

Prelims Exam Topics

CRITICAL MINERALS GLOBAL SUPPLY CHAIN OBSERVATORY (GSCO)

Context

India and the United Kingdom formally launched the Critical Minerals Global Supply Chain Observatory (GSCO)

About GSCO

- **Objective:** To expand mineral coverage, further integrate advanced technologies, and unlock new bilateral investment opportunities.
 - **Joint Operators:**
 - India's **Technology Innovation in Exploration & Mining Foundation (TEXMiN)**
 - **Indian Institute of Technology (ISM), Dhanbad**
 - U.K.'s **University of Cambridge**
 - **Function:** Institutes a **data-driven platform** to monitor and analyse global critical mineral supply chains.
 - **Significance:** Aims at strengthening critical mineral supply chains, supporting clean energy transitions, and building resilient global supply chains through the India–U.K. partnership.
- **TEXMiN (Technology Innovation in Exploration & Mining Foundation):** A Technology Innovation Hub established under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) by the Department of Science & Technology (DST), hosted at IIT (ISM) Dhanbad. Focuses on developing next-generation technologies for the mining sector.
 - **India–USA Critical Minerals Framework (2026):** India and the USA signed a Critical Minerals Framework — covering supply chain resilience, joint processing, and technology sharing.
 - **Quad Critical Minerals Initiative Framework:** Aims to coordinate economic policy and investment across mining, processing, and recycling, with a target of mobilising up to \$20 billion to reduce dependence on concentrated supply sources.

PRADHAN MANTRI KAUSHAL VIKAS YOJANA (PMKVY)

Context

Parliament's Public Accounts Committee (PAC), pulled up the government over PMKVY, citing the CAG audit report which highlighted serious implementation gaps.

About PMKVY

- **Nodal Ministry:** Ministry of Skill Development and Entrepreneurship (MSDE)
- **Objective:** To provide free short-duration training, certify skills through Recognition of Prior Learning (RPL), and enhance youth employability across India.
- **Training Delivery:** Through approved Training Centres under a standard quality framework aligned with the National Skills Qualification Framework (NSQF).

Key Concerns Raised by PAC

- **Demand-Supply Mismatch:** Apparel, Electronics, and Retail = 40% of trainees; Food Processing = 0.48%; Tourism = 3.8%.
- **Poor Placement Record:** Only 41% of trainees placed post-training.
- **Fraudulent Certifications**
- **No course-correction** despite scheme running since 2015.

- **NSQF (National Skills Qualification Framework):** A nationally integrated education and competency-based framework that organises qualifications according to a series of levels of knowledge, skills and aptitude. Levels range from 1 to 10, enabling learners to progress to higher levels through formal, non-formal, or informal learning.
- **Public Accounts Committee (PAC)**
 - **Oldest** parliamentary financial committee, in existence since **1921**.
 - **Composition:** 22 members — 15 from Lok Sabha, 7 from Rajya Sabha; **Tenure: 1 year**.
 - **Chairman:** By convention, from the **Opposition**.
 - **Examines** CAG's Audit Reports on Union Government accounts.
 - **Checks Excess Grants** — expenditure beyond Parliament-approved limits.
 - **Ensures** money was spent only for the purpose for which it was voted.
 - **Can summon** Secretaries and senior government officials for questioning.
 - Issues **Action Taken Reports (ATRs)**: government must formally respond to PAC findings.

REGULATIONS FOR USE OF ARTIFICIAL INTELLIGENCE (AI) IN COURTS, 2026

Context

The Supreme Court AI Committee, chaired by Justice P.S. Narasimha, has released a preliminary draft of 'Regulations for Use of AI in Courts, 2026', prohibiting AI from determining judicial outcomes and mandating human oversight.

Key Provisions

- **General Principles**
 - AI must function solely in an **assistive capacity**, strictly subservient to human judgment and judicial authority.
 - No **opaque/unexplainable** AI systems permitted in any court process.
 - AI must not perpetuate bias on grounds of race, religion, caste, sex, gender, disability, language, or economic status, any ground prohibited under the **Constitution**.
 - Personal data processed through AI governed by **Digital Personal Data Protection Act, 2023**.
 - Must not **widen digital divides** — must remain accessible to rural, economically disadvantaged, and linguistically diverse communities.
- **Permitted Uses** (*Administrative functions only*): Case management, cause list preparation, scheduling of hearings, transcription, and translation of judgments.
- **Prohibited Uses**
 - **AI-Assisted Sentencing** without mandatory human oversight.
 - **Profiling** of parties or witnesses.
 - **Risk Scoring**- flight risk assessment, recidivism prediction, bail eligibility determination.
 - **Credibility Assessment** of parties or witnesses.
 - **Surveillance/Continuous Monitoring** of judicial officers, advocates, or litigants.
- **Human-in-the-Loop (HITL)**: Applications involving higher risk to **personal liberty** or integrity of judicial outcomes require **mandatory HITL** and independent oversight.
 - **Human-in-the-Loop (HITL)**: A design principle requiring that a human must review, approve, or intervene in AI-generated decisions, especially in high-stakes domains like judiciary, healthcare, and defence.

UN SECURITY COUNCIL

Context

The UN General Assembly elected Austria, Kyrgyzstan, Portugal, Trinidad and Tobago, and Zimbabwe as non-permanent members of the Security Council for a two-year term beginning January 1, 2027.

About the UN Security Council (UNSC)

- **Total Members:** 15: 5 Permanent (P5) + 10 Non-Permanent.
- The only UN body that can make **legally binding decisions** such as imposing sanctions and authorizing use of force.
- Non-permanent members are elected for **two-year terms**, with **5 new members joining every year**.
- Seats are distributed among **regional groups** to ensure geographical representation.
- Requires **two-thirds majority** of the General Assembly (i.e., 128 of 193 votes) for election.
- **Permanent Members (P5):** China, France, Russia, UK, USA
- **P5 members hold veto power**, any one can block a substantive resolution.
 - **UNSC Veto Power:** Each of the 5 permanent members can veto any substantive resolution. A veto by even one P5 member blocks the resolution regardless of other votes, a major point of contention in reform debates.

JAI PRAKASH NARAYAN BIRD SANCTUARY- INDIA'S 100TH RAMSAR SITE

Context

The Jai Prakash Narayan Bird Sanctuary has been designated as India's 100th Ramsar Site

About Jai Prakash Narayan Bird Sanctuary (Surha Tal)

- **Location:** Ballia district, Uttar Pradesh, middle stretch of Ganga River Basin
- **Type:** Freshwater; originally formed from meander of Ganga and receives freshwater inflow from three channels.
- **Significance:** Exceptionally rich in avifaunal biodiversity, attracting numerous migratory and resident birds.

- A **Ramsar site** is a wetland designated to be of international importance under the Ramsar Convention, an international environmental treaty signed on 2 February 1971 in Ramsar, Iran, under the auspices of UNESCO.
- Globally, there are nearly **2,595 Ramsar sites**.

- India has the **highest number of such wetlands in Asia** and **third highest in the world** after the UK (176) and Mexico (144).

SECTION 138 OF NEGOTIABLE INSTRUMENTS ACT VS. IBC MORATORIUM

Context

The Supreme Court has taken up the question of whether the Insolvency and Bankruptcy Code (IBC) moratorium intersects with Section 138 of the Negotiable Instruments Act (NIA), which deals with cheque bounce cases.

About Section 138 (NIA)

- Criminalises dishonour of cheques- punishes failure to honour people's faith in financial instruments.
- The offence is compoundable- parties can settle, and the case can proceed simultaneously as a civil suit for the same amount.
- Features both punishment and restitution, making its interaction with insolvency law complicated.

About IBC Moratorium

- Under the IBC, when a person undergoes personal insolvency proceedings or an entity enters corporate insolvency, a moratorium kicks in, barring legal proceedings or actions in respect of any debt.
- The criminal nature of Section 138 suggests moratorium should not apply.
- But the compensatory/restitutionary aspect of Section 138 proceedings creates overlap with insolvency law.

Negotiable Instruments Act, 1881: Governs financial instruments like cheques, promissory notes, and bills of exchange. Section 138 was introduced via 1988 amendment to instil confidence in cheque-based transactions by making dishonour a criminal offence.

Insolvency and Bankruptcy Code (IBC)

- **Replaced:** SICA (Sick Industrial Companies Act), SARFAESI (partially), and other fragmented laws, consolidated India's insolvency framework.
- **Resolution Timeline:** 180 days (extendable by 90 days) for Corporate Insolvency Resolution Process (CIRP); maximum 330 days including litigation.
- **Adjudicating Authorities:**
 - NCLT (National Company Law Tribunal) for companies and LLPs
 - DRT (Debt Recovery Tribunal) for individuals and partnership firms

- **Insolvency Regulator:** IBBI (Insolvency and Bankruptcy Board of India)
- **Who can initiate CIRP:** Financial creditor, Operational creditor, or the Corporate Debtor itself
- **Waterfall Mechanism (Priority of Repayment):** Insolvency costs → Financial creditors → Operational creditors → Equity shareholders
- **Pre-packaged Insolvency (PIRP):** introduced in 2021 for MSMEs; faster resolution with debtor-in-possession model.

SUN PROTECTION FACTOR (SPF)

Context

Growing awareness around skin protection has brought focus on SPF-rated sunscreens, but misconceptions persist.

About SPF

- SPF measures protection against **Ultraviolet B (UVB)** radiation
- Measured by comparing UV exposure needed to cause **minimal erythema (redness)** on protected vs. unprotected skin.
- An **SPF 30** sunscreen means 30 times more UV exposure is needed to cause redness compared to unprotected skin.

About Ultraviolet Radiation

- UV radiation is a form of **non-ionizing electromagnetic radiation** emitted naturally by the sun and artificial sources (e.g., tanning beds, mercury vapor lighting).
- It spans the wavelength range of 100 nm to 400 nm. This makes its wavelength shorter than visible light (400 nm to 800 nm) but longer than X-rays.
 - **UVA:** It is not absorbed by the ozone layer, accounting for 95% of the UV radiation reaching Earth.
 - **UVB:** It is mostly absorbed by the ozone layer, primarily damages the skin's surface to cause sunburns, and stimulates natural Vitamin D synthesis.
 - **UVC:** It is the most energetic and harmful UV band, but it is completely filtered out by Earth's atmosphere and never naturally reaches the surface.

Places in News

LAKE CHAD

News

A joint Nigerian-US AFRICOM operation killed 175 Islamic militants including Abu-Bilal al-Minuki, drawing attention to the deteriorating security situation in the Lake Chad Basin.

About Lake Chad

- Freshwater lake in **West-Central Africa**, bordered by **Nigeria, Niger, Chad, and Cameroon**.
- Part of the **Sahel region**, transitional zone between the Sahara Desert and Sudanian Savanna.
- Historically one of Africa's largest lakes; has **shrunk by ~90% since the 1960s** due to climate change, overuse, and desertification.
- Fed primarily by the **Chari (Logone) River**, it has **no outlet**, making it an **endorheic basin**.



Sahel Region: A semi-arid belt stretching across Africa from Senegal to Eritrea, acting as a transition zone between the Sahara and tropical savanna. Faces a confluence of challenges: climate change, desertification, poverty, weak governance, and jihadist insurgency (Mali, Burkina Faso, Niger -the "Sahel G5" crisis).

Mains Exam Topics

INDIA'S CLIMATE FINANCE ARCHITECTURE: BRIDGING THE GREEN INVESTMENT GAP

Context

India's bottleneck to achieve NDCs is not the absence of financial instruments, but the institutional architecture needed to deploy capital at scale.

What Is the Scale of India's Climate Financing Gap?

- **Overall Investment Gap:** India requires ₹162.5 trillion (~\$2.5 trillion) by 2030 to fulfill its NDCs, while the long-term target of achieving net-zero emissions by 2070 is estimated to cost a massive \$10.1 trillion.
- **Sectoral Decarbonisation Cost:** Transitioning over half of India's emissions sectors (specifically steel, cement, power, and road transport) will demand an investment of \$467 billion between 2022 and 2030 (~\$54 billion annually).
- **RBI's Green Financing Estimates:** The Reserve Bank of India's *Report on Currency and Finance* states that the nation needs to inject an additional 2.5% of its GDP annually into green financing up to the year 2030.

What Progress Has India Already Made?

- **GSSS Debt Surge:** By end-2024, India had issued \$55.9 billion in green, social, sustainability, and sustainability-linked (GSSS) debt, a 186% rise since 2021.
 - Green debt leads at 83% of total issuances, directed primarily to clean energy and transport.
- **Sovereign Green Bonds:** Sovereign green bonds worth ₹477 billion have set market benchmarks and boosted institutional investor confidence.
- **RBI's 2025 Climate Finance Directions:** A comprehensive framework requiring commercial banks to integrate climate risks into lending and risk management.
 - Eligible green activities now qualify as Priority Sector Lending (PSL): banks must direct 40% of adjusted net bank credit to PSL.
 - Investments in sovereign green bonds are also recognised under the framework.
- **Draft Climate Finance Taxonomy (May 2025):** The Department of Economic Affairs released India's Draft Climate Finance Taxonomy for public consultation

- Covers mitigation, adaptation, and transition activities; described as a "living document" to evolve with India's NDCs and global commitments.
- Aligns with the Energy Conservation Act, SEBI norms, and the Carbon Credit Trading Scheme.

What Are the Key Gaps in India's Climate Finance Architecture?

- **Absence of a Legal Green Taxonomy:** The absence of a statutory definition of "green" weakens project verification, enables greenwashing and creates ambiguity in climate-related lending and investments.
- **Lack of Credit Enhancement Mechanisms:** India has no dedicated public guarantee architecture to de-risk climate projects and crowd in large-scale private investment.
- **Weak Secondary Market Liquidity:** Limited liquidity in the green bond market discourages participation by long-term institutional investors such as pension and insurance funds.
- **Distorted Market Incentives:** The absence of differentiated capital norms means brown finance often remains cheaper and more attractive than green finance.
- **Limited Climate Integration in Banking:** While RBI has integrated climate risks into Priority Sector Lending, climate stress testing and differentiated risk weights are yet to be mandated.
- **Constrained State-Level Climate Financing:** States undertaking adaptation projects face limited borrowing capacity and inadequate access to international green capital markets.
 - E.g, coastal resilience in Odisha, drought-proofing in Vidarbha is delivered at State level.

What Is the Way Forward?

- **Enact the Climate Finance Taxonomy Without Delay:** It unlocks credible bond verification, PSL eligibility, anti-greenwashing regulation, and international capital access simultaneously.
- **RBI Must Move from Enabling to Mandating:** Introduce differentiated capital requirements making brown lending more capital-intensive and green lending less so; mandate climate stress testing for all scheduled commercial banks.
 - E.g., EU's Capital Requirements Regulation incorporates climate risk into bank capital adequacy frameworks.
- **Build a Guarantee Architecture via NaBFID:** NaBFID should deploy first-loss guarantees and subordinated debt systematically to crowd in private co-investment at scale.
 - E.g., US IRA's Loan Programs Office achieves a 5:1 private leverage ratio for clean energy through loan guarantees.

- **Establish a State Climate Finance Facility:** Co-capitalised by the Union, NABARD, and international sources (e.g., Green Climate Fund) to give States and municipalities genuine access to green debt markets.
 - *E.g.*, EU's Just Transition Fund channelled concessional finance directly to sub-national governments, bypassing central bottlenecks.
- **Scale Sovereign Green Bonds and Embed in SLR Framework:** Deepens the domestic green bond market, reduces dependence on volatile foreign capital flows, and builds a long-term institutional investor base.
- **Activate Blended Finance Systematically:** Deploy public concessional capital strategically to de-risk private investment — particularly in deep-tech climate solutions, offshore wind, and green hydrogen.
 - *E.g.*, IFC's Blended Finance for Climate Investments report (2023) identifies India as one of the highest-potential blended finance markets globally.

URBAN FIRE SAFETY IN INDIA

Context

A deadly fire in South Delhi recently brought into focus the numerous fire safety gaps in India's urban areas

What Are the Main Challenges in Urban Fire Management?

- **Fire Services Are a State Subject:** Fire services fall under Entry 6, State List, and Article 243(W), making them a state responsibility with no central enforcement mechanism.
- **NBC 2016 Is Advisory, Not Binding:** The National Building Code carries no statutory force, ULBs face no legal obligation to enforce fire safety provisions at building permission or occupancy certificate stage.
 - The Delhi fire building had no NOC and no fire safety certificate, yet operated freely.
- **Residential Buildings Outside Inspection Cycles:** Unlike commercial establishments, residential structures, especially older ones, face no routine fire safety inspection or mandatory audit requirement whatsoever.
- **Unchecked Illegal Conversions:** Commercial properties converted into residential or hospitality use without NOCs or fire safety upgrades.
 - Unlike commercial buildings, residential structures have no mandated audit cycle to detect and rectify electrical short circuits, overloaded circuits, and LPG gas leaks

- **Fire Services Are Grossly Underfunded:** The 15th FC noted a critical "accidental gap", fire services lack resources, trained personnel, and modern equipment, particularly in Tier-II and Tier-III cities.
 - It recommended ₹5,000 crore for strengthening state fire services
- **Firefighting Infrastructure Lags Urbanisation:** As cities build upward and outward, fire station coverage, equipment capacity, and trained manpower have not kept pace
- **Urban Density Compounds the Risk:** Narrow lanes, congested layouts, and high-rise construction make access for fire tenders increasingly difficult in rapidly urbanising Indian cities.

What Is the Way Forward?

- **Make NBC 2016 Statutorily Binding:** Convert the National Building Code from an advisory document into a legally enforceable standard with mandatory compliance at building permission, construction, and occupancy certificate stages.
 - *E.g.*, UK's Building Regulations Act makes fire safety compliance a legal prerequisite for any construction or change-of-use approval.
- **Mandatory Inspection for Residential Complexes:** Extend periodic fire safety inspections to all residential complexes above a defined floor area or height.
 - *E.g.*, Singapore's Fire Safety Act mandates annual inspections for all building classes including residential towers above four storeys.
- **Crack Down on Illegal Conversions:** Create a fast-track regularisation-or-demolition framework for illegally converted properties; link property tax records and utility connections to fire NOC compliance.
- **Outcome-Linked Disbursement of 15th FC Funds:** Release the recommended ₹5,000 crore for fire services against measurable targets: fire station density, response time benchmarks, and equipment modernisation milestones.
- **Develop Ward-Level Urban Fire Risk Maps:** Map fire hazard zones for all cities above 5 lakh population based on building age, density, electrical load, and fire station proximity — enabling targeted resource deployment.
 - *E.g.*, Tokyo's Urban Fire Risk Assessment ranks every city block by fire risk, driving pre-emptive infrastructure investment in high-risk wards.
- **Community-Level Fire Safety Literacy:** Given 60% of deaths occur in residential buildings, community awareness around electrical overloading and LPG handling is as critical as regulatory enforcement.

- *E.g.*, Japan's neighbourhood fire watch (*Jishu-Bo*) programme trains resident associations in fire prevention.

Fire Safety Measures in India

- **National Building Code (NBC)**, published by the BIS in 1970 and updated in 2016-provide comprehensive guidelines for construction, maintenance, and fire safety protocols in buildings.
- **Model Building Bye Laws 2016-** issued by the Ministry of Housing and Urban Affairs, offers guidance to states and Union Territories (UTs) in formulating building bylaws to address fire protection and safety requirements.
- **Scheme for Expansion and Modernization of Fire Services:** Launched from earmarked allocation of Preparedness and Capacity Building Funding Window under the NDRF for strengthening fire services in the states
- **Fire and Life Safety Guidelines (2020):** Issued by the Ministry of Health, these guidelines recommend measures such as third-party fire safety accreditation and the development of a Fire Response Plan (FRP).
- **Other Laws:** The Factories Act of 1948's Section 37 establishes regulations to guard against fire and explosion hazards.