Legal and Constitutional Framework

- **Article 112 (Annual Financial Statement):** Sets the framework for public expenditure, taxation policies, and fiscal deficit targets essential for sustained macroeconomic stability.
- **RBI Act, 1934 & Flexible Inflation Targeting (FIT):** Under Section 45ZB, the Monetary Policy Committee (MPC) is legally mandated to maintain Consumer Price Index (CPI) inflation at 4% with a tolerance band of +/- 2%.
- **Fiscal Responsibility and Budget Management (FRBM) Act, 2003:** Guides long-term fiscal consolidation to keep public debt manageable while sustaining capital expenditure.

Conclusion While India's high headline GDP growth rate showcases remarkable external shock absorption, long-term stability hinges on addressing structural vulnerabilities. Ensuring sustainable growth will require structural boost to services exports, resilient domestic manufacturing, and maintaining strict vigilance over food and service inflation trajectory.

UPSC Relevance

- **GS Paper III (Indian Economy):** Directly relevant to issues relating to planning, mobilization of resources, growth, development, employment, monetary policy transmission, external trade balance, and inflation dynamics.
- **Prelims Exam:** Crucial for questions on CAD components, Monetary Policy Committee (MPC) mandates, inflation indices (CPI vs. WPI), and economic jargon like Goldilocks scenarios.

SIXSIGMAIAS
Dream | Dare | Deliver

8. US Unilateral Renaming of Lake Ontario as Lake America

Key Highlights & Summary

- **Executive Order for Renaming:** US President Donald Trump signed an executive order to unilaterally rename Lake Ontario, located on the US-Canada border, as "Lake America," calling it a major domestic asset.
- **Canadian Rejection:** Canadian Prime Minister Mark Carney rejected the move, highlighting that "Ontario" originates from the indigenous Wendat people and predates both Canadian Confederation and the US Declaration of Independence.

- **Great Lakes Significance:** Lake Ontario is part of the Great Lakes system (along with Superior, Michigan, Huron, and Erie), which holds 90% of US freshwater, 20% of global surface freshwater, and provides drinking water to 40 million people across both nations.
- **Underlying Geopolitical Tensions:** The move follows the collapse of bilateral trade talks and subsequent tariff

escalation, echoing the January 2025 decision where the US renamed the Gulf of Mexico as the "Gulf of America" during immigration disputes.

- **Jurisdictional Reach:** The unilateral executive order binds only domestic US federal entities like the US Geological Survey (USGS), without imposing international legal obligation on Canada or global bodies to alter official nomenclature.
- **Digital Mapping Protocol:** Digital platforms like Google Maps reflect localized naming based on user geography; US users see "Lake America," Canadian users see "Lake Ontario," while international users (including India) see dual nomenclature such as "Lake Ontario (Lake America)."

Essential Definitions

- **Great Lakes System:** A interconnected series of five large freshwater lakes in eastern North America spanning the US-Canada border, forming the largest surface group of freshwater lakes globally.
- **Unilateral Executive Order:** A presidential directive issued to federal agencies within a single sovereign state, carrying statutory force domestically but lacking extra-territorial international law enforcement.

Legal and Constitutional Framework

- **International Water Law & Boundary Waters Treaty (1909):** Regulates joint management, navigation, and environmental protection of shared water bodies between the US and Canada, establishing the International Joint Commission (IJC).
- **UN Group of Experts on Geographical Names (UNGEGN):** A United Nations body promoting international standardization of geographical names, emphasizing historical precedent and mutual consent for shared transboundary features.
- **Article 253 of Indian Constitution (Comparative Context):** Empowers Parliament to legislate for giving effect to international agreements, contrasting executive-led unilateral actions on shared transboundary natural resources.

Conclusion Unilateral renaming of transboundary geographical features serves as a geopolitical diplomatic lever during trade impasses, yet lacks legal force under international law. Coordinated management of shared natural assets like the Great Lakes necessitates multilateral consensus, historical respect, and adherence to established international boundary treaties.

UPSC Relevance

- **GS Paper I:** Physical Geography (World's major freshwater systems, Great Lakes distribution) and Cultural/Historical Toponymy.
- **GS Paper II:** International Relations (Bilateral trade disputes, Transboundary water governance, Principles of Sovereignty vs. Unilateralism, UN Bodies like UNGEGN).

9. India Acquires US Javelin Anti-Tank Missiles via Foreign Military Sales

Key Highlights & Summary

- **Deal Finalization:** India signed a Letter of Offer and Acceptance (LOA) with the US under the Foreign Military Sales (FMS) route to acquire third-generation Javelin Anti-Tank Guided Missiles (ATGMs) for the Indian Army.
- **Historical Delays (2010–2026):** Procurement discussions initiated in 2010 were repeatedly stalled due to Washington's refusal to provide 100% Transfer of Technology (ToT) for core infrared seeker systems.
- **Alternative Interim Measures:** Procurement pivoted to Israel's Spike system in 2014, leading to trial cancellations in 2017 and subsequent stopgap emergency acquisitions of Spike-LR variants in 2019.
- **Strategic Shift to Co-Production:** The revival of the Javelin deal transitions from a pure ToT model to industrial co-production, supported by an agreement between the Javelin Joint Venture (Lockheed Martin & RTX) and India's Bharat Dynamics Limited (BDL).
- **Modernization of Infantry Arsenal:** The acquisition addresses operational shortages in man-portable anti-armour capability, complementing older legacy systems like Milan-2T and Konkurs.
- **Procurement Multi-Tracking:** The acquisition includes immediate off-the-shelf emergency deliveries as well as long-term contracts involving local assembly.

Essential Definitions

- **Foreign Military Sales (FMS):** A US government-to-government procurement program where the US Department of Defense negotiates directly with defense contractors on behalf of foreign partner nations.
- **Fire-and-Forget Capability:** A missile guidance mechanism utilizing autonomous tracking (e.g., imaging-infrared), allowing operators to reposition or seek cover immediately after launch without manual terminal guidance.

Legal and Constitutional Framework

- **Seventh Schedule (Union List, Entry 2):** Grants exclusive legislative authority to the Parliament of India over naval, military, and air forces, as well as foreign defense procurement policies.
- **Defence Acquisition Procedure (DAP) 2020:** Governs capital acquisitions under foreign government agreements, regulating inter-governmental agreements (IGA), emergency procurement (EP) limits, and indigenous co-production offsets.
- **Arms Export Control Act (AECA) [US Code Title 22]:** US federal law authorizing the President to control the export of defense articles and services, governing FMS certifications issued to the US Congress.

Conclusion Finalizing the Javelin acquisition resolves long-standing infantry shortages while illustrating a pragmatic shift in India's defense procurement strategy. Moving beyond rigid full-ToT requirements toward joint manufacturing and co-assembly strengthens bilateral strategic alignment with the US while upgrading tactical battlefield capabilities.

UPSC Relevance

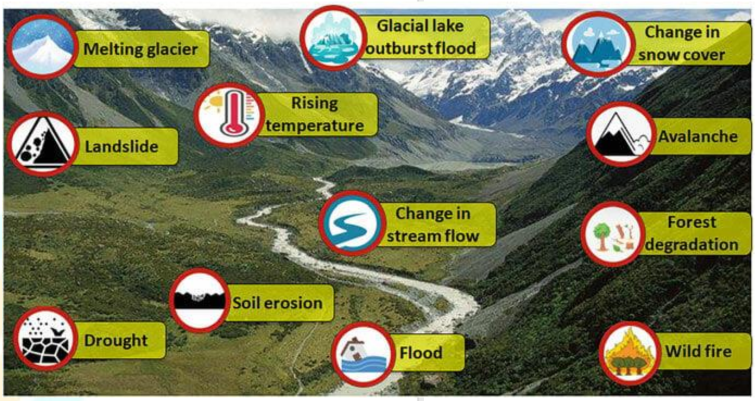
- **GS Paper II:** India and its bilateral relations (US-India Major Defense Partnership); Defense frameworks, FMS route, and technology transfer barriers.

- **GS Paper III:** Security challenges and operational readiness; Indigenization of technology (Aatmanirbhar Bharat in defense); Comparison between man-portable ATGMs (Javelin) and platform-based indigenous systems (NAG/Helina).

10. Ecological Fragility and Disaster Risks in the Himalayan Region

Key Highlights & Summary

- **Escalating Disaster Frequency:** The Himalayan-Karakoram zone faces compounding ecological hazards from climate change and unregulated infrastructure, evidenced by widespread flash floods, Glacial Lake Outburst Floods (GLOFs), and catastrophic avalanches.
- **Severe GLOF Vulnerability:** Over 48,000 sq km of glaciers in the region contain 5,000+ mapped glacial lakes, with around 500 classified as hazardous or significantly hazardous, causing over 388 recorded GLOF events.



- **Systemic Carrying Capacity Failure:** Unregulated commercial expansion—including multi-story guest houses, dhabas, and heavy tourist traffic along pilgrimage routes—exceeds carrying capacity, leading to severe waste management failures and increased vulnerability during monsoon events.
- **Cascading Hydropower Disruptions:** Run-of-the-river and dam projects experience repeated destruction from flash floods and GLOFs, illustrated by past destructions of Teesta-III in Sikkim, Rishiganga in Uttarakhand, and power grid losses in Nepal.
- **Transboundary Water Security Concerns:** Cross-border river flow management between India, China, and Nepal remains inconsistent due to irregular early-warning data sharing, heightened by upstream construction of massive infrastructure like the Medog Dam.
- **Seismic and Tectonic Threats:** Mega-infrastructure constructed along active fault systems (such as the Paizhen Fault) elevates risks of reservoir-induced seismicity, landslide blockages, and downstream flash flooding across North-East India.

Essential Definitions

- **Glacial Lake Outburst Flood (GLOF):** A sudden release of water from a lake fed by glacier melt, triggered when natural moraine or ice dams rupture due to avalanches, earthquakes, or water pressure buildup.
- **Carrying Capacity:** The maximum population size or environmental load an ecosystem can sustainably support without permanent degradation or increased disaster risk.

Legal and Constitutional Framework

- **Article 48A & 51A(g):** Mandates the State to protect and improve the environment, while imposing a Fundamental Duty on citizens to safeguard forests, lakes, rivers, and wildlife.

- **Environment (Protection) Act, 1986:** Empowers the Union government to regulate industrial activity, establish Eco-Sensitive Zones (ESZs), and mandate strict Environmental Impact Assessments (EIA).
- **National Disaster Management Act, 2005:** Provides the legal machinery for hazard mitigation, establishing NDMA guidelines for GLOF monitoring, early warning systems, and risk management.

Conclusion The accelerated degradation of Himalayan ecosystems highlights the limits of traditional infrastructure development in geologically active zones. Preserving regional stability requires enforcing strict carrying-capacity thresholds, prioritizing bio-engineering, establishing reliable cross-border data sharing, and reforming river-basin management strategies.

UPSC Relevance

- **GS Paper I:** Physical Geography of the Himalayas, Glaciology, and Mechanisms of Natural Hazards (GLOFs, Earthquakes, Landslides).
- **GS Paper III:** Environmental Degradation, Disaster Management Protocols, Ecosystem Resilience, and Infrastructure Planning in Fragile Regions.

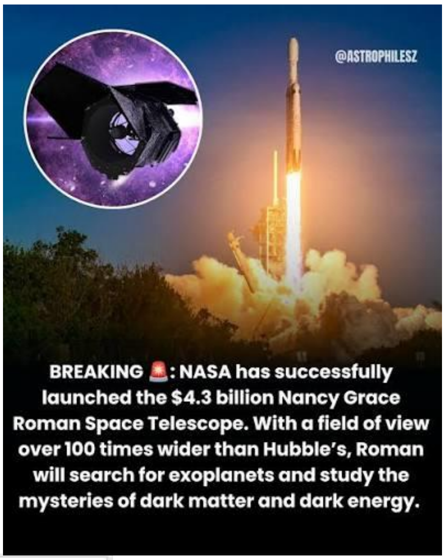
11. NASA Launches Nancy Grace Roman Space Telescope to Unravel Dark Energy

Key Highlights & Summary

- **Successful Orbital Launch:** NASA launched its $4.3 billion Nancy Grace Roman Space Telescope aboard a SpaceX Falcon Heavy rocket from Kennedy Space Center, Florida.
- **Lagrange Point Destination:** The bus-sized observatory is embarking on a three-month journey to orbit the Sun-Earth Lagrange Point 2 (L2), located approximately 1.6 million kilometers from Earth.
- **Expansive Field of View:** Roman features a 2.4-meter primary mirror with a field of view 100 times wider than the Hubble Space Telescope, enabling rapid sky mapping at unprecedented survey speeds.
- **Core Scientific Mission:** The telescope is designed to map billions of galaxies to investigate the nature of dark energy, dark matter, and cosmic expansion, alongside searching for thousands of exoplanets.

SIXSIGMA IAS

- **Synergistic Cosmic Fleet:** Roman will complement existing space observatories like James Webb, Euclid, and the Vera C. Rubin Observatory by providing wide-field targets for targeted high-resolution follow-up.



- **Nomenclature and Legacy:** Named in honor of Dr. Nancy Grace Roman, NASA's first chief astronomer and "Mother of Hubble," it represents NASA's first space telescope named after a woman.

Essential Definitions

- **Lagrange Point 2 (L2):** A gravitationally stable position in space located 1.6 million km directly behind Earth relative to the Sun, allowing spacecraft to maintain a steady orbit with minimal fuel expenditure.
- **Dark Energy & Dark Matter:** Unseen cosmic components comprising ~95% of the universe; dark energy drives the accelerating expansion of space, while dark matter exerts gravitational pull holding galaxies together.

Legal and Constitutional Framework

- **Article 51A(h) of Indian Constitution:** Enshrines the Fundamental Duty of every Indian citizen to develop scientific temper, humanism, and the spirit of inquiry and reform.
- **Outer Space Treaty (1967):** The foundational framework of international space law, establishing that exploration of outer space shall be carried out for the benefit of all mankind and forbidding national appropriation by claim of sovereignty.
- **US National Aeronautics and Space Act (1958):** Statutory basis establishing NASA, mandating civilian research into space phenomena and international scientific collaboration.

Conclusion The launch of the Nancy Grace Roman Space Telescope marks a pivotal advancement in deep-space observational astronomy. By bridging the gap between wide-field cosmological surveying and targeted exoplanetary exploration, the mission promises to unlock fundamental questions regarding cosmic expansion, structural evolution, and the ultimate fate of the universe.

UPSC Relevance

- **GS Paper III:** Science and Technology—developments and their applications in daily life; achievements of space agencies in observational astronomy; basic concepts of cosmology, exoplanets, and deep-space missions.
- **GS Paper I:** General Science and Salient Features of Physical Geography (Universe, Solar System, Gravitation, and Orbital Mechanics).

12. OBC Creamy Layer Exclusion and Income Test

Key Highlights & Summary

- **SC Judgment on Income Test:** In *Union of India vs Rohith Nathan* (March 2026), the Supreme Court ruled that parental salary income cannot be included when determining the OBC "creamy layer" status for candidates whose parents work in Public Sector

Undertakings (PSUs) or private employment where post-equivalence with government services has not been established.

- **Hostile Discrimination Identified:** The Court held that evaluating PSU and private sector employees based on salary while excluding salary income for government servants amounts to "hostile discrimination" and violates Article 14, as unequals are treated equally and equals unequally.
- **Rejection of 2004 DoPT Letter:** The Division Bench clarified that the DoPT's 2004 letter—which included salary for PSU employees—cannot override the parent 1993 Office Memorandum (OM), where income from salary and agriculture was consciously excluded under the residual "Income/Wealth Test".
- **Direction for Supernumerary Posts:** The Court directed the Union Government to create supernumerary posts within six months to accommodate aggrieved Civil Services Examination (CSE) candidates who were wrongly classified as creamy layer solely due to parental salary.
- **Centre's Implementation Challenges:** The Centre filed applications seeking clarification and relief, citing that retrospective implementation from 2012 onwards would cause a "cascading effect" on settled service allocations, seniority, and provoke widespread fresh litigation across all categories.
- **Plea for Ongoing Allocations:** The Centre requested permission to continue allocating services for CSE 2025 candidates under the existing framework while the Supreme Court considers constituting a new Bench to hear the clarification plea.

Essential Definitions

- **Creamy Layer:** A mechanism to exclude socially and economically advanced individuals among Other Backward Classes (OBCs) from availing reservation benefits.
- **Residual Income Test:** The criterion under Category VI of the 1993 OM applying an annual income ceiling (currently ₹8 lakh) derived exclusively from non-salary and non-agricultural sources (e.g., business, property).

Legal and Constitutional Framework

- **Article 14 & 16(4):** Guarantees equality before law and permits state provisions for reservation of appointments in favor of any backward class not adequately represented, provided the creamy layer is excluded (*Indra Sawhney*, 1992).
- **1993 Office Memorandum vs. 2004 Letter:** Substantive administrative guidelines (1993 OM) cannot be altered or amended by subordinate clarificatory letters (2004 Letter) without formal statutory or policy revision.

Conclusion The Supreme Court's verdict establishes parity across public and private sector employees regarding OBC creamy layer exclusion. While resolving long-standing administrative arbitrariness, executive delays in establishing post-equivalence necessitate balanced implementation to protect systemic administrative stability without diluting constitutional equality.

UPSC Relevance

- **GS Paper II:** Indian Constitution (Articles 14, 16); Welfare schemes for vulnerable sections; Role of executive circulars vs. judicial interpretation; Principles of administrative fairness and natural justice.

SIXSIGMA IAS
Dream | Dare | Deliver