

August 2024 Issue

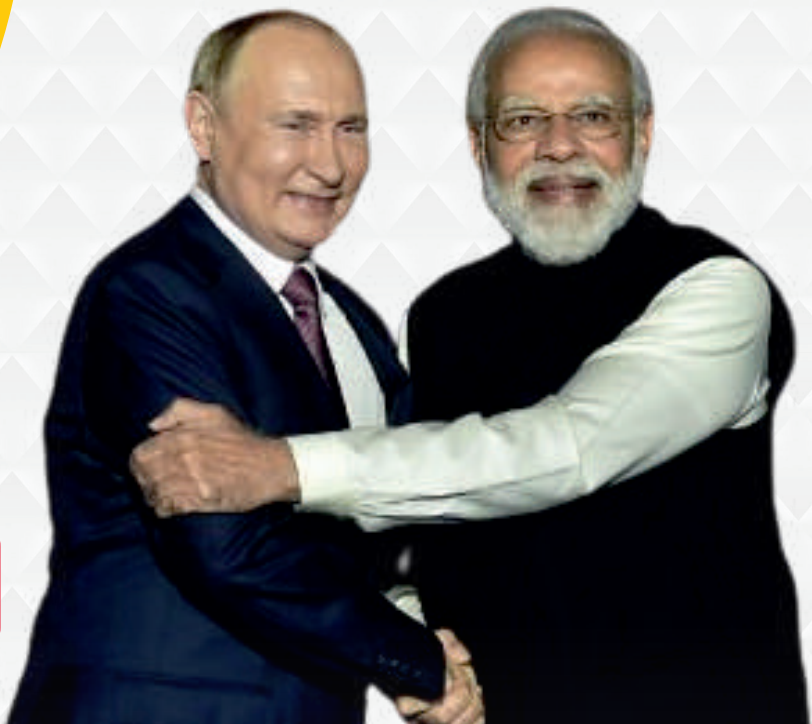
VAJIRAO & REDDY IAS

Monthly Magazine

For UPSC | IAS | IPS & State Civil Services Aspirants



UNION
BUDGET



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CURRENT EVENTS OF NATIONAL IMPORTANCE

ECONOMIC SURVEY 2024

- The **Economic Survey is a comprehensive review** or annual report of Indian economy during the closed financial year.
- **Prepared by:** The **Economics Division** of the **Department of Economic Affairs** of the Finance Ministry under the guidance of the **India's Chief Economic Advisor (CEA)**.
- It is typically **published a day before the Union Budget**.
- The survey has evolved over the years, becoming more comprehensive and analytical

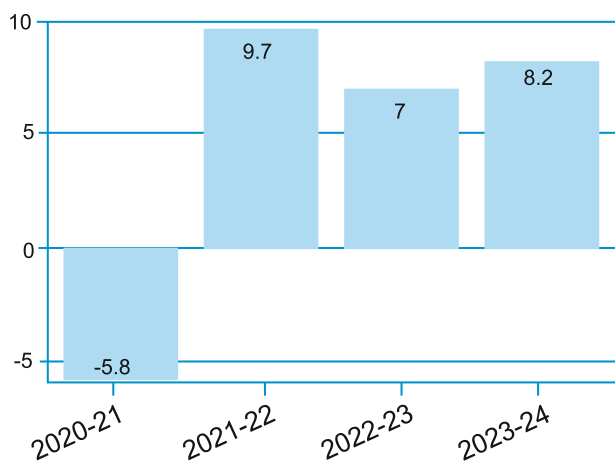
THE HISTORY

- The **first Economic Survey** was published in **1950-51** as a **"white paper"** within the budget papers
- **Initially**, the survey **relied on secondary data** due to the scarcity of readily available figures and analysts
- Over time, **the survey has expanded in scope** and become a primary data source for those outside the government
- However, **since 2021-22**, the **Economic Survey has reverted to its classic template**, focusing on hard facts and less on opinions

1. OVERALL ECONOMIC PERFORMANCE

- **GDP Growth:** India's real GDP grew by 8.2% in FY24, exceeding 8% in three out of four quarters.

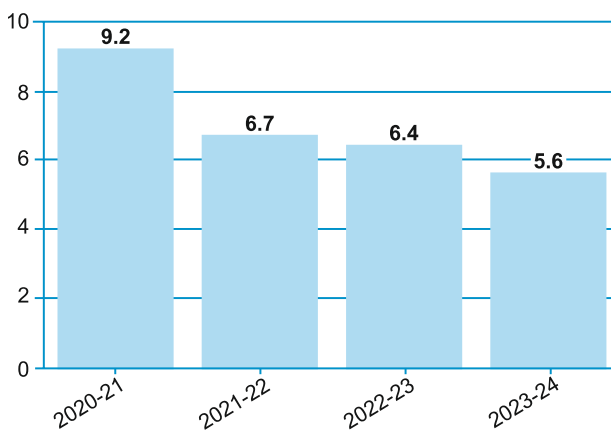
GDP Growth



- **Projected Growth:** India's real GDP is anticipated to grow between 6.5% and 7% in fiscal year 2024-25.
- **Global Context:** India's growth is notable, given the challenging global economic environment with 3.2% global growth in 2023.

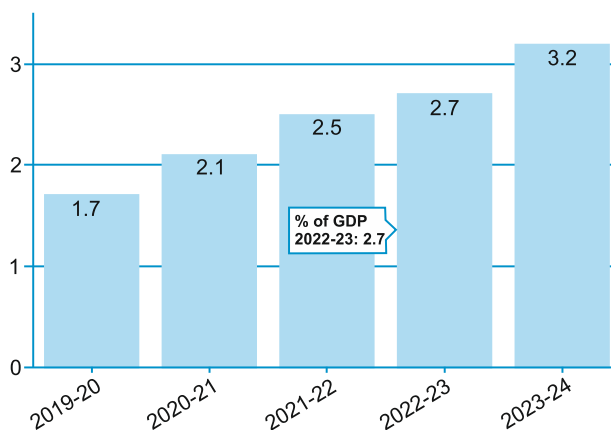
- **Recovery:** The real GDP in FY24 was 20% higher than its level in FY20, a feat achieved by very few major economies post-pandemic.
- India has **continued to reduce its fiscal deficit**, going against the global trend of increasing deficits. According to recent data, the **fiscal deficit has decreased from 6.4% of GDP in FY 23 to 5.6% of GDP in FY 24**.

Fiscal deficit % of GDP



- India's **capital expenditure in FY24** reached **Rs. 9.5 lakh crore**, a 28.2% year-over-year increase, and nearly triple the level of FY20.

Capital Expenditure % of GDP

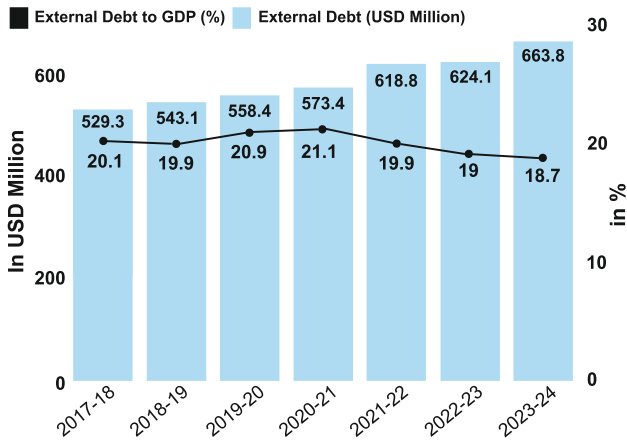


The **government's focus on capital expenditure** has been a key factor in driving economic growth despite global uncertainty.

- India's **external debt indicators remain stable**, with **external debt at 18.7% of GDP as of March 2024**.

Additionally, **foreign exchange reserves cover 97.4% of total debt**, indicating a comfortable position.

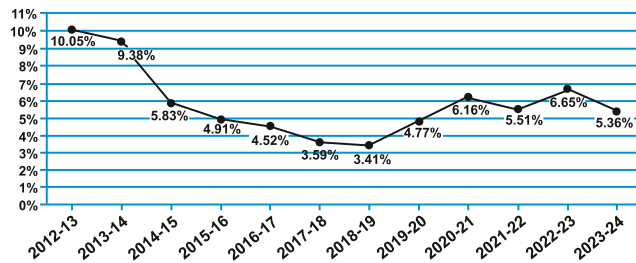
India's External debt



2. INFLATION & MONETARY POLICY

- **Inflation Rate:** Retail inflation moderated to 5.36% in FY24, the lowest since the pandemic.
- **Core Inflation:** Dropped to a four-year low in FY24.
- **RBI Actions:** The Reserve Bank of India raised the repo rate by 250 basis points from May 2022 to combat inflationary pressures.

India's retail inflation rate

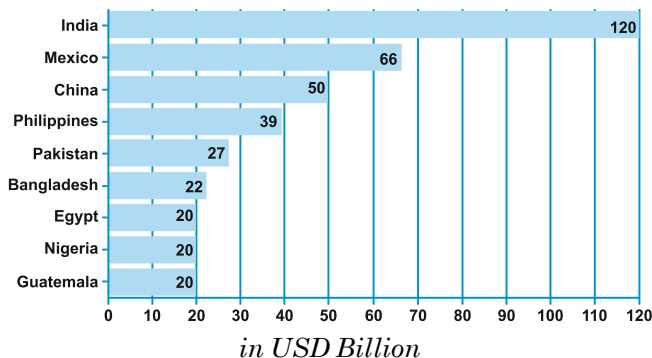


- **Future Outlook:** RBI projects inflation to fall to 4.5% in FY25 and 4.1% in FY26, assuming normal monsoons and no external shocks.

3. EXTERNAL SECTOR

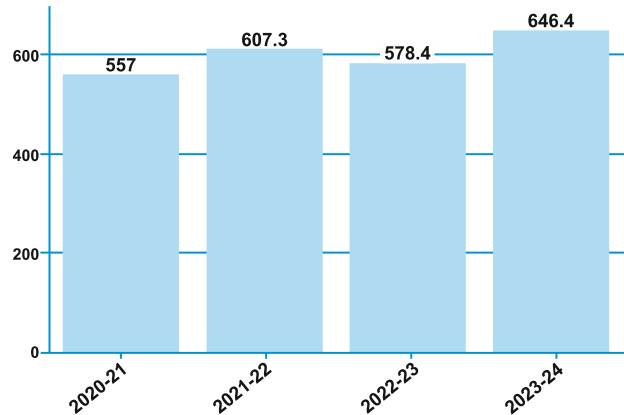
Top remittance recipients in the world in 2023

According to the World Bank, India has the largest emigrant population and is the top remittance recipient country in the world. Remittances to India are forecasted to grow at 3.7 per cent to USD 124 billion in 2024.



- **Current Account Deficit (CAD):** Narrowed to 0.7% of GDP in FY 24, down from 2.0% in FY23.
- **Services Exports:** Grew by 4.9% to USD 341.1 billion in FY 24, driven by IT/software and business services.
- **Remittances:** India remains the top global remittance recipient, reaching USD 120 billion in 2023.

Foreign Exchange Reserves in US \$ billion



- **Forex Reserves:** Sufficient to cover more than 10 months of projected imports for FY25.

4. INVESTMENT & CAPITAL FORMATION

- **Public Investment:** Has been pivotal in sustaining capital formation in recent years.
- **Private Sector Investment:** Showing encouraging signs since FY22.
- **Gross Fixed Capital Formation:** Increased by 9% in real terms in 2023-24.
- **Capital Markets:** Primary capital markets facilitated capital formation of Rs. 10.9 lakh crore in FY24.

5. BANKING & FINANCIAL SECTOR

- **Credit Growth:** Bank credit growth was broad-based and in double digits.
- **Non-Performing Assets (NPAs):** Gross and net NPAs reached multi-year lows.
- **Stock Market Performance:** India's market capitalization to GDP ratio is the fifth largest globally

6. EMPLOYMENT & LABOUR MARKET

- **Unemployment Rate:** Decreased to 3.2% in 2022-23.

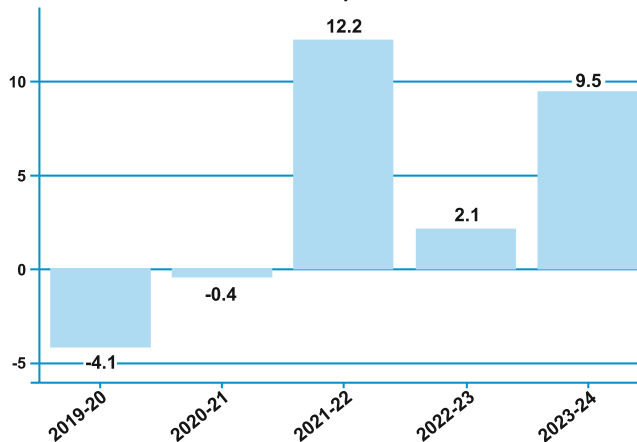
- **Formal Employment:** Net payroll additions under EPFO have more than doubled over the past five years.
- **Youth and Female Participation:** Significant rise in workforce participation, offering opportunities for demographic and gender dividends.

7. AGRICULTURE & FOOD MANAGEMENT

- **Sector Growth:** Average annual growth rate of 4.18% at constant prices over the last five years.
- **Allied Sectors:** Livestock and fisheries showing robust growth (CAGR of 7.38% and 8.9% respectively from 2014-15 to 2022-23).
- **Digital Initiatives:** Implementation of Digital Agriculture Mission (2021–2025) and e-National Agriculture Market (e-NAM).
- **Food Security:** Free food grains provided to 81.35 crore beneficiaries under PMGKAY for an additional five years.

8. INDUSTRIAL GROWTH

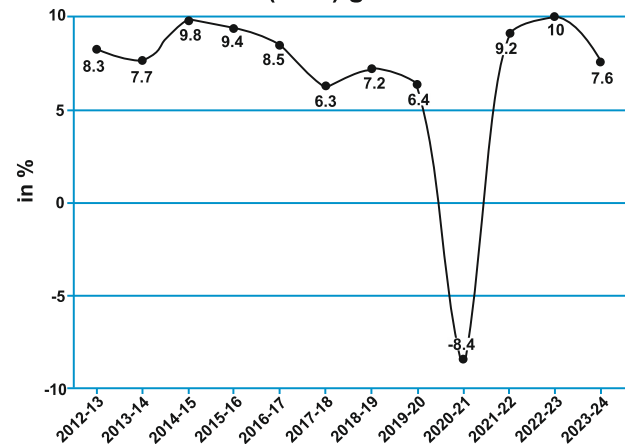
Industrial Growth
Growth rate of GVA in constant prices



- **Manufacturing Growth:** Average annual growth rate of 5.2% in the last decade.
- **Steel Production:** India became a net exporter of finished steel over the past decade.
- **Electronics Manufacturing:** Significant growth since 2014, reaching 3.7% of global market share in FY22.
- **MSME Support:** Rs. 9,000 Crore allocated to the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) in Union Budget 2023-24.

9. SERVICE SECTOR

Services sector GVA (YOY) growth



- **Sector Growth:** Estimated to have grown by 7.6% in FY24.
 - **PMI Performance:** Services PMI above 50 since August 2021, indicating continuous expansion for 35 months.
 - **Global Services Exports:** India's share reached 4.4% of the world's commercial services exports in 2022.
 - **E-commerce Growth:** Indian e-commerce industry expected to cross USD 350 billion by 2030.
- ## 10. INFRASTRUCTURE DEVELOPMENT
- **National Highways:** Construction increased from 11.7 km per day in FY14 to ~34 km per day by FY24.
 - **Railways:** Capital expenditure increased by 77% in the past 5 years.
 - **Airports:** New terminal buildings operationalized at 21 airports in FY24, increasing passenger handling capacity by approximately 62 million per annum.
 - **Clean Energy:** New investment of Rs. 8.5 lakh crore (USD 102.4 billion) between 2014 and 2023.
- ## 11. CLIMATE CHANGE & SUSTAINABLE DEVELOPMENT
- **Emission Reduction:** Emission intensity of GDP reduced by 33% from 2005 levels by 2019.
 - **Renewable Energy:** Non-fossil sources make up 45.4% of installed electricity generation capacity as of May 31, 2024.
 - **Mission LiFE:** Initiative to create a mass movement for sustainable living based on conservation and moderation.
 - **International Leadership:** India has led several global climate change mitigation efforts, including the International Solar Alliance (ISA) and Coalition for Disaster Resilient Infrastructure (CDRI).

12. SOCIAL SECTOR DEVELOPMENTS

- **Education:** Implementation of NEP 2020, focusing on foundational literacy and numeracy.
- **Healthcare:** Over 34.7 crore Ayushman Bharat cards issued, covering 7.37 crore hospital admissions.
- **Women Empowerment:** DAY-NRLM Program covers over 89 million women through 8.3 million Self Help Groups.
- **Skill Development:** Increased participation in government skill development programs under the 'Skill India' initiative.

13. CHALLENGES & FUTURE FOCUS AREAS

- **Global Risks:** Slowing global GDP growth and rising trade protectionism pose significant risks.
- **Climate Adaptation:** Aligning production patterns with agro-climatic characteristics and natural resources.
- **Technology Integration:** Balancing technological deployment (e.g., AI) with labor considerations in various sectors.
- **Infrastructure Financing:** Need for higher levels of private sector financing and resource mobilization.
- **Data Management:** Developing better systems for tracking infrastructure utilization and financial flows.

Union Budget 2024-25

Introduction :

1. The Union Budget 2024-25 was presented by the Union Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharaman, in Parliament on 23 July, 2024.
2. This was her **seventh consecutive budget**.
3. This budget is significant as it surpasses the record of **six consecutive budgets** presented by the late Morarji Desai.

Background :

1. The budget presentation is a **quinquennial event in India**, typically occurring once every five years.
2. The **Union Budget is presented twice: first as an interim budget by the outgoing government and then as a full budget by the newly-formed government**.
3. Finance Minister Nirmala Sitharaman had presented an **interim Budget** for the current financial year (2024-25) on February 1.

4. With 2024 being an **election year** in India, the Union Budget was not presented on its usual date in February. Instead, **an Interim Budget was presented until the new government was in place**.

Union Budget vs. Household Budget:

1. Union budgets are different from **household budgets** in their impact on the country's trajectory.
2. Unlike household budgets, the union budget can influence the behaviour of citizens and businesses in two ways:
 - a. By changing **who is taxed and how much**.
 - b. By changing **where and how much the government spends**.

The **Budget** in constitution refers to as Annual Financial Statement. **Article 112** deals with the annual financial statement.

1. Budget is a statement covering **estimated expenditure and receipts** for the Government of India in a financial year.
2. Other than that **budget contains estimated revenue and capital receipts, ways to increase revenues**, details for receipts and expenditure of the closing financial year and economic and financial policy for the upcoming year.
3. Earlier the Government of India had two budgets, **railway and general budget**. It was separated in 1921.
4. In **2016**, Modi government merged the railway budget to the general budget and scrapped the 92 years old practices.

Priorities of Union Budget 2024-25:

9 priorities identified for generating ample opportunities:

1. Productivity and Resilience in Agriculture
2. Employment and Skilling
3. Inclusive Human Resource Development and Social Justice
4. Manufacturing and Service
5. Urban Development
6. Energy Security
7. Infrastructure
8. Innovation, Research and Development
9. Next Generation Reforms

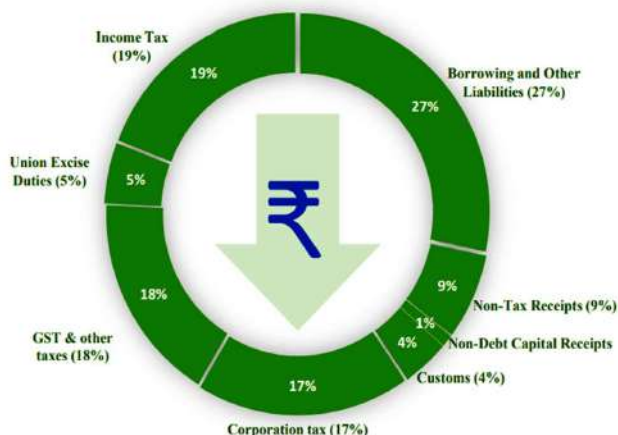
Part A : Economic Overview and Key Initiatives

Budget Estimates 2024-25

- Total receipts other than borrowings: Rs. 32.07 lakh crore**
- Total expenditure:** Rs. 48.21 lakh crore
- Net tax receipt:** Rs. 25.83 lakh crore
- Fiscal deficit:** 4.9% of GDP
Government aims to reduce deficit below 4.5% next year
- Inflation:** Continues to be low and stable, moving towards the 4% target
- Core inflation** (non-food, non-fuel): 3.1%

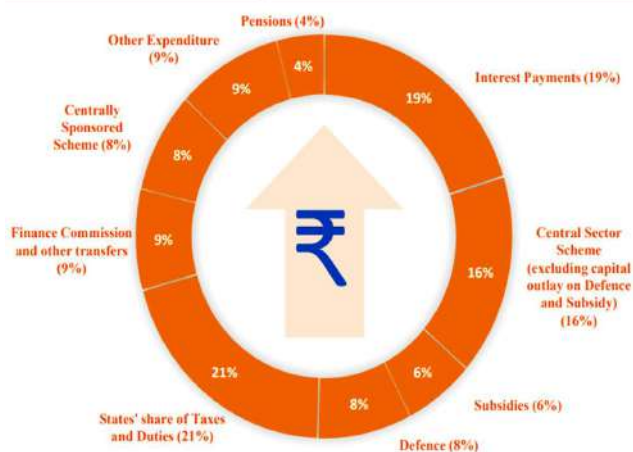
Rupee comes from :

Rupee Comes From

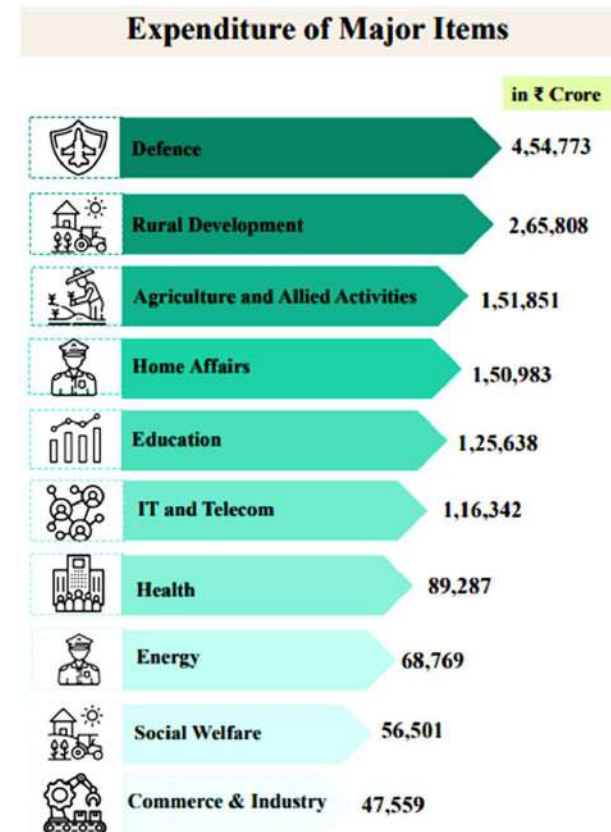


Rupees Goes To :

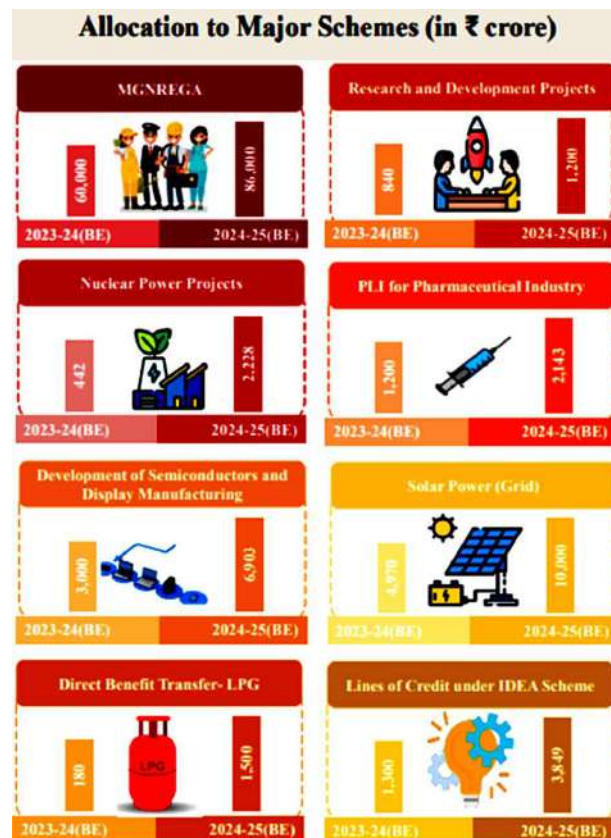
Rupee Goes To



Expenditure of Major Items :



Allocation to Major Schemes :



Focus Areas:

1. Employment
2. Skilling
3. MSMEs
4. Middle Class

Prime Minister's Package for Employment and Skilling

Target: 4.1 crore youth over 5 years

1. Scheme A - First Timers

- o One-month salary up to Rs. 15,000 provided in 3 installments
- o For first-time employees registered in EPFO

2. Scheme B - Job Creation in Manufacturing

- o Incentives for both employee and employer
- o Covers EPFO contributions for first 4 years of employment

3. Scheme C - Support to Employers

- o Government reimburses up to Rs. 3,000 per month for 2 years
- o Covers employer's EPFO contribution for additional employees

4. New Centrally Sponsored Scheme for Skilling

- o Target: 20 lakh youth over 5 years
- o 1,000 Industrial Training Institutes to be upgraded in hub and spoke arrangements

5. Internship Scheme

- o 1 crore youth in 5 years
- o Internships in 500 top companies

Nine Budget Priorities for 'Viksit Bharat'

Priority 1 : Productivity and Resilience in Agriculture

1. **Allocation:** Rs. 1.52 lakh crore for agriculture and allied sectors
2. 109 new high-yielding and **climate-resilient varieties of 32 field and horticulture crops to be released for cultivation.**
3. **Natural farming initiative:**
 - o 1 crore farmers to be initiated in next 2 years
 - o Certification and branding included
4. 10,000 need-based bio-input resource centres for natural farming.
5. **Digital Public Infrastructure (DPI) for Agriculture:**
 - o To be implemented for coverage of farmers and their lands in 3 years

Priority 2: Employment & Skilling

1. As part of the Prime Minister's package, 3 schemes for 'Employment Linked Incentive' to be implemented - Scheme A - First Timers; Scheme B - Job Creation in manufacturing; Scheme C - Support to employers.

2. Women-focused initiatives:

- o Working women hostels with industrial collaboration
- o Women-specific skilling programmes
- o Market access promotion for women SHG enterprises

3. Skill Development:

- o New centrally sponsored scheme for 20 lakh youth over 5 years
- o Model Skill Loan Scheme revised to facilitate loans up to Rs. 7.5 lakh
- o Financial support for higher education loans up to Rs. 10 lakh for youth ineligible for government benefits

Priority 3 : Inclusive Human Resource Development and Social Justice

1. Purvodaya initiative:

- o Industrial node at Gaya along Amritsar-Kolkata Industrial Corridor
- o Power projects including new 2400 MW plant at Pirpainti (Rs. 21,400 crore)

2. Andhra Pradesh Reorganization Act:

- o Special financial support of Rs. 15,000 crore through multilateral development agencies
- o **Industrial nodes:**

- * Kopporthy along Vishakhapatnam-Chennai Industrial Corridor
- * Orvakal along Hyderabad-Bengaluru Industrial Corridor

3. Women-led development:

Total allocation of more than Rs. 3 lakh crore for schemes benefitting women and girls

4. Pradhan Mantri Janjatiya Unnat Gram Abhiyan:

- o Socio-economic development of tribal families
- o Coverage: 63,000 villages, benefitting 5 crore tribal people
- o Focus on tribal-majority villages and aspirational districts

5. North-Eastern Region:

- o 100 branches of India Post Payment Bank to be set up

Priority 4 : Manufacturing & Services

1. Credit Guarantee Scheme for MSMEs in Manufacturing Sector:

- o Without collateral or third-party guarantee for term loans
- o For purchase of machinery and equipment

2. Credit Support to MSMEs during Stress Period:

New mechanism to facilitate continuation of bank credit

3. **Mudra Loans:**

- o Limit under 'Tarun' category enhanced to Rs. 20 lakh from Rs. 10 lakh
- o For those who have successfully repaid previous loans

4. **Enhanced scope for mandatory onboarding in TReDS:**

Turnover threshold of buyers reduced from Rs. 500 crore to Rs. 250 crore

5. **MSME Units for Food Irradiation, Quality & Safety Testing:**

Financial support for 50 multi-product food irradiation units

6. **E-Commerce Export Hubs:**

- o To be set up under public-private-partnership (PPP) mode
- o For MSMEs and traditional artisans to sell in international markets

7. **Critical Mineral Mission:**

For domestic production, recycling, and overseas acquisition of critical minerals

8. **Offshore mining of minerals:**

Auction of first tranche of offshore blocks

9. **Digital Public Infrastructure (DPI) Applications:**

Development in areas: credit, e-commerce, education, health, law and justice, logistics, MSME, services delivery, urban governance

Priority 5 : Urban Development

1. **Transit Oriented Development:**

- o Plans and strategies for 14 large cities (population > 30 lakh)

2. **Urban Housing:**

- o Investment of Rs. 10 lakh crore over next 5 years
- o Includes central assistance of Rs. 2.2 lakh crore
- o Under PM Awas Yojana Urban 2.0
- o To address housing needs of 1 crore urban poor and middle-class families

3. **Street Markets:**

- o New scheme to support 100 weekly 'haats' or street food hubs annually for 5 years
- o In select cities

Priority 6 : Energy Security

1. **Energy Transition:**

- o Policy document on 'Energy Transition Pathways' to be brought out

2. **Pumped Storage Policy:**

- o To promote pumped storage projects for electricity storage

3. **Research and development of small and modular nuclear reactors:**

- o Government to partner with private sector for R&D of Bharat Small Modular Reactor
- o Focus on newer technologies for nuclear energy

4. **Advanced Ultra Super Critical Thermal Power Plants:**

- o Joint venture between NTPC and BHEL
- o To set up full-scale 800 MW commercial plant using AUSC technology

5. **Roadmap for 'hard to abate' industries:**

- o Transition from 'Perform, Achieve and Trade' mode to 'Indian Carbon Market' mode

Priority 7: Infrastructure

1. **Infrastructure investment by Central Government:**

- o Rs. 11,11,111 crore (3.4% of GDP) for capital expenditure

2. **Infrastructure investment by state governments:**

- o Rs. 1.5 lakh crore for long-term interest-free loans to support infrastructure investment

3. **Pradhan Mantri Gram Sadak Yojana (PMGSY):**

- o Launch of phase IV
- o All-weather connectivity to 25,000 rural habitations

4. **Irrigation and Flood Mitigation:**

- o Financial support of Rs. 11,500 crore for projects in Bihar (including Kosi-Mechi intra-state link)
- o Assistance for Assam, Himachal Pradesh, Uttarakhand and Sikkim for floods, landslides and related projects

5. **Tourism :**

- o Comprehensive development of Vishnupad Temple Corridor, Mahabodhi Temple Corridor and Rajgir
- o Assistance for development of temples, monuments, craftsmanship, wildlife sanctuaries, natural landscapes and pristine beaches of Odisha

Priority 8: Innovation, Research & Development

1. **Anusandhan National Research Fund:**

- o To be operationalized for basic research and prototype development

2. **Financing pool of Rs. 1 lakh crore:**

- o For spurring private sector-driven research and innovation at commercial scale.

3. Space Economy:

- o Venture capital fund of Rs. 1,000 crore
- o Aim to expand space economy by 5 times in next 10 years

Priority 9: Next Generation Reforms

1. Rural Land Related Actions:

- o Unique Land Parcel Identification Number (ULPIN) or Bhu-Aadhaar for all lands
- o Digitization of cadastral maps
- o Survey of map sub-divisions as per current ownership
- o Establishment of land registry
- o Linking to farmers registry

2. Urban Land Related Actions:

Land records in urban areas to be digitized with GIS mapping

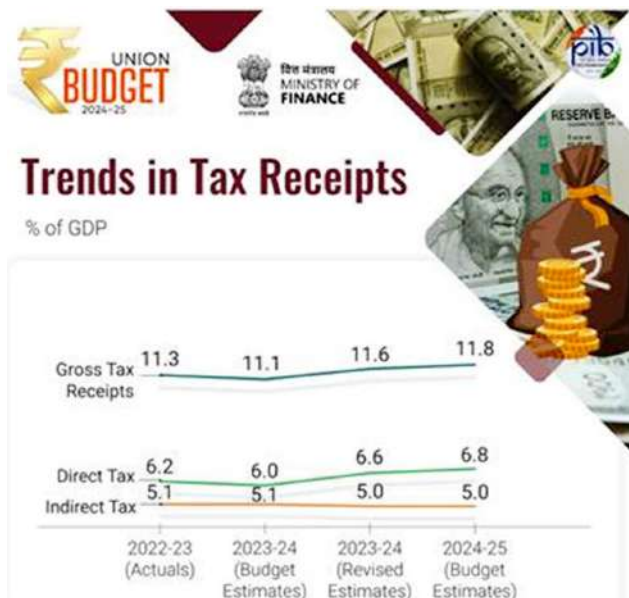
3. Services to Labour:

- o Integration of e-shram portal with other portals for one-stop solution
- o Open architecture databases for labour market, skill requirements and available job roles
- o Mechanism to connect job-aspirants with potential employers and skill providers

4. NPS Vatsalya:

- o Plan for contribution by parents and guardians for minors

Part B: Tax Proposals



Indirect Taxes

GST

1. Tax structure to be simplified and rationalized
2. Aim to expand GST to remaining sectors

Sector-specific Customs Duty Proposals

1. Medicines and Medical Equipment

- o Three cancer drugs fully exempted: Trastuzumab, Deruxtecan, Osimertinib, Durvalumab
- o Changes in Basic Customs Duty (BCD) on x-ray tubes & flat panel detectors for medical x-ray machines

2. Mobile Phone and Related Parts

- o BCD on mobile phone, mobile Printed Circuit Board Assembly (PCBA) and mobile charger reduced to 15%

3. Precious Metals

- o Customs duties reduced: Gold and silver to 6%, platinum to 6.4%

4. Other Metals

- o BCD removed on ferro nickel, blister copper, ferrous scrap, nickel cathode
- o Concessional BCD of 2.5% on copper scrap

5. Electronics

- o BCD removed on oxygen-free copper for resistor manufacturing (subject to conditions)

6. Chemicals and Petrochemicals

- o BCD on ammonium nitrate increased from 7.5% to 10%

7. Plastics

- o BCD on PVC flex banners increased from 10% to 25%

8. Telecommunication Equipment

- o BCD increased from 10% to 15% on PCBA of specified telecom equipment

9. Critical Minerals

- o 25 critical minerals fully exempted from customs duties
- o BCD on two critical minerals reduced

10. Solar Energy

- o Capital goods for solar cell and panel manufacturing exempted from customs duty

11. Marine Products

- o BCD reduced on broodstock, polychaete worms, shrimp and fish feed to 5%
- o Various inputs for shrimp and fish feed manufacturing exempted from customs duty

12. Leather and Textile

- o BCD reduced on real down filling material from duck or goose
- o BCD reduced on methylene diphenyl diisocyanate (MDI) for spandex yarn manufacturing (from 7.5% to 5%, subject to conditions)

Trade Facilitation

1. Time period for export of goods imported for repairs extended from 6 months to 1 year
2. Time-limit for re-import of goods for repairs under warranty extended from 3 to 5 years

Direct Taxes

Simplification Measures

1. Two tax exemption regimes for charities to be merged into one
2. 5% TDS rate on many payments merged into 2% TDS rate
3. 20% TDS rate on repurchase of units by mutual funds or UTI withdrawn
4. TDS rate on e-commerce operators reduced from 1% to 0.1%
5. Delay for payment of TDS up to due date of filing statement decriminalized

Reassessment Simplification

1. Assessment can be reopened beyond 3 years up to 5 years only if escaped income is Rs. 50 lakh or more
2. In search cases, time limit reduced from 10 to 6 years before the year of search

Capital Gains Simplification and

Rationalization

1. Short-term gains on certain financial assets to attract 20% tax rate
2. Long-term gains on all financial and non-financial assets to attract 12.5% tax rate
3. Exemption limit of capital gains on certain financial assets increased to Rs. 1.25 lakh per year

Tax Payer Services

1. All remaining services of Customs and Income Tax to be digitalized over next two years
2. Includes rectification and order giving effect to appellate orders

Litigation and Appeals

1. 'Vivad Se Vishwas Scheme, 2024' for resolution of income tax disputes pending in appeal
2. Monetary limits increased for filing appeals:
 - o Tax Tribunals: Rs. 60 lakh
 - o High Courts: Rs. 2 crore
 - o Supreme Court: Rs. 5 crore

Employment and Investment Measures

1. Angel tax abolished for all classes of investors
2. Simpler tax regime for foreign shipping companies operating domestic cruises
3. Safe harbour rates for foreign mining companies selling raw diamonds
4. Corporate tax rate on foreign companies reduced from 40% to 35%

Tax Base Deepening

1. Security Transactions Tax increased:

- o Futures of securities: 0.02%
 - o Options of securities: 0.1%
2. Income received on buy-back of shares to be taxed in recipient's hands

Social Security Benefits

1. Deduction of employer's NPS contribution increased from 10% to 14% of employee's salary
2. Non-reporting of small movable foreign assets up to Rs. 20 lakh de-penalized

Other Major Proposals

1. Equalization levy of 2% withdrawn

Personal Income Tax (New Tax Regime)

1. Standard deduction for salaried employees increased from Rs. 50,000 to Rs. 75,000.
2. Deduction on family pension for pensioners enhanced from Rs. 15,000/- to Rs. 25,000/-
3. Salaried employee in the new tax regime stands to save up to Rs. 17,500/- in income tax.
4. Revised tax rate structure:

0-3 lakh rupees	Nil
3-7 lakh rupees	5 per cent
7-10 lakh rupees	10 per cent
10-12 lakh rupees	15 per cent
12-15 lakh rupees	20 per cent
Above 15 lakh rupees	30 per cent



CURRENT EVENTS OF INTERNATIONAL IMPORTANCE

CHINA BROKERS A DEAL AMONG PALESTINIANS

Leaders of Palestinian groups Hamas and Fatah signed a **China-brokered declaration** in Beijing on Tuesday (July 22), “pledging to end division and strengthen unity”.



THE CONFLICT:

The two groups have **competed in the past over the political leadership** of Palestinian territories.

OTHER PALESTINIAN GROUPS PRESENT

Representatives of **12 other Palestinian groups also participated** in three days of talks. Foreign Minister Wang Yi said on closing day that “The most important consensus reached in the talks was for the reconciliation and **unity of the 14 factions**, with the **core outcome** being that the **Palestine Liberation Organization is the sole legitimate representative of all Palestinian people.**”

It also calls for achieving **comprehensive national unity**, which would **include all Palestinian factions within the framework of the Palestine Liberation Organization**, and establishing an independent Palestinian state with **Jerusalem as its capital.**”

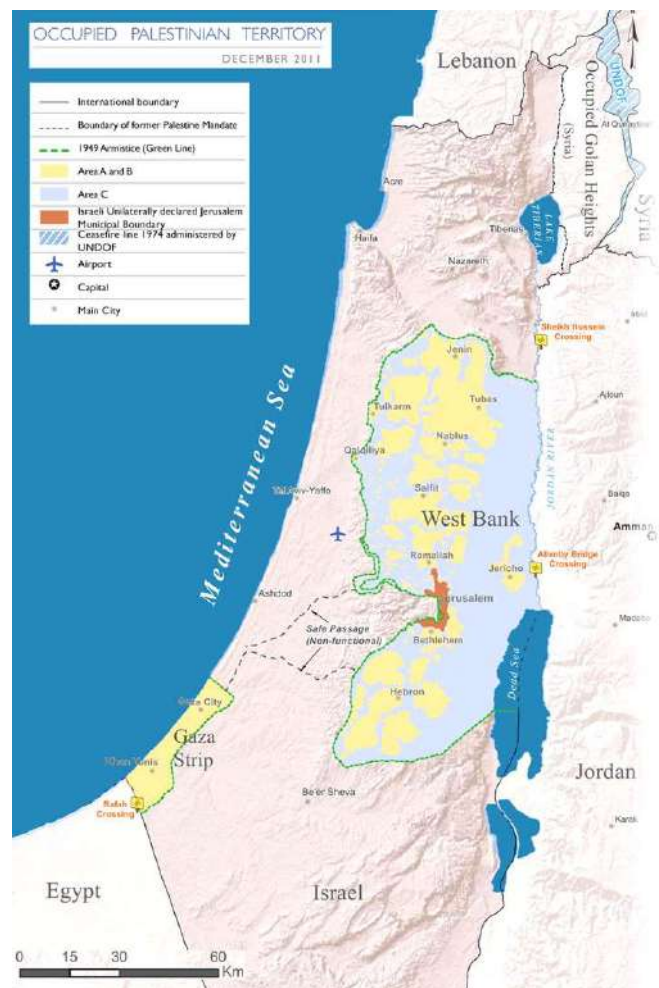
HAMAS FATAH & PLO

Hamas and Fatah are major political groups in Palestinian territories, that is the **Gaza Strip and the West Bank.**

- Hamas (**formed in 1987**) is in power in Gaza. Hamas emerged as a resistance group against Israeli occupation **after the First Intifada or uprising in 1987.** There was dwindling faith among many about the prospects of Palestinian goals for independence being met at the time, and Hamas advocated the use of violence.
- Fatah (**formed in 1959**) heads the Palestinian Authority which governs some parts of the West Bank. Most of the West Bank is under Israeli control.

- **Fathah became the most powerful organisation in the Palestinian Liberation Organisation (PLO), created in 1964 to unite Palestinian groups.** PLO is also the representative of Palestine at various international organisations and **Hamas is not a part of it.**

THE ISRAEL-PALESTINE REGION



OSLO ACCORDS & ITS AFTERMATH

- While they **initially lodged strong opposition to Israel** and employed tactics such as **attacks on Israelis**, that stance softened over time, around the 1990s.
- Particularly, the signing of the US-brokered **Oslo Accords in 1993** between **Arafat and Israeli Prime Minister Yitzhak Rabin** led the **PLO to recognise the State of Israel for the first time.**
- PLO also **resolved to give up violence**, while **Israel recognised it in turn as the sole representative of the Palestinians.**

- **Oslo accords were criticised** on both the sides.
 - o **Hamas criticised** it since it wanted the entire territory and PLO recognised the right of Israel as a state.
 - o Rightist Israelis criticised because PLO was recognised as a representative of Palestinians. The rightist went on to assassinate the PM Rabin.

SIGNIFICANCE OF THIS ACCORD BROKERED BY CHINA

- There has been **no resolution to the brutal conflict** between Israelis & Hamas which started in **Oct 2023**.
- The **lack of a Palestinian representative**, who **enjoys support among all parties**, has been cited as a reason behind the slow progress on establishing peace.
 - **Israel**, for instance, **views Hamas as a terrorist group** which needs to be completely destroyed. The **US has also repeatedly condemned Hamas**.
 - In this scenario, **China has attempted to present itself as a mediator** with **“no selfish interests in the issue”** and **“a staunch advocate of justice and fairness”**.
 - But its engagement with Palestinian leadership also comes from its **long-standing support for Palestine**. China was one of the first countries to recognise the PLO and the State of Palestine. **China supports the Two State solution for Israel & Palestine**.

Expanding Horizons in South American Regionalism as Bolivia Joins MERCOSUR



Overview

Bolivia's Accession to MERCOSUR

Bolivia is set to become a full member of MERCOSUR (Southern Common Market), a significant step towards increasing trade with member countries.

- This move has been in progress since Bolivia signed a protocol of accession to MERCOSUR in 2012 and has been an associated member since 1996.
- The process of full membership has been slow, possibly due to concerns over the state of Bolivia's democratic institutions.

Timeline: Bolivia's accession as a full member was finalized in December 2023.

Leadership: Bolivian President Luis Arce expressed gratitude to Brazilian leader Lula for his efforts, describing the accession as a historic milestone for Bolivia in the face of global challenges.

About MERCOSUR:

MERCOSUR is an economic and political bloc originally comprising Argentina, Brazil, Paraguay, and Uruguay.

- Formation:** Formed to improve relations between arch-rivals Argentina and Brazil, the bloc saw early successes, including a fivefold increase in trade within the group during the 1990s.

Implications of Full Membership:

- Economic Integration:** Full membership will integrate Bolivia more deeply into MERCOSUR's customs union, potentially increasing trade with member countries.
- Market Access:** Bolivian goods will benefit from reduced tariffs and fewer trade barriers within the bloc, promoting export growth.
- Investment Opportunities:** Easier access to the larger markets of MERCOSUR countries could significantly boost Bolivia's exports and attract more foreign investment, spurring economic growth and development.
- Energy and Natural Resources:** Bolivia's significant natural gas and lithium reserves, which are of strategic importance, will enhance energy cooperation and investment in the sector.
- Political and Diplomatic Influence:** Joining MERCOSUR as a full member will strengthen Bolivia's influence in regional politics and decision-making within the bloc, signifying a stronger commitment to South American integration and cooperation.

Challenges and Concerns

- 1. Internal Divisions:** MERCOSUR continues to face internal divisions. Lula's desire to modernize the bloc, including allowing for bilateral deals with third-party countries, has been **opposed by former Argentine President Alberto Fernández. Fernández's successor, Milei,** has even threatened to withdraw Argentina from the bloc entirely.
- 2. Economic Disparities:** Uruguay's ongoing efforts to ink an **FTA with China have created tension, and Bolivia's recent accession amid an economic crisis could add to the pressure.** Bolivia's smaller and less industrialized economy may pose challenges in competing within the bloc.
- 3. Protectionist Policies:** The bloc's protectionist policies and reluctance toward creating value-added supply chains or regional production hubs are stifling integration.
- 4. Regulatory Alignment:** Bolivia will need to align its regulations and standards with those of MERCOSUR, necessitating significant technical and policy modifications within the domestic domain.

Future Prospects

1. The full membership of Bolivia in MERCOSUR holds promise for **greater economic integration, increased trade, and heightened Latin American regionalism.**
2. However, the foreseen challenges will need to be addressed by Bolivia to fully benefit from the opportunities presented by joining the bloc.

Conclusion

Bolivia's accession to MERCOSUR is a significant milestone that offers numerous economic and political benefits. However, it also presents challenges that will require strategic planning and cooperation to overcome. This move underscores Bolivia's commitment to regional integration and cooperation, aligning with the broader goals of South American regionalism.

ICJ ON ISRAEL'S OCCUPATION OF PALESTINE

The **International Court of Justice (ICJ), the United Nations' principal judicial organ,** said on **July 19** that **Israel's occupation of the West Bank and East Jerusalem violated international law,** and its presence in Palestinian territories should come to an end "as soon as possible".

Israel has occupied the **West Bank and East Jerusalem since the Six-Day War in 1967.** Prior to this, the territories were under Jordanian control.

WHAT DOES OCCUPATION MEAN IN INTERNATIONAL LAW?

The most widely accepted definition of occupation comes from **Article 42 of the "Hague Convention (IV) respecting the Laws and Customs of War on Land and its annex", 1907.**

It says that a **"territory is considered occupied when it is actually placed under the authority of the hostile army."** Importantly, an occupation must only be temporary, and cannot involve any transfer of sovereignty to the occupying power.

THE OBLIGATIONS ON OCCUPYING POWER:

Once a territory is seized, the occupying power has certain obligations as spelled out in the 1907 Hague regulations, and the Fourth Geneva Convention of 1949. These obligations are

- Providing food and medical care to the population of an occupied territory.
- Prohibit civilian transfers of population in the territory, and
- The use of or threat of force.

WHY DID ICJ GIVE ITS OPINION?

In **December 2022,** the **UN General Assembly adopted a resolution seeking the ICJ's advisory opinion** on the **"legal consequences arising from the policies and practices of Israel in the Occupied Palestinian Territory, including East Jerusalem."**

Presented in the UNGA by Nicaragua, it passed with **87 votes in favour, 26 against, and 53 abstentions.**

This came well before Israel's assault on Gaza following the Hamas attacks of October 7, 2023.

WHAT DID THE ICJ OPINE?

- **ON PROLONGED OCCUPATION:**
 - o Since **international law does not specify any temporal limit** for an occupation, the **ICJ noted that the legal status of an occupation cannot be determined by how long a territory has been occupied.**
 - o What does affect the legality of said occupation, the court said, is the occupying power's **"policies and practices and the manner in which they are implemented and applied on the ground".**
- **ON SETTLEMENT POLICY:** The first Israeli practice that the court examined was **its policy of settlement in the West Bank and East Jerusalem since 1967.** This, the court said, violated international law.
 - o The settlement policy, and Israeli military measures, **have pushed Palestinians to leave**

parts of occupied territories against their will. This violates Article 49 of the Fourth Geneva Convention which provides that “The Occupying Power shall not deport or transfer parts of its own civilian population into the territory it occupies”;

- o The policy breaches Articles 46 (protection of private property), 52 (general protection of civilian objects), and 55 (protection of the natural environment) of the Hague regulations, as Israel expanded its settlements in the occupied territories by “confiscation or requisitioning of large areas of land”.
- o The policy’s implementation fails to follow Article 43 of the Hague regulations, which mandates occupying powers, “unless absolutely prevented”, to respect the law in force in the occupied territories. The court held that Israel treats its settlements and occupied East Jerusalem “as its own national territory, where Israeli law is applied in full and to the exclusion of any other domestic legal system”.
- **ON ANNEXATION OF PALESTINIAN TERRITORIES:** Annexation, the ICJ said, is the permanent control over an occupied territory.
 - o The court found that Israel’s policies and practices in the West Bank and East Jerusalem are “designed to remain in place indefinitely and to create irreversible effects on the ground”.
 - o Apart from the maintenance and expansion of settlements, these include the exploitation of Palestine’s natural resources, the proclamation of Jerusalem as Israel’s capital, and the application of Israeli domestic law in East Jerusalem and the West Bank.
 - o According to the ICJ, this is “contrary to the prohibition of the use of force in international relations” and thus affects the legality of Israel’s continued occupation.
- **ON DISCRIMINATORY LEGISLATION:**
 - o The court found that a broad array of legislation implemented by Israel in occupied territories “treat Palestinians differently”.
 - o This, the court said, “constitutes systemic discrimination” based on, “race, religion or ethnic origin” of the International Covenant on Economic, Social and Cultural Rights, 1954 and the International Covenant on Civil and Political Rights, 1954, and the International Convention on the Elimination of All Forms of Racial Discrimination, 1965 (ICERD).

- o The court observed that Israel’s policies serve to maintain “near-complete separation” in the occupied territories between the settlers and Palestinians in clear violation of Article 3 (the obligation to eradicate apartheid and practices of racial segregation) of ICERD.

- **ON SELF DETERMINATION:**

In light of all the above, the ICJ determined that Israel’s occupation has violated Palestinians’ right to self-determination. “The Palestinian people has been deprived of its right to self-determination over a long period, and further prolongation of these policies and practices undermines the exercise of this right in the future,” in contravention to the fundamental principles of international law, the court said.

- **ON FUTURE COURSE OF ACTION:**

- o The ICJ said that Israel is under the obligation to immediately end its illegal occupation, cease new settlement activities and evacuate settlers from the occupied territories, and make reparation to all affected people for the damage caused.
- o The court said that other states should not recognise the occupied territories as part of Israel, and refrain from providing aid or assistance to Israel in maintaining this occupation.

About International Court of Justice (ICJ)

- Alternative Name: World Court
- Establishment:
 - o Founded in June 1945 by the Charter of the United Nations (UN)
 - o Began work in April 1946
- Location: Peace Palace, The Hague, Netherlands
- Uniqueness: Only principal UN organ not located in New York, USA

Hearings and Languages

- Hearings: Always public
- Official Languages: French and English

Powers and Functions

- Dispute Settlement (Contentious Cases): Settles disputes between member states
- Examples: Land frontiers, maritime boundaries, territorial sovereignty, non-use of force, violation of international humanitarian law, non-interference in internal affairs, diplomatic relations

- Advisory Opinions:
 - Issues advisory opinions on legal questions referred by UN bodies or specialized agencies
 - Clarifies and strengthens the functioning of these organizations
- Judgments:
 - Final and binding in contentious cases
 - No appeal
- Advisory Opinions:
 - Non-binding
- Decision Basis:
 - International law, conventions, custom, general principles, judicial decisions, writings of experts

Composition

- Judges:
 - 15 judges from different countries
 - Elected to nine-year terms by majority votes in the UN General Assembly and Security Council
 - One-third elected every three years
 - Eligible for reelection
 - Independent of their home countries
- Ad Hoc Judges:
 - States involved in a case can appoint a judge ad hoc if no judge of their nationality is on the bench
- Registry:
 - Permanent administrative secretariat
 - Independent of the UN Secretariat

About International Criminal Court (ICC)

Overview

- Establishment:
 - Created by the 1998 Rome Statute of the International Criminal Court
 - Began functioning on 1 July 2002
- Purpose:
 - Investigates and tries individuals charged with grave crimes: genocide, war crimes, crimes against humanity, and the crime of aggression
- Distinction from ICJ:
 - Handles prosecutions of individuals, not disputes between states
- Relationship with UN:
 - Not a UN organization but has a cooperation agreement with the UN

India Assumes the Chair of Asian Disaster Preparedness Centre (ADPC)



Overview

Under the leadership of Prime Minister Shri Narendra Modi, **India** is playing a significant global and regional role in the field of **Disaster Risk Reduction (DRR)**. India has taken several global initiatives in this direction, notably establishing the international **Coalition for Disaster Resilient Infrastructure (CDRI)**.

Assumption of ADPC Chair

1. **Representative:** Shri Rajendra Singh, Member & Head of the National Disaster Management Authority (NDMA), has taken over the Chair of the **Asian Disaster Preparedness Centre (ADPC)** from the People's Republic of China for the year 2024-25.
2. **Date and Location:** The handover took place on **Thursday, 25th July 2024**, in **Bangkok, Thailand**.
3. **Significance:** This move underscores India's commitment to regional cooperation in disaster risk reduction and climate resilience.

About the Asian Disaster Preparedness Centre (ADPC)

1. **Establishment:** ADPC is an autonomous international organization established in **1986**.
2. **Purpose:** It focuses on cooperation and implementation of disaster risk reduction and building climate resilience in **Asia and the Pacific** region.
3. **Vision:** "Safer communities and sustainable development through disaster risk reduction."
4. **Geographical Remit:** Asia and the Pacific.
5. **Member Countries:** The founding members include India, Bangladesh, Cambodia, China,

Nepal, Pakistan, Philippines, Sri Lanka, and Thailand.

- 6. Governance:** The organs of ADPC, defined in the ADPC Charter, include the Board of Trustees, the Executive Committee, the Advisory Council, and the Regional Consultative Committee (RCC), which are the governing or advisory bodies of ADPC.
- 7. Charter:** The ADPC's international Charter was signed by nine founding member countries and was put into effect in **2018** through the ratification by all the founding members.
- 8. Current Status:** As of **January 2020**, ADPC operates as an autonomous international organization governed by the Board of Trustees.
- 9. Headquarters:** **Bangkok, Thailand**, with sub-centers in the countries of operation serving as the operational parts of ADPC.

India's Role in ADPC

- 1. Chairmanship:** India also chaired the 5th Board of Trustee (BoT) meeting of ADPC held on **25th July 2024** in **Bangkok, Thailand**.
- 2. Leadership:** This role highlights India's growing influence and leadership in regional disaster management and climate resilience efforts.

What is Disaster Risk Reduction (DRR)?

- 1. Definition: Disaster Risk Reduction (DRR)** is the concept and practice of reducing disaster risks through systematic efforts to analyze and reduce the causal factors of disasters.
- 2. Significance:** DRR aims to minimize the impact of disasters on communities and promote sustainable development.

Conclusion :

India's assumption of the Chair of the **Asian Disaster Preparedness Centre (ADPC)** is a significant step in its ongoing efforts to lead regional and global initiatives in disaster risk reduction. This move underscores India's commitment to safer communities and sustainable development through effective disaster management strategies. As India continues to play a leadership role in this field, it reaffirms its dedication to regional cooperation and the promotion of climate resilience in Asia and the Pacific.

K P Sharma Oli Becomes Nepal's Prime Minister For 3rd Time



Context

- K P Sharma Oli, 72, has been appointed as Nepal's Prime Minister for the third time. He succeeds Pushpa Kamal Dahal Prachanda, who lost the vote of confidence in the House of Representatives on Friday.

Appointment Details

- **Appointment Date:** K P Sharma Oli was appointed Nepal's Prime Minister for the third time on Sunday.
- **New Coalition Government:** He will lead the new coalition government that faces the daunting challenge of providing political stability in the country.
- **Constitutional Process:** The appointment follows the formation of the new government process as per Article 76 (2) of the Constitution.
- **Presidential Appointment:** President Ram Chandra Paudel appointed K P Sharma Oli as the new Prime Minister of the Communist Party of Nepal-Unified Marxist Leninist (CPN-UML)-Nepali Congress (NC) coalition.

Previous Tenures

- **First Tenure:** K P Sharma Oli served as Nepal's Prime Minister from October 11, 2015, to August 3, 2016.
- **Second Tenure:** He then served from February 5, 2018, to July 13, 2021.

POLITICAL INSTABILITY IN NEPAL THE NUMBERS



PM Pushpa Kamal Dahal (Prachanda), KP Sharma Oli and Sher Bahadur Deuba

NUMBERS AGAINST RULING CPN(MC)

TOTAL MEMBERS IN NEPAL PARLIAMENT: 275		138 seats in parliament Simple majority
Nepali Congress	88	13 Nepal has had 13 governments in the last 16 years
CPN(UML)	79	
Communist Party of Nepal (Maoist Centre)	32	
Rashtriya Swatantra party	21	
Rastriya Prajatantra Party	14	
*(including speaker)		03 Prachanda won three votes of confidence in Parliament during his one-and-a-half-year term
<small>(United Socialist-10, Janata Samajwadi (Ashok Rai)-7, JSP-5, Janamat-5, Nagarik Inmukti-4, Loktantrik Samajwadi Party-4, Janamorcha and Nepal Mazdoor Kisan party - one each, Independents-2)</small>		

WHAT WAS THE EXISTING POLITICAL SITUATION?



POLITICAL SITUATION IN NEPAL EARLIER (BEFORE MARCH, 2024)



POLITICAL DEVELOPMENTS IN NEPAL (POST 2017)

2017: Communist Party of Nepal (formed by the merger of CPN-UML & CPN (Maoist)) came into power. KP Sharma Oli became PM.

2020: Protests going on by some factions to establish Nepal as a Constitutional monarchy (again) and a Hindu nation. Discontent is arising from inefficiency And corruption of the present government.

2021: The KP Sharma Oli government was dissolved in May 2021. Sher Bahadur Deuba of Nepali Congress became the PM on 13 July 2021. (As ordered by SC of Nepal.

2022: CPN (Maoist) leader Pushpa Kamal Dahal forms a coalition Government with Nepali Congress.

HOW DOES THIS POLITICAL DEVELOPMENT IN NEPAL IMPACT INDIA?

The extraordinary political instability in Nepal is of **concern to India**.

Oli does not enjoy a goodwill with india. But Nepali Congress does.

WHY OLI IS NOT A GOOD FRIEND?

The actions and statements by Oli in 2015 during the drafting of the Nepalese constitution, which led to protests and the infamous border blockade, had caused a fair bit of bitterness in south Bloc. Oli, who was Prime Minister then, portrayed India as the neighbourhood bully in his country.

AREAS OF COOPERATION

- Nepal, being a landlocked country is **dependant on India for its international trade**. (Politicians in Nepal have often described the country as being “india-locked”, meaning it needs India for access to ports — a fact of geography that Indian diplomats prefer to frame as being “India-open”)
- TRADE:** The Indian foreign policy establishment points out that **India is Nepal’s largest trade partner**, with bilateral trade crossing \$7 billion in FY 2019-20, and that **India provides transit for almost all of Nepal’s third country trade**. Indian exports to Nepal have grown more than eight times over the past decade, while exports from Nepal have almost doubled.
- COOPERATION DURING COVID:** During the Covid-19 pandemic, India provided **assistance of more than \$7 million to Nepal**, which included the supply of more than **23 tonnes of medicines and medical equipment**, more than **9.5 million doses of vaccines**, and a medical oxygen plant.
- PEOPLE TO PEOPLE CONNECT:**
 - About **8 million Nepalese citizens live and work in India**, and some **6 lakh Indians live in Nepal**.
 - Indians are about **30% of foreign tourists in Nepal**.
 - The **bilateral remittance flow** is estimated at **\$3 billion from Nepal to India**, and **\$1 billion from India to Nepal**.

- Cooperation in **power, water, and infrastructure** has been a major element of India's diplomatic toolkit with regard to Nepal.

THE CHINA CHALLENGE FOR INDIA

Nepal is sandwiched between the two Asian giants, and the Nepalese political leadership, including the country's former monarchs, has long **sought to play the China card to manage the relationship with India.**

- China has been pouring aid and investment in infrastructure to wean Kathmandu away from New Delhi. Nepalese imports from China almost tripled from (Indian) Rs 49.5 billion in 2013-14 to Rs 138.75 billion (\$1.67 billion) in 2022-23.
- With Oli, who has clear China leanings, back in government in Kathmandu, New Delhi would be keenly watching the expected efforts by Beijing to play a more active and influential role in Nepal's domestic affairs..

Conclusion :

K P Sharma Oli's third appointment as Nepal's Prime Minister marks a significant moment in the country's political history. He faces the challenging task of leading a new coalition government and providing much-needed political stability. His previous tenures as Prime Minister bring valuable experience to this role, and his leadership will be crucial in navigating the comple.

Keir Starmer Becomes UK's New Prime Minister



Context :

- Labour Party leader Keir Starmer, 61, assumed charge as the 58th Prime Minister of the United Kingdom after his customary audience with King Charles III at Buckingham Palace. This marked the end of the Conservative's 14-year governance in Britain.

Details

- **Labour Party Victory:** The Labour Party secured 412 seats in the 650-member House of Commons, up 211 from the last election in 2019.
- **Conservative Party Loss:** Rishi Sunak's Conservatives won just 121 seats, down 250 seats from the previous election. The Labour Party had a vote share of 33.7 percent, while the Conservatives had 23.7 percent.
- **Starmer's Promise:** Keir Starmer, who became Britain's 58th Prime Minister, promised to bring about change, emphasizing the need to deliver results.

Nature of the Parliament of UK

Bicameral Legislature: The UK Parliament is a bicameral legislature, consisting of two houses:

- **House of Commons:** The lower house, made up of 650 MPs elected by the public through FPTP.
 - **Composition:** 533 for England; 59 for Scotland; 40 for Wales; 18 for Northern Ireland.
 - **Primary Legislative Body:** Responsible for making and passing laws. The party (or coalition) with the majority of seats forms the government, and its leader becomes the Prime Minister. The opposition is made up of MPs from parties not in government.
- **House of Lords:** The upper house, which is unelected and includes life peers, bishops, and hereditary peers. It reviews and suggests amendments to legislation proposed by the House of Commons. While it can delay legislation, it cannot ultimately prevent bills passed by the Commons from becoming law.

Nature of the Governance System

Constitutional Monarchy and Parliamentary Democracy: The United Kingdom operates under a constitutional monarchy and a parliamentary democracy. Key features include:

- **Monarch:** The head of state is the monarch, currently King Charles III. The role is largely ceremonial, with real political power vested in elected bodies.
- **Prime Minister:** The head of government is the Prime Minister, who is the leader of the majority party in the House of Commons. The Prime Minister is appointed by the monarch and is responsible for running the government, making policy decisions, and representing the UK domestically and internationally.

- **Cabinet:** Comprises senior government ministers chosen by the Prime Minister. Ministers are typically heads of government departments and are responsible for implementing government policy.

Voting System of the United Kingdom

- **First-Past-The-Post:** The House of Commons, mayoral elections in England, Police and Crime Commissioner elections, and local councils in England and Wales use the first-past-the-post system. Voters select their preferred candidate. The candidate with the most votes wins.
- **Formation of the Government:** If a single party wins a majority of the 650 seats, their leader will become the new Prime Minister. If no party achieves a majority, a hung parliament will be declared, and the largest party may attempt to form a coalition government.

What Labour's Win Could Mean for India-UK FTA

- **Background:** India and the UK have been negotiating a proposed free trade agreement (FTA) for more than two years to boost trade between the two nations. The agreement could result in a mutual tariff relaxation on a range of goods such as cars, clothes, alcoholic beverages, and medical instruments.
- **Political Certainty:** A landslide victory for the Labour Party in the UK elections could lead to a change in the dynamic of the FTA negotiations. Since the UK's unexpected referendum to leave the European Union, London has lacked the political stability needed to negotiate a trade deal with India, which has a high tariff regime. However, if Labour wins decisively, there might be enough political stability to sign such a deal.
- **Growing Support for India:** Under Keir Starmer, the Labour Party has changed. It is not the same party as that headed by his predecessor, Jeremy Corbyn, who called for international intervention in Kashmir. Starmer has recognized the growing political clout of the UK's Indian-origin population — the largest immigrant group in the country.
- **Visa Issue:** Immigration remains among the most heated issues in British politics. This could be a sticking point for a trade deal with India. New Delhi is seeking temporary visas for its service sector workforce under the FTA — this is where it expects to gain the most in the deal. With the UK being a powerhouse in the IT and financial services segment, India's service sector could

benefit from the integration. But given the UK's political climate, Labour is likely to negotiate hard on the visa issue.

- **Tougher Negotiations on Climate:** India will also likely face tougher negotiations on climate from a Labour government. India has sought a relaxation on the carbon tax that the UK is expected to implement along the lines of the EU. A carbon tax is a government-imposed price that emitters pay for each ton of greenhouse gas (GHG) emissions they release. New Delhi argued during the FTA negotiations that the proposed carbon border adjustment mechanism could take away much of the tariff concessions agreed during the FTA.

What is the European Union?

- **Definition:** The European Union (EU) is a political and economic union of 27 European countries that are located primarily in Europe. It aims to ensure the free movement of people, goods, services, and capital among its member states and to enact common policies on various issues including trade, agriculture, and regional development. The EU also has its own currency, the euro, used by 19 of its members.

What is the House of Commons?

- **Definition:** The House of Commons is the lower house of the UK Parliament. It is composed of Members of Parliament (MPs) who are elected by the public in general elections. The House of Commons is responsible for making and passing laws, debating policies, and scrutinizing the government's work. The leader of the majority party in the House of Commons becomes the Prime Minister.

Conclusion :

Keir Starmer's assumption of the role of Prime Minister marks a significant shift in British politics, ending the Conservative's 14-year governance. The Labour Party's victory brings about the promise of change and a focus on delivering results. The UK's unwritten constitution and parliamentary system provide a unique framework for governance, with the sovereignty of Parliament being a key feature. The differences and similarities between the British and Indian constitutions highlight the importance of understanding the role of the Prime Minister and the Cabinet in both systems. As the UK and India continue to negotiate a free trade agreement, the political stability and policies of the new Labour government will play a crucial role in shaping the future of this partnership.

KEY OUTCOMES OF PM'S VISIT TO RUSSIA

The Indian PM visited Russia as his **first destination post elections for a bilateral visit**.

Multiple domains were discussed between the two leaders from trade ties to expanding diplomatic reach, and much much more.

HIGHLIGHTS OF THE VISIT

- **TRADE TIES & TRIUMPHS**
 - Aim to boost bilateral trade to **100 bn USD by 2030**.
 - Promote bilateral settlement system **using national currencies**.
- **EXPANDING DIPLOMATIC REACH**
 - India will open **two new consulates** in Russia in **Kazan & Yekaterinburg**.
- **CHARTING NEW CONNECTIVITY**
 - Implementing **the Chennai Vladivostok (Eastern) Maritime Corridor & International North South Trade Corridor**.
 - Cooperation in developing shipping between Russia & India via **North Sea Route**.
- **STRENGTHENING DEFENCE CAPABILITIES**
 - **Joint manufacturing of spare parts & components** in India of Russian defence equipments under **'Make in India'** program.
 - Transfer Technology & joint ventures to boost local production capabilities.
- **COUNTERING TERRORISM**
 - Both nations called for **zero tolerance for terrorism**.
 - Multilateral cooperation against **organised crime, terrorist financing & drug trafficking**.
 - Agreed on **peaceful resolution of Ukraine conflict** through dialogue.
- **COLLABORATION FOR A GREENER PLANET**
 - MoU to foster **collaboration on Climate Change & Low Carbon Development**.
 - **Joint Research** for sustainable **Low-Cost Technologies**.
- **THE GEOSPATIAL ENERGY**
 - MoU to **exchange knowledge & experience** in **Geodesy, Cartography & Spatial Data infrastructure**.
 - **Cooperation** between **scientific & Educational Institutes**.

- **UNITING FOR POLAR RESEARCH & LOGISTICS**

- MoU to share resources & data for studying Polar Environments & their variability.
- Collaborative logistics, joint research, personnel exchanges & participation in international Polar Programs.

- **BROADCASTING TOGETHER**

- Collaboration on broadcasting between india's **Prasar Bharati** & Russia's **ANO "TV- Novosti"** (Russia Today TV Channel).

ORDER OF THE SAINT ANDREW THE APOSTLE

Prime Minister **Narendra Modi** was on Tuesday awarded **Russia's highest civilian honour, the Order of Saint Andrew the Apostle**, during his visit to the country.

The award for the **PM** was announced in 2019, for **"exceptional services in promoting special & privileged strategic partnership between Russia and India and friendly relations between the Russian and Indian peoples."**

WHAT IS THE AWARD & WHO GETS IT?

- The award is given to prominent government and public figures, military leaders, and outstanding representatives of science, culture, art, and various sectors of The economy for exceptional services to russia.

CAN IT BE AWARDED TO FOREIGN NATIONALS OR ITS AN EXCEPTION?

It can also be awarded to heads of foreign states for outstanding services to the Russian federation :

WHO WAS SAINT ANDREW?

- Its name comes from **Saint Andrew**, who is believed to be **one of the apostles or 12 original followers of Jesus**.
- After Christ's crucifixion, the apostles are said to have travelled great distances to spread his message. **Saint Andrew** travelled to **Russia, Greece, and other Places in Europe and Asia**, and founded the **Church of Constantinople**, which later led to the establishment of the Russian Orthodox Church.
- **More than 90 million people** follow the Church in Russia, **out of the country's population of around 140 million**.

THE SCOTLAND CONNECTION

- **Saint Andrew** is regarded as the **patron saint of Russia and Scotland**.
- The **'X' symbol** on the flag of Scotland comes from the **saint's symbol, called the 'Saltire'**.

- It is believed that he was crucified on a cross of a similar shape.

WHO ESTABLISHED THIS AWARD?

- **Tsar Peter the Great (1672–1725)** established the **Order of Saint Andrew in 1698**. The chain of the Order consists of **17 alternating links**, and features a **gilded image of the State Emblem of the Russian Federation, a double-headed eagle**. It also includes **a badge, a star, and a light blue silk moire ribbon**. For those recognised **for distinction in combat, the badge and star are adorned with swords**.
- **The order was abolished in 1918** following the Russian Revolution, which overthrew the Tsarist regime. It was **re-established in 1998** by an Executive Order of the President of Russia.

NOTED RECIPIENTS

Past recipients largely include influential figures in Russia, such as:

- Military engineer and gun designer Mikhail Kalashnikov,
- Author Sergey Mikhalkov,
- The Last Leader of the Soviet Union Mikhail Gorbachev,
- Russian Orthodox Church leader Patriarch Alexy II, and
- The current head of the Russian Orthodox Church Patriarch Kirill.

FOREIGN RECIPIENTS OF THE AWARD:

- Chinese President Xi Jinping in 2017, and
- The former President of Kazakhstan, Nursultan Nazarbayev.
- President of Azerbaijan, Heyder Aliyev

Masoud Pezeshkian Sworn in as President of Iran



Context :

Iran's new President Masoud Pezeshkian was sworn in on July 30, after winning an election earlier this month by promising to improve ties with the world and ease restrictions on social freedoms at home.

List of Presidents of Iran

- Islamic Republic of Iran: Established in 1980, the Islamic Republic of Iran has seen many presidents since its inception. The position of the President of Iran holds great power, as it is the highest popularly elected official in Iran.

Name	Political party	Assumed office	Left office	Term of Office
Abolhassan Baniadr	Independent	4 February, 1980	22 June 1981	1 year, 138 days
Mohammad-Ali Rajai	IRP	2 August 1981	30 August 1981	28 days
Ali Khamenei	IRP CCA	9 October 1989	16 August 1989	7 Years 311 days
Akbar Hashemi Rafsanjani	CCA	16 August 1989	3 August 1997	7 years, 352 days
Mohammad Khatami	ACC	3 August 1997	3 August 2005	8 years
Mahmoud Ahmadinejad	ABII	3 August 2005	3 August 2013	8 Years
Hassan Rouhani	MDP	3 August 2013	3 August 2021	8 Years
Ebrahim Raisi	CCA	3 August 2021	19 May 2024	2 years, 290 days
Mohammad Mokhber	Independent	19 May 2024	28 July 2024	74 Days
Masoud Pezeshkian	Independent	28 July 2024	Incumbent	—

Recent Events

- **Demise of Ebrahim Raisi:** On May 19, 2024, Ebrahim Raisi, the most recent president of Iran, passed away in a tragic helicopter crash. Raisi was the eighth president of Iran. His demise left the position of the President of Iran vacant.
- **Current President:** At present, Masoud Pezeshkian serves as the President of Iran.

A Bit About Iran : Its History, Constitution, and Presidents

- **Iranian Revolution and Constitution:** The Iranian revolution of 1979 and the referendum for the creation of the Islamic Republic led to the new government of Iran bringing about a new constitution.

- **Assembly of Experts:** An election for the Assembly of Experts was ordered by Ayatollah Ruhollah Khomeini. This body of experts was instructed with writing the constitution. It was on October 24, 1979, that the constitution was presented by the assembly. Next, Supreme Leader Ruhollah Khomeini and Mehdi Bazargan, the Prime Minister of Iran, approved it.
- **Constitutional Structure:** As per the constitution of 1979, the Supreme Leader was designated as the head of the state. Also, the Prime Minister and the President were designated as the heads of government. After the 1989 referendum, the position of the Prime Minister was abolished in the country.

The First President and the Presidential Election :

- **First Presidential Election:** It was on January 25, 1980, that the very first Iranian presidential election was held in Iran. This election led to the election of Abolhassan Banisadr as the first president with 76 percent of votes.
- **Impeachment of Banisadr:** On June 22, 1981, Banisadr was impeached by the Parliament. Until the election on July 24, 1981, it was the Provisional Presidential Council that took the duties of the President.
- **Election of Mohammad-Ali Rajai:** Next, it was Mohammad-Ali Rajai who was elected as the next president of Iran on July 24, 1981. The president took office on August 2. The president remained in office for less than a month. It was on August 30, 1981, that both the president and the prime minister got assassinated. The result? The Provisional Presidential Council took the duties until the new president, Ali Khamenei, got elected on October 13, 1981.

Demise of Ebrahim Raisi :

- **Tragic Incident:** Considered as a potential successor to Supreme Leader Ayatollah Ali Khamenei, Iranian President Ebrahim Raisi passed away recently when his helicopter crashed in mountains in poor weather near the Azerbaijan border. It was after an overnight search of the helicopter in blizzard conditions, the charred wreckage of the vehicle was found carrying Raisi and six other passengers on Monday.

Implications for India-Iran Relations

- **Reformist Policies:** Pezeshkian's presidency is viewed as a call for change following general unhappiness with the hardline policies of his

predecessors. However, the dynamics of Iranian politics, where hardliners still control the majority and the Supreme Leader Ayatollah Ali Khamenei retains ultimate authority, will put Pezeshkian's ability to carry out his vision to the test.

- **Iranian Ambassador's Statement:** "Today, we are holding the second round of the presidential election. More than 700 polling centers are accepting the vote of Iranians. We hope that by tomorrow morning we will have a new president. There will be no changes in Iranian foreign policy and internal policy. Both discourses emphasize strengthening Iranian power internally and externally," said Iran's ambassador to India, Iraj Elahi.

India-Iran Ties

- **Strong Economic Ties:** India and Iran have historically enjoyed strong economic ties. Under Pezeshkian's presidency, these ties are likely to deepen.
- **Chabahar Port:** The focus will be especially on the strategic Chabahar Port, a project to which India has already committed heavy investments. It is an important transit point for trade with Afghanistan and Central Asia, bypassing Pakistan. India has pledged \$120 million for the development of the Shahid-Beheshti Port terminal and offered a \$250 million credit line for infrastructure projects in Iran.
- **Crude Oil:** Iran is one of India's key sources of crude oil. With Iran eyeing an increase in oil exports against the backdrop of ongoing Western sanctions, India could be looking at a reliable and arguably cheaper source of crude oil.
- **Regional Security:** Pezeshkian's approach to regional security will be closely watched in New Delhi. His stand related to keeping up the "Axis of Resistance" against Israel and strategic regional siding with forces against what he calls "the Zionist regime" could continue to impact India's tightrope diplomacy in the region.
- **International North-South Transport Corridor (INSTC):** Another platform for close cooperation between India and Iran is the INSTC, a multi-modal transportation route connecting India to Russia via Iran. This corridor increases connectivity in terms of trade and bilateral ties for regional stability.

Conclusion :

The list of all the Presidents of Iran through the years highlights the significant political and historical events that have shaped the country. From the Iranian revolution to the recent tragic demise of Ebrahim Raisi, the presidency of Iran has seen many leaders, each contributing to the nation's governance and development. Masoud Pezeshkian's presidency marks a new chapter in Iran's political history, and his policies will be closely watched by the international community, including India.

PM'S AUSTRIA VISIT

At the invitation of Chancellor Mr Karl Nehammer, Prime Minister Narendra Modi paid an official visit to Austria from 9-10 July 2024.

During his visit, the Prime Minister called on H.E. Alexander Van der Bellen, President of Austria, and held bilateral discussions with Chancellor Nehammer.

This was the Prime Minister's first visit to Austria and that of an Indian Prime Minister after 41 years. This year marks the 75th year of diplomatic relations between the two countries.

THE EMPHASISED AREAS DURING THE MEETING

The Prime Minister and the Chancellor emphasised that the :

- Shared values of democracy,
- Freedom,
- International peace and security,
- A rules-based international order with the UN Charter at its core,
- The shared historical linkages, and
- The long-standing ties between the two countries are at the centre of the growing enhanced partnership.

Chancellor Nehammer and Prime Minister Modi recognised that the two countries have the potential to significantly upgrade their bilateral partnership to a higher level. They agreed to adopt a strategic approach to advance this shared Objective.

AREAS OF COOPERATION

- **POLITICAL & SECURITY COOPERATION:**
 - o Both leaders underscored their commitment to democracy, international and regional peace & prosperity.

- o They reinforced their commitment to a free, open and rules-based Indo-Pacific in accordance with the international law of the sea as Reflected in UNCLOS.
- o Concerning the war in Ukraine, both leaders supported any collective effort to facilitate a peaceful resolution consistent with international law and the UN Charter.
- o The two leaders reiterated their unequivocal condemnation of terrorism in all its forms and manifestations. Both countries reiterated their commitment to work together in FATF, NMFT and other multilateral Platforms.
- o Austria expressed interest in joining India-Middle East Europe Economic Corridor.
- **SUSTAINABLE ECONOMIC PARTNERSHIP:**
 - o The convening of the first-ever high-level bilateral Business Forum with the participation of the CEOs of several companies in Vienna.
 - o Recognised the vital importance of research, scientific tie-ups, technology partnerships and innovation in driving forward the bilateral partnership.
 - o Initiatives to link the innovation and start-up ecosystems of the two countries through the Start-Up Bridge set up during the visit of the Austrian Minister of Labour and Economy to India in February 2024.
 - o The leaders recognised that this would significantly reduce the risks and impacts of climate change.
 - o Noted the scope for engagement in the context of the Austrian Government's Hydrogen Strategy and the National Green Hydrogen Mission.
- **SKILL DEVELOPMENT**
 - o Recognised the importance of skill development and mobility of skilled personnel to support an expanded engagement in high-tech sectors.
 - o In this regard, they welcomed the operationalisation of the bilateral Migration and Mobility Agreement, which provides an institutional framework to facilitate such exchanges, while at the same time combating irregular migration.
 - o They encouraged academic institutions of both countries to build future-oriented partnerships focused on areas of mutual interest, especially in science, technology, and engineering.

- **PEOPLE TO PEOPLE TIES:**
 - The leaders also noted the growing **interest among Austrians in yoga and Ayurveda.**
 - They welcomed efforts to promote further **bilateral cultural ties in music, dance, opera, theatre, films, literature, sports and other fields,** including in the framework of the recently signed MOU on Cultural Cooperation.
- **MULTILATERAL COOPERATION:**
 - Both leaders affirmed their support for **reforms in the UN.**
 - Prime Minister Modi conveyed India's invitation to Austria for its membership in the **International Solar Alliance**

Prime Minister Modi extended an invitation to Chancellor Nehammer to visit India at his convenience, which the Chancellor accepted with pleasure.

THE PREVIOUS VISITS

Diplomatic relations between India and Austria were established on **November 10, 1949** — this year marks its **75th anniversary.**

- In June 1955, about a month after Austria had gained full independence through the conclusion of the State Treaty, Nehru paid a State Visit to the country, the first by a foreign leader.
- The year after **Indira's visit in 1983, Austria's Chancellor Fred Sinowatz Came to India on a reciprocal visit.**
- President **K R Narayanan went to Austria** on a State Visit in November **1999; Austria's President Dr Heinz Fischer** came in **February 2005,** and
- **President Pratibha Patil** visited Austria in **October 2011.**

WHY AUSTRIA MATTERS?

- Austria offers tremendous opportunities for bilateral collaboration in **infrastructure, renewable energy, e-commerce, fintech, enterprise tech, consumer services, and media and entertainment.**
- Both countries have taken **balanced positions in the Russia-Ukraine war.**
 - Even though **Austria supported the EU's sanctions against Russia,** on April 11, 2022, **Chancellor Nehammer became the first European leader to visit President Putin** to discuss the end of the war.
 - **Austria has publicly criticised Russian actions in Ukraine,** but **commercial ties** between the two countries **remain largely intact,** and it **continues to import gas from Russia.**

India-Austria Bilateral Relations

Historical Foundations:

- Diplomatic relations established on 10 November 1949.

High Level Visits:

- President K.R. Narayanan (1999) and President Pratibha Devisingh Patil (2011) visited Austria.
- Austrian President Dr. Heinz Fischer (2005) and Chancellor Fred Sinowatz (1984) visited India.
- PM Modi met Austrian leaders in 2017, 2020, and 2021.

Recent Ministerial Visits:

- EAM Dr. S. Jaishankar (2022-2023) and Austrian FM Alexander Schallenberg (2022) exchanged visits.
- Austrian FM Dr. Karin Kneissl visited India in 2019.

Other Ministerial Visits:

- Various Indian and Austrian ministers visited each other's countries between 2010 and 2023.

Parliamentary Exchanges:

- Austrian Parliamentary Delegation (2022) and Indian Parliamentary Delegation (2021) exchanged visits.
- Lok Sabha Speaker Meira Kumar visited Austria in 2009.

Bilateral Agreements/MoUs:

- Key agreements include Air Services, Double Taxation Avoidance, Investment Promotion, and various sector-specific MoUs.

Economic Cooperation:

- Bilateral Trade (2023): USD 2.93 billion.
- Cumulative FDI: 733 million Euros from Austria to India, 1.159 billion Euros from India to Austria.
- India-Austria Startup Bridge launched in February 2024.

Cultural Relations:

- Historical ties date back to the 16th century.
- Rabindranath Tagore visited Vienna in 1921 and 1926.
- Cultural exchanges include performances by renowned artists and Bollywood films shot in Austria.
- Interest in Indian literature, Ayurveda, and Yoga.

Indian Community:

- Estimated Indians in Austria: Over 31,000.
- Indian Students in Austria: Over 450.

Russian President Vladimir Putin Greets INS Tabar on Russia's Navy Day



Russian President Vladimir Putin greeted Indian Navy personnel onboard the Indian Naval Ship (INS) Tabar, which participated in Russia's Navy Day celebrations. Putin reviewed the Main Naval Parade on the Neva River in St. Petersburg, where he congratulated the sailors of the Russian Navy at the start of the event.

Key Points:

- 1. Main Naval Parade:** The tradition of holding the Main Naval Parade in St. Petersburg emerged in 2017 to honor the glorious victories of the Navy that made a substantial contribution to defending the Fatherland.
- 2. Participating Ships:** This year, Russia's Main Naval Parade on the Neva River involved 20 surface ships and gunboats, four sailing vessels, and a submarine.
- 3. Russian Combat Ships:** The parade included notable Russian combat ships such as the Project 22800 Karakurt-class missile corvette Odintsovo, the Project 20380 missile corvette Boiky, the Project 12700 coastal minesweeper Alexander Obukhov, the Project 21631 missile corvettes Grad, Naro-Fominsk, Grad Sviyazhsk, and Serpukhov, the Project 23550 icebreaking patrol ship Ivan Papanin, and the Project 636.3 Varshavyanka-class large diesel-electric submarine Mozhaik.
- 4. Foreign Combat Ships:** The foreign combat ships that were part of Russia's Main Naval Parade included the Indian Navy's frigate Tabar, the Algerian Navy's training ship Soummam, and the Chinese guided missile destroyer Jiaozuo.

5. Troops March: Nearly 2,500 troops marched in foot columns on Senate Square in St. Petersburg to conclude Russia's Main Naval Parade.

INS Tabar's Participation:

- 1. Arrival:** Earlier in the day, INS Tabar arrived at St. Petersburg to participate in Russian Navy Day celebrations.
- 2. Significance:** The Indian Navy spokesperson stated that the visit of INS Tabar to Russia strengthens cooperation between the two nations, underpinned by interoperability between the navies, and is aligned with the Government of India's policy of Vasudhaiva Kutumbakam.

About INS Tabar:

- 1. Classification:** INS Tabar is a stealth frigate built for the Indian Navy in Russia.
- 2. Class:** It is the third of the Talwar-class frigate of the Indian Navy.
- 3. Commissioning:** The frigate was commissioned on April 19, 2004, in Kaliningrad, Russia.
- 4. Capabilities:** INS Tabar has the ability to handle air/surface/sub-surface missions or defending herself, operating either independently on maritime missions or supporting a larger naval task force.
- 5. Fleet:** The ship is part of the Indian Navy's Western Fleet, which is based in Mumbai under the Western Naval Command.
- 6. Features :**
 - a. Displacement:** Fully loaded, INS Tabar has a displacement of 4,035 tons.
 - b. Speed:** 30 knots (56 km/h; 35 mph).
 - c. Range:** Maximum range is 4,850 nautical miles (8,980 km; 5,580 mi) at 14 knots (26 km/h; 16 mph), while at 30 knots (56 km/h; 35 mph), the range lessens to 1,600 nautical miles (3,000 km; 1,800 mi).
 - d. Weapons and Sensors:** The ship is equipped with a versatile range of weapons and sensors. It is the first vessel in the Talwar class frigate to be armed with supersonic BrahMos (anti-ship cruise missiles) and is also equipped with Barak-1 missiles.

About BrahMos:

- 1. BrahMos** is a supersonic cruise missile that can be launched from land, sea, and air.
- 2. Development:** It has been developed by BrahMos Aerospace, a joint venture of India and Russia.

- 3. Features:** It is a **two-stage missile** with a **solid propellant booster engine** as its first stage, which brings it to **supersonic speed** and then gets separated. The **liquid ramjet**, or second stage, then takes the missile closer to **3 Mach speed** in the cruise phase. It is one of the fastest cruise missiles currently operationally deployed, with a speed of **Mach 2.8**, which is nearly three times more than the speed of sound.

Conclusion:

The participation of **INS Tabar** in **Russia's Navy Day** celebrations highlights the strengthening cooperation between **India** and **Russia**, particularly in the **maritime domain**. The visit underscores the **interoperability** between the two navies and aligns with **India's policy** of **Vasudhaiva Kutumbakam**. The event also showcases the capabilities of **INS Tabar**, a **stealth frigate** equipped with advanced weapons and sensors, including the **supersonic BrahMos missiles**.

SE Asian Countries and BRICS

Context :

- BRICS is attracting Southeast Asian countries, with Thailand and Malaysia being the latest to express their interest in joining the bloc.

Details :

- Thailand:** Has formally requested membership.
- Malaysia:** Is preparing to start the process, citing potential trade and investment benefits.
- ASEAN Foundation:** Appealed in BRICS for Southeast Asian nations seeking a stronger voice in global affairs and enhanced economic opportunities.

Reasons for SE Asian Countries to Join BRICS Strategic Benefits

- Elevated Status:** BRICS could elevate Thailand and Malaysia as middle powers, providing a platform for broader international influence and economic growth through expanded trade.
- Economic Advantage:** There are potential benefits for Thailand and Malaysia's economies, particularly in digital sectors and key industries like services, manufacturing, and agriculture.

Geopolitical Dynamics

- Strong Trade Ties:** The nations showing interest already have strong trade ties with China, a major BRICS member, which could further enhance through membership.
- Global Collaboration:** The interested countries see BRICS as a means to strengthen their neutral stance while fostering collaboration with multiple global partners.

Balancing Act

- Indonesia:** Considered BRICS membership but opted to prioritize OECD accession, highlighting Southeast Asia's strategic balancing act between Western and emerging economies.

Membership Expansion

- New Members:** BRICS recently decided to expand its membership beyond its original members (Brazil, Russia, India, China, South Africa). On January 1, 2024, BRICS admitted four new members: Egypt, Ethiopia, Iran, and the United Arab Emirates.
- Global Reach:** This move underscores BRICS' global reach and potential as a significant economic bloc.

Challenges in the Expansion of BRICS Members Maintaining Cohesion and Consensus

- Diverse Interests:** As BRICS expands by including new members such as Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates, one of the primary challenges is maintaining cohesion and consensus among a more diverse group. Different countries have varying interests, priorities, and geopolitical alignments, which can complicate decision-making and collective action within BRICS.

Strategic Alignment

- Divergent Interests:** The expansion introduces new dynamics in strategic alignment within BRICS. New members may have different geopolitical goals and alliances outside of the BRICS framework, which could potentially create divergent interests and hinder the group's ability to present a unified front on global issues.

Institutional Capacity and Governance

- Scaling Capacity:** BRICS may face challenges in scaling its institutional capacity to accommodate new members effectively. This includes enhancing the operational efficiency of institutions like the New Development Bank (NDB) and establishing clear governance frameworks that ensure equitable participation and decision-making among all members.

Integration and Coordination

- Logistical and Diplomatic Challenges:** Integrating new members into existing BRICS mechanisms and coordinating policies across a larger and more diverse group pose logistical and diplomatic challenges. Ensuring effective communication, alignment of goals, and mutual understanding of shared objectives becomes crucial for sustaining the group's effectiveness.

Balance of Power and Leadership Dynamics

- **Power Dynamics:** The expansion could potentially alter the balance of power and leadership dynamics within BRICS. Existing members, particularly China and India, may seek to maintain their influence and leadership positions, while new members may aspire to assert their own agendas and priorities within the group. Managing these dynamics while fostering a cooperative atmosphere is essential for BRICS' unity and effectiveness.

Way Ahead

Enhance Institutional Capacity

- **Strengthen Institutions:** Strengthen the capacity of existing BRICS institutions like the New Development Bank (NDB) to accommodate new members. This includes increasing capitalization, improving governance structures, and streamlining decision-making processes to ensure equitable participation and efficient operation.

Establish Clear Criteria for Membership

- **Transparent Guidelines:** Develop transparent criteria and guidelines for admitting new members into BRICS. This could include criteria related to economic size, geopolitical alignment, commitment to BRICS principles, and potential contributions to the group's objectives.

Promote Dialogue and Consensus-Building

- **Regular Dialogue:** Foster regular dialogue and consensus-building among BRICS members, both existing and new, on key issues and strategic priorities. This involves facilitating discussions, negotiating common positions, and managing divergent interests through diplomatic channels and working groups.

Enhance Strategic Coordination

- **Shared Priorities:** Strengthen strategic coordination among BRICS members by identifying shared priorities and areas of cooperation. This includes aligning policies on global governance reform, sustainable development, energy security, and technology transfer to maximize collective impact on the global stage.

Diversify Partnerships and Engagement

- **Expand Outreach:** Expand outreach and engagement with non-BRICS countries and regional blocs to enhance cooperation and build alliances. This includes exploring partnerships in areas such as trade, investment, technology exchange, and cultural diplomacy to broaden BRICS' influence and relevance globally.

Conclusion :

Thailand and Malaysia's interest in joining BRICS underscores the bloc's appeal as a platform for economic growth, global influence, and strategic partnerships, reflecting Southeast Asia's evolving diplomatic and economic strategies. The expansion of BRICS membership presents both opportunities and challenges, requiring enhanced institutional capacity, clear membership criteria, and strategic coordination to maintain cohesion and effectiveness.

SHANGHAI COOPERATION ORGANISATION

On July 4, the final day of the **Shanghai Cooperation Organisation (SCO) Summit** in **Kazakhstan's capital Astana**, Indian External Affairs Minister **S Jaishankar** held talks with Chinese Foreign Minister **Wang Yi**.

Earlier, Jaishankar **also held bilateral meetings** with his counterparts from SCO members **Tajikistan and Russia**, and the **newest member Belarus**, on the sidelines of the two-day summit that began on Wednesday.

ABOUT SCO

The grouping **came into existence in Shanghai in 2001**.

Its name comes from its origins in the "**Shanghai Five**", formed in **1996** and consisting of:

- China
- Russia
- Kazakhstan
- Kyrgyzstan and
- Tajikistan.

THE BACKGROUND

With the **dissolution of the USSR in 1991** into 15 independent countries, there were **concerns in the region about extremist religious groups and ethnic tensions** coming to the fore. To manage these issues, a grouping was created for Cooperation on security matters.

Building on this, **SCO was established on June 15, 2001**, as an international organisation and also **included Uzbekistan as a sixth member**.

PRESENT MEMBERSHIP

With further expansions, it currently has 10 members:

- Russia
- Tajikistan
- Uzbekistan
- Kazakhstan

Observer members:

- China
- Afghanistan
- Kyrgyzstan
- Mongolia.
- Pakistan (2017)
- India (2017)
- Iran (2023).
- Belarus (2024)

Aims of sco

The main objectives of the sco are as follows:

- Strengthening mutual trust, friendship and neighborly relations among the member states;
- Promoting effective cooperation in political, trade, economic, scientific, technical, and cultural spheres as well as in the realm of educational, energy, transport, tourism, environmental protection, and other areas;
- Jointly maintaining and safeguarding of peace, security and stability in the Region; and
- Fostering creation of democratic, fair and rational new international political and economic order.

SIGNIFICANCE OF SCO

- SCO is one of the few international organisations which deal with security issues and primarily has Asian members.
- Regional heavyweights Russia and China have stressed its position as an alternative to a “Western” international order.
- Along with the BRICS grouping, which has India, South Africa and Brazil as well, Russia & China are seen positioning against US influence.
- The Central Asian Republics (CAR) ie Kazakhstan, Kyrgyzstan, Uzbekistan & Tajikistan (Turkmenistan is also part of CAR but not of SCO) often considered as backyard of Russia are a major source of Oil & Natural Gas. These resources are vital for projects like BRI of China & overall Energy Security.

SIGNIFICANCE FOR INDIA

- On one level, SCO membership allows India to participate in a forum which enhances its scope of cooperation with Central Asian countries, which have not had particularly close relations with India since their formation in 1991.
- It also matters for maintaining communication with major actors in the Region on common security issues.
 - o For example, an important permanent structure within the SCO is the Regional anti-Terrorist Structure (RATS).
 - o It assists members in the preparation and staging of counter-terrorism exercises, analyses key intelligence information coming in from the member states, and shares information on terrorist movements and drug trafficking.

CONCERNS IN BRI

Bilateral issues remain unsolved:

- India & China have unresolved border issues.
 - o Last year, when the summit was under India’s leadership, it was hosted digitally. India refused to sign the paragraph which endorsed the Belt & Road Initiative (BRI)

- India & Pakistan relationship have time & again been hampered by Cross Border Terrorism.
- There are border conflicts between Russia & China as well.

THE KOREAN WAR

The Korean War, which began on June 25, 1950, was a pivotal event in 20th-century history, as it shaped the geopolitical landscape of East Asia and impacted global affairs. It also resulted in a massive loss of life, with estimates suggesting around 2.5 million people (including civilians and military personnel) perished.

WHEN DID THE WAR END?

Despite the cessation of active hostilities, the war has never formally ended – the reason it is also called the “Forgotten War” sometimes.

It concluded with an armistice agreement on July 27, 1953, rather than a peace treaty, leaving North and South Korea technically still at war.

WHAT LED TO THE DIVIDE OF THE KOREAN PENINSULA?

The war was a result of Cold War tensions and the rivalry for supremacy between the communist Soviet Union and the liberal capitalist United States. The two superpowers emerged after the second world war (1939 to 1945) and attempted to extend their influence over the Korean peninsula as it had just gained independence from colonial rule.

KOREA BEFORE THE COLD WAR:

Several dynasties ruled Korea before that with some uniting the entire region, such as the Silla dynasty in the 7th century. Korea then came under Japanese colonial rule from 1910 to 1945 and it ended with Japan’s surrender in WW2. However, Korea’s liberation was quickly followed by division.

THE AFTERMATH OF WORLD WAR 2

To manage the Japanese surrender, the Allied forces (comprising the US, the USSR, the UK & France) agreed to a temporary division of Korea into two occupation zones :

- The Soviet Union-controlled one in the north and
- The US one in the south.



US authorities decided the 38th parallel would be the dividing line.

Today, a buffer zone called the demilitarised zone (DMZ) runs along the 38th parallel to avoid border skirmishes. Army members of both countries guard it on either side.

WHAT HAPPENED AFTER DRAWING THE 38TH PARALLEL?

In the North, the Soviet Union helped establish a communist regime led by Kim

Il-sung, a former guerrilla fighter and Soviet-trained leader.

In the South, the United States supported the creation of a capitalist state under Syngman Rhee, an anti-communist leader who had spent many years in exile in the United States.

By 1948, two separate governments were officially established:

- The Democratic People's Republic of Korea (North Korea) and
- The Republic of Korea (South Korea)

Each claiming legitimacy over the entire peninsula.

THE OUTBREAK

On June 25, 1950, North Korean forces, backed by the Soviet Union and China, launched a surprise invasion of South Korea by crossing the 38th parallel. The invasion began in the early morning and caught the South Korean Army and its American allies off guard.

The North Korean forces quickly advanced, overwhelming the South Korean defences and capturing key areas — including the capital Seoul.

This alarmed the international community and prompted the United Nations to Intervene.

THE UN INTERVENTION & THE AFTERMATH

The UN Security Council passed a resolution condemning the invasion and calling for a withdrawal of North Korean forces from South Korea.

In another UNSC resolution on June 27, it was declared that North Korean actions constituted a breach of peace. UN members were recommended to assist South Korea against the attack and “restore peace on the Korean Peninsula”.

In response, a coalition of UN forces primarily led by the United States intervened. This marked the beginning of a bloody and protracted conflict that would last for three years and result in millions of casualties.

THE LEGACY CONTINUES

- It has had far-reaching implications for regional security, contributing to the militarisation of the Korean Peninsula and ongoing tensions between the two Koreas and between North Korea and the West.
- It also solidified the alliance between the United States and South Korea. The US established a lasting military presence in South Korea by stationing American troops and remains committed to defending it against any external aggression.
- China's entry into the war demonstrated its commitment to supporting communist regimes and a willingness to confront US-led forces in the region. China and North Korea largely maintain a close strategic partnership, with China being a key economic and diplomatic ally of North Korea.

The Yuan Challenge : How India-Russia Trade Gap May Threaten Rupee Internationalisation Efforts

Introduction:

India's efforts to make the rupee a global currency may be threatened by the growing trade gap with Russia, which could force India to use the Chinese yuan instead.

Background:

India wants to increase its trade with Russia to \$100 billion by 2030, but the trade between the two countries has been uneven since the Ukraine war started in 2022. Russia has become India's top oil supplier, but India's exports to Russia have struggled, resulting in a \$57 billion trade deficit.

Why is the Trade Gap with Russia Benefiting the Yuan?

- China has taken advantage of the opportunities to export to Russia, while India's exports have not grown as much.
- China and Russia trade mostly in their own currencies, which has made the yuan a popular currency in Russia.
- Russian oil exports are now asking Indian refineries to pay in yuan, instead of rupees.

How Can India Make the Rupee a Global Currency?

- India wants to reduce its dependence on the US dollar, but it does not want to use the yuan due to tensions with China.

- In 2022, the **Reserve Bank of India (RBI)** allowed trade to be settled in rupees.
- For the rupee to become a global currency, it needs to be used more in **international trade**.
- Currently, the **US dollar** is the dominant currency, and the rupee accounts for only **1.6% of global forex turnover**.

Internationalisation of the Rupee

About:

Internationalisation of the rupee is a process that involves increasing use of the local currency in cross-border transactions. It involves enhancing the currency's **acceptance**, **liquidity**, and **usability** in global markets.

Steps Taken to Promote International Trade Settlement in Rupees:

- In **July 2022**, the RBI has provided an additional arrangement for invoicing, payment, and settlement of exports/imports in the rupee.
- As part of this mechanism, in **December 2022**, India saw its first settlement of foreign trade in rupee with Russia.
- So far, banks of **19 countries** including the UK, New Zealand, Germany, Malaysia, Israel, and the United Arab Emirates have been permitted to make settlements in rupees.

How Can India Internationalise the Rupee?

- The **FY23 Economic Survey** highlights that a prerequisite for an international currency is its increasing use for **trade invoicing**.
- The **BIS Triennial Central Bank Survey 2022** shows the US dollar as the dominant currency, making up **88% of global forex turnover**, while the rupee accounts for only **1.6%**.
- The survey suggests that if the rupee's turnover reaches **4%**—the share of non-US, non-Euro currencies in global forex turnover—it will be considered an international currency.

Why are Exports to Russia Challenging?

- **Private banks** are hesitant to facilitate trade with Russia due to fears of **Western sanctions**.
- Indian exporters are facing difficulties using the rupee settlement mechanism while trading with Russia.
- Exporters initially complained that the RBI's mechanism was not clear, and banks did not know how to use it.
- The **ruble and rupee** have experienced volatility, making trade in domestic currency complicated.

How are Russia and India Planning to Boost Trade?

- During Modi's visit, both countries agreed to **remove trade barriers** and start negotiations for a trade deal with the **Russia-led Eurasian Economic Union (EEU)**.
- The **EEU** consists of five member states: Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia, representing a **\$5 trillion economy**.
- India and Russia agreed to cooperate in manufacturing sectors such as **transport engineering, metallurgy, and chemicals**.
- They also planned to implement **joint projects** in priority areas and increase reciprocal trade flows of industrial products.

Conclusion:

The growing trade gap with Russia could force India to use the **yuan**, which goes against its efforts to make the rupee a global currency. India needs to address the challenges in exports to Russia and increase the use of the rupee in international trade to achieve its goal of reducing dependence on the US dollar. The success of India's efforts will depend on its ability to increase its exports to Russia and other countries, and to promote the use of the rupee as a settlement currency in international trade.

UK Announces Second Ballot for India Young Professional Scheme 2024



The UK Home Office has announced the **second and final ballot** for the **India Young Professional Scheme 2024**, facilitating young Indian nationals to live, work, and study in the UK for up to 24 months.

- This scheme is part of the **UK-India Mobility and Migration Partnership** aimed at enhancing migration arrangements between both nations.

Key Details:

- **Ballot Period:** Opens on **July 16, 2024**, and closes on **July 18, 2024**, at **13:30 IST**.

- **Eligibility Criteria:**
 - **Age:** Applicants must be between **18-30 years old** or turning 18 by the date they plan to travel to the UK.
 - **Education:** Possession of a **bachelor's degree** or higher (**Regulated Qualifications Framework level 6, 7, or 8**).
 - **Financial Requirements:** Applicants must demonstrate savings of at least **GBP 2,530**.
 - **Dependents:** Must not have any dependent children under **18 years old**.
- **Application Process:**
 - Entry into the ballot is **free**; successful applicants are required to pay **GBP 298** upon visa application.
 - Necessary documents include a valid passport, financial evidence, educational qualifications, and, if applicable, tuberculosis (**TB**) test results and a police clearance certificate from India.
- **Scheme Allocation:** **3,000 places** allocated for 2024, with the majority of spots filled during the **February 2024 ballot**; remaining places to be distributed in the July ballot.

Benefits of the Scheme:

- Provides a **streamlined visa pathway** ensuring **quicker processing times** compared to other UK visa schemes.
- Allows participants **flexibility** to study, work, and engage in self-employment during their stay in the UK.

About the India Young Professional Scheme:

- Introduced under the **India-U.K. Migration and Mobility MoU** signed in **May 2021**.
- Officially launched in **February 2023**, making India the first visa-national country to benefit from such a scheme.
- Aims to enhance bilateral cooperation in **migration and mobility** between India and the UK, fostering closer ties.

India-U.K. Migration and Mobility MoU:

- Aims to **liberalize visa issuance**, promote mobility of students, researchers, and skilled professionals.
- Strengthens cooperation on issues such as **irregular migration** and **human trafficking**.
- Facilitates talent exchange to support innovation ecosystems without discrimination based on caste, creed, religion, or gender.

Conclusion:

The **India Young Professional Scheme 2024** represents a significant opportunity for young Indian professionals to gain valuable international experience in the UK, supported by structured application processes and clear eligibility criteria underpinned by bilateral agreements between India and the UK.

EDITORIALS

Crux of The Hindu & Indian Express

International Issues

5 THINGS INDIA NEEDS TO DO IF TRUMP COMES TO POWER

Under Trump, the **Republican Party** is making a **big push towards overthrowing the traditional American consensus** on a range of issues:



- free trade,
- open borders, and
- US support for post war global institutions built by Washington.
- alliances,

1. TRADE & ECONOMIC GLOBALISATION

The Republican convention has **unhesitatingly backed Trump's anti-globalisation instincts**.

- The GOP wants to **stop outsourcing production to the rest of the world** (at the cost of working people at home), and **"make America a manufacturing superpower"** again.
- The main instrument for this is the **declared Trump plan** for a **big hike in tariffs on imports** (10% for all imports, 60% for imports from China).
- Trade issues that were an **important irritant in India's engagement with Trump** in the first term, will now be a **serious challenge**, addressing which will involve rethinking India's own trade strategies.

2. SECURITY & ALLIANCES

- On security, **India might be better placed than US allies in Europe and Asia** that fear **US abandonment**.
- The Republicans are **not seeking to isolate America from the world**. They want **greater reciprocity**.
- On the face of it, **as a non-ally, India is not part of that argument**; but the **military partnership with the US** is very much central today to **India's defence calculus** with an ever so **assertive China on its frontiers**.

- Although the **India-US convergence is real**, Delhi has thus far **been hesitant in translating that into concrete military arrangements**.
- The idea that **India can play all sides without making commitments** to any one might be harder to pursue under **Trump**, who plans to shake down US great power relations.

3. DEMOCRACY & INTERVENTIONISM

The Republican focus on battling “woke ideology” at home is **accompanied by an opposition to liberal internationalism**, and all that it entailed — **including the obsession with promotion of democracy and human rights**, and a penchant for political interventionism around the world.

This should make **many of the traditional arguments between Indian governments and American liberal elites less significant** in the a second Trump term.

4. IMMIGRATION & OPEN BORDERS

Indian elites have been a major beneficiary of **America’s open border policies since the 1960s**.

But immigration has **become a toxic issue in US domestic politics**, and the Republican platform talks about “**sealing the border against migrant invasion**” and “**carrying out the largest deportation operation**” in American history.

India should be able to work with the **Trump Administration** on facilitating legal immigration so critical for US business, while curbing illegal migration.

5. CLIMATE & ENERGY

The Republicans are **determined to bring down the Biden Administration’s expansive agenda** of “green transition”.

Trump is promising to make **America an “energy superpower”** through industrial policy. He plans to support a rapid expansion of hydrocarbon drilling.

The Trump years saw **India Engage with America’s big oil companies**. India might be prudent to **reconnect with them**.

For India, which is a major oil importer, **Trump’s US could become a more important energy partner**.

INDIA TO RATIFY UN HIGH SEAS TREATY

The Indian government on Monday said it **would soon sign and ratify the High Seas Treaty**, a new international legal architecture for **maintaining the ecological health of the oceans**.

The treaty, negotiated last year, **is meant for reducing pollution**, and for **conservation and sustainable use of biodiversity** and other marine resources in ocean waters.

WHAT ARE HIGH SEAS?

High seas are areas **outside the national jurisdiction of any country** because of which the treaty is also known as the agreement on **Biodiversity Beyond National Jurisdictions (BBNJ)**. It is formally called the **Agreement on Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction**.

India, like most other nations, **was a party to the nearly 15 years of negotiation** that resulted in the finalisation of the treaty last year. As such, the decision to sign and ratify the treaty is not unexpected.

HOW MANY COUNTRIES HAVE SIGNED THE TREATY?

91 countries have already signed the treaty, while eight of them have also ratified it.

UN HIGH SEAS TREATY

- **91 nations signed the document**, officially known as the **Biodiversity Beyond National Jurisdiction Treaty**, after agreeing to its terms in March, 2023 following roughly **15 years of discussion**.
- The treaty is meant “**to prevent a cascading of species extinctions**” brought on by **overfishing, oil extraction, deep-sea mining and other activities** with environmental impacts that occur in the high seas.

ABOUT THE TREATY

- It is the **first-ever treaty to protect the world’s oceans that lie outside National boundaries**.
- It is also **known as the ‘Paris Agreement for the Ocean.’**
- It is a **legally binding treaty that aims at protecting, caring for, and ensuring the responsible use of the marine environment**, maintaining the **integrity of ocean ecosystems**, and **conserving the inherent value of marine biological diversity**.
- The treaty **is built on the legacy of the UN Convention on the Law of the Sea (UNCLOS)**, which is the **last international agreement on ocean protection**, signed 40 years ago in 1982. UNCLOS established an area called the **high seas**.

HIGHLIGHTS

- It aims to **place 30% of the seas into protected areas by 2030**(a pledge made by countries at the UN biodiversity conference in 2022).
- It will **provide a legal framework for establishing vast marine protected areas (MPAs)** to protect against the loss of wildlife and share out the genetic resources of the high seas.
- It also **covers environmental assessments to evaluate the potential damage** of commercial activities, such as deep-sea mining.

- The treaty aims at strengthening resilience and contains provisions based on the polluter-pays principle as well as mechanisms for disputes.
- The treaty offers guidance, including through an integrated approach to ocean management that builds ecosystem resilience to tackle the adverse effects of climate change and ocean acidification, and maintains and restores ecosystem integrity, including carbon cycling services.
- Treaty provisions also recognize the rights and traditional knowledge of indigenous peoples and local communities, the freedom of scientific research, and need for the fair and equitable sharing of benefits.
- The treaty also considers the special circumstances facing small-island and landlocked developing nations.
- It will establish a conference of the parties (CoP) that will meet periodically and enable member states to be held to account on issues such as governance and biodiversity.
- The treaty also includes a pledge by signatories to share ocean resources.

NEED FOR THE UN HIGH SEAS TREATY

- **Ocean and biodiversity**
 - o The high seas comprise 64 per cent of the ocean surface, and about 43 per cent of the Earth.
 - o These areas are home to about 2.2 million marine species and up to a trillion different kinds of microorganisms.
- **Ocean and global climate**
 - o Oceans are an integral part of the global climate cycle, and perform a range of ecological services including absorption of carbon dioxide and Excess heat.
 - o Hence, this treaty is being considered as a landmark in the efforts to keep the planet habitable.
- **Unregulated human activities**
 - o Climate change is already influencing, and is being influenced by, ocean systems, and is exacerbating the pressures on marine biodiversity from unregulated human activities.
 - o It is these specific challenges — a combination of climate change, biodiversity, and pollution — that the High Seas Treaty seeks to address.
- **UNCLOS and concerns regarding the biodiversity**
 - o Though UN Convention on the Law of the Sea (UNCLOS) asks countries to protect the ocean ecology and conserve its resources, it does not provide the specific mechanisms or processes to do so.

- o Hence, it is believed that the High Seas Treaty will work as an implementation agreement under the UNCLOS.
- o This is similar to the Paris Agreement working under the UN framework Convention on Climate Change (UNFCCC).

NATO Signs \$700 Million Stinger Missile Contract

NATO has signed a contract valued at nearly \$700 million to produce more Stinger missiles, a portable surface-to-air defense system.

- This initiative is part of NATO's strategy to enhance defense manufacturing capabilities among its member countries.

What is the Stinger Missile ?



- Overview:** The FIM-92 Stinger is a man-portable surface-to-air missile system (MANPADS) developed by the American defense industry.
- Service History:** Entered service with the U.S. Army in 1981 and is currently used by the U.S. armed forces and 29 other countries.
- Manufacturers:** Produced by Raytheon Missile Systems and under license by EADS in Germany.
- Purpose:** Provides air defense capabilities to U.S. and allied troops, reducing the need for immediate air support against enemy aircraft.

Features of the Stinger Missile:

- Dimensions:** The missile is 1.52 meters long and 70 millimeters in diameter, with 10-centimeter fins.
- Weight:** The missile and its launcher together weigh about 15 kilograms, with the launcher being reusable.
- Deployment:** Can be carried and fired by troops or mounted on vehicles for short-range defense against aircraft.
- Technology:** Utilizes a passive infrared seeker to lock on to the target's heat signature.
- Operation:** A "fire-and-forget" weapon requiring no further input from the operator once launched.

6. Range and Altitude: Capable of hitting targets up to 11,500 feet (3,500 meters) high and within a range of about 5 miles (8 kilometers).

NATO's Defense Boost:

- 1. Summit Focus:** The NATO summit in Washington is concentrating on increasing defense manufacturing capabilities among its member countries.
- 2. Objective:** Strengthening the defense industry to deter future attacks.
- 3. Statement:** NATO Secretary General Jens Stoltenberg emphasized the critical role of a robust defense industry in providing strong defense.

US Political Divisions and NATO:

- 1. Context:** The summit occurs amid uncertainties due to US political divisions, which have delayed weapons shipments to Ukraine.
- 2. Concerns:** The upcoming presidential election has raised doubts about the reliability of US support for NATO members.
- 3. Donald Trump:** The presumptive Republican nominee has suggested encouraging Russia to act against NATO members that do not meet their 2% GDP defense spending commitment.

NATO's Defense Spending:

- 1. Commitments:** Out of 32 NATO members, 23 are expected to meet the 2% defense spending commitment this year, up from six before Russia's invasion of Ukraine.
- 2. US Contributions:** The US has provided over \$53.6 billion in weapons and security assistance to Ukraine since the invasion.
- 3. International Support:** Other NATO members and international partners have contributed around \$50 billion in weapons and security assistance.

Strengthening Defense Industrial Capacity:

- 1. Pledges:** National Security Adviser Jake Sullivan announced that NATO countries will pledge to strengthen their industrial defense capacity.
- 2. Prioritization:** This will help the alliance prioritize the production of essential defense equipment in the event of a conflict.
- 3. Plans:** Each member country will commit to submitting defense industrial plans over the next year to boost internal production.

Implications:

- 1. Significance:** The Stinger missile contract marks a significant step in strengthening NATO's defense capabilities.

2. Necessity: Enhancing defense manufacturing is crucial amid growing security threats.

3. US Support: The reliability of US support remains a concern, prompting NATO to diversify its defense capabilities.

4. Summit Outcomes: The NATO summit is a key step towards bolstering the alliance's defense capabilities and fostering cooperation among member countries.

5. Global Impact: The contract is seen as a response to Russia's increasing military aggression and is expected to influence the global defense industry and the balance of power in Europe.

Why Are Students Protesting in Bangladesh?

Context :

- Over a hundred people have been killed in violent clashes amid student protests against the return of a 30% quota in government employment for the descendants of those who fought for the freedom of Bangladesh from Pakistan.
- Internet shutdowns have prevailed across Bangladesh for a fifth day on Monday (July 22), even as a sense of calm prevailed following the ruling by the Appellate Division of Bangladesh's Supreme Court the previous day (July 21) to reduce the quotas in government jobs.
- The latest order dismisses a ruling by the lower court and comes amidst nationwide protests that have left 114 people dead and thousands injured.

Key Developments

- **Court Ruling:** The Appellate Division of Bangladesh's Supreme Court ruled to reduce the quota for descendants of the country's freedom fighters to 5%, with 93% of jobs to be allocated on merit. The remaining 2% will be set aside for members of ethnic minorities and transgender and disabled people.
- **Protestors' Demands:** Despite the court ruling, protestors have vowed to continue their demonstrations, setting a 48-hour deadline to ensure their key demands are met, including the release of those jailed and the dismissal of officials responsible for the violence.
- **Government Response:** The government imposed a nationwide curfew with a "shoot-on-sight" order on Friday (July 19) evening, which was indefinitely extended on Sunday. The shutdown was marked by military deployment to maintain order after weeks of violence. The government also declared Sunday and Monday (July 22) public holidays with only emergency services allowed to operate.

- **Protest Leaders:** The protests are led by youths opposed to the return of a 30% quota in government employment at all levels for those who fought for the freedom of Bangladesh from Pakistan, as well as their children and grandchildren.
- **Inflammatory Statement:** The situation was inflamed by a statement from Prime Minister Sheikh Hasina on July 14, appearing to equate the protesters with the descendants of razakars, mercenary collaborators of the Pakistan military who led a brutal campaign of murder and rape in which up to 3 million Bangladeshis are estimated to have been killed in the space of a few months in 1971.

Background of the Quota System

- **Court Order:** On June 5, the High Court Division of the Supreme Court of Bangladesh ruled on a suit filed by the “children of nationally recognized freedom fighters,” restoring the 30% reservation and striking down a circular issued by the government in October 2018, which had scrapped the freedom-fighter and other quotas.
- **Historical Context:** The 2018 decision had been announced by Prime Minister Hasina ahead of the national elections that took place in December that year. Students and teachers had been protesting since April, demanding that quotas be capped at 10%. There had been violence, though at a smaller scale than this week, and protesters had clashed with police and members of Bangladesh Chhatra League, the students’ wing of Hasina’s ruling Awami League party.
- **Government Appeal:** The government has said it agrees with the students and has appealed to the Supreme Court, which has suspended the High Court’s order and will hear the matter on August 7. Hasina has asked the protesters to be patient until then.

Constitutional and Economic Factors

- **Constitution:** Article 29(1) of Bangladesh’s 1972 Constitution says “there shall be equality of opportunity for all citizens in respect of employment or office in the service of the Republic.” However, under Article 29(3)(a), the state can make “special provisions in favour of any backward section...for the purpose of securing their adequate representation in the service of the Republic.”
- **Economic Discontent:** Analysts suggest that the violence is now being driven by wider economic discontent, including high inflation, growing unemployment, and shrinking foreign exchange reserves.
- **Employment Statistics:** More than two-thirds of Bangladesh’s 170 million population is in the

working age group of 15-64, and more than 25% are between the ages of 15 and 29. Government jobs are highly coveted due to their promise of stability and a guaranteed income.

- **Quota Distribution:** Besides the 30% quota for freedom fighters, there are 10% quotas each for women and backward districts, 5% for members of tribal communities, and 1% for persons with disabilities, taking the total reservation to 56%.

Historical Context

- **Razakars:** The razakars, literally “volunteers,” were a paramilitary force set up by Pakistan’s General Tikka Khan in 1971 to facilitate Islamabad’s control over East Pakistan and to crush the liberation movement led by Bangabandhu Sheikh Mujibur Rahman. The collaborationist razakars, working alongside Pakistan’s armed forces, were behind some of the worst atrocities perpetrated on the Bangladeshi people.
- **Political Use:** In the popular Bangladeshi memory, razakars are often remembered with greater resentment than even the Pakistani army and bureaucracy. Over the years, the Awami League has often referred to its critics and dissidents — constituted in large measure by Islamists and pro-Pakistan elements — as razakars.

Government Response and Opposition

- **Government Claims:** The government has claimed that the protests have been infiltrated by cadres of the opposition Bangladesh Nationalist Party (BNP) and its ally, the Islamist Jamaat-e-Islami.
- **Protestors’ Response:** In response to Hasina’s jibe, student protesters called her an autocrat, raising slogans that translate as “Who am I? Who am I? Razakar, razakar. Who said that? Who said that? Autocrat, autocrat.”

Conclusion :

The student protests in Bangladesh are a response to the return of a 30% quota in government employment for the descendants of those who fought for the country’s freedom from Pakistan. The protests have been marked by violence and internet shutdowns, with the government imposing curfews and military deployment to maintain order. The situation is further complicated by historical and economic factors, including the legacy of the razakars and widespread economic discontent. The government’s appeal to the Supreme Court and the ongoing protests highlight the deep-seated issues and the need for a resolution that addresses the concerns of the protesters while maintaining stability and justice.



PM MODI'S VISIT TO RUSSIA

Prime Minister Narendra Modi will be in Russia to meet President Vladimir Putin on **July 8 and 9**. The two leaders have met a **total 16 times since Modi became Prime Minister**, but **not since Russia invaded Ukraine in February 2022**, provoking wide-ranging western sanctions.

THE PREVIOUS VISITS BY THE LEADERS:

1. Modi last went to Russia for the **Eastern Economic Forum meeting in Vladivostok in September 2019**;
2. Putin last visited India in **December 2021** for the annual bilateral summit.

THE MEETING

- From India's perspective, Modi's visit is **part of the series of annual bilateral summits between the leaders of the two countries** that has been ongoing since 2000.
- **Twenty-one summits**, the highest institutionalised dialogue mechanism in the **strategic partnership**, have so far taken place in India and Russia.
- Since their **last summit in December 2021**, Modi and Putin have had at least **10 telephone conversations** to review progress on bilateral cooperation and exchange views on regional and global issues of mutual interest.

THE BROKEN TRADITION

- In **choosing Russia for his first bilateral visit** after being sworn in, Modi has **broken with the tradition** of India's new Prime Minister travelling first to a neighbouring country, a template that he followed in both **June 2014 (Bhutan)** and **June 2019 (Maldives and Sri Lanka)**.
- He **travelled to Italy last month**, but that was for a **multilateral meeting of G7 leaders**.

SIGNIFICANCE OF THE TIMING

- The **visit to Russia is a statement of the importance New Delhi accords to its relationship with Moscow**, and an underlining of this foreign policy priority.
- **Modi will be meeting Putin** around the same time as **leaders of the 32 nations in the North Atlantic Treaty Organisation (NATO)** gather in Washington DC from **July 9-11** to celebrate **75 years of the anti-Russia military alliance**.

THE BACKGROUND OF INDIA'S RELATIONSHIP WITH RUSSIA

- India's relationship with Russia is **seven decades old**. Veteran Indian policymakers carry fond

memories of the **generosity and friendship of the USSR**, a goodwill that has been transferred to the relationship with Russia — even though the **transactional approach of the Kremlin today is qualitatively very different** from the worldview and priorities of the leadership of the **erstwhile Soviet Union**.

- Over the years, as **India has diversified its relationships in a multi-polar world**, the India-Russia relationship has **stagnated in some areas and atrophied in others**.
- **Defence is the strongest pillar** of the strategic partnership by far, with **nuclear and space cooperation** also occupying an important place. **Energy imports** have increased exponentially in the last few years.

THE EVOLUTION OF DEFENCE

PARTNERSHIP:

The USSR was & is India's main supplier of defence equipment during the decades of the Cold War, and even now, **between 60 and 70 per cent of India's defence equipment is estimated to be of Russian and Soviet origin**.

FROM BUYER-SELLER TO CO DEVELOPMENT PARTNERS:

The defence cooperation has **evolved over time from a buyer-seller framework to one involving joint R & D, co-development and joint production**. (1988)

JOINT DEVELOPMENT

Brahmos Cruise missile.
Sukhoi Su-30 MKI
Iyushin/HAL
KA 226 Helicopters.

PURCHASES

S-400 Triumph
T.90s Bhishma.
Akula-II
INS Vikramaditya
Mil Mi-17
Tu 220M3 bombers.

Def. Exercise – INDRA & Tsentr 2019.

HAS INDIA DIVERSIFIED ITS DEFENCE IMPORTS?

- Over the last 25 years, **India has sought to look beyond Russia** — especially to the **United States, France, and Israel** for the supply of defence equipment.

- However, it still cannot afford to alienate Moscow, particularly at a time when Indian soldiers are in a standoff with the Chinese People's Liberation Army along the Line of Actual Control in eastern Ladakh.
- It is essential for India to have a regular and reliable supply of equipment and spares from Russia, and for Moscow to not share its sensitive defence technologies with Beijing.

ARE RUSSIAN ARMS EXPORTS TO INDIA EXCLUSIVE?

- P S Raghavan, chairman of India's National Security Advisory Board and a former Indian Ambassador to Russia, wrote in 2022,
- "President Putin has said that Russia does not transfer to any other country the military technologies shared with India. This is an assurance that India must constantly verify in respect of the weaponry and technologies that Moscow supplies to Beijing, as also the nature of their intelligence-sharing arrangements."

THE ENERGY TRADE

- Since the beginning of the war in Ukraine, India has been buying large amounts of Russian oil at a discount to cushion the inflationary impact of rising crude prices.
- The purchase of Russian crude has pushed bilateral trade volumes beyond expectations and targets. (\$30 billion by 2025).

INDIA'S OVERALL TRADE WITH RUSSIA:

- However, bilateral trade reached an all-time high of \$65.70 billion in FY 2023-24, according to data from the Department of Commerce. The balance of trade was heavily in Russia's favour, and India's \$61.44 billion imports were made up mostly by Russian oil and petroleum products, fertilisers, mineral resources, precious stones and metals, and vegetable oils.

THE DIPLOMATIC TIGHTROPE

- The war has, however, put India in a delicate diplomatic position with its Western allies.
- New Delhi has walked the diplomatic tightrope, not explicitly condemning the Russian invasion but calling for an international probe into the Bucha massacre in the early weeks of the war.
- India expressed concern over threats of nuclear war issued by Russian Leaders.
- India has abstained from voting against Russia in several resolutions at the United Nations Security Council.

- On his November 2022 visit, Jaishankar had conveyed that India is on the side of "peace, respect for international law and support for the UN Charter", and "strongly advocates a return to dialogue and diplomacy".
- New Delhi has reiterated that respect for the sovereignty and territorial integrity of states is an essential element of the international order, which has been perceived as a euphemism for telling Russia that it has violated these basic norms.
- At their last in-person bilateral meeting in Samarkand, Uzbekistan, on the sidelines of the SCO Summit in September 2022, Modi had told Putin that "this is not the era of war" — a line that was later used in the G20's Bali Declaration that November,

INDIA AMIDST RUSSIA UKRAINE WAR

- There is a perception that India is positioning itself as a neutral player that could be a mediator between the two sides.
- Modi is one of the few world leaders who have had phone conversations with both Putin and President Volodymyr Zelenskyy of Ukraine.
- Zelenskiy invited Modi to visit during their meeting at the G7 in Italy, and there has been some talk of the Prime Minister possibly travelling to Kyiv.
- However, Modi stayed away from the peace summit on Ukraine hosted by Switzerland last month, and India did not sign the joint communique. Russia called the summit a "waste of time" and did not attend, and India took the position that "only those options acceptable to both parties can lead to abiding peace".

CAN INDIA MEDIATE?

- Back in September 2022, Mexico had proposed that a committee including Modi, Pope Francis, and UN Secretary General Antonio Guterres should try to mediate in the crisis.
- Guterres had reached out separately to India for help in defusing the situation — Jaishankar had disclosed in September 2022 that India had weighed in with Russia on grain shipment from ports on the Black Sea.
- New Delhi had also conveyed to Moscow global concerns about the safety of nuclear plants in Ukraine.

THE WEST & RUSSIA

- Modi's visit to Russia comes **days after a series of meetings between India and the West**. At the G7, Modi met, besides the leader of Ukraine, Western leaders.
- US National Security Advisor **Jake Sullivan then visited New Delhi**. This was followed by a **visit by a US Congressional delegation led by Congressman Michael McCaul and former US House Speaker Nancy Pelosi** to meet the Dalai Lama in Dharamsala, and the top Indian Leadership.

THE IRRITANT IN RELATIONSHIP

- An **irritant in ties has been the presence of Indians in Russia who are believed to have**
- **Been "misled" into joining the war in Ukraine.**
- **Four Indians have been killed and 10 have returned, but another 40 are believed to be still in Russia.**
- New Delhi has asked for their **early discharge, and the issue is expected to be discussed during Modi's visit.**

Indo-Russian Relations:

- Major Landmark: Indo-Russian relations are a significant milestone in the political history of both nations, particularly in bilateral trade.
- Strong Ties: The relationship has been robust since the Cold War (1949-1991) and strengthened after the dissolution of the Soviet Union in 1991.
- Special Relationship: Based on military, economic, and political agreements and partnerships.
- Intergovernmental Commission: Established to ensure smooth communication between the nations.

Historical Ties

- 1917 Russian Revolution: Provided inspiration to the extremist section of the Indian National Congress and several revolutionaries during India's freedom struggle.
- Vladimir Lenin: Offered full support to the Indian Nationalist movement.
- Russo-Japanese War (1904): Russia's victory provided great inspiration.
- 5-Year Economic Plan: Formulated by India, influenced by the USSR.
- Treaty of Friendship, Peace, and Cooperation (1971): Signed to build Indo-Russian relations, lasting for 20 years.
- Post-USSR Disintegration (1991): Indo-Russian relations evolved.
- Strategic Partnership (2000): Signed between India and Russia, further developed into the Special and Privileged Strategic Partnership in 2010.

PILLARS OF COOPERATION

Economic Cooperation

- Good Relations: Strong economic ties between both nations.
- Investment Goal: Set a US \$30 billion investment goal expected to reach by 2025, achieved in 2018.
- Mutual Investment: Aiming for an additional US\$ 50 billion mutual investment.
- East Russia Development: India extended support in 2019 with concessional loans worth USD 1 billion.

Political Relations

- Strategic Partnership (2000): One of the first major political initiatives after the Soviet Union's collapse.
- Annual Meetings: Organized between political leaders to maintain strategic relations.
- Collaboration: Exemplary collaboration on issues of shared national interest.
- UNSC Support: Russia backed India's candidature for a permanent seat at the United Nations Security Council.
- High-Level Exchanges: Including the Inter-Governmental Commission (IGC).
 - IRIGC-TEC: Covers trade, economy, science, technology, and cultural cooperation, chaired by the External Affairs Minister and Deputy Prime Minister of India.
 - IRIGC-M&MTC: Covers military-technical cooperation, chaired by the defence ministers of both nations.
- Strained Relations (2021): Due to India's anti-China stance.

Strategic and Military Cooperation

- Defence Equipment: India's defence equipment was primarily supplied by the Soviet Union for decades.
- Ten-Year Agreement (1997): Signed to expand technical-military cooperation, including weaponry acquisition and military technology marketing.
- Defence Equipment Delivery (1998): Large range of defence equipment delivered to India.
- Make in India (2017): Strengthened defence manufacturing enterprise through diverse machine construction agreements.
- Weapons Trading: Includes joint research, leasing, and training, maintained with high security and regularity.

- Joint Projects:
 - Missile Stealth Frigates: Four state-of-the-art missile stealth frigates.
 - ILYUSHIN-HAL Transport Aircraft.
 - Brahmos Cruise Missile Program.
 - Fifth-Generation Fighter Jet.
 - KAMOV-226T Light Utility Helicopters.
 - INS Vikramaditya Aircraft Carrier.
- Military Products:
 - S-400 Triumf Air Defence System.
 - T-90 Bhisma Tanks Program.
 - Faktor Airbase in Tajikistan.
- Deals:
 - \$3 Billion Deal (2019): Lease of an Akula-class nuclear-powered attack submarine.
 - US\$ 900 Million Upgradation: MIG-29.

Energy or Nuclear Relations

- ONGC VIDESH and Rosnet: Sharing a bond over Sakhalin 3 and 4 gas fields and Russian fields.
- Investment: India has invested over \$5 billion in the Russian sector.
- Roadmap for Cooperation in Hydrocarbons (2019-2024): Signed during Narendra Modi's visit to Russia.
- Nuclear Ties: 16-18 new reactors to be built by 2030, each costing \$2.5 billion, making the net worth USD 45 billion.
- Joint Rooppur Nuclear Power Plant: Set up in Bangladesh.

Cultural Cooperation

- Strong Cultural Ties: Many institutions across Russia teach Hindi and other Indian languages like Bengali, Marathi, Tamil, etc.
- Cultural Events: Small-scale cultural events organized in Russia since 2008, strengthening bonds between both nations.

Conclusion :

The relationship between India and Russia is expected to continue with strong bonds of harmony, welfare, and mutual benefit. The pillars of cooperation have stood strong despite straining times, fostering a positive belief in Indo-Russian relations.

CHARAIDEO MOIDAMS

Assam's Charaideo Moidams burial sites have been added to United Nations Educational, Scientific and Cultural Organization's (UNESCO) World Heritage Sites list.



These are royal burial sites of the Ahom dynasty, which ruled over much of Assam and the North East from 1228 to 1826 AD. Located around 30 km from Sivasagar town in eastern Assam, even today, the tumuli in Charaideo are considered sacrosanct by many locals.

ABOUT

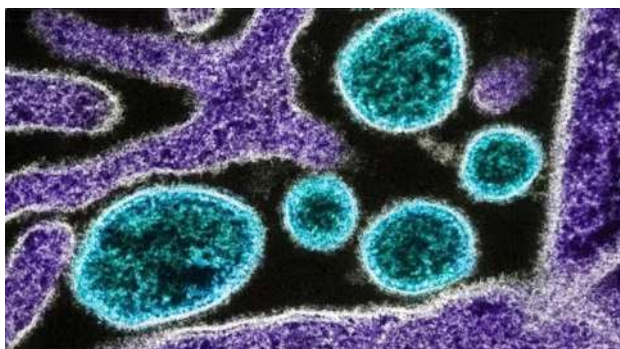
- Charaideo commonly known as 'Pyramids of Assam' was the original capital of the Ahom Kings.
- Charaideo remained the symbolic center of Ahom Kingdom even though the capital of the kingdom moved many times.
- It was built by Chaolung Sukhapa the founder of the dynasty in about 1229 CE.
- **Location:** Located at the foothills of Nagaland, it's situated at a distance of around 30 KM from the historical Sivsagar town in Assam.
- **Why is Charaideo known as 'Pyramids of Assam'?**
 - It contains sacred burial grounds of Ahom kings and queens and is also the place of the ancestral Gods of the Ahoms.
 - Some 42 tombs (Maidams) of Ahom kings and queens are present at Charaideo hillocks.
 - **Architecture:** It comprises a massive underground vault with one or more chambers having domical superstructure and covered by a heap of earthen mound and externally it appears a hemispherical mound.

AHOM DYNASTY

- It was founded by Chaolung Sukapha , who entered the Brahmaputra valley in 1228.
- They ruled Assam for six centuries.
- The Ahoms created a new state by taking over the older political system of the bhuiyans (landlords).
- The Ahom administration was a monarchical government with democratic and aristocratic values as well.
- Ahom society was divided into clans and with the expansion of the kingdom, the clans moved and took charge of the designated territory.

- The Ahoms followed stringent travel policies to protect their motherland against the foreign invaders for inward travel.
- In the 17th century, the Ahom rule got weakened due to multiple Burmese invasions and internal conflicts.
- Ahom Kingdom was annexed by the British East India Company after the Treaty of Yandabo in 1826.

6 Children die of suspected Chandipura virus infection in Gujarat: What is the disease, and what are its symptoms?



Introduction:

Six children have died of suspected **Chandipura virus (CHPV)** infection in Gujarat, India, since July 10, with a total of 12 suspected cases reported so far.

What is CHPV infection and how is it transmitted?

1. **CHPV** is a **virus of the Rhabdoviridae family, which also includes other members such as the lyssavirus that causes rabies.**
2. Several species of sandflies, like *Phlebotomine* sandflies and *Phlebotomus papatasi*, and some mosquito species, like *Aedes aegypti* (which is also the vector for dengue), are considered vectors of **CHPV**.
3. The virus resides in the salivary gland of these insects and can be transmitted to humans or other vertebrates like domestic animals through bites.
4. The infection caused by the virus can then reach the central nervous system, leading to **encephalitis** — inflammation of the active tissues of the brain.

Symptoms of CHPV infection:

- The **CHPV** infection presents initially with flu-like symptoms such as acute onset of **fever**, **body ache**, and **headache**.

- It may then progress to altered sensorium or seizures and **encephalitis**.
- Retrospective studies from India have also reported other symptoms such as **respiratory distress**, **bleeding tendencies**, or **anaemia**.
- The infection often progresses rapidly after **encephalitis**, which may then lead to mortality within 24-48 hours of hospitalisation.

Susceptibility:

- Susceptibility has largely remained limited to children below 15 years.

Management of the infection:

- The infection can only be symptomatically managed as currently there is no specific antiretroviral therapy or vaccine available for treatment.
- It becomes crucial to manage **brain inflammation** to prevent mortality.

Disease progression:

- Disease progression can be as rapid as a patient reporting high fever in the morning, and their kidneys or liver being affected by the evening.

Worst affected regions in India:

- The **CHPV** infection was first isolated in 1965 while investigating a dengue/chikungunya outbreak in Maharashtra.
- One of the most significant outbreaks of the disease in India was seen in 2003-04 in states such as Maharashtra, northern Gujarat, and Andhra Pradesh, with the three states reporting more than 300 deaths of children.
- Gujarat, during the 2004 outbreak, saw a case fatality rate (CFR) of around 78% while CFR in Andhra Pradesh, during the 2003 outbreak, was pegged at around 55%.
- The infection has largely remained endemic to the central part of India, where the population of **CHPV** infection-spreading sandflies and mosquitoes is higher.

Seasonal aspect:

- Outbreaks are often reported in rural, tribal, and peripheral areas, and may have a correlation with the prevalence of sandflies in these areas.
- There is also a seasonal aspect to the infection, where outbreaks are reported more when the sandflies' population increases.

Changes in disease pattern:

- According to Dr. Sandipkumar Trivedi, former executive board member of the Indian Association of Pediatrics, changes in patterns are being reported — both in the disease manifestation as well as the vector.

- Sandflies usually do not fly at a height more than 3 feet from the ground, but this time during surveillance, sandflies have been found on terraces and higher heights.
- Additionally, of the six suspected deaths so far, two presented with **brain haemorrhages**, which is a new presentation.
- New outbreak centres are also being reported, for example in Gujarat, cases are also suspected in other tribal areas such as Pavagadh, Khedbrahma, and Godhra.

Gujarat Government's Response:

- The Gujarat government has reported that six children have died of suspected **CHPV** infection in the state since July 10.
- A total of 12 suspected cases have been reported so far, with four cases from Sabarkantha district, three from Aravalli, and one each from Mahisagar and Kheda.
- Two patients are from Rajasthan, and one is from Madhya Pradesh. They received treatment in Gujarat.

KERALA LANDSLIDE

122 dead as landslides flatten Wayanad villages

Mundakkai, Choeramala and Attamala buried under debris | Swollen river changes course and floods neighbouring locations | Rescue teams and volunteers are struggling to knee-deep mud | Body parts recovered from Chalgar river in distant Malappuram



WHAT EXACTLY HAPPENED?

The govt. Has identified a **waterlogged hillock 6 kms from the villages** which abutted the **Iruvanippuzha river as the origin of the landslide.**

The **first landslide** exactly occurred at **2 AM**, the **second** at **4 AM**.

These landslides flattened the villages and plunged into the swollen river changing its course and flooding neighbouring areas.

WAS THERE ANY WEATHER PREDICTION ALERT?

As per CM of Kerala, there was Orange Alert.

STEPS TAKEN

- **Heavy engineering equipment** and rescue dog teams were being airlifted, and
- Disaster relief teams had been dispatched by the Indian Coast Guard to provide aid to people after a series of landslides in the hilly areas of Wayanad district in Kerala early on Tuesday.
- Indian Armed Forces swung into immediate action and 300 Military personnel were moved forthwith to commence rescue operations.
- During the day, additional columns of Army, Naval teams and helicopters from Air Force were mobilised to assist the rescue and relief efforts.
- Dedicated medical teams have been deployed to give medical aid.

DID KERALA DO ANYTHING WRONG?

Ecologist **Madhav Gadgil**, who was the **Chairman of the Western Ghats Ecology Expert Panel**, has termed the **disaster in Wayanad a man-made tragedy**, attributing it to the Kerala government's failure to implement crucial ecological recommendations.

Mr. Gadgil criticised the State govt. for not adhering to the panel's guidelines designed to prevent such disasters amid extreme climate changes.

His panel's report had classified the region into **three levels of ecological sensitivity**, with the **areas now struck by the disaster being marked as highly sensitive.**

No development should have taken place in these areas.

WHAT TYPES OF DEVELOPMENTAL ACTIVITIES HAPPENED?

- These zones had been utilised for **tea plantations during the British period.**
- It had **since seen extensive development**, including the **construction of resorts and artificial lakes.**
- Mr. Gadgil said the **presence of quarries** operating a few kilometres from the disaster site had further exacerbated the situation.
 - o Though these quarries were **now defunct**, the shockwaves caused during their operational period could have extended to the disaster-stricken areas.

WHAT ARE ECO SENSITIVE ZONES?



As per the **National Wildlife Action Plan (2002-2016)**, issued by the **Union Ministry of Environment, Forest and Climate Change**, land within **10 km** of the boundaries of national parks and wildlife sanctuaries are to be notified as eco-fragile zones or **Eco-Sensitive Zones (ESZ)**.

While the **10-km rule** is implemented as a **general principle**, the extent of its application can vary. It can be more or less also. (In case of Kerala, it is only 1 KM) (TN Godavarman Case, 2022)

Areas beyond 10-km can also be notified by the Union government as ESZs, if they hold larger ecologically important “sensitive corridors”.

WHY ARE THEY CREATED?

According to the **guidelines issued by the Environment Ministry** on February 9, 2011, ESZs are created as “**shock absorbers**” for the protected areas, to **minimize the negative impact** on the “**fragile ecosystems**” by certain human activities taking place nearby.

Furthermore, these areas are meant to **act as a transition zone** from areas **requiring higher protection** to those requiring lesser protection.

PERMITTED & PROHIBITED ACTIVITIES:

Activities **prohibited** in an ESZ, such as commercial mining, saw mills, commercial use of wood, etc., apart from **regulated** activities like felling of trees.

There are **permitted** activities like ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, among others.

GADGIL & KASTURIRANGAN COMMITTEE RECOMMENDATIONS RELATED TO ESZ

GADGIL COMMITTEE:

- **Indefinite moratorium** on new environmental clearances **for mining** in Ecologically Sensitive Zones.

- **Phase-out of all chemical pesticides** within **five to eight years** & plastic bags in **three years**.
- Continuing existing mining in Ecologically Sensitive Zone 2 under strict regulation with an effective social audit mechanism.
- **Prohibited new red and orange category industries**, such as **coal based power plants**, in Ecologically Sensitive Zones 1 and 2.
- Cultivation of Genetically Modified crops was banned in the entire region.
- **No new special economic zones or hill stations, dams, railway lines or major roads** in Ecologically Sensitive zone-1 and zone-2 areas.
- Ban on conversion of public lands to private lands, and on diversion of forest land for non-forest purposes in ESZ -1 and ESZ -2 areas.

KASTURIRANGAN COMMITTEE:

- Only **37% classified as an ecologically sensitive area (ESA)**
- The report **categorized areas** on the basis of their **ecological sensitivity**.
- Activities affecting the ecology negatively were to be banned or restricted in highly sensitive zones.
- Opined that the “**blanket prescription**” approach of the Gadgil committee would be harmful to the economy.
- **Mining, Quarrying, Sand Mining, Thermal Power plants, Township and Area Development Projects, ‘Red Industries’** were **banned**.
- Hydroelectric power projects were based only at those places where there have been a standard ecological flow of 30%, and were restricted otherwise.
- The ‘Orange’ category industries (food processing industry) were not banned, but careful process and production techniques were prioritized to minimize environmental damage.
- Infrastructure projects related to transport to be approved only after cumulative impact.



ANALYSIS OF CURRENT ISSUES

Indian Polity & Governance

APPOINTMENT OF GOVERNORS

President Droupadi Murmu appointed Governors for **Rajasthan, Telangana, Maharashtra, Punjab, Sikkim, Meghalaya, Assam, Jharkhand and Chhattisgarh** on Saturday (July 28). Assam Governor Lakshman Prasad Acharya has been given the additional charge for Manipur as well.

The President of India appoints state Governors, who function as the Centre's representatives.

THE CONSTITUTIONAL PROVISIONS WRT GOVERNOR

- **Article 153** of the Indian Constitution says “There shall be a Governor for each State.”

A few years after the commencement of the Constitution, an **amendment in 1956** laid down that “**nothing in this article shall prevent the appointment of the same person as Governor for two or more States**”.

- **Article 155** says that the “**Governor of a State shall be appointed by the President by warrant under his hand and seal**”.
- **Under Article 156**, “**the Governor shall hold office during the pleasure of the President**”, but his normal term of office will be five years.
 - o If the **President withdraws her pleasure before the completion of five years**, the Governor has to step down.
 - o Since the President acts on the aid and advice of the Prime Minister and the Union Council of Ministers, **in effect, the Governor is appointed and removed by the central government**.

QUALIFICATIONS TO BE A GOVERNOR

Articles 157 and 158 lay down the **qualifications of the Governor** and the conditions of his office.

- The Governor must be a **citizen of India**.
- Should have completed the age of **35 years**.
- The Governor should **not be a member of Parliament or a state legislature**, and
- Must **not hold any other office of profit**.

RELATIONSHIP OF GOVERNOR & STATE POLICE

The **position of the Governor is envisaged as an apolitical head** who must act on the advice of the Council of Ministers of the state.

Article 163 states: “There shall be a **Council of Ministers with the Chief Minister at the head to aid and advise the Governor** in the exercise of his functions, except in so far as he is by or under this Constitution required to exercise his functions or any of them in his discretion.”

POWERS OF A GOVERNOR

The Governor enjoys certain powers under the Constitution:

- Giving or withholding assent to a Bill passed by the state legislature;
- Determining the time needed for a party to prove its majority in the state Assembly; or,
- In cases such as a hung verdict in an election, which party must be called first to prove its majority — which make his position very significant.
- The Governor can send a report to the President about the failure of Constitutional machinery of the state. If accepted, President's rule gets implemented.

Over the decades, Governors have been seen as **acting on the behest of the central government** in power at the time, and have been accused by state governments, especially those in opposition, of acting as “**agents of the Centre**”.

BHARATIYA NYAYA SANHITA ACT, 2023

New avatar

The Bills seek to replace the criminal laws that have been in force for more than a century in the country

NEW BILL	OLD LAW
■ Bharatiya Nyaya (Second) Sanhita Bill (BNSS)	■ Indian Penal Code, 1860
■ Bharatiya Sakshya (Second) Bill (BSS)	■ Indian Evidence Act, 1872
■ Bharatiya Nagarik Suraksha (Second) Sanhita Bill (BNSSS)	■ Code of Criminal Procedure, 1898



This is a pure Indian law after removing all the British imprints

AMIT SHAH, Union Home Minister

BHARTIYA NYAYA SANHITA BILL

This bill is going to replace the **Indian Penal Code, 1860**.

The new bill seeks to include issues like **Love Jihad, Terrorism, Organised Crime, Mob lynching** and such like.

Changes in provisions related to **Sedition, Fake News & Mandatory minimum sentence** have been done.

PROMISE TO MARRY

The BNS introduces **Clause 69** that seems to ostensibly **tackle the “love jihad”** narrative by criminalising **“deceitful”** promise to marry. The phrase **“sexual intercourse not amounting to the offence of rape”** essentially criminalises consensual sexual activity too.

WHAT DOES DECEITFUL MEAN?

“Deceitful means” shall include **the false promise of employment or promotion, inducement, or marrying** after suppressing identity.

MOB LYNCHING

The BNS provisions **codify offences linked to mob lynching** and hate-crime murders, for cases when a **mob of five or more individuals** commits murder based on factors such as **race, caste, community, or personal belief**. The provision has punishment that extends from **life imprisonment to death**.

In its **earlier version**, the Bill had proposed a **minimum sentence of seven years**, but this was brought at par with murder.

The Supreme Court in 2018 had asked the Centre to consider a separate law for lynching.

ORGANISED CRIME

For the first time, organised crime has been brought under the realm of ordinary law. Although there exists **legislations in the states**, like **Maharashtra Control of Organised Crime Act, 1999 (MCOCA)** which give excessive surveillance powers & relaxed standards of evidence in favour of the states.

In the new legislation, the punishment for **attempt to commit organised crime** and for **committing organised crime** is the same, but a **distinction is drawn** based on whether a death is caused or not by the alleged offence. For **cases involving death**, the punishment ranges from **life imprisonment to death** but where there is no death involved, a **mandatory minimum sentence of five years** is prescribed which may extend to life imprisonment.

Petty Organised Crime: “theft, snatching, cheating, unauthorised selling of tickets, unauthorised betting or gambling, selling of public examination question papers.” Have been included.

TERRORISM

The BNS adds terrorism as an offence. It is defined as **“an act that intends to threaten the unity, integrity, and security of the country, intimidate the general public or disturb public order.”**

Importing large parts of the language in defining **“terror activities”** from the stringent Unlawful Atrocities Prevention Act has been done.

It is **unclear how both the UAPA and the BNS will operate concurrently**, especially when procedurally the UAPA is more stringent and the cases are heard in special courts.

ATTEMPT TO SUICIDE

The BNS introduces a new provision that criminalises **“whoever attempts to commit suicide with the intent to compel or restrain any public servant from discharging his official duty”**, and prescribes a jail term which may extend to one year with community service.

This provision could be invoked to **prevent self-immolations and hunger strikes during protests**.

GENDER NEUTRALITY

The BNS has tweaked certain laws, especially those dealing with children, Gender Neutral.

- The offences dealing with **procurement of a girl** (for “illicit intercourse”, 366A of the IPC) has been made **gender neutral**.
- For the offence dealing with **kidnapping of minors**, the IPC (Section 361) prescribes different age limits: **16 years for male and 18 years for a female. The BNS makes it 18 for both**.
- For adults, the offence of outraging the modesty of women (354A of the IPC) and voyeurism (354C) now has gender neutrality for the accused under the BNS, which means that **women can also be booked under the law**.

FAKE NEWS

The IPC currently contains **Section 153B** which deals with **“imputations, assertions prejudicial to national integration.”**

This, commonly referred to as the **“hate speech”** provision, criminalises, among other aspects, causing **“disharmony or feelings of enmity or hatred or ill-will”** between communities.

The BNS introduces a new provision here which **criminalises publishing false and misleading information**.

SEDITION

When the Sanhitas were first introduced in the Lok Sabha in August, Union Home Minister Amit Shah had said that the **law on sedition had been repealed**.

However, the BNS introduces the offence **under a new name and with a wider definition**. Apart from a name change from 'rajdroh' to 'deshdroh', the new provision brings under its sweep aiding through financial means acts of "subversive activities", and those encouraging "feelings of separatist activities."

This provision has incorporated the SC guidelines in the 1962 *Kedarnath Singh case*, which upheld the constitutional validity for the crime of sedition.

MANDATORY MINIMUM SENTENCE

Section 303 of the IPC prescribed a **mandatory death sentence** for murder committed by a life-convict. In **1983, the Supreme Court struck down** the provision as unconstitutional since it took away the discretion of judges in awarding a sentence. The **BNS has now** tweaked this provision to prescribe a punishment of "death or imprisonment for life, which shall mean the remainder of that person's natural life."

In several other provisions, mandatory minimum sentences are prescribed. While the **prescription of a minimum sentence limits the scope for judicial discretion and arbitrariness**, it is seen to be **unfair to the convict**, whose mitigating circumstances, such as if they are a first-time offender or the sole breadwinner in the family, are often overlooked.

DELETIONS FROM IPC

- **Unnatural Sexual Offence:** Section 377 of IPC which criminalised homosexuality among other "unnatural" sexual activities, has been repealed under the BNS. (struck down by SC in 2018 wrt homosexuality)
- **Adultery:** The offence of adultery, which was struck down by the Supreme Court as unconstitutional in 2018, has been omitted under the BNS.
- **Thugs:** The **IPC under Section 310** criminalises those who have been "habitually associated with any other or others for the purpose of committing robbery or child-stealing by means of or accompanied with murder," and labels them a thug. This provision is criticised for attaching colonial notions of criminality for certain tribes. The BNS has fully omitted this provision.

CRITICISM OF THE BILL

- The IPC provides **protection from prosecution to a person of unsound mind**. The **BNS changes** this to a **person with mental illness**. The definition of mental illness excludes mental retardation and includes abuse of alcohol and drugs.
- The **definition of terrorism** includes an act that intends to intimidate public order.
- **Several offences overlap with special laws**. In many cases, both carry different penalties or provide for different procedures. This may lead to multiple regulatory regimes, additional costs of compliance and possibility of levelling multiple charges.
- The **BNS omits S. 377 of IPC** which was read down by the Supreme Court. This removes rape of men and bestiality as offences. (Section 377 was still invoked to penalise non-consensual sex, and is often the only recourse in cases of rape of men)

BHARTIYA NAGRIK SURAKSHA SANHITA, 2023

The **Bhartiya Nagrik Suraksha Sanhita, 2023** is one among the three criminal laws which has been passed by the Parliament.

It has been passed by both the houses and has come into force on 1 July, 2024.

The **Bhartiya Nagrik Suraksha Sanhita, 2023** is going to **replace** the **Criminal Procedure Code (CrPC), 1898**.

The CrPC provides for the **procedure for arrest, prosecution, and bail**.

KEY PROVISIONS

- The BNSS **mandates forensic investigation** for offences punishable with **seven years of imprisonment or more**. Forensic experts will visit crime scenes to collect forensic evidence and record the process.
- **All trials, inquiries, and proceedings** may be held in **electronic mode**. Production of electronic communication devices, likely to contain **digital Evidence, will be allowed for investigation, inquiry, or trial**.
- If a **proclaimed offender has absconded** to evade trial and there is no Immediate prospect of arresting him, the trial can be conducted and **Judgement pronounced in his absence**.
- Along with specimen signatures or handwriting, finger impressions and voice Samples may be collected for investigation or proceedings. Samples may be taken from a person who has not been arrested.

CRITICISMS

- The BNSS allows up to **15 days of police custody**, which can be authorised in parts during the initial **40 or 60 days of the 60 or 90 days period of Judicial custody**. This may lead to denial of bail for the entire period if the police has not exhausted the 15 days custody.
- The power to **attach property from proceeds of crime** does not have safeguards provided in the Prevention of Money Laundering Act.
- The **CrPC provides for bail** for an accused who has been **detained for half The maximum imprisonment** for the offence. The **BNSS denies this facility** for anyone facing multiple charges. As many cases involve charges under multiple sections, this may limit such bail.
- The **use of handcuffs** is permitted in a range of cases including organised Crime, contradicting Supreme Court directions.

THE BHARATIYA SAKSHYA BILL, 2023

The Bharatiya Sakshya bill is the third bill among the three criminal laws.

The Bharatiya Sakshya Bill, 2023 (BSB) replaces the **Indian Evidence Act, 1872** (IEA).

It **retains most provisions of the IEA** including those on **confessions, relevancy of facts, and burden of proof**.

PROVISIONS

- The IEA provides for **two kinds of evidence** - documentary and oral. Documentary evidence includes primary (original documents) and secondary (that proves the contents of the original). The BSB retains the distinction. It **includes electronic records** in the definition of documents.
- Under the IEA, **electronic records are categorised as secondary evidence**. The **BSB classifies electronic records as primary evidence**. It expands such records to include information stored in semiconductor memory or any communication devices (smartphones, laptops).
- Under the IEA, secondary evidence may be required under various Conditions, such as when the original is in the possession of the person against whom the document is sought to be proved or has been destroyed.

The BSB adds that secondary evidence may be required if the genuineness of The document itself is in question.

ISSUES

- The Supreme Court has recognised that **electronic records may be tampered** with. While the BSB provides for the admissibility of such records, there are **no safeguards to prevent the tampering and contamination** of such records during the investigation process.
- Under the IEA, a fact discovered due to information received from an Accused in police custody may be provable. The BSB retains this provision.
Courts and Committees noted that facts may be discovered in police custody By coercion, and without adequate safeguards.
- The IEA (and the BSB) allows such information to be admissible if it was obtained when the accused was in police custody, but not if he was outside. The Law Commission recommended to remove this distinction.

GOVERNOR'S IMMUNITY

The **Supreme Court on July 19** agreed to **hear a plea seeking to redefine the contours of the constitutional immunity enjoyed by the Governor of a state**.

Article 361 of the Constitution **shields the President and Governor** from **criminal prosecution, and bars any judicial scrutiny of their actions**.

THE CASE:

A **three-judge Bench** — comprising **Chief Justice of India DY Chandrachud, and Justices J B Pardiwala and Manoj Misra** — took up the issue after a **petition was moved by a contractual woman employee of West Bengal Raj Bhavan**. She has **alleged sexual harassment** by **Governor C V Ananda Bose**.

THE CONSTITUTIONAL PROVISIONS

Article 361 states that the **President, or the Governor of a state**, “**shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him in the exercise and performance of those powers and duties**”, unless it is by Parliament for impeachment from office.

The provision further says “**no criminal proceedings whatsoever shall be instituted or continued**”; “**no process for the arrest or imprisonment**” can take place while the President, or the Governor, holds office.

WHAT IS THERE FOR THE COURTS?

The interpretation of these phrases — in **Article 361(2) and 361(3)** —

- “**criminal proceedings**” and
- “**process for the arrest or imprisonment**”

is what is now before the SC. The court will consider **whether that process covers a registration of FIR, initiation of a preliminary inquiry, or a magistrate taking cognisance of an offence**, which is the technical start of a criminal case.

ORIGIN OF GOVERNOR'S IMMUNITY

The protection given to the President and the Governor can be traced to the Latin maxim *rex non potest peccare* or “**the king can do no wrong**”, which is rooted in English legal traditions.

WHAT HAPPENED IN THE CONSTITUENT ASSEMBLY?

The Constituent Assembly **discussed the introduction of Article 361** — or Draft Article 302 as it was known then — on September 8, 1949. On criminal immunity, Assembly Member **H V Kamath from the Indian National Congress raised certain prescient questions**.

- In case the **President, or the Governor**, commits a crime, he asked “Does this clause mean that no proceedings can be instituted against him (the President or the Governor) during the whole prescribed term, or whether it means while he is in office only”.
- He also asked if the President should remove “a Governor or a Ruler committing a criminal act” in case a prima facie case is made against the Governor concerned.

However, the **article was adopted without any further debate on criminal immunity**.

JUDICIAL INTERPRETATIONS

- **State v/s Kalyan Singh & Ors:**
 - o The **SC did so in the 2017 criminal case** — State vs Kalyan Singh & Ors — concerning the Babri Masjid demolition in 1992. The court delayed the trial against then Rajasthan Governor Kalyan Singh, who was one of the accused in the case.
 - o In its order, the SC said being the Governor, Kalyan Singh “**is entitled to immunity under Article 361 of the Constitution as long as he remains Governor of Rajasthan. The Court of Sessions will frame charges and move against him as soon as he ceases to be Governor**”.

- **Vyapam Scam Case:**

- o In **2015, the Madhya Pradesh High Court** categorically held that Article 361(2) “**guarantees absolute protection from any malicious campaign or publicity against the Head of a State, so as not to undermine the solemnity of that office.**”
- o The observation came in a case **pertaining to the Vyapam scam**. Then Governor of Madhya Pradesh **Ram Naresh Yadav** was one of the accused in the scam, and the HC had to determine **if the registration of an FIR against him** would amount to criminal proceedings being “instituted” in the case.
- o In its ruling, the **HC allowed investigation in that FIR against other accused**, while “**effacing**” the name of the Governor till **he occupied the office**.
- o As Yadav died in November 2016, the SC did not rule in appeal.

- **Rameshwar Prasad v/s UoI:**

- o In the case, the SC had to deal with the Governor’s immunity in civil cases after recommending the Bihar Assembly’s dissolution in 2005.
- o The court said while the Governor enjoys “complete immunity” when exercising their powers under Article 361(1), this immunity “does not, however, take away the power of the Court to examine the validity of the action including on the ground of malafides (actions taken in bad faith)”.
- o The SC in that case examined the Governor’s actions in discharging his constitutional powers, which can be placed on a higher threshold compared to acts outside the discharge of constitutional or any official duties.

THE GLOBAL PRECEDENTS

The debate on whether executive immunity is a blanket protection has been taking place in other countries as well.

The **US Supreme Court** on July 1 decided that **former President Donald Trump, or any former US President, is entitled to “absolute immunity” from criminal prosecution for official acts but not unofficial or personal acts**.

This came as a huge relief for Trump, **who faces a criminal case for allegedly attempting to subvert the 2020 presidential election results**, while he was in power.

MONEY BILLS

Chief Justice of India **D.Y. Chandrachud** agreed to list petitions challenging the Money Bill route taken by the Centre to pass contentious amendments in the Parliament.

“I will list when I form Constitution Benches.”

The Chief Justice addressed

WHAT IS A MONEY BILL?

A Money Bill is deemed to contain only provisions dealing with all or any of the matters under **clauses (a) to (g) of Article 110(1)**, largely including the **appropriation of money from the Consolidated Fund of India** and **taxation**.

In other words, a Money Bill is restricted **only to the specified financial matters**.

ARTICLE 110

A Bill shall be deemed to be a Money Bill if it contains only provisions dealing with **all or any of the following matters**, namely:—

- (A) The **imposition, abolition, remission, alteration or regulation of any tax**;
- (B) The **regulation of the borrowing of money or the giving of any guarantee by the Government of India, or the amendment of the law** with respect to **any financial obligations undertaken** or to be undertaken by the Government of India;
- (C) The custody of the **Consolidated Fund or the Contingency Fund of India**, the payment of moneys into or the withdrawal of moneys from any such Fund;
- (D) The **appropriation of moneys out of the Consolidated Fund of India**;
- (E) The declaring of any expenditure to be **expenditure charged on the Consolidated Fund of India** or the increasing of the amount of any such expenditure;
- (F) The **receipt of money on account of the Consolidated Fund of India** or the **public account of India** or the custody or issue of such money or the audit of the accounts of the Union or of a State; or
- (G) Any matter incidental to any of the matters specified in sub-clauses (a) to (f).

OTHER PROVISIONS

- A Bill **shall not be deemed to be a Money Bill** by **reason only that it provides for the**

imposition of fines or other pecuniary penalties, or for the demand or payment of fees for licences or fees for services rendered, or by reason that it provides for the imposition, abolition, remission, alteration or regulation of any tax by any local authority or body for local purposes.

- If any question arises **whether a Bill is a Money Bill or not, the decision of the Speaker of the House of the People thereon shall be final**.
- There shall be **endorsement on every Money Bill- the certificate of the Speaker of the House of the People signed by him that it is a Money Bill**.
- It is **introduced in Lok Sabha only** with prior consent of the President. Once passed, the President has to sign it.
- It can be **introduced by a minister** only & **no provision of joint sitting** is there.

POWERS OF RAJYA SABHA ON MONEY BILLS

The Rajya Sabha has **no power to reject or amend a Money Bill**, but it **can make recommendations and return it to the Lok Sabha within 14 days**.

If the rajya sabha **doesn't return the bill within 14 days**, neither passes it, it's considered passed in both houses.

In case **Rajya Sabha** gives some **recommendations**, The **Lok Sabha** can then **accept or reject the recommendations**.

THE CURRENT CASE

The reference **includes legal questions concerning amendments** made from 2015 onwards in the **Prevention of Money Laundering Act (PMLA)** through Money Bills, giving the **Enforcement Directorate almost blanket powers of arrest, raids, etc**.

Though **the court had upheld the legality of the PMLA amendments**, it left the question of whether the amendments could have been passed as Money Bills to the seven-judge bench.

NATIONAL FLAG DAY

On **22 July in 1947**, the Constituent Assembly of **India adopted the National Flag**. It was a **red-letter day** in our history, and the tricolour's adoption marked a pivotal moment in India's journey towards establishing itself as an independent nation free from colonial rule.



WHAT HAPPENED IN THE CONSTITUENT ASSEMBLY?

According to the official record of the proceedings, the Constituent Assembly met in the

Constituent Hall in New Delhi at 10 o'clock, with **Dr Rajendra Prasad in the Chair**. The

Constituent Assembly had been **meeting since December 9, 1946**, and had by then discussed a range of subjects.

The Chair announced that the **first item on the agenda** was **“a Motion by Pandit Jawaharlal Nehru about the Flag”**.

At the end of the day, the record says, **“The motion was adopted, the whole Assembly standing.”**

THE MOTION

Thereafter, India's first Prime Minister rose to move the following Resolution:

- “Resolved that the National Flag of India shall be **horizontal tricolour** of deep **Saffron (Kesari), white and dark green** in equal proportion. In the centre of the white band, there shall be a Wheel in navy blue to represent the **Charkha**.”
- The **design of the Wheel** shall be that of the Wheel (Chakra) which appears on the abacus of the **Sarnath Lion Capital of Asoka**.
- “The **diameter** of the Wheel shall **approximate to the width of the white band**.”
- “The **ratio of the width to the length** of the Flag shall ordinarily be **2:3**.”

WHAT DID NEHRU SAY ABOUT THE FLAG?

The Flag defined by the Resolution, Nehru said, **“was adopted, not by a formal resolution, but by popular acclaim and usage, adopted much**

more by the sacrifice that surrounded it in the past few decades”, and that the Constituent Assembly was **“in a sense only ratifying that popular adoption”**.

IS THE FLAG REPRESENTING COMMUNAL GROUPS IN INDIA?

He clarified that the **Flag must not be thought of in communal terms**, and that when the Flag was devised, **there was no communal significance attached to it**.

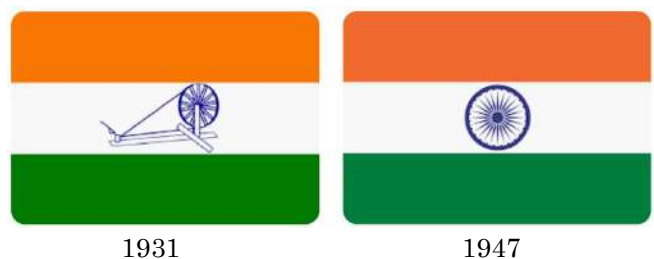
“We thought of a design for a Flag which was beautiful, because the symbol of a nation must be **beautiful to look at**. We thought of a Flag which would in its combination and in its separate parts would somehow **represent the spirit of the nation**, the tradition of the nation, that mixed spirit and tradition which has grown up through thousands of years in India. So, we devised this Flag

FLAGS OF INDIA OVER THE YEARS



PREVIOUS FLAG V/S THE NEW FLAG

- Although the Flag was different in some respects from the one used earlier, **its “colours are the same”** Nehru said, “a deep saffron, a white and a dark green”.
- **The Charkha**, which **symbolised the common man in India**, had been **“slightly varied”** — the practical reason being that **“the symbol on one side of the Flag should be exactly the same as on the other side”**.



- “The Charkha, as it appeared previously on this Flag, had the wheel on one side and the spindle on the other [and on] the other side the spindle comes the other way and the wheel comes this way”.

Section 294 of the Code of Criminal Procedure (CrPC)



The **Supreme Court** has observed that an accused cannot be said to be a witness against himself if he was called upon to admit or deny the genuineness of the documents produced by the prosecution under **Section 294 of the Code of Criminal Procedure (CrPC)**.

About Section 294 of the Code of Criminal Procedure (CrPC)

1. **Filing of documents:** **Section 294** pertains to the **filing of documents** by the prosecution or the accused.
2. **List of documents:** This section requires that the **particulars of every document** filed by either party be included in a **list**.
3. **Admission or denial:** The opposing party or their pleaders must be given the opportunity to **admit or deny** the **genuineness of each document**.
4. **Applicability:** It applies to all documents filed by the prosecution or the accused, regardless of their **nature and character**.
5. **Genuineness of documents:** The genuineness of the documents is crucial, and without proper proof, reliance cannot be placed upon them.
6. **Exclusion:** **Section 294** does not apply to witnesses who wish to directly produce additional documents during the course of the trial or during the recording of their evidence.
7. **Purpose:** The purpose of **Section 294** is to **accelerate the pace of the trial** by avoiding the waste of time in recording unnecessary evidence.
8. **Admission of documents:** It allows for the **admission of documents** whose genuineness is not disputed by the opposing party.
9. **Transparency and fairness:** It aims to ensure **transparency and fairness** in the judicial process by allowing both the prosecution and the accused to present relevant documents.

What is the Code of Criminal Procedure (CrPC)?

1. **Enactment:** The **CrPC** was enacted in **1973** and came into force on **1 April 1974**.
2. **Main legislation:** It is the main legislation on procedure for administration of **substantive criminal law** in India.
3. **Procedure:** It provides a procedure for the **investigation of crime**, the **collection of evidence**, and the **determination of guilt or innocence**.
4. **Arrest and detention:** The **CrPC** also covers the **arrest and detention** of suspects, the conduct of trials, and the sentencing of convicted individuals.
5. **Importance:** The **CrPC** is an important piece of legislation that ensures that the **criminal justice system** in India functions **fairly and efficiently**.

Key Features of Section 294 of the CrPC

1. **Efficient trial:** **Section 294** helps to **accelerate the pace of the trial** by avoiding the waste of time in recording unnecessary evidence.
2. **Transparency:** It ensures **transparency** in the judicial process by allowing both the prosecution and the accused to present relevant documents.
3. **Fairness:** It aims to ensure **fairness** in the judicial process by giving the opposing party the opportunity to admit or deny the genuineness of each document.
4. **Genuineness of documents:** It emphasizes the importance of the **genuineness of documents** and ensures that only authentic documents are admitted as evidence.

RULES GOVERNING CIVIL SERVANTS

The Centre last Thursday **constituted a single-member committee** under the **Department of Personnel and Training (DoPT)** to examine all documents submitted by probationary IAS officer Puja Khedkar to secure her candidature in the civil services.

Puja Khedkar secured a **rank of 821** in the **2022 upsc civil services Examination**, and was allotted the **Indian Administrative Service (IAS)** under The **Other Backward Classes (OBC)** and **Physically Handicapped (PH)** Quotas.

Questions have been raised about her appointment under these categories.

ARE THERE ANY OTHER CHARGES?

Khedkar also faces **multiple allegations of misconduct**:

- **Seeking special privileges she is not entitled to** as a probationer and **“occupying” the ante chamber** of the District Collector’s office.
- **Using an unauthorised red-blue beacon** on her private car, a luxury Audi sedan which she claims to have received as a “gift”.

ACTIONS TAKEN

- In light of this controversy, the **Maharashtra government on July 8 decided to transfer Khedkar from Pune to Washim**.
- **As per LBSNAA**, her **district training program has been kept on hold** & she has been immediately recalled from her district postings under Govt of Maharashtra. **She has to report to LBSNAA by 23rd July**.
- **Single member committee** formed to **examine documents** submitted by her to secure candidature in Civil Services.

WHAT RULES SHOULD BE FOLLOWED BY CIVIL SERVANTS?

Khedkar’s actions as a civil servant are governed primarily by **two rules**:

- The All India Services (Conduct) Rules, 1968, and
- The Indian Administrative Service (Probation) Rules, 1954.

THE ALL INDIA SERVICES (CONDUCT) RULES, 1968

All IAS, Indian police Service (IPS) and Indian Forest Service officers are governed by the **AIS (Conduct) Rules** from the time they are allotted their service, and begin training.

The rules:

- AIS (Conduct) **Rule 3(1)** states: “Every member of the Service shall at all times **maintain absolute integrity and devotion to duty** and shall do nothing which is unbecoming of a member of the Service.”
- **Rule 4(1)** is more specific about what is “unbecoming”. It states that officers **must not use their “position or influence” to “secure employment for any member of his family with any private undertaking or NGO”**.
- According to **Rule 11(1)**, **officers may accept gifts from “near relatives” OR “personal friends”** with whom they have **“no official dealings”**, on occasions such as **“weddings, anniversaries, funerals and**

religious functions”. However, they must report (to the government) any gift whose value exceeds **Rs 25,000**. This threshold was last updated in 2015.

- Officers should maintain:
 - high ethical standards,
 - integrity and honesty;
 - political neutrality;
 - accountability and transparency;
 - responsiveness to the public, particularly to the weaker sections;
 - courtesy and good behaviour with the public.

RULES FOR PROBATIONERS

There is an **additional set of rules that govern the conduct of officers during their probation period**, which lasts for **at least two years after selection** to the services. **This includes the period of the officers’ training at the Lal Bahadur Shastri National Academy of Administration (LBSNAA) in Mussoorie**.

At the **end of two years**, **officers sit for an examination**, after clearing which they are confirmed in their respective services.

During the **probation period**, officers draw a **fixed salary and travel allowance**.

WHAT ARE THEY NOT ENTITLED TO DURING PROBATION?

But they are **not entitled to, as a right**, a number of benefits that confirmed IAS officers receive. These include:

- An official car with a VIP number plate,
- Official accommodation,
- An official chamber with adequate staff,
- A constable, etc.

CAN PROBATIONARY OFFICERS BE DISCHARGED?

Rule 12 gives the **circumstances in which probationers can be discharged**. These include:

- The central government finding the probationer **“ineligible for recruitment”** or **“unsuitable to be a member of”** the service;
- The probationary **“wilfully” neglecting her probationary studies or duties**;
- The probationer **lacking in “qualities of mind and character”** needed for the service.

The **Centre holds a summary enquiry** before passing an order under these rules — like the one that has been initiated against Khedkar by the DoPT.

The committee will **submit its report within two weeks**.

HOW DID SHE GET INTO THE IAS?

Since the **batch of 1995, 27% seats** in the services have been reserved for the **OBC category**.

The **Physically Handicapped (PH) reservation** was introduced with the batch of **2006 — 3% seats in every category** (General, OBC, SC, and ST) are reserved for the differently abled.

Despite her low rank, Khedkar was allotted IAS, India's premier civil service, **due to these quotas**. However, **if her OBC and PH certificates are proven to have been falsified**, Khedkar stands to be **discharged from service**.

THE DOPT CIRCULAR

A **DoPT circular from 1993** states: “Wherever it is found that a Government servant had **furnished false information or produced a false certificate** in order to secure appointment, **he should not be retained in service**”.

This is **applicable even if the person in question is not a probationer**, and has already been confirmed.

CAN IT BE CHALLENGED?

However, **such a dismissal would likely be challenged** in court, before the **Central Administrative Tribunal (CAT)**, and the **National OBC Commission** — challenges which may drag on for years. **In the interim, the officer may still Continue to be in service**.

THE QUESTION ON HER PHYSICAL DISABILITY

Khedkar was **previously embroiled in a legal battle** at the **CAT** regarding her **PH status**. as per a **CAT order dated February 23, 2023**, UPSC had asked Khedkar to undergo a **medical examination at the AIIMS, New Delhi in April 2022** but she sought a **postponement citing a Covid-19 infection**.

She **did not arrive at the rescheduled examination** as well, although she is learnt to **Have later submitted an MRI report** from a private facility to support her claims.

THE CAT ORDER:

“Despite making multiple attempts by the duty officer in AIIMS to contact the applicant, **no response was received from her**. Therefore the percentage of visual disability could not be assessed,” the **CAT order read**.

THE QUESTION ON HER OBC STATUS

Critics have pointed to **Khedkar's ostensibly well-to-do background to question Her OBC (non-creamy layer) status**.

The OBC category is **subdivided into the creamy and non-creamy layers**, with only the latter benefiting from reservations in government services and institutions. It is **made based on the parents' income, and occupational background**.

WHO IS THE CREAMY LAYER?

- For those **whose parents work in the private sector**, the current threshold to qualify for the non-creamy layer status is an income of under **Rs 8 lakh annually**.
- For those with **parents who work in the public sector, income is not taken into account**. Rather, as per DoPT rules, what qualifies people to be in the creamy layer is:
 - o Either parent becoming a Group-A official before the age of 40, or
 - o Both being Group-B officials with similar ranks.

Conclusion

The case of Puja Khedkar underscores the necessity for strict adherence to the rules governing civil servants, especially during probation. The All India Services (Conduct) Rules, 1968, and the Indian Administrative Service (Probation) Rules, 1954, emphasize integrity and ethical conduct. Khedkar's alleged misconduct and eligibility concerns highlight the need for thorough verification and swift disciplinary action.



CruX of The Hindu & Indian Express

Indian Polity & Governance

Consent of States for CBI Investigations

Context :

- The Government of Madhya Pradesh announced that the Central Bureau of Investigation (CBI) would now require written consent from the state government to initiate any inquiry against state officials. This move comes amidst a backdrop of several states withdrawing general consent for CBI investigations, prompting discussions about the need for new legislation to define the CBI's status, functions, and powers.

Why Did Madhya Pradesh Mandate Prior Consent for CBI Inquiries?

- **Decision Considerations:** This decision considers changes in the Bharatiya Nyaya Sanhita (BNS) and recent consultations with the CBI.
- **Legal Provision:** Also under Section 17A of the Prevention of Corruption Act, 1988, agencies need permission to conduct inquiries against government officials.
- **Section 17A:** It provides that no enquiry or inquiry or investigation shall be conducted by a

police officer into any offence alleged to have been committed by a public servant under the PC Act without prior approval from the appropriate authority.

- **Previous Consent:** All previous general consent for any other offences and any consent given by the state government on a case-by-case basis for any other offence will also continue to apply.

Implications of Madhya Pradesh's Decision

- **Slowing Down Process:** The requirement for written consent could slow down the process of initiating CBI inquiries against state officials.
- **Administrative Burden:** It may increase the administrative burden on both the state government and the CBI, potentially affecting the efficiency of corruption investigations.
- **State Control:** The decision reflects a broader trend of states asserting more control over central investigative agencies, impacting the dynamics of federal governance in India.

What are the Key Facts About the Central Bureau of Investigation?

- **Establishment:** Following recommendations by the Santhanam Committee on Prevention of Corruption (1962–1964), the CBI was officially established in 1963 by a resolution of the Ministry of Home Affairs.
- **Investigative Powers:** It derives its investigative powers from the Delhi Special Police Establishment Act, 1946.
- **Operates Under:** The Ministry of Personnel, Public Grievances, and Pensions, which falls under the Prime Minister's Office.
- **Supervision:** Investigations under the Prevention of Corruption Act, CBI is supervised by the Central Vigilance Commission.
- **Nodal Police Agency:** It acts as the nodal police agency for coordinating investigations with Interpol member countries.
- **Director:** The director of the CBI is also the Inspector General of Police (IGP) of the Delhi Special Police Establishment (DSPE) and is responsible for the administration of the organisation.
- **Appointment of CBI Director:** Initially appointed under the DSPE Act, 1946. Following the Supreme Court's recommendations in the Vineet Narain case, the process was revised in 2003.
- **Current System:** Under the Lokpal Act, 2014, a committee comprising the Prime Minister, Leader of the Opposition, and Chief Justice of India (or a

Supreme Court Judge) recommends the appointment.

- **Tenure:** The Director enjoys a tenure security of two years, extendable up to five years in the public interest.
- **Extensions:** In 2021, the President issued two ordinances to extend the tenures of the directors of the CBI and the Enforcement Directorate from two years to up to five years.
- **Amendments:** The chiefs of the CBI can now be given three annual extensions, as per the amendments made to the DSPE Act, 1946.

Legal Framework Governing the CBI's Jurisdiction

- **Delhi Special Police Establishment (DSPE) Act, 1946:** The CBI operates under this act.
- **Section 6:** CBI officers need state government consent to exercise powers in any state area, excluding Union Territories or railway areas.
- **Entry 80 of the Union List:** The legal foundation of the CBI is based on Entry 80 of the Union List, allowing the extension of police powers to other States with their permission.
- **Advance Insurance Co. Ltd Case, 1970:** The CBI, being a force for Union Territories, can only investigate States with their consent, as determined in this case.
- **Consent:** Consent can be either case-specific or general. General consent is usually provided to facilitate investigations into corruption among central government employees within states, as 'police' is Entry 2 in the State List under the Seventh Schedule of the Constitution.

Primary Functions

- **Anti-Corruption Crimes:** Investigates cases under the Prevention of Corruption Act against public officials, central government employees, and public sector undertakings.
- **Economic Crimes:** Handles major financial scams, economic frauds, bank frauds, cyber crimes, and smuggling of narcotics, antiques, and other contraband items.
- **Special Crimes:** Investigates serious and organised crimes such as terrorism, bomb blasts, kidnapping for ransom, and mafia-related activities.
- **Suo Moto Cases:** Can initiate investigations in Union Territories and, with central government authorisation, in states with their consent. The Supreme Court and High Courts can also direct the CBI to investigate crimes anywhere in the country without state consent.

Issues Highlighting the Need for New Legislation for the CBI

- **Need for Clear Legislation:** A parliamentary panel in 2023 emphasised the need for new legislation to clearly define the CBI's status, functions, and powers.
- **Complicated Framework:** The current legislative framework complicates the CBI's ability to conduct investigations due to states' growing reluctance to provide general consent.
- **Staffing Issues:** There are around 1,700 vacant posts in the CBI against a sanctioned strength of 7,295. Vacancies in executive ranks, law officers, and technical officers are increasing the pendency of cases.
- **Quality of Investigations:** The quality of investigations and overall effectiveness of the agency are impacted by these vacancies.
- **Transparency in CBI's Functioning:** The details of cases registered with the CBI, progress in their investigation, and outcomes are not publicly available. The annual report of CBI is also not accessible to the general public.
- **Criticism:** The CBI is still guided by the DPSE Act 1946, which hampers its accountability and autonomy. It has been criticised for being politically biased and vulnerable to undue pressure.
- **Legal Challenges:** In 2013, the Guwahati HC deemed CBI unconstitutional for lacking statutory backing, but the Supreme Court later stayed the decision. Instances of corruption and nepotism have also been reported.

Way Forward

- **New Legislation:** A parliamentary panel in 2023 recommended enacting a new law to define the status, functions, and powers of the CBI and to ensure objectivity and impartiality in its functioning. The recommendation came in response to states' growing reluctance to provide general consent, complicating the CBI's ability to conduct investigations.
- **Filling Vacancies:** The panel recommended that the Director of CBI should monitor the progress of filling vacancies quarterly. The CBI should reduce dependence on deputations and recruit more permanent staff, particularly for the ranks of inspector of police and deputy superintendent of police.
- **Transparency:** CBI should publish case statistics and annual reports on its website. Providing access to information would make CBI's functioning more

accountable, responsible, efficient, and transparent.

- **Centralised Case Management System:** The panel suggested that CBI should have a centralised case management system, containing case details and progress. The system should allow tracking of case progress and be accessible to the public.

Conclusion

The requirement for written consent from state governments for CBI investigations highlights the need for clear legislation defining the CBI's status, functions, and powers. The current legislative framework complicates the CBI's ability to conduct investigations due to states' growing reluctance to provide general consent. Addressing staffing issues, enhancing transparency, and ensuring objectivity and impartiality in the CBI's functioning are crucial steps forward. New legislation and a centralised case management system can help address these challenges and make the CBI more accountable, responsible, efficient, and transparent.

Constitutional Morality : Principles, Challenges, and Indian Case Studies

Context :

- The arrest of a serving chief minister on corruption charges brings up several legal, political, and constitutional questions. It also challenges the adherence to constitutional morality in a parliamentary democracy like India.

Allahabad High Court Judgment in Kiran Rawat

Vs. State of UP

1. **Breach of Constitutional Morality:** The Allahabad High Court's ruling in the case of Kiran Rawat vs State of UP is viewed as a breach of constitutional morality.
2. **Denial of Protection:** The court denied protection to an inter-faith couple in a live-in relationship from police harassment and implied that their relationship was immoral, illegal, and against personal laws.

About Constitutional Morality

1. **Definition:** Constitutional morality refers to the principles and values embedded in a constitution that guide the actions of both the government and its citizens.
2. **Origin:** The concept was introduced by British Classicist George Grote in the 19th century, who defined it as a "paramount reverence for the forms of the Constitution."
3. **In India:** Dr. B.R. Ambedkar was the first to use the term in India.

Core Elements of Constitutional Morality

1. **Constitutional Values:** Uphold the core values enshrined in the Constitution, such as justice, liberty, equality, fraternity, secularism, and individual dignity.
2. **Rule of Law:** Ensure that everyone, including government officials, is subject to and accountable under the law.
3. **Democratic Principles:** Facilitate the functioning of a representative democracy where citizens participate in decision-making and hold their representatives accountable.
4. **Fundamental Rights:** Respect and protect the fundamental rights guaranteed by the constitution, such as equality, freedom of speech, and the right to life and personal liberty.
5. **Separation of Powers:** Maintain a balance of power among the legislative, executive, and judicial branches to prevent any single branch from becoming too powerful.
6. **Checks and Balances:** Implement mechanisms and institutions that prevent abuse of power and protect individual rights.
7. **Constitutional Interpretation:** Interpret the constitution in ways that promote its principles and adapt to changing societal needs.
8. **Ethical Governance:** Ensure ethical conduct, transparency, accountability, and integrity in public service.

Constitutional Morality and the Indian Constitution

1. **Implicit Concept:** The term “constitutional morality” is not explicitly stated in the Indian Constitution.
2. **Core Values:** The concept is intrinsic to the Constitution’s core values, such as justice, equality, and liberty.
3. **Embedded in Constitution:** These values are embedded in various sections of the Constitution, including the Preamble, Fundamental Rights, and Directive Principles of State Policy.
4. **Supreme Court Judgments:** The essence of constitutional morality is also evident in numerous Supreme Court judgments.

Major Judgments Upholding Constitutional Morality

1. **Kesavananda Bharati v. State of Kerala, 1973:** Established the “basic structure doctrine,” limiting Parliament’s power to amend the Constitution and ensuring its core principles remain intact. This case is an early example of the court upholding the Constitution’s spirit.

2. **SP Gupta Case (First Judges Case), 1982:** The Supreme Court recognized a constitutional breach as a severe violation of constitutional morality.
3. **Naz Foundation v. Government of NCT of Delhi, 2009:** Decriminalized consensual same-sex relationships between adults. The court emphasized that “constitutional morality” should prevail over societal norms, protecting individual rights.
4. **Indian Young Lawyers Association v. State of Kerala (Sabarimala Case), 2018:** The court struck down the practice of excluding women of a certain age group from the Sabarimala temple. It highlighted that “constitutional morality” encompasses justice, equality, liberty, and fraternity, which surpass religious customs that restrict women’s entry.
5. **Navtej Singh Johar v. Union of India, 2018:** This judgment read down Section 377 of the Indian Penal Code, which criminalized homosexuality.
6. **Joseph Shine vs Union of India (2018):** Struck down the law on adultery, declaring it an infringement on the rights to equality, dignity, privacy, and autonomy.
7. **Shafin Jahan vs Asokan K.M. (2018):** Upheld the right to marry a person of one’s choice regardless of religion or caste, overturning the annulment of a Hindu-Muslim marriage.
8. **Shakti Vahini vs Union of India (2018):** Condemned honour killings and violence against inter-caste and inter-religious couples, setting guidelines for their prevention and protection.

Challenges of Upholding Constitutional Morality

1. **Absence of a Precise Definition:** The concept of constitutional morality lacks a precise definition, causing diverse interpretations influenced by individual viewpoints.
2. **Encroachment of Judicial Dominance:** Emphasizing constitutional morality can elevate judicial authority, leading to judicial involvement in legislative functions. This involvement breaches the separation of powers principle.
3. **Clashes with Popular and Religious Values:** Constitutional morality can sometimes oppose popular morals or religious beliefs.
 - Such clashes may trigger social unrest and opposition.

- Notable instances include the Supreme Court's decisions on decriminalizing homosexuality and permitting women's entry into the Sabarimala temple, which faced protests from certain societal groups.
4. **Impact of Political and Personal Influences:** Constitutional morality can be swayed by political motives or personal biases.
 - These influences can compromise the objectivity and integrity of constitutional principles.
 - For instance, the recent changes to the appointment committee for the Election Commission of India and the amended IT Rules 2023 have faced criticism for political interference.
 5. **Judicial Activism vs. Judicial Restraint:** Finding a balance between judicial activism and judicial restraint is challenging.
 - While judicial activism can uphold rights and constitutional values, excessive activism can intrude on executive and legislative domains.
 - Judicial activism and judicial restraint are the two terms used to describe the philosophy and motivation behind some judicial decisions.
 - Judicial activism refers to a theory of judgment that takes into account the spirit of the law and the changing times, while judicial restraint relies on a strict interpretation of the law and the importance of legal precedent.
 - Judicial restraint is a theory of judicial interpretation that encourages judges to limit the exercise of their own power. It asserts that judges should hesitate to strike down laws unless they are obviously unconstitutional.
 6. **Enforcement and Compliance Issues:** Despite a strong constitutional framework, effective enforcement and adherence are challenging. Problems such as implementation gaps, delays in justice delivery, and lack of public awareness about constitutional rights contribute to these challenges.

Steps Needed to Uphold Constitutional Morality

1. **Clear Definition and Understanding:** Establish a clear and comprehensive definition of constitutional morality to provide a solid foundation for its interpretation and application.
2. **Public Awareness and Education:** Promote public awareness and education about constitutional morality.

Enhance civic education, conduct public discussions, and engage with various stakeholders to foster a deeper understanding of its principles.

3. **Judicial Restraint and Respect for Separation of Powers:** Focus on judicial restraint and respect for the separation of powers to address concerns about judicial supremacy.

The judiciary should exercise caution in legislative matters and maintain a balance between upholding constitutional values and respecting other branches of government.

4. Strengthening Institutions:

- Uphold constitutional morality by strengthening the independence, integrity, and effectiveness of institutions like the Election Commission, National Investigation Agency (NIA), and Central Bureau of Investigation (CBI).
- Ensure transparent appointments, reduce political interference, and enhance accountability mechanisms.

5. **Promoting Civic Education:** Increase public awareness and understanding of constitutional rights and values, especially among the youth.

Implement civic education programs in schools and colleges to instill a sense of constitutional responsibility and empower citizens to participate meaningfully in democratic processes.

6. **Enhancing Access to Justice:** Improve access to justice, particularly for marginalized and vulnerable communities, to uphold constitutional principles.

Expand legal aid services, reduce judicial backlog, simplify legal procedures, and promote alternative dispute resolution mechanisms.

7. **Encouraging Ethical Leadership:** Promote ethical leadership and governance practices at all levels to uphold constitutional values.

Leaders and public officials should demonstrate integrity, accountability, and a commitment to serving the public interest, setting a positive example for society.

8. **Adapting to Evolving Challenges:** Continuously adapt legal and institutional frameworks to address emerging challenges to constitutional morality.

These include technological advancements, globalization, and environmental concerns, ensuring relevance and effectiveness.

Do Chief Ministers in India Lack Immunity from Arrests?

1. **Constitutional Provisions:** Constitutionally, only the President of India and Governors of states have immunity from civil and criminal proceedings until their terms conclude.
2. **Article 361:** This article states that these officials are not liable to any court for acts performed in their official duties.
3. **Prime Ministers and Chief Ministers:** This immunity does not extend to Prime Ministers or Chief Ministers, who are subject to the principle of equality before the law as advocated by the Constitution.
4. **Arrest Alone:** However, arrest alone does not lead to disqualification.

Conclusion :

The concept of constitutional morality is crucial for upholding the principles and values embedded in the Indian Constitution. While there are challenges in defining and enforcing constitutional morality, steps such as promoting public awareness, strengthening institutions, and encouraging ethical leadership can help uphold these principles. The arrest of a chief minister highlights the importance of adhering to constitutional morality and the rule of law in a parliamentary democracy like India.

Demand for Bhil Pradesh

Context :

- Recently, the demand for a separate Bhil state, “Bhil Pradesh,” has been gaining momentum in Rajasthan and neighbouring states.

Who are Bhills and What are their Demands?

- **About Bhills:** Bhills are considered one of the oldest tribes in India and identified as one of the Dravidian racial tribes of Western India belonging to the Austroloid group of tribes. They are a cross section of the great Munda race and a wild tribe of India and speak a language (Bhili) of Dravidian origin. Once they were the rulers in parts of Rajasthan, Gujarat, Malwa, Madhya Pradesh, and Bihar. As per Census 2011, there are 1.7 crore Bhills across the country. The largest concentration is in Madhya Pradesh at about 60 lakh, followed by 42 lakh in Gujarat, 41 lakh in Rajasthan, and 26 lakh in Maharashtra. Bhills are Hindus by religion and appease deities of forest and evil spirits beside pujas of Lord Shiva and Durga.

Demand of Bhil Pradesh

- **Historical Context:** The demand for Bhil Pradesh dates back to 1913 when Govind Giri Banjara, a tribal activist and social reformer, first called for

a separate Bhil state during a mobilization at Mangarh Hill. This was followed by a tragic massacre where British forces killed around 1,500 tribals. Over the decades, various tribal leaders, including political figures, have periodically revived this demand.

- **Proposed State:** The proposed Bhil Pradesh would cover 49 districts across four contiguous states including Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra. This would involve 12 districts from Rajasthan.

Reasons for the Demand

- **Cultural and Linguistic Homogeneity:** The Bhil community shares a common language, Bhili, and cultural practices across the four states. Proponents argue that a separate state would better preserve and promote their cultural heritage.
- **Geographic Considerations:** The proposed Bhil Pradesh would encompass 49 districts across these four states, with significant tribal populations. This region has historical and cultural ties that transcend current state boundaries.
- **Political Marginalisation:** Tribal leaders claim that existing political structures have failed to adequately address the needs and aspirations of the Bhil community. A separate state is seen as a solution to ensure more focused governance and development.
- **Developmental Focus:** Proponents believe a separate state would lead to more tailored development policies and better utilization of resources for tribal welfare. Historical neglect and slow implementation of laws like the Panchayats (Extension to Scheduled Areas) Act, 1996, highlight the need for more localized governance.

Criticism of Demand

- **Fragmentation:** Critics argue that creating states based on caste or community could lead to further fragmentation and instability.
- **Unity of India:** The Fazl Ali Commission had opined that the unity of India should be regarded as the primary consideration in any redrawing of the country’s political units.
- **Resistance from Political Parties:** There is also resistance from established political parties which have complex stakes in maintaining the status quo.
- **Social Divisions:** Opponents argue that forming states based on tribal identity could exacerbate social divisions.

What are the Other Regions Demanding Separate States?

- **Vidarbha:** It comprises the Amravati and Nagpur divisions of eastern Maharashtra. The State Reorganisation Act of 1956 recommended the creation of Vidarbha state with Nagpur as the capital. However, to alleviate the fear of neglect among Vidarbha people after its inclusion in Maharashtra state, Nagpur was designated as the second capital. The backwardness of the region due to the neglect of successive state governments is justified as the basis for the demand for a separate state of Vidarbha.
- **Bodoland:** The Bodos are the largest ethnic and linguistic community in northern Assam. The agitation for the creation of a separate Bodoland state resulted in an agreement in 2003 between the GoI, the Assam state government, and the Bodo Liberation Tigers Force. According to the agreement, Bodos were granted the Bodoland. There have been demands from other quarters as well for separate states including Gorkhaland, Kukiland, and Mithila, etc.

Issues Arising due to the Creation of New States

- **Dominance of One Community:** Different statehoods may lead to the hegemony of the dominant community/caste/tribe over their power structures. This can lead to the emergence of intra-regional rivalries among the sub-regions.
- **Political Consequences:** The creation of new states may also lead to certain negative political consequences like a small group of legislators could make or break a government at will.
- **Inter-State Disputes:** There is also the possibility of an increase in inter-state water, power, and boundary disputes. For example, disputes between Delhi and Haryana over water sharing.
- **Financial Burden:** The division of states would require huge funds for building new capitals and maintaining a large number of Governors, Chief Ministers, Ministers, and administrators as the case in the division of Andhra Pradesh and Telangana.
- **Power Transfer:** The creation of smaller states only transfers power from the old state capital to the new state capital without empowering already existing institutions like Gram Panchayat, District Collector, etc., rather than diffusion of development in the backward areas of the states.

Way Forward

- **Strengthening National Integration Council:** The National Integration Council can be strengthened to deal with the challenges of regionalism.
- **High-Powered Commission:** A high-powered commission can also be formed to assess the efficacy of existing laws & policies and propose necessary amendments to address the regional concerns.
- **Strengthening Institutions:** The 73rd and 74th Constitutional Amendments provided a strong foundation for Panchayati Raj and Urban Local Bodies. Strengthening these institutions through capacity building, financial empowerment, and constitutional safeguards can be more effective.
- **Finance Commission's Recommendations:** The Finance Commission's recommendations can be used as a benchmark for equitable distribution. Additionally, mechanisms for efficient resource utilization, such as performance-based budgeting, need to be strengthened.
- **Special Package:** A Special Package, similar to the one provided to Telangana after its creation and tailored to specific regional needs, can be designed.
- **Economic Parameters:** Economic parameters like per capita income, infrastructure index, and human development indicators can be used to identify deserving regions.
- **NITI Aayog's Aspirational Districts Programme:** The NITI Aayog's Aspirational Districts Programme focuses on underdevelopment. Similar programs can be launched for regions demanding statehood.
- **Inter-State Council:** The Inter-State Council provides a platform for center-state dialogue. Similar mechanisms can be created at the regional level.
- **Cultural Preservation:** Initiatives like the National Cultural Fund and the Sahitya Akademi support cultural preservation. Region-specific programs, including language promotion and cultural festivals, can be expanded.

Conclusion :

The demand for Bhil Pradesh highlights the need for cultural preservation and focused governance for the Bhil community. While there are valid reasons for the demand, there are also significant challenges and criticisms that need to be addressed. Strengthening

national integration, forming high-powered commissions, and implementing tailored development programs can help address the concerns and ensure equitable and efficient governance for all regions.

EXERCISE MAITREE

The Indian Army contingent departed for the 13th edition of India-Thailand joint military Exercise MAITREE. The exercise is scheduled to be conducted from 1st to 15th July 2024 at Fort Vachira Prakan in Tak Province of Thailand.

PREVIOUS EDITION:

Last edition of the same exercise was conducted at Umroi, Meghalaya in September 2019.

PARTICIPANTS FROM INDIA:

The Indian Army contingent comprising 76 personnel is being represented mainly by a Battalion of the LADAKH SCOUTS along with personnel from other arms and services.

AIM OF THE EXERCISE

- To foster Military Cooperation between India and Thailand.
- Enhance combined capabilities in executing Joint Counter Insurgency/Terrorist Operations in Jungle and Urban Environment under Chapter VII of United Nations Charter.
- The Exercise will focus on high degree of physical fitness, joint planning and Joint tactical drills.
- Will enable the two sides to share their best practices in Tactics, Techniques and Procedures for conduct of joint operations.
- The Exercise will facilitate developing interoperability, bonhomie and camaraderie between soldiers of both the countries.

ACTIVITIES DURING THE EXERCISE

Tactical Drills to be practiced during the exercise will include :

- Creation of a Joint Operation Centre.
- Establishing an Intelligence & Surveillance Centre.
- Employment of Drones and Counter Drone Systems.
- Securing of a Landing Site,
- Small Team Insertion & Extraction,
- Special Heliborne Operations,
- Cordon and Search Operations,
- Room Intervention Drills and
- Demolition of Illegal Structures.



Abhaya Mudra: Symbol of Fearlessness in Buddhist and Hindu Traditions



Why in the News?

- In his first speech as the Leader of the Opposition in Lok Sabha, Rahul Gandhi referred to the abhaya mudra, a gesture with a raised open palm that symbolizes reassurance and freedom from fear.
- He highlighted that the abhaya mudra is a common symbol in the depictions of Lord Shiva, Guru Nanak, Jesus Christ, and figures in Islam, Buddhism, and Jainism.

MUDRAS IN BUDDHISM

About Mudras

- Mudras are a non-verbal mode of communication and self-expression, consisting of hand gestures and finger postures.
- They are symbolic sign-based finger patterns that replace spoken words and evoke ideas symbolizing divine powers or deities.
- The composition of a mudra is based on specific finger movements, constituting a highly stylized form of gestural communication.

Mudras in Buddhism

- Mudras represent dominant themes in episodes of the Buddha's life, serving as narrative and pedagogical devices.
- Buddhist art has primarily retained five mudras for the representations of the Buddha.
- Each of the five transcendental (Dhyani) Buddhas is assigned one of these mudras, consistently depicted in visual arts with their specific mudra.

Five Primary Mudras

1. Abhaya Mudra

- Associated with the **fifth Dhyani-Buddha, Amoghasiddhi**.
- Symbolizes **peace and friendship**, denoting acts of **pacification, reassurance, or protection**.
- Performed using either the right hand or both hands, with the fingers outstretched, palms slightly cupped, and facing the viewer.

2. Dharmachakra Mudra

- Associated with the **first Dhyani-Buddha, Vairochana**.
- Symbolizes the **Wheel of Dharma** and the occasion when Buddha preached his first sermon after Enlightenment.
- Involves the thumb and index finger of both hands touching at their tips to form a circle, representing the union of **method and wisdom**.

3. Bhumisparsha Mudra

- Symbolizes the moment when **Siddhartha attained enlightenment** under the bodhi tree.
- Associated with the **Dhyani-Buddha Akshobhya**.
- Depicted in the seated position, with the right hand reaching over the knee, fingers extending downwards to touch the earth, invoking the earth goddess.

4. Varada Mudra

- Associated with the **third Dhyani-Buddha, Ratnasambhava**.
- Known as the **boon-granting mudra**.
- Performed using the left hand, with the palm and fingers angled downward and facing the viewer.

5. Dhyana Mudra

- Associated with the **fourth Dhyani-Buddha, Amitabha**.
- Denotes a state of **meditation**.
- Performed in the seated padmasana position, with both hands resting on the lap, the right hand placed palm-up over the left hand.

Abhaya Mudra in Hindu Religion:

- Over time, the Abhaya Mudra appeared in depictions of Hindu deities, and the Buddha himself was absorbed into the Hindu pantheon as the ninth avatar of the Puranic god Vishnu.
- The Abhaya Mudra is seen in the depictions of Lord Shiva, Lord Vishnu, and Lord Ganesha, symbolizing protection, reassurance, and fearlessness.

Importance:

- The Abhaya Mudra is a powerful symbol of reassurance and fearlessness, conveying a sense of security and protection to those who see it.

- In the context of Rahul Gandhi's speech, the Abhaya Mudra is a call to action, urging people to confront their fears and stand up against the culture of fear and oppression.
- The gesture is also a reminder of the importance of promoting a culture of courage, compassion, and fearlessness in Indian society.

Historical Significance:

- The Abhaya Mudra has been depicted in various forms of Buddhist art and architecture, including sculptures, paintings, and murals.
- The gesture has also been used in various Buddhist rituals and practices, including meditation and prayer.

Cultural Significance:

- The Abhaya Mudra is a symbol of the cultural and religious diversity of India, highlighting the country's rich cultural heritage and its ability to absorb and adapt various influences.
- The gesture is also a reminder of the importance of promoting interfaith dialogue and understanding in India, and of the need to celebrate and appreciate the country's diverse cultural and religious traditions.

Conclusion :

The Abhaya Mudra is a **significant gesture that has its roots in Buddhism and has been adopted in Hinduism, symbolising fearlessness, protection, and reassurance**. The gesture is a powerful reminder of the importance of standing up against fear and oppression, and promoting a culture of courage, compassion, and fearlessness in Indian society.

Centre Stops School Scheme Funds to Delhi, Punjab & Bengal After States Refuse to Participate in PM-SHRI



Introduction:

- The **Education Ministry** has stopped funds to **Delhi, Punjab, and West Bengal** under the **Samagra Shiksha Abhiyan (SSA)** scheme after these states refused to participate in the **Pradhan Mantri Schools for Rising India (PM-SHRI)** scheme.

PM-SHRI Scheme:

- The **PM-SHRI scheme** aims to upgrade at least 14,500 government schools into “exemplar” institutions to showcase the implementation of the Centre’s **National Education Policy (NEP)** of 2020.
- The scheme has an overall budget of over **Rs 27,000 crore** for the next five years, with the **Modi government** and states shouldering **60 and 40 per cent** of the financial burden, respectively.

Reason for Stopping Funds:

- The three states refused to sign a **Memorandum of Understanding (MoU)** with the Education Ministry, alleging that they are yet to receive third and fourth installments of SSA funds for the last year’s **October-December** and **January-March** periods.
- The states also alleged that they have not received funds for the current financial year’s **April-June** quarter.

Pending Funds:

- **Delhi** is yet to receive **Rs 330 crore**, **Punjab** awaits **Rs 515 crore**, and **West Bengal** awaits **Rs 1,000 crore** for the aforementioned three quarters.

Objections to PM-SHRI:

- **West Bengal** has objected to attaching the prefix “PM-SHRI” to their schools, citing that the states bear 40 per cent of the financial burden.
- **Punjab** had signed an MoU in October 2022 but later decided to opt out, citing that they are implementing their own schemes, namely **Schools of Eminence, Schools of Brilliance, and Schools of Happiness**, which will be aligned with the **NEP**.

Centre’s Response:

- A senior official from the Ministry claimed that states cannot receive funds under **SSA** while not implementing the **PM-SHRI scheme**, which is a part of the programme.

Other States’ Participation:

- **Tamil Nadu** and **Kerala** have expressed their willingness to participate in the **PM-SHRI scheme**.

What is PM-SHRI?

- **PM-SHRI** is a centrally sponsored scheme that aims to upgrade existing schools to reflect the key features of the new **National Education Policy, 2020**.
- The scheme will cover **14,500 existing schools**, which will be redeveloped to become “model schools” that capture the essence of the **NEP**.

Benefits of PM-SHRI:

- The scheme will provide **high-quality education** in an **equitable, inclusive, and joyful school environment**.
- The schools will adopt a **modern, transformational, and holistic approach** to imparting education.
- The schools will be upgraded with **labs, libraries, and art rooms**, and will be developed as **green schools** with **water conservation, waste recycling, energy-efficient infrastructure**, and integration of the **organic lifestyle** as part of the curriculum.

Centrally Sponsored Scheme:

- The **PM-SHRI scheme** is sponsored by the Central government, with the Centre bearing 60 per cent of the implementation cost and the state or UT bearing the remaining 40 per cent.
- In some states, such as **Himachal Pradesh, Uttarakhand, Jammu and Kashmir**, and the **northeast**, the contribution of the Central government can go up to 90 per cent.

Other Central Schemes for Students:

- The **Pradhan Mantri Poshan Shakti Nirman scheme (PM Poshan Scheme)** provides **hot-cooked meals** to students in government and government-aided schools.
- The centre has also launched scholarship schemes, including **PRAGATI (Scholarship for Girl Students)** and **PM Yashasvi Scheme** for students from the **Other Backward Classes, economically backward classes, and non-notified, nomadic and semi-nomadic tribes**, among others.

Letters Exchanged:

- **West Bengal’s Education Minister Bratya Basu** and **Education Secretary Manish Jain** wrote letters to the Ministry seeking release of SSA funds.
- The **Delhi government** also wrote to the Centre seeking release of SSA funds.
- **Punjab’s Education Secretary Kamal Kishore Yadav** wrote to the Centre seeking release of SSA funds and stated that Punjab was implementing its own schemes, which would be aligned with the **NEP**.

Centre to Revise Criteria for Classical Language Status



In response to the increasing demand for classical language status for various languages, including Marathi, the Central Government has decided to revise the criteria for this recognition.

The Linguistics Expert Committee of the Union Culture Ministry has submitted a report recommending changes in the criteria for granting classical status to languages.

About Classical Language Status:

Current Criteria:

- High Antiquity:** The language should have a documented history of 1,500-2,000 years.
- Valuable Heritage:** The language must possess a body of ancient literature or texts that are considered a valuable heritage by its speakers.
- Original Literary Tradition:** The literary tradition of the language should be original and not derived from another speech community.
- Distinct Language and Literature:** The language and its literature should be distinct from its modern form, with a possible discontinuity between the classical language and its later forms or offshoots.

Benefits of Classical Language Status:

- International Awards:** Two major annual international awards are given to eminent scholars in the recognized languages.
- Centre of Excellence:** A dedicated centre for the study of the classical language is established.
- Professional Chairs:** The University Grants Commission is requested to create a certain number of Professional Chairs in Central universities for the classical languages.

Classical Languages in India:

To date, six languages have been granted Classical Language status in India:

- Tamil:** Declared in 2004
- Sanskrit:** Declared in 2005
- Telugu:** Declared in 2008
- Kannada:** Declared in 2008
- Malayalam:** Declared in 2013
- Odia:** Declared in 2014

Demand for Marathi:

- The demand for classical language status for Marathi has been pending for over a decade.
- In 2014, the then Maharashtra Chief Minister Prithviraj Chavan formed a committee of Marathi experts, chaired by Prof. Ranganath Pathare, which concluded that Marathi meets all the criteria for classical language recognition.
- The Shiv Sena-BJP government in Maharashtra has recently formed a "persuasion" committee to advocate for this recognition, while the Congress party has also voiced its support.

Timeline :

- 2014:** Maharashtra Chief Minister Prithviraj Chavan forms a committee to explore the possibility of granting classical language status to Marathi.
- 2022:** Union Culture Minister G. Kishen Reddy informs Parliament that the proposal for Marathi is under active consideration.
- 2023:** The Linguistics Expert Committee submits a report suggesting changes in the criteria for classical status.

Political Significance:

- The demand for classical language status for Marathi has gained renewed attention with the upcoming Maharashtra Assembly election.
- The revision of the criteria may delay the decision on granting this status to Marathi and other languages such as Bengali, Assamese, and Maithili.
- This decision has significant implications for the promotion and development of languages and the preservation of India's cultural and literary heritage.
- The move underscores the importance of languages in shaping India's cultural identity and carries political weight, as the recognition is seen as a matter of pride for the people of Maharashtra.

The revision of the criteria represents a significant step toward recognizing the cultural and historical importance of languages in India, potentially paving the way for more languages to achieve classical status in the future.

Ministry of Culture & World Heritage Young Professionals Forum 2024



- **Host of Prestigious UNESCO Event:** India hosts UNESCO World Heritage Committee meeting in New Delhi, July 21-31, 2024.

World Heritage Young Professionals Forum 2024:

- Inaugurated on July 14, 2024, themed “World Heritage in the 21st Century: Building Capacities and Exploring Opportunities for Youth.”

Organizers and Participants:

- **Host:** Pt. Deendayal Upadhyaya Institute of Archaeology, under Archaeological Survey of India (ASI).
- **Guests:** Inaugurated by Sh. Govind Mohan, Secretary Ministry of Culture, attended by Sh. Yadubir Singh Rawat, Director General, ASI, Sh. Vishal Sharma, Ambassador to UNESCO.
- **Participants:** 50 young professionals (20 from India, 30 international).

Objectives and Themes:

- **Capacity Building:** Enhancing skills in protecting, preserving, and promoting natural and cultural World Heritage.
- **Educational Focus:** Understanding global concepts of World Heritage and Sustainable Development.
- **Sub-Themes:** Addressing climate change, sustainable development practices.

Activities:

- **Educational Visits:** Participants visit Qutb Minar, Red Fort, Humayun’s Tomb (Delhi), Taj Mahal (Agra).
- **Knowledge Exchange:** Presentations, roundtable discussions, site visits with local, international experts.

Outcomes:

- **Declaration:** Presented to the 46th session of the World Heritage Committee on July 22, 2024.
- **Impact:** Emphasizes community involvement, technological innovation, sustainable tourism in heritage conservation.

World Heritage Young Professionals Forum:

- **Purpose:** Facilitates intercultural learning among young professionals, heritage experts.
- **Focus Areas:** World Heritage principles, climate change impacts, innovative technologies, sustainable tourism.
- **Empowers youth** in heritage conservation, global heritage conventions.

About the World Heritage Committee:

- The World Heritage Committee is a committee of the United Nations Educational, Scientific, and Cultural Organization (UNESCO).
- The Committee is responsible for the implementation of the World Heritage Convention, defines the use of the World Heritage Fund, and allocates financial assistance upon requests from States Parties.

Significance of the Event:

- The hosting of the World Heritage Young Professionals Forum 2024 and the 46th Session of the World Heritage Committee in India highlights the country’s commitment to preserving and promoting its cultural and natural heritage.
- The event provides an opportunity for India to showcase its rich cultural heritage and its efforts towards sustainable development.
- The Forum will also provide a platform for young professionals from around the world to share their experiences and ideas on heritage conservation and sustainable development.

NITI Aayog Launches ‘NITI GearShift Challenge’ to Promote Zero-Emission Trucks in India



NITI Aayog has launched the **'NITI GearShift Challenge'** as part of the **e-FAST India initiative**, a pioneering hackathon aimed at fostering innovative business models for the adoption of zero-emission trucks in India. This initiative addresses the nation's economic and environmental challenges.

Key Points:

- **e-FAST India Initiative:** Launched in **September 2022**, this platform aims to accelerate the transition towards cleaner and greener freight transportation in India, supporting the country's **2070 net-zero commitments**.
- **NITI GearShift Challenge:** A hackathon inviting students, transport service practitioners, academics, and researchers to develop innovative business models addressing financial, technical, and operational challenges in adopting electric trucks.
- **Collaboration:** Organized in collaboration with **IIM Bangalore, Smart Freight Centre India, CALSTART/Drive to Zero, and WRI India**. The challenge has garnered participation from e-FAST India knowledge partners, financial institutions, and industry forums.
- **Objective:** To foster innovative business models for the adoption of zero-emission trucks in India, addressing the nation's pressing economic and environmental challenges.
- **Importance:** Adoption of electric trucks is crucial for India to meet its **2070 net-zero commitments**, marking a pivotal move towards sustainable freight transportation in the country.

About e-FAST India Initiative:

- **Launch:** e-FAST India was launched in **September 2022**.
- **Objective:** The platform aims to galvanize the transition towards cleaner and greener freight transportation in India.
- **Key Features:** Facilitates active collaborations at national and international levels, supports ideation and development of pilot programs on a scalable basis, and explores technology integration and associated research.
- **Stakeholders:** Brings together different stakeholders, including the government, Original Equipment Manufacturers (OEMs), Logistics Service Providers, Shippers, and industry experts to enable the development and adoption of electric technology in the freight sector at scale.

- **Knowledge Partners:** Supported by the collaborative efforts of **12 knowledge partners**.

Importance:

- **Sustainable Freight Transportation:** Adoption of electric trucks is crucial for reducing greenhouse gas emissions and promoting a cleaner environment.
- **Economic Benefits:** Transitioning to electric trucks can reduce operating costs and increase efficiency.
- **Innovative Business Models:** The **NITI GearShift Challenge** encourages the development of innovative business models, promoting entrepreneurship and innovation in the electric vehicle sector.
- **Addressing Challenges:** Provides a comprehensive approach to addressing financial, technical, and operational challenges in adopting electric trucks.
- **Net-Zero Commitments:** Supports India's **2070 net-zero commitments**, contributing to efforts to mitigate climate change.

PM-DAKSH Yojana



The **Pradhan Mantri Dakshata aur Kushalta Sampann Hitgrahi (PM-DAKSH) Yojana** has been gaining attention for its efforts to enhance the **competency levels of marginalized groups**, making them **employable** and improving their **socio-economic status**.

Overview :

- **Scheme Name:** Pradhan Mantri Dakshata aur Kushalta Sampann Hitgrahi (PM-DAKSH) Yojana.
- **Type:** Central Sector Scheme.
- **Launch Year:** 2020-21.
- **Objective:** To enhance the competency levels of target groups to make them employable in both **self-employment** and **wage-employment** for their socio-economic development.

Target Groups

- **Groups Covered:** Scheduled Castes (SCs), Other Backward Classes (OBCs), De-notified Tribes (DNTs), Economically Weaker Sections (EWSs), Safai Mitras including Waste Pickers, etc.
- **Economic Assets:** Most people in these groups have minimal economic assets, making **training** essential for their **economic empowerment**.

Eligibility Criteria

- **Income Limit:**
 - **OBC and EWS:** Annual family income less than **Rs. 3.00 lakh**.
 - **SC/DNT/Safai Mitras including Waste Pickers:** No income limit.

Budget and Funding

- **Approved Amount:** **Rs. 450 Crore** from **2021-22** to **2025-26**.
- **Budget Estimate for 2024-25:** **Rs. 130 Crore** (no change from the previous estimate).

Information Source

- **Provided by:** **Union Minister of State for Social Justice and Empowerment**, Shri **B.L. Verma**, in a written reply to a question in **Lok Sabha**.

PM-DAKSH Yojana Details

- **Scheme Type:** **Central Sector Scheme**.
- **Launch Year:** **2020-21**.
- **Main Objective:** To enhance the competency levels of target groups for socio-economic development through **self-employment** and **wage-employment**.
- **National Action Plan:** **Skilling marginalized persons** including **SCs, OBCs, EBCs, DNTs, Sanitation workers**, and **waste pickers**.

Target Groups and Criteria

- **Artisans:** To improve their revenue generation capacities within their practicing vocations.
- **Women:** To enter **self-employment** and become **financially empowered** without neglecting domestic activities.
- **Youth:** To acquire long-term **training** and **specialization** in employable vocations for better job market standing.
- **Age Criterion:** **18-45 years**.
- **Income Criterion:**
 - **SCs, Safai Karamcharis** including **waste pickers**, and **DNT:** No income limit.
 - **OBCs:** Annual family income below **Rs. 3 lakh**.
 - **EBCs (Economically Backward Classes):** Annual family income below **Rs. 1 lakh**.

Nodal Ministry

- **Ministry of Social Justice & Empowerment (MoSJ&E)**.

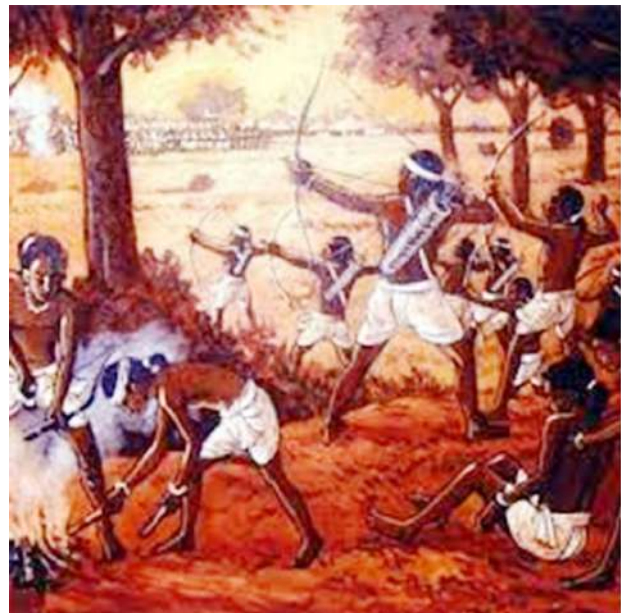
What is a Central Sector Scheme?

- **Definition:** A government scheme fully funded and implemented by the central government without financial contribution from **state governments** or other entities.
- **Purpose:** To address **national-level priorities**, goals, or objectives.

Conclusion :

The **PM-DAKSH Yojana** aims to empower marginalized groups by enhancing their **skills** and making them **employable**. The scheme focuses on various target groups with specific eligibility criteria and is fully funded by the central government. The **Ministry of Social Justice & Empowerment** oversees the implementation of this initiative.

Prime Minister Narendra Modi's Tribute to Santhal Freedom Fighters in Mann Ki Baat



1. Introduction :

- In his 111th episode of Mann Ki Baat, Prime Minister Narendra Modi paid homage to the sacrifices and bravery of the Santhal tribal community.
 - This was his first address after assuming office for his third term.
- ### 2. Hul Diwas:
- Modi's address coincided with the annual celebration of Hul Diwas on June 30.

- b. Hul Diwas marks the Santhal Hul (rebellion) of 1855 against British oppression.
- 3. **Significance of the Day**
 - a. Modi emphasized the importance of June 30 for the tribal community, who celebrate the day as Hul Diwas.
 - b. He highlighted the courage of **tribal brothers Sido and Kanhu, who led their community members to fight against foreign rule.**
- 4. **Historical Context**
 - a. Modi explained that **Sido and Kanhu mobilized thousands of tribals from Jharkhand's Santhal Pargana to take up arms against British rulers in 1855.**
 - b. He acknowledged the atrocities committed by the British against the tribal community and the restrictions imposed upon them.
- 5. **Tribute to Tribal Martyrs**
 - a. Modi praised the incredible bravery displayed by the tribal brothers who were martyred in their fight against oppression.
 - b. He emphasized that their ultimate sacrifice continues to inspire the nation.
- 6. **Santhali Language Song Excerpt**
Modi encouraged listeners to pay attention to an audio clip featuring an excerpt from a song in the Santhali language, dedicated to the tribal martyrs.

About the Santhal Tribal Community in India

1. Introduction :

- a. The Santhals are the third largest scheduled tribe community in India, after the Gonds and Bhils.
- b. They are primarily concentrated in the **eastern states of Bihar, Jharkhand, West Bengal, and Odisha.**

2. Language

- a. The Santhal community speaks Santhali, a **dialect of Kherwari, which is a Munda (Austroasiatic) language.**
- b. Santhali, written in the OI-Chiki script, is recognized as one of the scheduled languages in the **Eighth Schedule of the Indian Constitution.**

3. History and Settlement

- a. The Santhals were originally a **nomadic community but eventually settled on the Chotanagpur plateau.**
- b. By the end of the 18th century, they had concentrated in the Santhal Parganas of Jharkhand (previously Bihar) and later migrated to Odisha and West Bengal.

4. Religion and Culture

- a. The Santhals are **nature worshippers** and often pay respect at Jaher (sacred groves) in their villages.
- b. Their traditional dress includes dhotis and gamuchhas for men and short-check sarees, usually blue and green, for women, who often have tattoos.
- c. Various forms of marriage are accepted in Santhal society, including elopement, widow remarriage, levirate, and forced marriage (rare). Divorce is not considered taboo.

5. Occupation

- a. Most Santhals are agriculturists, relying on their farmlands or forests for sustenance.
- b. Seasonal forest collection is an important source of subsidiary income.
- c. Dance (enej) and music (sereng) are integral parts of Santhal life.
- d. Their homes, called Olah, feature a distinctive three-color pattern on the outer walls: black soil at the bottom, white in the middle, and red at the top.

6. Santhal Rebellion (1855-56)

- a. The Santhal uprising, a notable event of **revolt against the British Raj, took place in 1855 and 1857.**
- b. It was **India's first major peasant uprising, fueled by the implementation of the Permanent Land Settlement in 1793.**
- c. The rebellion was led by Sido and Kanhu and covered regions of Bihar.

7. Gonds: Largest Adivasi Community

- a. The **Gonds are the largest Adivasi community in India, with roots tracing back to the pre-Aryan era.**
- b. They are a heterogeneous group spread over large areas from the Godavari gorges in the south to the **Vindhya Mountains in the north, living in the states of Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Bihar, and Odisha.**
- c. The majority of Gonds speak various mutually unintelligible dialects of Gondi.

What is the Gender Gap in Education?



Introduction :

The **World Economic Forum (WEF)** report of 2024 on global gender gaps recently ranked **India** at 129 out of 146 economies, with a decline in the **education sector** being one of the reasons for India's rank slipping a couple of places this year.

Where Does the Gap Lie?

1. According to the WEF's June report, updated figures in **educational attainment indicators** have caused India's gender parity levels to dip from the previous year.
2. The gap between men and women's **literacy rate** is 17.2 percentage points wide, leaving India ranked 124th on this indicator.
3. The main indicators being tracked are **enrolment levels in primary, secondary, and tertiary education**, as well as the **adult literacy rate**.
4. India had attained a perfect 1.000 score in terms of educational parity, ranking 26th in that category, in the 17th edition of the report published in 2023.
5. The regression from the perfect score is due to updates in the values corresponding to the indicator, according to **Ricky Li**, WEF's Insight and Data Lead.

Indian Statistics

1. The **Unified District Information System for Education (UDISE+)** and the **All India Survey on Higher Education (AISHE)** track school and college enrolment data.
2. The UDISE+ report for 2021-22 shows that 13.79 crore boys were enrolled in school, in comparison to 12.73 crore girls, meaning that girls make up 48% of the school population.
3. However, this varies at the different stages of school education, with girls making up 46.8% of enrolled children in preschool or kindergarten,

47.8% in primary school, 48.3% in upper primary or elementary school, and 47.9% in secondary school.

4. Girls who do have access to secondary education are more likely to stick to the finish, with the higher secondary level having the lowest gender gap of 48.3%.
5. The AISHE report for 2021-22 shows that the **gross enrolment ratio (GER)** for women in higher education was 28.5, slightly higher than the male GER of 28.3.
6. Female enrolment in higher education has seen a **32% increase** since 2014-15.

Impact of Packages to Incentivise Girls to Get an Education

1. The biggest impact has come from simply building more schools, with parents more likely to enrol their children, especially girls, if a primary school exists within one or two kilometres of their home.
2. The presence of **women teachers** is also an important factor, with areas with low enrolment mostly having primary schools employing only one or two teachers.
3. **Transport** to and from school can also be a barrier, and free bus passes for schoolgirls in some States have improved enrolment.
4. **Sanitation issues** remain a major obstacle for girls' education in higher classes, especially after puberty, and may cause a large number of dropouts after Class 8.

Regional Differences

1. Regional differences exist, with some States like Gujarat having a lower percentage of girls in secondary classes due to a lack of secondary and higher secondary schools.
2. Other States like Jharkhand, Chhattisgarh, Bihar, and Uttar Pradesh have a higher percentage of girls in secondary classes despite being poorer.

Next Challenge

1. A number of States have successfully closed the gender gap in higher classes, but there are worries about boys dropping out before completing school.
2. The challenge lies in encouraging more girls to opt for **STEM subjects** and improving **foundational literacy** in schools as well as taking education to rural women to close the gender gap.
3. **Adult literacy** is also still a matter of concern, with only 64.63% of women who are literate, in comparison to 80.88% of men, according to the last Census data from 2011.

Scheme for Safeguarding the Intangible Heritage and Diverse Cultural Traditions of India

The scheme formulated by the Ministry of Culture aims to reinvigorate and revitalize various institutions, groups, individuals, and non-Government organizations engaged in activities/projects for strengthening, protecting, preserving, and promoting the rich Intangible Cultural Heritage of India.

Conclusion :

The Cultural Mapping of Villages is a significant initiative by the Government of India to preserve and promote India's rich cultural heritage. The project aims to create a comprehensive database of cultural assets and art repositories of 6.5 lakh villages across the country. The data will be available on a web portal and can be used by any Ministry and other Government organizations to protect and promote the cultures, traditions, art forms, etc., of identified villages.



Crux of The Hindu & Indian Express

Society & Culture

Asur Tribes in Netarhat to Get Forest Land Rights

The Gumla district administration has announced that the Asur community, a Particularly Vulnerable Tribal Group (PVTG), residing in the Netarhat plateau region of Gumla, will soon receive benefits under the Forest Rights Act (FRA).

Background

The Asur community, believed to be one of the oldest iron-melting tribes, has not yet been officially given ownership papers for individual forest rights or community forest rights.

Key Features

- The District-Level Committee (DLC) under FRA, comprising the Deputy Commissioner (DC) and the Divisional Forest Officer (DFO), is responsible for assisting genuine claimants to forest rights and authenticating the legitimacy of their claims.
- A gram sabha meeting was held at Lupungpat in Janawal panchayat under the remote Chainpur block, where the DC and DFO discussed the forest rights of the Asur community and inquired about

their issues related to drinking water, electricity, and various welfare measures.

- Currently, 18 members of the Asur tribe have applied for forest (land) deeds.
- The DFO stated that the Asur community's rights will be recognized after all the paperwork is completed.
- The administration intends to cover the Asur community under various government schemes to bring a change in their lifestyle, including the provision of a new multipurpose centre in Lupungpat.

About the Asur Community

- The Asur community is a small Austro-Asiatic ethnic group living primarily in the Indian state of Jharkhand, with a population of around 23,000 according to the 2011 census.
- They speak the Asur language, which belongs to the Munda family of Austro-Asiatic languages.
- Traditionally, the Asurs are iron-smelters, but they were once hunter-gatherers and have also been involved in shifting agriculture. Today, a majority of them are cultivators, with 91.19% enlisted as cultivators in the 2011 census.
- The Asur society is divided into 12 clans, named after different animals, birds, and food grains. Family is the second-most prominent institution after the clan.
- The Asur religion is a mixture of animism, animatism, naturalism, and ancestral worships.
- Asur women sing a song relating the furnace to an expectant mother, encouraging the furnace to give a healthy baby, i.e., good quality and quantity of iron from the ore, and were thence, according to Bera, associated with the fertility cult.
- A major section of the population is also attached to mining work.

Importance

- The recognition of forest rights for the Asur community is a significant step towards empowering Particularly Vulnerable Tribal Groups (PVTGs) and ensuring their rights over forest land.
- The Forest Rights Act (FRA) aims to conserve forests while also recognizing the rights of forest-dwelling communities, promoting sustainable forest management and biodiversity conservation.
- The provision of welfare measures, such as drinking water, electricity, and connectivity, will improve the quality of life for the Asur community and other PVTGs.

- The recognition of forest rights and provision of welfare measures can promote **sustainable livelihoods** for the Asur community and other PVTGs, reducing their dependence on mining and other unsustainable practices.

PVTGs in India

There are **75 PVTGs** in India, including the Asur community, who are identified as being particularly vulnerable due to their small population, geographical isolation, and cultural and linguistic differences.

Forest Rights Act (FRA)

The FRA was enacted in **2006** to recognize the rights of forest-dwelling communities over forest land and resources, and to promote sustainable forest management and biodiversity conservation.

Tribal Welfare Schemes

The Indian government has launched various schemes to improve the welfare of tribal communities, including the PVTGs, such as the **National Tribal Policy**, the **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act**, and the **Pradhan Mantri Adarsh Gram Yojana**.

Khelo India Rising Talent Identification (KIRTI) Program



The **Khelo India Rising Talent Identification (KIRTI)** program is set to get a fresh boost under the leadership of **Union Minister for Youth Affairs & Sports and Labour & Employment**, Dr. Mansukh Mandaviya. The program aims to identify and nurture young sporting talent across the country.

Background:

About Khelo India Scheme

1. **Flagship Scheme:** The **Khelo India Scheme** is the flagship **Central Sector Scheme** of the **Ministry of Youth Affairs & Sports**.
2. **Objectives:** The scheme aims to infuse sports culture and achieve sporting excellence in the country.
3. **Khelo India Mission:** The **Khelo India Mission** aims at harnessing the power of sports through its cross-cutting benefits.

KIRTI Program: The **KIRTI program** is part of the Khelo India Scheme. It envisions developing an

integrated **talent identification architecture** based on modern **ICT tools** and global best practices.

Key Features of KIRTI Program

1. **Athlete-Centric Approach:** The program uses an **athlete-centric approach**, making talent identification more broad-based and accessible.
2. **Decentralized Talent Identification:** It employs a **decentralized and pocket-based talent identification** method to achieve the Khelo India Scheme's goals of sports excellence and mass participation.
3. **Transparent Selection Methodology:** The program uses a **transparent selection process** based on **Information Technology**. **Data analytics** and **Artificial Intelligence** are used to predict the sporting potential of aspiring athletes.
4. **Nation-Wide Scheme:** Targeting **school children** aged 9 to 18, the scheme aims to find talent across the country and use sports to combat **addiction to drugs and gadgets**.
5. **Assessments:** The program plans to conduct **20 lakh assessments** nationwide in FY 2024-25 through designated **Talent Assessment Centres**.

Phase 1 of KIRTI

1. **Launch:** The first phase was launched in **Chandigarh** on March 12 this year.
2. **Registrations:** Out of **3,62,683 registrations** across 70 centres, nearly **51,000 assessments** in 28 states and Union Territories have been conducted.
3. **Top Performing States:** **Maharashtra** and **Haryana** lead with **9,168** and **4,820 assessments**, respectively.
4. **Disciplines:** Evaluations have been conducted in 11 sports, including **Archery, Athletics, Badminton, Boxing, Football, Hockey, Kabaddi, Kho-Kho, Volleyball, Weightlifting, and Wrestling**.

Phase 2 of KIRTI

1. **Inauguration:** The second phase of KIRTI will be inaugurated by Dr. Mansukh Mandaviya in **New Delhi**.
2. **Objectives:** The phase aims to achieve **20 lakh assessments** in the FY 2024-25 by onboarding all states and treating the district as a unit of assessment.

Significance

1. **Paris Olympics:** The **KIRTI program** is significant as the **Paris Olympics** draw near, and India aims to become a **top 10 sports nation** in the world by 2036 and among the **top five by 2047**.
2. **Mass Participation:** The program aims to promote **mass participation** in sports and achieve excellence through Khelo India's structured pyramidal programs.

National Culture Fund (NCF)



The Government of India established the National Culture Fund (NCF) as a Trust on November 28, 1996, under the Charitable Endowment Act, 1890.

- a. The aim is to mobilize extra resources through **Public Private Partnerships (PPP)** to promote, protect, and preserve India's tangible and intangible **cultural heritage**.

Major Objectives of NCF

1. **Conservation and Maintenance:** To administer and apply the Fund for the conservation, maintenance, promotion, protection, preservation, and upgradation of monuments, both protected and unprotected.
2. **Training and Development:** To impart training and facilitate the development of a cadre of specialists and cultural administrators.
3. **Museum Expansion:** To provide additional space in existing museums and construct new museums to accommodate or create new and special galleries.
4. **Documentation:** To document cultural expressions and forms that have lost their relevance in contemporary scenarios and are either fading out or facing extinction.

Features of NCF:

1. **Governing Council:** Managed and administered through a **Governing Council** chaired by the **Hon'ble Minister of Culture**, with a maximum strength of **25 members** to decide policies.
2. **Executive Committee:** Headed by the **Secretary (Culture)** with a maximum strength of **11 members** to execute policies.
3. **Tax Benefits:** Donations to the National Culture Fund are eligible for **100% tax benefit** under **Section 80G (ii)** of the **Income Tax Act, 1961**.
4. **CSR Contribution:** NCF's activities are covered under **Schedule VII No. (v)** of the **Companies Act, 2013** as a valid receptacle of **Corporate Social Responsibility (CSR)** contribution. This includes the protection of national heritage, art and culture, restoration of historical buildings and sites, setting up public libraries, and promotion of traditional

arts and handicrafts.

5. **Auditing:** Annual Accounts are audited by the **Comptroller and Auditor General of India**.

Role of NCF:

1. **Partnerships:** NCF forges **partnerships** with **corporates, NGOs**, etc., to implement preservation and conservation-related heritage projects as per norms.
2. **Flexibility for Donors:** NCF provides donors/sponsors the flexibility to indicate a specific project, location, or **implementing agency** for the execution of the project.
3. **Project Monitoring:** To ensure that projects supported by NCF under PPP mode do not get delayed, meetings of the **Project Implementation Committee (PIC)** are regularly convened. These meetings are chaired by the **Director General, Archaeological Survey of India** for ASI projects, and officials of NCF/Ministry of Culture for other projects.
4. **Donations:** NCF can receive **donations** from corporates, PSUs, trusts, and individuals for the maintenance and preservation of centrally protected monuments/cultural projects through NCF. All donors/sponsors must comply with the terms and conditions of the **MoU** agreed for any particular project.

What is Intangible Cultural Heritage?

Intangible cultural heritage refers to the practices, representations, expressions, knowledge, skills, instruments, objects, artefacts, and cultural spaces associated with them that communities, groups, and individuals recognize as part of their cultural heritage.

Conclusion :

The **National Culture Fund (NCF)** plays a crucial role in preserving and promoting India's rich cultural heritage through **public-private partnerships**. Its objectives, features, and role highlight the government's commitment to safeguarding both tangible and intangible cultural assets. The NCF's activities are supported by various stakeholders, including corporates and NGOs, and are monitored to ensure smooth implementation.

THE CONTROVERSY WRT DRESS WORN BY INDIAN ATHLETES IN PARIS OLYMPICS

The **social media blitz** over the uniform of the Indian contingent at the Olympics — with reactions ranging from its **"tacky" and underwhelming look** to an **"injustice"** to Indian weaving traditions and motifs — focuses on the need for putting more thought and time into making sporting attire an extension of brand India.



WHO DECIDES ON THE UNIFORM?

This works as a **partnership** between the **Indian Olympic Committee (IOC)** and the **designer/design house**, who is **contracted after a fair bid**.

The selection process factors in both the financial and creative aspects of the agency.

WHICH DESIGNER/DESIGN AGENCY WAS CHOSEN THIS TIME?

This is the **first time** that the uniform for Team India was **entrusted to a designer** — **Tarun Tahiliani via Tasva**, the premium affordable menswear label launched by **him and Aditya Birla Fashion and Retail Limited**.

Many couture brands **feature in the Paris Olympic 2024 list of uniform-makers**, including **Ralph Lauren for the United States, Berluti for France and Emporio Armani for Italy**.

WHAT ARE THE CONSIDERATIONS IN THE OUTFIT?

According to Tahiliani, A designer has to follow a **set of guidelines put out by the Indian Olympic Committee (IOC)**.

The team has to factor in the **colours of the tricolour** as most countries follow their flag because that's all that is visible from afar.

The current design was chosen by a vetting committee from multiple sketches and multiple options.

WHY IT IS BEING CRITICISED?

- **Lack of elegance:** Many felt the designs didn't match the grandeur of the Olympic stage and didn't adequately represent India's rich cultural heritage.
- **Fabric and quality:** The choice of fabric and overall quality of the outfits was criticized as subpar. The designer used cotton instead of silk, did not use weaves or embroideries and chose digital ikat prints instead, which some interpreted as an insult to our handloom and handcrafting traditions.
- **Fit issues:** Some athletes complained about the fit of the outfits, particularly for women.

- **Branding concerns:** The inclusion of a brand logo on the outfits was seen as inappropriate for such a prestigious event.
- **Comparison with other countries:** Smaller nations like Mongolia and Sri Lanka have created more thoughtful and representative designs that many feel reflect their handcrafted traditions and culture better.

World Population Day 2024



Theme

“Leave no one behind, count everyone”

History

- **Established:** By the United Nations (UN) in 1989.
- **Inspiration:** The global population reaching 5 billion on July 11, 1987.
- **Proposed by:** Dr. KC Zachariah, a senior demographer at the World Bank.
- **First Observed:** In 1989, aimed at increasing awareness of population-related issues.

Objective

- **Promotion:** To foster understanding, cooperation, and innovative solutions for a sustainable future globally.
- **Awareness:** To shed light on how population dynamics affect:
 - o Socio-economic development
 - o Environmental sustainability
 - o Individual well-being
- **Encouragement:** To motivate governments, organizations, and individuals to act and engage in population-related discussions.

Facts about Global Population

- **Milestones:**
 - o **2011:** Global population reached 7 billion.
 - o **November 15, 2022:** Global population reached 8 billion.
- **Projections:**
 - o **2030:** Around 8.5 billion.
 - o **2050:** Around 9.7 billion.
 - o **2100:** Around 10.9 billion.

- **Country Rankings:**
 - **India:** Leading with 1.44 billion as of July 2024, surpassing China in 2022.
 - **China:** Second with 1.42 billion.
 - **United States:** Third with 341 million.
- **Regional Growth:**
 - **Africa:** Expected to contribute to more than half of global population growth by 2050, having the highest growth rate.
 - **Europe:** Populations in 61 countries or regions are expected to decline by 2050.

Significance

- **Awareness:** Highlights global population issues and their societal impacts.
- **Key Concerns:**
 - Reproductive health
 - Family planning
 - Gender equality
 - Sustainable development
- **Discussions:** Encourages proactive measures and discussions on population dynamics.
- **Reminders:** Emphasizes both the challenges and opportunities of a growing population.
- **Emphasis:** Stresses the importance of sustainable development and individual well-being.

Importance

- **Awareness:** World Population Day has been crucial in:
 - Raising awareness about population issues.
 - Advocating for reproductive rights.
 - Supporting policies and programs for sustainable development and individual well-being.
- **Platform:** Provides a venue for governments, organizations, and individuals to discuss and act on population-related issues.
- **Collective Action:** Emphasizes the necessity of collective efforts to address the challenges of population growth and ensure a sustainable future.

Key Points

- **Future Projections:**
 - **2050:** World population projected to reach 9.7 billion.
 - **2100:** World population projected to reach 11.2 billion.
- **Challenges:**
 - Strain on natural resources
 - Increased poverty and inequality
 - Pressure on urban infrastructure and services
 - Threats to environmental sustainability

- **Multi-faceted Approach:**
 - Enhancing access to education and family planning services
 - Promoting gender equality and reproductive rights
 - Investing in sustainable development and environmental conservation
 - Encouraging sustainable consumption and production patterns

UN Secretary-General's Message

- **Data Collection:** "This year's theme underscores the importance of investing in data collection to understand issues, tailor solutions, and drive progress."
- **Financial Investment:** "Financial investment is also essential. I urge countries to leverage the Summit of the Future this year to unlock affordable capital for sustainable development."
- **Emphasis:** The message stresses the need for data-driven solutions and financial investments to tackle population-related challenges.

World's Oldest Cave Painting in Indonesia Shows a Pig and People



Location: Leang Karampuang cave, Maros-Pangkep region, South Sulawesi province, Indonesia

Scientists have found the world's oldest cave painting, which is at least 51,200 years old, in a limestone cave on the Indonesian island of Sulawesi.

- The painting shows **three human-like figures and a wild pig in a narrative scene**, showing that **early humans had the capacity for storytelling and complex thought**.

Context:

- The discovery is part of a larger effort to understand the **origins of human art and culture**.
- The painting is one of several found in **Sulawesi**, including another narrative scene depicting part-human, part-animal figures hunting pigs and dwarf buffalo.
- The findings challenge the assumption that **Europe was the birthplace of cave art** and suggest that the history of art is more complex and nuanced than previously thought.

- The discovery has implications for our understanding of **human migration and the spread of art and culture around the world**.

Key Findings:

- A scene of **humans interacting with a pig** painted on a cave wall
- Painted in a single shade of **dark red pigment**
- Scene features:**
 - Upright pig** with three smaller **human-like figures**
 - One figure holding an object near the pig's throat
 - One figure above the pig's head in an **upside-down position**
 - One larger, grander figure holding an object and possibly wearing an **elaborate headdress**

Significance:

- Predates European cave paintings** (El Castillo in Spain, ~40,800 years ago)
- Oldest-known evidence of storytelling in art**
- Shows **advanced mental capacity** of people at the time
- Suggests that early humans in **Sulawesi** had a sophisticated understanding of **art and narrative**
- Pushes the timeline of human artistic expression back thousands of years**

Interpretation:

- The painting is interpreted as a **narrative scene**, with the three human-like figures and the pig interacting with each other in a deliberate and meaningful way.
- The researchers believe that the painting conveys a sense of **action and tells a story**, although the exact meaning is unknown.
- The painting may be depicting a **hunting scene or a ritual**, but the exact context is unclear.
- The discovery provides a **unique window into the lives and culture of early humans in Indonesia**.

Significance:

- The discovery **pushes back the known origins of cave art and storytelling** by thousands of years.
- The painting is the **oldest-known evidence of storytelling in art**, predating European cave paintings by at least 10,000 years.
- The finding suggests that storytelling was a much older part of **human history and the history of art** than previously recognized.

- The discovery challenges the assumption that **Europe was the birthplace of cave art** and suggests that the history of art is more complex and nuanced than previously thought.

Methodology:

- The researchers used a **laser to date the calcium carbonate crystals** that formed on top of the painting.
- The method is a significant improvement over other dating methods and is expected to **revolutionize rock art dating worldwide**.
- The technique allows for more accurate and precise dating of cave paintings, which can help to shed light on the **origins of human art and culture**.

Quotes:

- "We, as humans, define ourselves as a species that tells stories, and these are the oldest evidence of us doing that." - **Maxime Aubert**, Griffith University archeologist
- "The earliest Sulawesi rock art is not 'simple.' It is quite advanced and shows the mental capacity of people at the time." - **Maxime Aubert**, Griffith University archeologist
- "This discovery of very old cave art in Indonesia drives home the point that Europe was not the birthplace of cave art, as had long been assumed." - **Adam Brumm**, Griffith University archeologist
- "The method is a significant improvement over other methods and should revolutionize rock art dating worldwide." - **Maxime Aubert**, Griffith University archeologist.



Bharat Bill Payment System



The Reserve Bank of India (RBI) has introduced new guidelines for repaying credit card dues, starting from July 1. These rules require all credit card bill payments made through third-party applications to be processed via the **Bharat Bill Payment System (BBPS)**.

Key Details:

1. Bharat Bill Payment System (BBPS):

Designed by the **RBI**, the **BBPS** is a centralized bill payment platform aimed at simplifying bill payments for customers across India.

2. Managed by NPCI:

The **National Payments Corporation of India (NPCI)**, an entity under the **RBI**, is tasked with managing and operationalizing the **BBPS**.

3. Unified Payment Platform:

The **BBPS** serves as a single platform where customers can pay various bills, such as utilities, school fees, and municipal taxes, all in one place.

4. Interoperability and Accessibility:

The **BBPS** ensures interoperability and accessibility, enabling customers to make payments anytime, anywhere in India.

Features:

1. Various Payment Modes:

The **BBPS** supports multiple payment methods, including cash, cards, net banking, and wallets, making bill payments convenient.

2. Immediate Payment Confirmation:

Customers receive instant payment confirmations via the **BBPS**, ensuring they are aware of successful transactions.

3. Integrated Ecosystem:

The **BBPS** connects banks, non-banks, billers, payment service providers, and retail outlets, forming a comprehensive bill payment network.

4. Convenient Payment Options:

Customers can choose from numerous payment channels, both physical and digital, to pay their bills through the **BBPS**.

Bill Payment Categories:

1. Electricity Bills:

Customers can pay their electricity bills using the **BBPS**.

2. Telecom Bills:

Telecom bills, including mobile postpaid and landline bills, can be paid via the **BBPS**.

3. Mobile Postpaid Bills:

The **BBPS** supports payments for mobile postpaid bills.

4. DTH Bills:

Direct-to-home (DTH) service bills can be paid through the **BBPS**.

5. Gas Bills:

Customers can use the **BBPS** to pay their gas bills.

6. Water Bills:

Water bill payments are facilitated through the **BBPS**.

7. Educational Fees:

School and university fees can be paid using the **BBPS**.

8. Municipal Payments:

Municipal taxes and other payments can be made via the **BBPS**.

9. Investment and Insurance Payments:

Payments for mutual funds and insurance premiums are supported by the **BBPS**.

10. Government Taxes:

Various government taxes, as specified by the **RBI**, can be paid through the **BBPS**.

Payment Channels:

1. Physical Outlets:

Customers can pay bills at physical outlets, including bank branches and agent collection stores.

2. Digital Platforms:

The **BBPS** enables bill payments through digital platforms like mobile apps and websites.

3. Instant Payment Confirmation:

Customers receive instant confirmation of their payments via SMS or receipts.

Benefits:

1. Convenient Payment Options:

The **BBPS** offers multiple channels and modes for bill payments, enhancing customer convenience.

2. Secure Transactions:

The **BBPS** guarantees reliable and secure transactions, providing a trustworthy platform for bill payments.

3. Nationwide Accessibility:

Customers can access the **BBPS** from anywhere in India, facilitating easy bill payments regardless of location.

4. Variety of Payment Methods:

The **BBPS** accommodates various payment methods, allowing customers to choose their preferred mode.

5. Immediate Confirmation:

Customers are promptly notified of successful payments, ensuring transparency.

Regulatory Oversight:

1. RBI's Directive:

The **RBI's** new guidelines aim to regulate and monitor peer-to-peer (P2P) credit card transactions via third-party apps, ensuring secure and transparent transactions.

Impact:

1. Affected Bank Users:

The new rules will affect customers of banks not yet integrated with the **BBPS**, such as **Axis Bank, HDFC Bank, IDFC First Bank, Indian Bank, Indian Overseas Bank, and YES Bank.**

BBPS Integration Status:

1. Banks Live on BBPS:

As of July 1, 2024, 12 banks, including **SBI, Kotak Bank, IndusInd Bank, IDBI Bank, AU Small Finance, Canara Bank, Bank of Baroda, Federal Bank, ICICI Bank, Union Bank, Punjab National Bank, and Saraswat Bank,** are operational on the **BBPS**.

Reasons for Delay:

1. High Investment Costs:

Some banks may be delaying **BBPS** integration due to the high costs involved, which they may not find justifiable.

RBI's Objective:

1. Payment Process Streamlining:

The **RBI** aims to simplify the payment process, ensuring all credit card transactions are secure and transparent.

Challenges:

1. Integration Delays:

Major banks are still working on **BBPS** integration due to the significant investment and perceived lack of added value.

2. Technical Challenges:

The integration process is technically complex, requiring substantial resources and expertise.

3. Customer Education:

Educating customers about the new system may be necessary, potentially causing initial confusion and resistance.

Conclusion:

The **RBI's** directive to route all credit card bill payments through the **BBPS** is a major step towards simplifying the payment process, enhancing regulatory oversight, and promoting financial stability. Despite challenges in integration, experts believe that all banks will eventually adopt the **BBPS**.

Budget 2024: What is Taxonomy for Climate Finance?

Context

- The 2024 Union Budget, presented by Finance Minister Nirmala Sitharaman on 23 July, includes developing a taxonomy for climate finance to enhance the availability of capital for climate adaptation and mitigation. This initiative aims to support the achievement of the country's climate commitments and green transition.

WHAT IS A CLIMATE FINANCE TAXONOMY?

- A **climate finance taxonomy** is a system that **classifies which parts of the economy may be marketed as sustainable investments**. It helps **guide investors and banks** in directing trillions toward **impactful investments** to tackle climate change.
- "Taxonomies are frequently used to **set standards for classifying climate-related financial instruments** (e.g., **green bonds**), but, increasingly, they **serve other use cases** where the benchmarking feature is viewed as beneficial, including in the areas of climate risk management, net-zero transition planning, and climate disclosure," according to a report by the government of Canada.
- Origin: The term taxonomy originally comes from the field of biology, where it is the scientific method of naming and classifying organisms, including plants, animals, and microorganisms.
- Purpose: According to the International Finance Corporation (IFC), a member of the World Bank Group, diverse interpretations fragment markets and confuse investors. What seems 'green' in one country may appear 'brown' elsewhere, stalling environmental progress.
- Components: Taxonomies for sustainable climate financing generally include a detailed list of economic sectors and activities, along with corresponding criteria that determine if they align with larger climate goals.
- Alternative Names: Climate finance taxonomies are also known as 'green' taxonomies.

Why is Climate Finance Taxonomy Important?

- Core Area: Climate financing forms a core area of combating the climate crisis. According to the U.N. Framework Convention on Climate Change's (UNFCCC's) first 'Needs Determination Report', financing of around \$5.8-5.9 trillion is required to

implement developing countries' climate action plans by 2030, and this does not fully include adaptation costs.

- **Facilitation:** Climate finance taxonomies can facilitate financing for investors, credit institutions, etc., based on how climate-aligned an entity or an activity is. It can therefore direct financial resources towards projects that support climate change mitigation and adaptation.
- **Comparison and Measurement:** Green taxonomies help investors compare investment opportunities and measure their environmental impact. A localized climate finance taxonomy can also help align a country's climate goals with the Paris Agreement and other international climate commitments while accounting for regional factors that influence localized transition pathways.
- **Regional Pathways:** Different regions will have to adopt different pathways to reach the goal of limiting global warming to under 1.5 degrees C, as required under the Paris Agreement. A one-size-fits-all approach won't work here, and where localized taxonomies on climate finance can help. Science-based targets at the regional level can help define metrics, based on which experts can develop standards and investors can determine their financial commitments, all without compromising on global climate goals.
- **Preventing Greenwashing:** Climate finance taxonomies can also help prevent greenwashing by companies by setting common standards based on scientific assessments.

India's Efforts to Set Up a Green Taxonomy

- **Task Force:** In January 2021, India established a task force on sustainable finance under the Department of Economic Affairs, Ministry of Finance, to create a framework for sustainable finance in India, establish the pillars for a sustainable finance roadmap, suggest a draft taxonomy of sustainable activities, and create a framework of risk assessment by the financial sector.
- **Memberships:** In April 2021, the Reserve Bank of India (RBI) joined the Central Banks and Supervisors Network for Greening the Financial System (NGFS) as a member. RBI is also a member of a task force on climate-related financial risks set up by the Basel Committee on Banking Supervision, and the International Platform on Sustainable Finance.

Why Does India Need a Green Taxonomy?

- **Funding Requirements:** According to the IFC, India needs an estimated \$10.1 trillion to achieve net-zero by 2070. Public investments alone can't match this goal, which calls for standardization in investments.
- **Attracting Investments:** "A green taxonomy framework could significantly help India attract both domestic and international investments, aligning these funds with its national and global commitments to a green transition and enhanced climate resilience," said Harjeet Singh.
- **Industry Demands:** "Investors and industry have been demanding a taxonomy and transition pathway as guidance for the flow of finance and reorientation of economic activity. The Budget announcements that clearly mention the establishment of a carbon market, taxonomy, and transition pathways mark significant progress in planning towards net zero in 2070," said Suranjali Tandon, an associate professor at the National Institute of Public Finance and Policy.

INDIA'S CLIMATE COMMITMENTS

- India will increase its **non-fossil fuel energy capacity** to **500 gigawatts (GW)** by **2030**. (Presently it is around 167 GW)
- It will meet **50% of its energy requirements** from **renewable sources** by **2030**.
- The total **projected carbon emissions** will be **reduced by 1 billion tonnes** from now through **2030**.
- The **emission intensity** of its economy will be **brought down to less than 45%**.
- India will achieve its **target of net zero by 2070**.

Conclusion

The development of a taxonomy for climate finance in the 2024 Union Budget is a crucial step towards enhancing the availability of capital for climate adaptation and mitigation. This initiative will support India's climate commitments and green transition by providing standardized regulations and guidelines for impactful investments. The taxonomy will help facilitate financing, prevent greenwashing, and align India's climate goals with international commitments, ultimately driving innovation and supporting the country's ambitious climate goals.

Changes in LTCG Tax Regime and the Removal of Indexation Benefit



Overview

The government's decision to remove the **indexation benefit** from the **long-term capital gains (LTCG) tax regime**, announced in the Union Budget for 2024-25, has sparked controversy and confusion.

- While the government argues that most people will benefit, concerns remain about the potential impact on taxpayers, particularly those with ancestral property.
- Additionally, there are fears about the return of black money in real estate transactions.

What is Indexation?

- Definition:** **Indexation** is the process of adjusting the original purchase price of an asset or investment to neutralize the impact of inflation.
- Process:** It involves revising upward the cost of acquisition of an asset based on the inflation over the period for which it was held.
- Purpose:** Inflation reduces the value of money over time. **Indexation** helps in arriving at the cost of acquisition with the impact of inflation over the holding period factored in.
- Indexed Cost of Acquisition:** The cost of acquisition thus arrived at is called the **indexed cost of acquisition**. It resets the base for the calculation of gains or losses from the sale or redemption.
- Realistic Returns:** Returns calculated on the indexed cost of acquisition are generally seen as more realistic than absolute gains calculated on the basis of the actual price at the time of purchase.

Consequences of Removing Indexation Benefit

- Impact on Gains:** Without indexation, particularly in cases where the asset was held for

an extended period, the gains may appear extremely high but may not paint a realistic picture. This is mainly because the inflationary impact on the asset's value was not taken into account.

- Tax Outgo:** If the gains accrued on the sale of assets or redemption of investments are taxed, the absence of the **indexation benefit** would increase the tax outgo, assuming that the rate of tax stays the same.

What Has the Government Done Now?

- New LTCG Regime:** The new LTCG regime proposed in the Union Budget for 2024-25 does away with the **indexation benefit** available for the calculation of LTCG on property, gold, and other unlisted assets, while reducing the LTCG tax rate to 12.5% from 20%.
- Fair Market Value:** For properties and other assets purchased prior to 2001, the fair market value as of April 1, 2001, would be considered as the cost of acquisition. This exception ensures that inherited ancestral property and property bought decades ago is not subject to supernormal tax.
- Justification:** The government has justified its decision, saying that it would simplify the capital gains tax structure without causing a loss to most taxpayers. This simplification, which removes the differential tax rates for various classes of assets, would help both taxpayers and tax authorities.

Reactions and Clarifications

- Confusion and Apprehension:** There was confusion and apprehension, especially in the residential real estate sector. The big fear was that the changes would result in a large increase in the LTCG tax liability for those looking to sell property.
- Government Clarifications:** Sensing the anxiety, the Finance Ministry and Income Tax Department started issuing clarifications. According to the government, the new LTCG tax regime, even without the **benefit of indexation**, would be beneficial in the vast majority of cases in the property sector.
- Tax Savings:** The Income Tax Department posted on social media platform X that the new tax rate without **indexation** is beneficial in most cases. Nominal real estate returns are generally in the region of 12-16% per annum, much higher than inflation. The **indexation** for inflation is in the region of 4-5% depending on the period of holding. Therefore, substantial tax savings are expected for a vast majority.

- 4. Rollover Benefits:** The government also clarified that rollover benefits have not been touched, meaning that if capital gains are invested in Section 54EC bonds or used for buying or constructing residential real estate up to specified limits, LTCG would be exempt from tax.

Stakeholder Concerns

- 1. Secondary Market Sales:** Various industry players and analysts have flagged concerns that the new regime without **indexation benefit** is likely to result in an increase in secondary market real estate sales, as people would not want to hold onto assets for more than 3-5 years.
- 2. Cash Transactions:** Another concern is that the new regime may incentivize the use of cash in property transactions, as sellers will be tempted to deflate the actual transaction value on paper to pay less tax.
- 3. Absence of Grandfathering:** One criticism is the absence of **grandfathering** for purchases made over the past 24 years. **Grandfathering** is a provision that allows an old rule or law to be applicable to some or all situations up to a certain date, while the new rule or law is applicable to all situations after that date. The government claims that the reduction in LTCG tax rate by 7.5 percentage points offsets the benefit that such **grandfathering** would have provided.

Conclusion

The removal of the **indexation benefit** from the LTCG tax regime has sparked debate and raised concerns among taxpayers and industry stakeholders. While the government argues that the new regime will simplify the tax structure and benefit most taxpayers, critics point to potential increases in tax liability and the risk of incentivizing cash transactions. The absence of **grandfathering** provisions has also been a point of contention. As the government continues to issue clarifications, the full impact of these changes remains to be seen.

DIGITAL BHARAT NIDHI

The Department of Telecommunications (DoT) on July 4 released draft rules to **operationalise the Digital Bharat Nidhi**, in a fresh attempt by the central government at **increasing telecom connectivity in rural areas**.

Digital Bharat Nidhi would replace the erstwhile Universal Service Obligation Fund (USOF), which is a pool of funds generated by a 5 per cent Universal Service Levy charged upon all the telecom fund operators on their Adjusted Gross Revenue (AGR).

The idea is that **this money would be used to fund the expansion of telecom networks in remote and rural areas**, where private companies may otherwise resist offering their services due to them not being revenue-generating markets.

HOW WILL DIGITAL BHARAT NIDHI WORK?

- As per the Telecom Act, contributions made by telecom companies towards the DBN will first be credited to the Consolidated Fund of India (CFI).
- All revenues that the government receives, including loans raised and all money received in repayment of loans, are credited to the CFI.
- The government also incurs its expenditures from this fund.
- The Centre will deposit the collected funds to the DBN from time to time.
- Funds collected under the DBN will be used to:
 - Support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas;
 - Fund research and development of telecommunication services, technologies, and products;
 - Support pilot projects, consultancy assistance and advisory support for Improving connectivity; and
 - For the introduction of telecommunication services, technologies, and products.
- As per the **draft rules issued by the DoT** on how the DBN will be operationalised, the **Centre will appoint an “administrator”** who will select **“DBN implementers”** through **“bidding”** or invitation of applications from eligible persons.
- This so-called **administrator will determine the modalities** of providing funding to DBN implementers on a **case-by-case basis**, including but not limited to **full funding, partial funding, co-funding, market risk mitigation, and risk capital**.
- The **DBN shall fund schemes and projects** for providing targeted access to telecommunication services for underserved groups of society such as **women, persons with disabilities and economically and socially weaker sections**, as per the draft rules.

AIM OF DBN

- The introduction of **next-generation telecommunication technologies** in underserved rural, remote and urban areas.

- **Improving affordability** of telecommunication services in such areas.
- **Promote innovation, research and development**, promotion and commercialisation of indigenous technology development and associated intellectual property, including creation of regulatory sandboxes.
- **Developing and establishing relevant standards** to meet national Requirements and their standardisation in international standardisation bodies.
- **Encouraging start-ups in the telecommunications sector** including the manufacturing of telecom equipment, among other things.

UNDERUTILISATION OF USOF

Since its establishment in 2003, **a common criticism of the USOF has been its relative underutilisation.**

- According to information shared in Parliament by former Minister of State for Communications Devusinh Chauhan in December 2022, **between 2017 and 2022, the government had collected Rs 41,740 crore** as part of contributions made by telcos towards the USOF, of which it had utilised **Rs 30,213 crore – about 72 per cent.**
- In **2019-20**, the collection was **Rs 7,962 crore**, of which the utilised amount was just **Rs 2,926 crore.** In the period specified by the former minister, the government did not achieve complete utilisation even once.

REASON : the underspending of funds allocated for the BharatNet project for fibre connectivity to villages.

PROJECT NEXUS

The Reserve Bank of India (RBI) has joined Project Nexus, a multilateral International initiative to enable instant cross-border retail payments by Interlinking domestic Fast Payments Systems (FPSs).

The linkage:

India's Unified Payments Interface (UPI) and FPSs of Malaysia, the Philippines, Singapore and Thailand will be interlinked through Nexus.

Going ahead, the platform can be extended to more countries.

ABOUT PROJECT NEXUS

- Project Nexus is conceptualised by the **Innovation Hub** of the **Bank for International Settlements (BIS).**

- It seeks to enhance cross-border payments by connecting multiple domestic Instant payment systems (IPS) globally.
- It is the first BIS Innovation Hub project in the payments area to move Towards live implementation.

WASN'T INDIA COLLABORATING WITH OTHER COUNTRIES FOR PAYMENTS?

- The Reserve Bank of India has been **collaborating bilaterally** with various countries to link **India's Fast Payments System (FPS)** – UPI, with their respective FPSs for cross-border Person to Person (P2M) and person to Merchant (P2M) payments.

WHAT WOULD HAPPEN TO THESE BILATERAL MECHANISMS AFTER WE HAVE BECOME PART OF PROJECT NEXUS?

While India and its partner countries can continue to benefit through such Bilateral connectivity of FPS, a multilateral approach will provide further impetus to the RBI's efforts in expanding the international reach of Indian payment systems.

HOW MUCH TIME DOES THE PAYMENT TAKE TO GET TRANSFERRED?

In over **70 countries** today domestic payments reach their destination in seconds at near-zero cost to the sender or recipient. This is thanks to the growing Availability of instant payment systems. **Connecting these ips to each other can enable cross-border payments from sender to recipient within 60 seconds** (in most Cases), **according to the bis.**

BENEFITS OF NEXUS

- Project Nexus is designed to **standardise the way IPS connect to each other.**
- Rather than a payment system operator building custom connections for every new country that it connects to, **the operator can make one connection to the Nexus platform.**
- This single connection **allows a fast payments system** to reach all other countries on the network.
- Nexus could **significantly accelerate the growth of instant cross-border payments.**

MEMBER COUNTRIES OF NEXUS

- Project Nexus aims to connect the FPSs of **four Association of Southeast Asian Nations (ASEAN)** —
 - o Malaysia,
 - o Philippines,
 - o Singapore, and
 - o Thailand; and
- **India**, who would be the **founding members** and first mover countries of this platform.
- Indonesia is expected to join this platform in the future.

RBI allows resident Indians to open Foreign Currency Accounts in IFSC, Gujarat



The Reserve Bank of India (RBI) has permitted resident individuals to open Foreign Currency Accounts (FCAs) in International Financial Services Centres (IFSCs) at GIFT City in Gujarat under the Liberalised Remittance Scheme (LRS).

Key Points:

1. Liberalised Remittance Scheme (LRS):

The LRS allows resident individuals to remit up to **\$250,000 per financial year** for permissible current or capital account transactions or a combination of both.

2. International Financial Services Centres (IFSCs):

IFSCs are financial hubs that offer financial services and products to **non-resident Indians** and foreign entities.

3. Foreign Currency Accounts (FCAs):

FCAs are accounts held in foreign currencies, facilitating international transactions.

4. Permissible Purposes:

The RBI allows remittances under LRS to IFSCs for all permissible purposes, including availing financial services or financial products within IFSCs, and all current or capital account transactions in any foreign jurisdiction through an FCA held in IFSCs.

5. Authorised Persons:

Authorised persons, such as banks and specific FX dealers, will facilitate remittances for all permissible purposes under LRS to IFSCs.

6. Current Remittance Rules:

Currently, remittances under LRS to IFSCs are permitted only for making investments in IFSCs in securities, excluding those issued by entities/companies resident in India (outside IFSC), and for payment of fees for education to foreign universities or foreign institutions in IFSCs.

7. Expansion of LRS:

The RBI's notification expands the scope of LRS, allowing resident individuals to open FCAs in IFSCs for a broader range of overseas investments and expenditures.

About GIFT City:

Spread over 886 acres on the bank of the river Sabarmati, GIFT City is India's first operational smart city, offering state-of-the-art infrastructure to provide cross-border financial services to investors. Both Indian and international banks can set up units in GIFT City to provide international banking services within the country.

Key Features of GIFT City:

1. India's First Operational Smart City:

GIFT City features underground utility tunnels to avoid road excavations for future maintenance and renovations. The City Command and Control Centre (C4) uses Internet of Things (IoT) technology to manage the city's infrastructure. It also includes a fully automated district cooling system (DCS) and waste collection system (WCS).

2. India's First International Financial Services Centre (IFSC):

The city is India's first IFSC under the Special Economic Zone (SEZ) Act, 2005. The Government of India has approved GIFT City as a multi-services SEZ, permitting financial institutions to set up IFSC units across various business sectors. Banks can establish IFSC Banking Units (IBU) to cater to resident and foreign clients.

3. Tax Incentives:

Both units and investors in IFSC GIFT City benefit from numerous tax advantages. Units receive 100% income tax exemption for 10 consecutive years out of 15. Additionally, Goods and Services Tax (GST) does not apply to services. Investors enjoy tax exemptions on specified securities, funds lent to IFSC, and transactions under IFSC exchange.

4. Integrated Development:

GIFT City comprises 67% high-rise landmark buildings with smart offices. It includes commercial spaces, a dedicated residential zone with affordable housing, pedestrian walking areas, multilevel parking, and enhanced connectivity through a mass rapid transit system (MRTS).

5. Strategic Location:

GIFT City is strategically located on the banks of the Sabarmati River, between **Ahmedabad** and **Gandhinagar**. Its proximity to top educational institutions ensures the availability of skilled talent.

Benefits to GIFT City:

The **RBI's** notification is expected to enhance the appeal and functionality of **GIFT City**, making it a more competitive financial hub.

Benefits:

1. Increased Investment Opportunities:

The expansion of **LRS** will provide resident individuals with more investment opportunities in **IFSCs** and other foreign jurisdictions.

2. Enhanced Financial Services:

The **RBI's** notification will enable **IFSCs** to offer a wider range of financial services and products to resident individuals, including insurance and education loan payments in foreign currency.

3. Simplified Remittance Process:

The notification will streamline the remittance process for resident individuals, making it easier to facilitate international transactions.

4. Boost to GIFT City:

The **RBI's** notification is expected to enhance the attractiveness and functionality of **GIFT City**, making it a more competitive financial hub.

Analysis:

1. Alignment with Global Financial Centres:

The **RBI's** notification aligns **GIFT IFSC** with other global financial centres, allowing resident investors to leverage the platform for a wider range of overseas investments and expenditures.

2. Increased Competitiveness:

The expansion of **LRS** will increase the competitiveness of **GIFT City**, making it a more attractive destination for foreign investors and financial institutions.

3. Economic Growth:

The **RBI's** notification is expected to spur economic growth by increasing foreign investment and facilitating international trade.

4. Financial Inclusion:

The notification will promote financial inclusion by providing resident individuals with greater access to international financial services and products.

Conclusion:

The **RBI's** decision to allow resident Indians to open **Foreign Currency Accounts** in **IFSC, Gujarat** is a significant step toward expanding the scope of the **Liberalised Remittance Scheme**. This move will provide resident individuals with increased investment opportunities, enhance financial services, and simplify the remittance process. The initiative is anticipated to boost the attractiveness and functionality of **GIFT City**, making it a more competitive financial hub.

RBI's Proposed Norms on Liquidity Coverage Ratio



The **Reserve Bank of India (RBI)** has issued draft guidelines for banks on the **Liquidity Coverage Ratio (LCR)**, requiring them to set aside a higher stock of **liquid securities** as a buffer against potential threats from unexpected withdrawals facilitated by technology. The new norms will be effective from **April 1, 2025**.

Background

- 1. Technological Advancements:** The RBI is concerned that with the rise of fast-paced technology (mobile, internet banking), customers can withdraw large amounts of deposits quickly, unlike the old days when withdrawals were a lengthy process involving branch visits and forms.
- 2. RBI's Perspective:** According to the RBI, banking has undergone rapid transformation, and while technology has enabled instantaneous transfers and withdrawals, it has also increased risks, requiring proactive management.
- 3. LCR Review:** The RBI reviewed the LCR framework to enhance the **liquidity resilience** of banks in response to these technological changes.

What is Liquidity Coverage Ratio (LCR)?

1. **Definition:** LCR refers to the proportion of **highly liquid assets** held by financial institutions to ensure they can meet their short-term obligations (cash outflows for 30 days).
2. **Purpose:** To ensure that banks have sufficient capital to manage short-term liquidity disruptions.
3. **Origin:** The LCR resulted from the **Basel III** agreement, a series of measures undertaken by the **Basel Committee on Bank Supervision (BCBS)**.

Implementation in India:

1. RBI issued **Basel III** liquidity guidelines in **2012**.
2. LCR was implemented in **January 2015**.
3. As per a **2020 circular**, banks should maintain sufficient **HQLA** at all times to meet unexpected withdrawals.

Calculation of LCR

1. **Formula:** $LCR = \frac{\text{High Quality Liquid Assets (HQLA)}}{\text{(Total net cash outflows over the next 30 calendar days)}}$
2. **High Quality Liquid Assets (HQLA):** Assets that can be easily and instantly converted into cash at minimal or no cost, including cash, reserves with central banks, and central government bonds.
3. **SLR Eligible Assets:** In India, all **Statutory Liquidity Ratio (SLR)** eligible assets, which banks must maintain as per the **Banking Regulation Act, 1949**, can be considered HQLA under LCR requirements if they are in excess. This helps maintain and optimize both liquidity requirements.

What are Basel Norms?

Basel norms, also known as **Basel accords**, are international banking regulations issued by the Basel Committee on Banking Supervision (BCBS). These norms aim to coordinate banking regulations globally to strengthen the international banking system.

About the Basel Committee on Banking Supervision (BCBS)

1. **Purpose:** The BCBS is the primary global standard setter for the **prudential regulation** of banks and provides a forum for cooperation on banking supervisory matters.
2. **Establishment:** Founded by the Central Bank governors of the **Group of Ten** countries in **1974**.
3. **Membership:** Expanded in **2009** and **2014**, now consisting of **45 members** from **28 jurisdictions**, including central banks and authorities responsible for banking regulation.

4. **Objective:** To enhance understanding of key supervisory issues and improve the quality of banking supervision worldwide.

Why These Norms?

1. **Risk Management:** Banks lend to various borrowers, exposing them to risks of default. To mitigate these risks, banks must keep aside a certain percentage of capital as security against non-recovery.
2. **Basel Norms:** The Basel Committee has produced norms called **Basel Norms** to address these risks.

Why the Name Basel?

1. **Location:** Basel is a city in **Switzerland** and the headquarters of the **Bureau of International Settlement (BIS)**, which fosters cooperation among central banks for financial stability and common banking regulations.
2. **Establishment:** The BIS was founded in **1930**, and the Basel Committee on Banking Supervision is housed in the BIS offices in Basel, Switzerland.

What are These Norms?

1. **Basel-I:**
 - a. **Introduction:** Introduced in **1988**.
 - b. **Focus:** Almost entirely on **credit risk**, which is the possibility of a loss resulting from a borrower's failure to repay a loan.
 - c. **Capital Requirement:** Defined capital and structure of risk weights for banks, with a minimum capital requirement of **8%** of risk-weighted assets (RWA).
 - d. **Adoption in India:** India adopted Basel-I guidelines in **1999**.
2. **Basel-II:**
 - a. **Introduction:** Published in **2004**.
 - b. **Refinements:** Refined and reformed versions of Basel-I.
 - c. **Pillars:**

- i. **Capital Adequacy Requirements:** Banks should maintain a minimum capital adequacy requirement of **8%** of risk assets.

What is Capital Adequacy Ratio (CAR)?

The Capital Adequacy Ratio (CAR) is a measure of a bank's financial health. It essentially compares a bank's capital to its risk-weighted assets. A higher CAR indicates a stronger financial position, as the bank has more capital to absorb potential losses.

ii. **Supervisory Review:** Banks need to develop and use better risk management techniques for credit, market, and operational risks.

iii. **Market Discipline:** Increased disclosure requirements, mandating banks to disclose their CAR, risk exposure, etc., to the central bank.

3. Basel-III:

a. **Introduction:** Released in **2010** in response to the **2008 financial crisis**.

b. **Objective:** To strengthen the banking system by focusing on **capital, leverage, funding, and liquidity**.

c. Capital:

i. **Capital Adequacy Ratio:** Maintained at **12.9%**.

ii. **Tier 1 and Tier 2 Capital:** Minimum Tier 1 capital ratio at **10.5%** and Tier 2 capital ratio at **2%** of risk-weighted assets.

iii. **Buffers:** Capital conservation buffer of **2.5%** and counter-cyclical buffer of **0-2.5%**.

iv. **Leverage:** Leverage rate of at least **3%**, which is the ratio of a bank's tier-1 capital to average total consolidated assets.

d. Funding and Liquidity:

i. **Liquidity Coverage Ratio (LCR):** Banks must hold a buffer of high-quality liquid assets to deal with cash outflows in a short-term stress scenario.

ii. **Net Stable Funds Rate (NSFR):** Banks must maintain a stable funding profile for off-balance-sheet assets and activities, with a minimum NSFR requirement of **100%**.

What is Statutory Liquidity Ratio (SLR)?

Statutory Liquidity Ratio (SLR) is the minimum percentage of deposits that commercial banks are required to maintain in the form of liquid assets such as gold, cash, or other approved securities. These assets are held by the banks themselves, not with the Reserve Bank of India (RBI).

Key points about SLR:

1. **Purpose:** SLR is a tool used by the RBI to control credit growth and inflation.
2. **Calculation:** SLR is calculated as a percentage of a bank's Net Demand and Time Liabilities (NDTL).
3. **Assets:** SLR assets include cash, gold, and government securities.

4. Impact:

a. **High SLR:** Restricts a bank's lending capacity, which can slow down economic growth.

b. **Low SLR:** Allows banks to lend more, potentially leading to inflation.

In essence, SLR is a regulatory requirement that ensures banks have sufficient liquid assets to meet their depositors' claims. **The current SLR rate is 18.00%.**

Conclusion :

The RBI's proposed norms on **LCR** aim to enhance the **liquidity resilience** of banks in response to the rapid technological advancements in banking. While these norms are intended to safeguard against potential risks from unexpected withdrawals, they could be a dampener for some banks as they will need to set aside a higher stock of **liquid securities**. The new norms will be effective from **April 1, 2025**.

SIDBI to Build \$1 Billion Fund for Green Financing with \$215 Million from GCF



Introduction:

On July 22, 2024, the **Small Industries Development Bank of India (SIDBI)** announced its plans to create a **\$1 billion fund** for financing mitigation and adaptation projects (**FMAP**) for **Medium and Small Enterprises (MSMEs)**.

This initiative comes shortly after the **Asian Development Bank (ADB)** approved **\$240 million** for rooftop solar projects in India, announced on July 17.

Background:

1. SIDBI has received approval for funding of **\$215.6 million** from the **Green Climate Fund (GCF)**, an entity set up by the **United Nations Framework Convention on Climate Change (UNFCCC)**.
2. The GCF board approved a **\$200 million loan** and a **\$15.6 million grant** for capacity building to SIDBI.

Funding Structure:

1. **GCF Contribution: \$215.6 million (\$200 million loan + \$15.6 million grant)**

2. **Additional Funding:** SIDBI will contribute an additional **\$800 million**, partly from its balance sheet and partly raised from the market, to form a total fund of **\$1 billion**.

Purpose of the Fund:

1. The **FMAP** facility aims to provide nearly **10,000 concessional loans** to MSMEs to promote low-emission, climate-resilient technologies.
2. The fund will support projects in **renewable energy, energy efficiency, energy storage, and e-mobility**.

Expected Impact:

1. **Greenhouse Gas Reduction:** The FMAP programme is expected to result in a reduction of greenhouse gas emissions by **35.3 million tonnes**.
2. **Water Savings and Resilience:** Adaptation activities under the programme will lead to substantial water savings and build resilience in vulnerable communities, benefiting more than **10.8 million people**.

Recent Developments:

1. **ADB Funding:** The **Asian Development Bank** recently approved **\$240 million** for lending to rooftop solar projects in India. This loan will be routed through the **State Bank of India** and the **National Bank for Agriculture and Rural Development (NABARD)**.

About Green Climate Fund (GCF):

Establishment and Purpose:

1. **Establishment:** The **Green Climate Fund (GCF)** was established at the **16th Conference of the Parties (COP 16)** held in **Cancun, Mexico**, in **2010**.
2. **Purpose:** It is an operating entity of the financial mechanism of the **United Nations Framework Convention on Climate Change (UNFCCC)**. The GCF aims to accelerate transformative climate action in developing countries through a country-owned partnership approach, utilizing flexible financing solutions and climate investment expertise.

Structure and Operations:

1. **Legal Status:** The GCF is a legally independent institution with a fully independent secretariat headed by an **Executive Secretary**.
2. **Location:** The Secretariat, located in **Songdo, South Korea**, began its operations in **December 2013**.

Financing Mitigation and Adaptation Project (FMAP):

Objectives and Impact:

1. **Loans to MSMEs:** The FMAP programme aims to provide nearly **10,000 concessional loans** to

Medium and Small Enterprises (MSMEs) to promote low-emission, climate-resilient technologies.

2. **Emission Reduction:** The programme is expected to result in a reduction of greenhouse gas emissions by **35.3 million tonnes**.
3. **Previous Projects:** This is the second GCF-approved project led by **SIDBI**. The first project is the **Avaana Sustainability Fund**, which helps startups access climate finance.

Small Industries Development Bank of India (SIDBI):

Establishment and Role:

1. **Establishment:** SIDBI was set up on **April 2, 1990**, under an Act of the **Indian Parliament**.
2. **Purpose:** Its primary role is to act as the principal financial institution for the promotion, financing, and development of the **Micro, Small, and Medium Enterprise (MSME)** sector. Additionally, it coordinates the functions of institutions engaged in similar activities.

Conclusion:

The establishment of the **\$1 billion FMAP fund** by **SIDBI**, with significant support from the **GCF**, marks a significant step towards promoting sustainable and climate-resilient technologies among **MSMEs** in India. This initiative, along with recent **ADB** funding for rooftop solar projects, underscores the growing commitment to green financing and climate action in the country.

World Bank Group Guarantee Platform Goes Live



Introduction:

The **World Bank Group (WBG)** guarantee platform is now open for business, housed at the **Multilateral Investment Guarantee Agency (MIGA)**.

Objective:

1. The platform aims to boost **WBG** annual guarantee issuance to **\$20 billion** by 2030.

Features:

- **WBG Guarantees** will serve as a one-stop-shop for all **WBG** guarantee business, providing the best

guarantee solutions for clients to meet project needs and development priorities.

- Clients can choose from a simplified market-friendly menu of guarantee options, including:
 - Credit guarantees for loans to the public or private sector;
 - Trade finance guarantees for trade finance projects involving public entities;
 - Political risk insurance against non-commercial risks for private sector projects or public-private partnerships.

Significance:

- The platform consolidates all guarantee products and experts from across the **World Bank Group** institutions at **MIGA**.
- It provides a simplified and comprehensive menu of guarantee solutions, enabling clients to select the instrument that best suits their needs.
- The platform streamlines processes, removes redundancies, and provides greater accessibility by de-risking investments in developing countries.

Background:

- The **World Bank Group** has been working to enable and catalyze private capital flows, recognizing the effectiveness of guarantees in mitigating risk and unlocking private finance.
- The **G20 Independent Expert Group's report** on Strengthening Multilateral Development Banks called for expanded use of guarantees to mitigate risk and unlock private finance.
- The **Private Sector Investment Lab**, launched by the **WBG** in June 2023, provided specific guidance on using guarantee instruments.

Impact:

- The platform is set to revolutionize the landscape of development financing, revitalizing the role of guarantees in development and aligning with the overall effort to mobilize private capital for development.
- It complements the **World Bank's** country-level support in creating an environment supportive to private capital mobilization.
- The platform will drive impactful solutions across diverse sectors, including energy access, pandemic preparedness, and climate action.

Performance:

- In fiscal year 2024, the **World Bank Group** issued approximately \$10.3 billion in new guarantees using products that will be part of the platform.

About World Bank Group:

- The **World Bank** is an international financial institution that provides loans and grants to the governments of low and middle-income/developing countries for the purpose of pursuing capital projects.
- It was established along with the IMF at the 1944 **Bretton Woods Conference**.

Quote: "MIGA is excited to host and begin the operationalization of the guarantee platform. This marks a pivotal moment in our commitment to sustainable economic development," said **Hiroshi Matano**, MIGA Executive Vice President.



Crux of The Hindu & Indian Express



INDIA'S BALANCE OF PAYMENTS

Last week, data from the **Reserve Bank of India (RBI)** showed that **India's current account** registered a **surplus** during the **fourth quarter (Jan-Mar)** of the **2023-24 financial year**. This was the **first time in 11 quarters** that India had witnessed a surplus.

SIGNIFICANCE OF TRANSACTIONS ON CURRENT ACCOUNT:

Movements in the current account are closely monitored as **they not only impact the exchange rate of the rupee and India's sovereign ratings, but also because they point to the overall health of the economy.**

WHAT IS BALANCE OF PAYMENT?

- The **Balance of Payments (BoP)** is essentially a **ledger of a country's transactions with the rest of the world.**
- As Indians **trade and transact** with the rest of the world, **money flows in and out of the country.**
- The BoP shows **how much money (shown here in billions of US dollars) went out of the country and how much money came in.**
- All the **money coming into** the country is **marked positive** and all the **money going out** is **marked negative.**
- The BoP matters because **it captures the relative demand of the rupee vis-à-vis the demand for foreign currencies** (represented in dollar terms).

Understanding India's Balance of Payments

(In \$ billion)			Q4 FY24	FY24	FY23	FY21	FY25#
Current account*			6	-23.3 (0.7% of GDP)	-67 (2% of GDP)	24 (0.9% of GDP)	-39 (1% of GDP)
	Trade of Goods		-51	-242	-265	-102	-266
	Trade of Services (Invisibles)		57	218	198	126	229
		Services	43	163	143	89	171
		Transfers	29	106	101	74	106
Capital account*			25	86	59	63	77
	Foreign investment		13	54	23	80	52
		FDI	2	10	28	44	20
		FI	11	44	-5	36	32
	Loans		2	2	B	6	10
	Banking Capital		7	41	21	-21	15
	Other Capital		3	-10	7	-2	0
Balance of Payments*			31	64	-9	87	38
Change in Forex*			-31	-64	9	-87	

A Minus sign is deficit : A minus sign shows increase in India's foreign exchange reserve; # Forecast by ICICI Securities

Source : RBI, ICICI Securities, Indian Express Research

CONSTITUENTS OF BoP

The table shows the constituents of India's BoP. The BoP has two main 'accounts' :

- * Current Account, and
- * Capital Account.

CURRENT ACCOUNT: The current account, as the name suggests, records transactions that are of a 'current' nature. There are two subdivisions of the current account:

- The trade of goods, and
- The trade of services.

The net of these two kinds of trades is the current account.

CAPITAL ACCOUNT: The capital account captures transactions **that are less about current consumption and more about investments**, such as **Foreign Direct Investment (FDI) and Foreign Institutional Investments (FII)**.

The table for Q4 shows a net surplus of \$25 billion on the capital account.

Lastly, the **BoP table always balances through the change in the foreign exchange reserves column.**

When there is a BoP surplus — **net of current and capital account** — implying billions of dollars coming into the country, the **RBI sucks up these dollars and adds to its foreign exchange reserves.**

RBI DATA ON JOBS

The **employment growth in the country jumped** by nearly **6 per cent** in the fiscal **2023-24**, as compared to an increase of **3.2 percent recorded in FY 2023**, according to the Reserve Bank of India's (RBI) data.

In FY 2024, the **workforce in the country increased by around 4.67 crore to 64.33 crore**, compared to **59.67 crore in fy 2023**, the data, which measures productivity at the industry level, showed.

The **RBI's data comes a few days after a research report by Citigroup India**, which said that the **country would struggle to create sufficient employment opportunities even with a 7 per cent growth rate** – a claim refuted by the Ministry of Labour and Employment.

THE SOURCE OF THE FINDINGS

As the **RBI's Measuring Productivity** at the Industry Level-**The India KLEMS [Capital (K), Labour (L), Energy (E), Material (M) and Services (S)]** database, released on Monday (July 9), the **growth in employment** in the country doubled to **6 per cent (provisional) in FY 2024**, compared to a **3.2 per cent rise seen in FY2023**.

In **absolute terms**, the number of jobs increased by approximately **4.67 crore** to 64.33 crore in FY 2024. In FY 2023, the total number of workforce stood at 59.67 crore.

Since **FY 2021**, the country added **7.8 crore, the data showed**. The employment

Growth rate in FY 2021 was 5.1 per cent and in FY2022 it stood at 3.3 percent.

ABOUT KLEMS

The RBI said the **KLEMS database covers 27 industries** comprising the entire Indian economy. The database also provides these estimates at the **broad sectoral levels (agriculture, manufacturing and services) and at the all-India levels**.

It includes measures of **Gross Value Added (GVA), Gross Value of Output (GVO), Labour Employment (L), Labour Quality (LQ), Capital Stock (K), Capital Composition (KQ), the consumptions of Energy (E), Material (M) and Services (s) inputs, Labour Productivity (LP) and Total Factor Productivity (TFP)**.

THE FINDINGS OF CITIGROUP REPORT

- Citigroup in a recent report said that **given India's demographic dividend, even 7 per cent GDP growth might not be able to fulfill the job requirement over the next decade under reasonable assumptions**.
- The **research report** had said that while the **official unemployment rate is just 3.2 per cent (16 per cent youth), details reflect serious issues around quality of jobs and possible underemployment**.
- Agriculture accounts for around **46 per cent of all employment but less than 20 percent of GDP**, while both **manufacturing and services sectors absorb lesser share of labour than their share in GDP**.
- Share of the formal sector in non-agri jobs is still only around 25%.
- **Only 21 per cent** of the labour force has a "salaried" job, lower than 24 per cent pre-Covid.
- Share of **employment in rural areas has remained at around 67 per cent between 2018 and 2023**, indicating that the rural to urban migration process has practically stalled,

THE LABOUR MINISTRY'S RESPONSE

- The Ministry said the Citigroup's report "fails to account for the **comprehensive and positive employment data** available from official sources such as the **Periodic Labour Force Survey (PLFS) and the Reserve Bank of India's KLEMS data**".
- Citing data from **RBI's KLEMS data**, the Ministry said it indicates **more than 8 crore employment opportunities created between 2017-18 to 2021-22** translating to an average of over 2 crore employment per year.

- It also said that **more than 6.2 crore net subscribers joined EPFO between september 2017 – March 2024**.
- These surveys **use their own derived definition of employment – unemployment which is not aligned to either national or international standards**.
- The **sample distribution and methodology** are often **critiqued for not being as Robust or representative as official data sources like PLFS**.

FINDINGS OF PLFS

As per the quarterly bulletin of Periodic Labour force Survey (PLFS) released by the Ministry of Statistics and Programme Implementation (MoSPI):

- In **May 2024, unemployment rate (UR) in urban areas decreased from 6.8 per cent during January – March 2023 to 6.7 per cent in January – March 2024** for persons of age 15 years and above.
- The **female unemployment rate declined from 9.2 per cent in January – March 2023 to 8.5 per cent in January – March 2024**.
- **Labour Force Participation Rate (LFPR) in urban areas has shown an ncreasing trend from 48.5 per cent in January – March 2023 to 50.2 per cent during January – March 2024** for persons of age 15 years and above.
- There was an **increasing trend in Worker Population Ratio (WPR) for persons of age 15 years and above from 45.2 per cent in January – March 2023 to 46.9 per cent in January – March 2024**.
- **Female Worker Population Ratio in urban areas rose from 20.6 per cent in January – March 2023 to 23.4 per cent during January – March 2024**, reflecting an overall increasing trend in WPR, the PLFS showed.

THE BUDGET 2024-25

The Union Budget 2024-25 was presented by the Union Minister of Finance and Corporate Affairs, Smt. Nirmala Sitharaman, in Parliament on 23 July, 2024.

- This was her **seventh consecutive budget**.
- This budget is significant as **it surpasses the record of six consecutive budgets** presented by the late Morarji Desai.

CONSTITUTIONAL PROVISIONS WRT BUDGET

The Budget in constitution refers to as **Annual Financial Statement**. Article 112 deals with the annual financial statement.

- Budget is a statement covering **estimated expenditure and receipts** for the Government of India in a financial year.

- Other than that, budget contains **estimated revenue and capital receipts, ways to increase revenues, details for receipts and expenditure** of the closing financial year and **economic and financial policy for the upcoming year.**
- Earlier the **Government of India had two budgets**
 - o Railways and
 - o General budget
} Separated in 1921
- In **2016**, Modi government **merged the railway budget to the general budget and scrapped the 92 years old practices.**

BUDGET ESTIMATES

Total Receipts: **Rs. 32.07 lakh crore**

- **Total Expenditure:** Rs. 48.21 lakh crore
- **Net Tax Receipts:** Rs. 25.83 lakh crore
- **Fiscal Deficit:** Estimated at 4.9% of GDP
- **Borrowings:** Gross Rs. 14.01 lakh crore, Net Rs. 11.63 lakh crore

OVERVIEW OF THE BUDGET

- **Economic Context:** Despite global uncertainties, **India remains a standout in economic growth.** Inflation is stable and moving towards the target of 4%. The budget emphasizes stability and growth amid global challenges.
- **Interim Budget Recap:** Focus remains on **'Garib' (Poor), 'Mahilayen' (Women), 'Yuva' (Youth), and 'Annadata' (Farmers),** as outlined in the interim budget.
- **Budget Theme:** Emphasizes **employment, skilling, MSMEs, and middle-class welfare.** Aims to **enhance productivity and resilience** across various sectors.

BUDGET PRIORITIES

Outlines **nine key priorities** for fostering opportunities:

- Productivity and resilience in Agriculture
- Employment & Skilling
- Inclusive Human Resource Development and Social Justice
- Manufacturing & Services
- Urban Development
- Energy Security
- Infrastructure
- Innovation, Research & Development
- Next Generation Reforms

1. Productivity and resilience in Agriculture

- Introduction of 109 high-yielding and climate-resilient crop varieties.
- Promotion of natural farming for 1 crore farmers.

- Establishment of 10,000 bio-input resource centers.
- Focus on self-sufficiency in pulses and oilseeds.
- Rollout of Digital Public Infrastructure (DPI) in agriculture.

2. Employment & Skilling

- Launch of schemes under PM's package for employment and skilling.
- Creation of 5 schemes for youth employment, with a Rs. 2 lakh crore outlay.
- Enhancement of skilling through new schemes and revision of Model Skill Loan Scheme.

3. Inclusive Human Resource Development and Social Justice

- Expansion of schemes for **artisans, self-help groups, SC/ST entrepreneurs, and street vendors.**
- Launch of **Purvodaya Yojana** for development in eastern states and **Pradhan Mantri Janjatiya Unnat Gram Abhiyan** for tribal communities.

4. Manufacturing & Services

- Support for **MSMEs** through financing and credit enhancement measures.
- **Expansion of Mudra loans** and establishment of food irradiation units and quality testing labs. (Limit was earlier Rs. 10 Lakh. It has increased to Rs. 20 Lakh)
- Launch of **internship schemes in top companies for youth.**

5. Urban Development

- **PM Awas Yojana Urban 2.0** for housing **1 crore urban poor** and middle-class families.
- **Promotion of water supply, sanitation, and street food hubs** under PM SVANidhi.

6. Energy Security

- Launch of **PM Surya Ghar Muft Bijli Yojana** for rooftop solar plants.
- **Emphasis on nuclear energy** for a sustainable energy mix.

7. Infrastructure

- Allocation of **Rs. 11,11,111 crore for capital expenditure** over the next year.
- Expansion of **PMGSY and support for irrigation and flood management projects.**

8. Innovation, Research & Development

- Establishment of **Anusandhan National Research Fund** and **venture capital fund for space economy.**

- Promotion of **private sector-driven research and innovation**.

9. Next Generation Reforms

- Formulation of **Economic Policy Framework for sustainable growth**.
- **Simplification of FDI** and overseas investment regulations.
- Introduction of **NPS Vatsalya** and **reforms in New Pension Scheme**.

TAXATION REFORMS & ECONOMIC POLICIES

- **Direct Taxation:** The Union Budget 2024-25 aims to **simplify and rationalize** direct taxes, reducing compliance burdens and broadening tax nets.
 - o It **increased the standard deduction for salaried employees** opting for the new tax regime from **Rs. 50,000 to Rs. 75,000**.
 - o Similarly, the **deduction on family pension for pensioners** was enhanced from **Rs. 15,000 to Rs. 25,000**. Assessments can now be reopened up to 5 years for incomes exceeding Rs. 50 lakh, enhancing scrutiny on high-income groups.
- **Corporate and Personal Income Tax:** Over **58% of corporate tax receipts** in the previous fiscal came from a **simplified tax regime**. The majority of individual taxpayers have shifted to the new personal income tax regime, appreciating its streamlined approach without exemptions and deductions.
- **Entrepreneurship and Start-ups:** The budget **abolished angel tax across all classes of investors** to boost start-up investments. It **introduced a simpler tax regime** for foreign shipping companies operating domestic cruises and reduced corporate tax rates for foreign companies from **40% to 35%**, aiming to attract more foreign capital.
- **Indirect Taxes and GST:** The budget proposed **comprehensive rationalization of the GST tax structure** to improve tax base and support domestic manufacturing. **Custom duty rates were also reviewed** to ease trade and reduce disputes. The government plans to **further digitalize Customs and Income Tax services** to enhance efficiency and reduce paperwork.
- **Customs Duty Adjustments:** To benefit various sectors, **the budget fully exempted three cancer treating medicines from customs duties**.

- o Basic Customs Duty (BCD) on X-ray machines, mobile phones, and components like Printed Circuit Board Assembly (PCBA) and mobile chargers was **reduced**.
- o BCD on critical minerals like **lithium was fully exempted** to boost processing and refining capacities.
- o Import duties on **gold, silver, platinum, and specific industrial goods were lowered** to stimulate demand and production.
- **Capital Gains Tax:** The budget revised the capital gains tax structure to **provide relief to lower and middle-income classes**. Short-term gains on financial assets now attract a **20% tax rate**, while long-term gains on all assets will be **taxed at 12.5%**. The exemption limit for capital gains was raised to **Rs. 1.25 lakh per year**, benefiting a wider segment of taxpayers.
- **Dispute Resolution:** A new scheme, **Vivad se Vishwas Scheme 2024**, was introduced to resolve **pending income tax disputes**. Monetary limits for appeals related to direct taxes, excise, and service taxes in higher courts were increased, aiming to reduce litigation and provide certainty in tax matters.

NEW TAX SLAB INTRODUCED

BUDGET '23 RISING BHARAT						INCOME TAX SLABS: AT A GLANCE					
NEW TAX REGIME (REVISED)		NEW TAX REGIME (PREVIOUS)		OLD TAX REGIME		NEW TAX REGIME (REVISED)		NEW TAX REGIME (PREVIOUS)		OLD TAX REGIME	
INCOME	TAX RATE (%)	INCOME	TAX RATE (%)	INCOME	TAX RATE (%)	INCOME	TAX RATE (%)	INCOME	TAX RATE (%)	INCOME	TAX RATE (%)
0-3 Lakh	NIL	0-2.5 Lakh	NIL	0-2.5 Lakh	NIL	0-2.5 Lakh	NIL	0-2.5 Lakh	NIL	0-2.5 Lakh	NIL
3-6 Lakh	5%	2.5-5 Lakh	5%	2.5-5 Lakh	5%	2.5-5 Lakh	5%	2.5-5 Lakh	5%	2.5-5 Lakh	5%
6-9 Lakh	10%	5-7.5 Lakh	10%	5-7.5 Lakh	10%	5-10 Lakh	20%	5-10 Lakh	20%	5-10 Lakh	20%
9-12 Lakh	15%	7.5-10 Lakh	15%	7.5-10 Lakh	15%	10-12.5 Lakh	20%	10-12.5 Lakh	20%	10-12.5 Lakh	20%
12-15 Lakh	20%	10-12.5 Lakh	20%	10-12.5 Lakh	20%	12.5-15 Lakh	25%	12.5-15 Lakh	25%	12.5-15 Lakh	25%
Above 15 Lakh	30%	12.5-15 Lakh	25%	12.5-15 Lakh	25%	Above 15 Lakh	30%	Above 15 Lakh	30%	Above 15 Lakh	30%

CONCLUSION :

The **Union Budget 2024-25** reflects a **proactive approach towards economic reforms** and tax rationalization. It aims to **simplify tax structures, reduce compliance burdens, and stimulate economic growth** across various sectors.

The emphasis on **boosting entrepreneurship, promoting start-ups, and enhancing manufacturing** through revised GST and Customs Duty regimes underscores the government's commitment to fostering a competitive and investor-friendly economic environment.



Blue Origin's New Shepard to Take Indians to Space



Blue Origin, the space company founded by Jeff Bezos, has partnered with the **Space Exploration and Research Agency (SERA)** to offer Indian citizens the opportunity to experience space travel aboard its **New Shepard spacecraft**.

Key Points

New Shepard Spacecraft

Blue Origin's **New Shepard** is a **suborbital space vehicle** designed for **human spaceflight**, offering unique experiences for **scientific research** and **space tourism**.

Features of New Shepard

- **Components:** The spacecraft includes a **reusable booster** and a **pressurised crew capsule**.
- **Capacity:** The capsule can accommodate six passengers, each with a **window seat** to view Earth.
- **Windows:** It has the **largest windows** ever flown in space, providing an unparalleled visual experience.

Journey to Space

- **Duration:** New Shepard's journey lasts **11 minutes**.
- **Altitude:** Passengers travel beyond the **Kármán line**, the international boundary of space.
- **Experience:** Passengers experience several minutes of **weightlessness** before a controlled descent back to Earth, aided by **parachutes**.

Safety Measures

- **Testing:** The New Shepard system underwent extensive **testing**, including **16 consecutive successful flight tests** and **three capsule escape tests**, before being cleared for crewed missions.
- **Autonomy:** The spacecraft is **fully autonomous**, requiring no pilots on board.

Scientific Research

New Shepard serves as a valuable platform for **scientific research**, carrying numerous payloads for organizations like **NASA**, schools, and universities.

Crewed Flights

Blue Origin has completed multiple **crewed flights** since its first human mission in July 2021, which included Jeff Bezos. The most recent crewed flight, **NS-25**, occurred on May 19, 2024, marking the company's seventh human spaceflight.

About the New Shepard Spacecraft

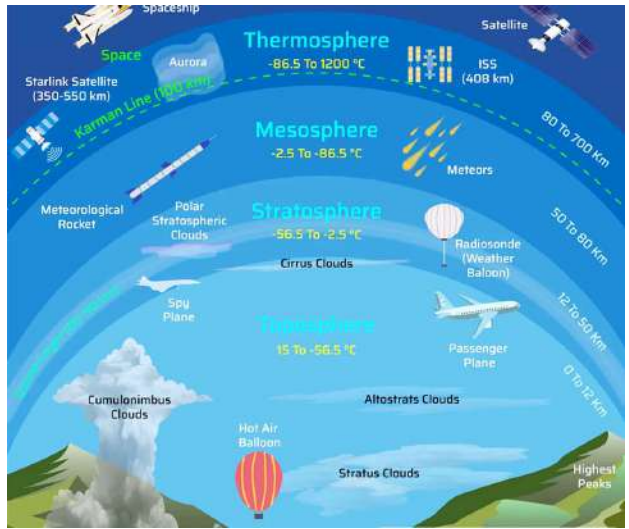
Suborbital Space Travel

New Shepard is designed for **suborbital space travel**, offering a unique experience for scientific research and space tourism.

Alan Shepard's Legacy

Named after **Alan Shepard**, the first American to travel to space, New Shepard is a fully **reusable rocket system** intended for human spaceflight.

What is the Kármán Line?



Boundary of Earth and Space

- **Location:** Approximately **100 kilometers (62 miles)** above sea level, marking the boundary between Earth's atmosphere and space.

Establishment and Recognition

- **Origin:** Established in the 1960s by the **Fédération Aéronautique Internationale (FAI)**.
- **Namesake:** Named after aerospace pioneer **Theodore von Kármán**.
- **Recognition:** Widely recognized by most countries and space organizations.

Significance and Controversy

- **Recognition:** Though not universally accepted (e.g., NASA places the line at 80 km), it is a widely recognized boundary.
- **Implications:** Anything traveling above the **Kármán Line** requires a propulsion system independent of Earth's atmosphere.

What is Suborbital Spaceflight?

Suborbital spaceflight refers to a flight reaching a height of around **100 kilometers** from Earth's surface, which is lower than an orbital flight that enters Earth's orbit.

FALCON 9

The US **Federal Aviation Administration (FAA)** on Friday **grounded SpaceX's Falcon 9** — one of the world's most active rockets — after the **failure of its Upper stage engine that stranded 20 Starlink internet satellites in a low, non-survivable orbit.**

SINCE WHEN IS FALCON OPERATIONAL? WAS IT SUCCESSFUL?

The failed mission ended a remarkable streak of **more than 300 successful Falcon 9 flights in the last nine years.**

ABOUT FALCON 9

- **Falcon 9** is a **partially reusable rocket** designed and manufactured by **Elon Musk-owned SpaceX**.
- It can **transport crew and payloads to low Earth orbit (an altitude of 2000 km or less) and beyond.**
- The rocket has **two stages.**
 - o The first stage or booster stage comprises nine Merlin engines (a family of rocket engines developed by SpaceX), and aluminium-lithium alloy tanks containing liquid oxygen and rocket-grade kerosene propellant.
 - o The second stage consists of a single Merlin Engine.

- The **first stage, which is reusable, is capable of re-entering the atmosphere, and landing vertically after separating from the second stage.**

WHAT WENT WRONG?

The issue occurred roughly **30 Minutes after the launch of Falcon 9 from the Vandenberg Space Force Base in California on Thursday Night.**

The **rocket's second stage experienced a liquid oxygen leak, and failed to complete a second, short engine burn needed to put 20 Starlink satellites in the correct orbit, according to a post on SpaceX's website.**

THE REMEDIAL MEASURE TAKEN:

"After a planned relight of the upper stage engine to raise perigee — or the lowest point of orbit — the Merlin Vacuum engine experienced an anomaly and was unable to complete its second burn," SpaceX Said.

WHAT WAS THE END RESULT?

Although **the stage survived and still deployed the satellites, it did not successfully circularise its orbit.** This left the satellites in an **eccentric orbit with a very low perigee of 135 kilometres (84 miles), which is less than half the expected perigee altitude."**

WHAT ARE THE THREATS?

SpaceX claimed that **the stranded satellites do not pose any threat to other satellites, or public safety as they are expected to entirely burn up in the Earth's Atmosphere.**

WHAT NEXT?

- The rare failure **is expected to impede Falcon 9's launch pace.**
- In 2023 alone, the rocket made **96 launches, and exceeded the annual launch total in any country, according to a report by Reuters.**
- **"By comparison, China, a space rival to the United States, launched 67 missions to space in 2023 using various rockets."**
- The **grounding of Falcon 9 is also likely to postpone upcoming missions taking astronauts to orbit.**
- The **private Polaris Dawn mission spearheaded by the entrepreneur Jared Isaacman is slated for the end of July.**

- The rocket is also scheduled to take four astronauts to the International Space Station (ISS) for NASA in mid-August.
- The rocket will remain grounded till the time SpaceX investigates the cause of failure, fixes the issue, and gets approval from the FAA.

Higher Syphilis Cases Detected in Mumbai with Increased Testing



Improved testing has led to the detection of over 6,000 cases of syphilis, a sexually transmitted disease, in Mumbai between 2018-19 and 2022-23, according to data from the Mumbai AIDS Control Society (MDACS).

Key Points:

- **Syphilis Cases:**
Over 6,000 cases of syphilis have been detected in Mumbai between 2018-19 and 2022-23, indicating a significant increase in testing and detection.
- **Improved Testing:**
The expansion of syphilis testing to cover HIV-infected individuals, high-risk groups, pregnant women, prison inmates, and other suspected individuals has led to the detection of more infected individuals.
- **Free Testing and Treatment:**
Testing and treatment for syphilis are provided free of charge in BMC and government hospitals, making it accessible to all.
- **Causes of Syphilis:**
Unsafe sex with multiple partners is the most common cause of syphilis infection, highlighting the need for safe sex practices and condom use.
- **Symptoms of Syphilis:**
Syphilis symptoms can manifest subtly, initially presenting as painless ulcers in the genital area, which may go unnoticed and heal spontaneously.

About Syphilis:

- **Definition:**
Syphilis is a sexually transmitted infection (STI) caused by the bacterium *Treponema pallidum*.
- **Transmission:**
Syphilis is typically spread through direct contact with a syphilis sore during vaginal, anal, or oral sex, and can also be passed from mother to baby during pregnancy, childbirth, and sometimes through breastfeeding.
- **Symptoms:**
Syphilis develops in stages, with symptoms varying with each stage, and is often painless. The disease starts as a sore that's often painless and typically appears on the genitals, rectum, or mouth.
- **Complications:**
If left untreated, syphilis can cause serious health issues, including permanent damage to the heart, brain, muscles, bones, and eyes.

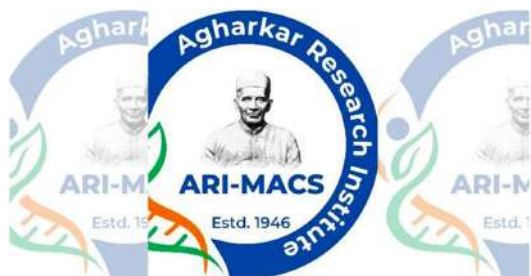
Treatment of Syphilis:

- **Curability:**
Syphilis is treatable and curable, especially during the early stages.
- **Antibiotics:**
Penicillin is the most commonly used medication for syphilis and is effective in eradicating the disease completely.

Way Forward:

- **Increased Awareness:**
There is a need to increase awareness about syphilis, its causes, symptoms, and treatment, to encourage people to get tested and seek treatment.
- **Safe Sex Practices:**
Promoting safe sex practices, such as condom use, can help prevent the spread of syphilis.
- **Expanded Testing:**
Expanding syphilis testing to cover more high-risk groups and individuals can help detect more cases and prevent the spread of the disease.
- **Improved Healthcare Infrastructure:**
Strengthening healthcare infrastructure, including BMC and government hospitals, can help provide better access to testing and treatment for syphilis.

Indian Scientists Discover New Probiotic with Potential Health Benefits



Researchers at **Agharkar Research Institute (ARI)** Pune have made a significant breakthrough in the field of **probiotics**. They have discovered a new strain of **lactic acid bacterium** that has the potential to be used in a wide range of applications beyond the dairy industry.

What is *S. thermophilus*?

1. ***S. thermophilus*** is a type of **probiotic bacteria** that is commonly used in dairy products.
2. It is a gram-positive, non-motile, and non-sporulating bacterium that can grow under aerobic and anaerobic conditions.

The Discovery of MCC0200

1. The team of researchers was interested in exploring the properties of ***S. thermophilus***.
2. Through a collaborative genome analysis, they were able to identify a new strain of **lactic acid bacterium**, which they named **MCC0200**.

Properties of MCC0200

MCC0200 has several properties that make it an attractive candidate for probiotic use. These include:

1. Ability to survive in the **harsh conditions of the gastrointestinal tract**
2. Strong affinity for **intestinal surfaces**, allowing it to interact with host cells and promote **gut health** and **immune function**
3. Ability to produce essential vitamins, such as **folate**, which is important for various cellular functions
4. Ability to assimilate **cholesterol**, which could help to lower serum cholesterol levels and reduce the risk of **cardiovascular disease**

Health Benefits of MCC0200

The health benefits of **MCC0200** include:

1. Reduction of **oxidative stress** and **inflammation** in the gut
2. Promotion of **gut health** and **immune function**

3. Potential to lower **serum cholesterol levels** and reduce the risk of **cardiovascular disease**

Potential Applications of MCC0200

The discovery of **MCC0200** has the potential to be used in a wide range of applications, including:

1. **Food products:** **MCC0200** could be added to food products to promote **gut health** and **immune function**
2. **Pharmaceutical products:** **MCC0200** could be used to develop new **probiotic supplements**
3. **Research:** **MCC0200** could be used as a model organism to study the properties of **probiotic bacteria**

Conclusion

The discovery of **MCC0200** is an exciting breakthrough in the field of probiotics. Its unique properties and health benefits make it a promising candidate for use in a wide range of applications.

ISRO Conducts Experimental Flight of Air-Breathing Propulsion System



Introduction

The **Indian Space Research Organisation (ISRO)** successfully carried out the second experimental flight for the demonstration of **Air Breathing Propulsion Technology**. The flight test was conducted on July 22 at 7 a.m. from **Satish Dhawan Space Centre, Sriharikota**.

Experimental Flight Details:

1. The propulsion systems were symmetrically mounted on either side of a **RH-560 Sounding Rocket**.
2. **RH-560** is a two-stage, solid motor based sub-orbital rocket that is designed to be utilised as a cost-effective flying test bed for the demonstration of advanced technologies.
3. The flight test achieved satisfactory performance of the Sounding Rocket along with successful ignition of the **Air Breathing Propulsion Systems**.
4. Nearly **110 parameters** were monitored during the flight to assess its performance.
5. The flight data from the mission will be useful for the next phase of development of Air Breathing Propulsion Systems.

Prior Ground Tests:

Multiple ground tests were carried out at **Vikram Sarabhai Space Centre (VSSC)**, **Liquid Propulsion Systems Centre (LPSC)**, **ISRO Propulsion Complex (IPRC)**, and at the **CSIR -National Aerospace Laboratories (CSIR-NAL)**, Bengaluru.

Air Breathing Propulsion System:

1. In this system, the rocket will carry its fuel, but will not carry an on-board oxidiser.
2. Instead, this system will utilise atmospheric oxygen as an oxidiser to burn the fuel.
3. This makes rockets significantly lighter and more efficient.
4. However, such air-breathing technologies can be used only within the denser layers of the **Earth's atmosphere**, where there is an adequate supply of oxygen.

Types of Air-Breathing Propulsion:

1. **Ramjet**: It is an air breathing propulsion engine operating on the principle of supersonic combustion.
2. **Scramjet**: It is an upgraded version of the Ramjet and generates thrust through supersonic air flow and combustion.
3. **Dual-Mode Ramjet (DMRJ)**: It is a jet engine where a ramjet transforms into a scramjet over Mach 4-8 range and it can efficiently operate both in subsonic and supersonic combustor modes.

Importance of Air-Breathing Propulsion:

1. Air-breathing propulsion systems have the potential to significantly reduce the weight of rockets and increase their efficiency.
2. This technology can be used for a variety of applications, including **space exploration** and **satellite launches**.

ISRO's Achievements:

1. In 2023, **India** became the fourth country to successfully demonstrate the flight testing of a **Scramjet Engine**.
2. **ISRO** has been at the forefront of space research and development in India, with a number of notable achievements in recent years.

What is ISRO?

1. **Indian Space Research Organisation (ISRO)** is the space agency of India, responsible for the planning and execution of space-related activities in the country.
2. **ISRO** is one of the most prominent and successful space agencies in the world, known for its cost-effective and efficient space missions.
3. The primary goal is the development and application of space technology for various national needs.

Conclusion:

The successful experimental flight of the air-breathing propulsion system is a significant milestone for **ISRO** and **India's space program**. This technology has the potential to significantly reduce the weight of rockets and increase their efficiency, making it an important area of research and development for the space industry.

ISRO Seeks Active Role in Global Efforts to Shield Earth from Asteroids



Location: Bengaluru, India

Key Findings:

1. **ISRO Chairman S. Somanath** emphasized India's growing **space exploration capabilities** and readiness for **asteroid research collaborations**.
2. India aims to contribute significantly to global efforts in **planetary defense** and **scientific discovery**.
3. ISRO seeks to engage in global **asteroid research** and **defense projects**, including the planned mission to study the **asteroid Apophis** in 2029.

Background:

1. **Asteroids** pose potential threats to Earth, but they also offer significant opportunities for **scientific discovery**.
2. **International collaboration** is necessary for developing **planetary protection systems** against asteroids.
3. No single country can undertake this task alone, and **global efforts** are required to address the threat of asteroids.

Initiative:

1. **ISRO** is willing to contribute to forthcoming international missions, including providing instruments or other support for collaborative missions spearheaded by agencies like **NASA**, **ESA**, and **JAXA**.
2. India's recent achievements in space exploration, such as the successful **Chandrayaan-3 mission** and the **Aditya-L1 solar observatory mission**, demonstrate its capabilities and readiness to participate in more complex and challenging missions.
3. The **Aditya-L1 mission** has recently completed its first halo orbit around the **Sun-Earth L1 point** and has undergone station-keeping maneuvers to maintain its orbit.
4. The mission involves modeling complex dynamics, demonstrating India's proficiency in executing intricate space maneuvers.

Challenges:

1. Developing **planetary protection systems** against asteroids requires **international collaboration** and cooperation.
2. The task of defending Earth against asteroids is complex and challenging, requiring significant resources and expertise.

Asteroid Impact Avoidance:

Definition:

1. **Asteroid impact avoidance** refers to the methods and techniques used to **prevent or mitigate** the impact of an asteroid or other **near-Earth object (NEO)** on Earth.
2. This includes detecting and tracking **NEOs**, characterizing their orbits and sizes, and developing strategies for deflecting or disrupting them if they are on a collision course with Earth.

Consequences of Impact:

1. The impact of a large asteroid or other NEO could have catastrophic consequences for Earth, including:
 - a. Massive destruction and loss of life
 - b. Global firestorms and tsunamis
 - c. Long-term environmental damage and climate disruption
 - d. Extinction of species

2. The **Chicxulub crater** and **Cretaceous-Paleogene extinction event** are examples of the devastating effects of an asteroid impact.

Asteroid Deflection Missions:

NASA's Double Asteroid Redirection Test (DART):

1. Launched in 2022
2. Impacted **Dimorphous**, a small asteroid moon
3. Reduced orbital period by 32 minutes
4. Demonstrated the feasibility of **asteroid deflection**

China's CNSA:

1. Plans to launch deflection mission to near-Earth object **2019 VL5** in 2025
2. Includes impactor and observer spacecraft
3. Aims to change the asteroid's trajectory and orbit

India's Journey in Planetary Defence:

Observing Apophis:

1. Discovered in 2004
2. Initial observations suggested a 1 in 37 chance of impact in 2036
3. Further observations refined the orbit and reduced the impact risk
4. ISRO's plans for Apophis:
 - a. Study asteroid in 2029
 - b. Collaborate with international agencies (JAXA, ESA, NASA)
 - c. Develop strategies for deflecting or disrupting the asteroid if necessary

India's Future in Planetary Defence:

Opportunities :

1. **Scientific discovery** and exploration
2. Development of new technologies and capabilities
3. Collaboration with international agencies and sharing of resources

Challenges:

1. **Funding constraints** and prioritization of resources
2. Need for sustained investment and commitment to **planetary defence**
3. Technical and engineering challenges in detecting and deflecting asteroids

Learning from NASA's DART mission:

1. Importance of **international cooperation** and collaboration
2. Feasibility of **asteroid deflection** and disruption
3. Need for continued research and development in **planetary defence technologies**

ISRO'S PLANETARY DEFENCE

Indian Space Research Organisation (ISRO) Chairman S Somanath said last week that “we should be able to go and meet” the asteroid Apophis when it passes by Earth at a distance of 32,000 km in 2029. However, “it is yet to be decided in what way [ISRO] should participate”.

The Indian space agency might send its own spacecraft, or collaborate with other space agencies. A NASA mission has already been confirmed.

WHAT WOULD BE THE PURPOSE?

Somanath's remarks reveal ISRO's intent to develop capabilities in planetary defence — an area it has so far not entered.

ANY OTHER PURPOSE?

A mission to study an asteroid would be the first step towards building a programme aimed at preventing celestial bodies from colliding with Earth with potentially catastrophic consequences.

ABOUT APOPHIS

When Apophis was discovered in 2004, scientists thought there was a 2.7% chance of a collision with earth — the highest probability of any large asteroid hitting Earth in the recent past.

WHEN IS IT EXPECTED?

Initial observations showed that if not in 2029, Apophis could hit Earth in 2036 or 2068.

Its size & potential to cause damage:

It measures about 450 m at its widest — a collision with Earth could cause large-scale damage. Some scientists compared the potential impact to the event that wiped out dinosaurs and most other extant life some 66 million years ago.

THE FACTS

POSSIBLE INCOMING THREATS FROM SPACE

Apophis may not pose a threat, but asteroids are headed towards Earth all the time.

HOW FREQUENTLY THEY ENTER THE EARTH'S ATMOSPHERE?

In fact, thousands enter the Earth's atmosphere every day. Most are very small and

Burn up in the atmosphere due to friction — some of the larger ones burn spectacularly, and show up as fireballs in the sky. In some cases, unburnt fragments make it to surface, although they are not large enough to cause much damage.

THE ASTEROID ENCOUNTER IN RUSSIA

In 2013, a 20-metre wide asteroid entered the atmosphere and exploded about 30 km above a Russian town, releasing energy equivalent to the blast yield of 400-500 kilotons of TNT — 26 to 33 times the energy released by the atom bomb that detonated over Hiroshima. While most of this energy was absorbed by

the atmosphere, shock waves travelled to the ground, flattened trees, damaged buildings, and injured 1,491 people, according to Russian Ministry of Health.

WASN'T IT DETECTED?

The asteroid was detected only after it entered the atmosphere. This was in part because it came from the direction of the Sun, and was hidden by its glare. Scientists know of at least 1.3 million asteroids. A planetary defence programme seeks to track and neutralise these threats.

About ISRO

Overview :

- **Agency:** Indian Space Research Organisation (ISRO)
 - **Responsibility:** Planning and execution of space-related activities in India
 - **Reputation:** One of the most prominent and successful space agencies globally, known for cost-effective and efficient missions
 - **Governance:** Operates under the Department of Space, reporting directly to the Prime Minister of India
- #### Origin and History
- **Early 1960s:** Space research activities began when satellite applications were still experimental
 - **1962:** Establishment of INCOSPAR under the Department of Atomic Energy (DAE)
 - **First Rocket Launch:** Nike-Apache from Thumba Equatorial Rocket Launching Station (TERLS) on November 21, 1963
 - **1969:** Establishment of ISRO on August 15, with headquarters in Bengaluru
 - **Objective:** Development and application of space technology for national needs

Key Centres of ISRO

ISRO Centres	Specification
Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram	Building of Launch Vehicles
U R Rao Satellite Centre (URSC), Bengaluru	Designing and Development of Satellites
Satish Dhawan Space Centre (SDSC), Sriharikota	Integration and launching of satellites
Liquid Propulsion Systems Centre (LPSC), Valiamala and Bengaluru	Development of liquid stages including cryogenic stage
Space Applications Centre (SAC), Ahmedabad	Sensors for Communication and Remote Sensing satellites
National Remote Sensing Centre (NRSC), Hyderabad	Remote Sensing satellite data reception processing and dissemination

IVRI Scientists' Mission to Save Endangered Turtle in UP's Bareilly



Scientists at the **Indian Veterinary Research Institute (IVRI)** in **Bareilly, Uttar Pradesh**, are working to save an **Indian flapshell turtle** whose shell was cracked in an accident. The turtle, listed as **vulnerable** on the **IUCN Red List**, was brought to the institute by a social worker and is undergoing treatment.

Key Points:

- **Indian Flapshell Turtle:** The species is found in **South Asia** and is characterized by its “**flap-shelled**” feature, where skin flaps cover its limbs when they retract into the shell.
- **Habitat and Distribution:** The turtles inhabit shallow, quiet waters in rivers, streams, marshes, ponds, lakes, and irrigation canals in **Pakistan, India, Sri Lanka, Nepal, Bangladesh, and Myanmar**.
- **Conservation Status:** The Indian flapshell turtle is listed as **Vulnerable** on the **IUCN Red List, Appendix I of CITES**, and **Schedule I of the Wildlife (Protection) Act, 1972**.
- **Accident and Treatment:** The turtle's shell was cracked after being run over by a vehicle, making it difficult to save due to the delicate condition. IVRI scientists used innovative methods, including **ortho surgical pins** and a **stapler**, to join the broken parts of the shell.
- **Challenges:** The treatment was challenging due to the turtle's poor condition, which made it difficult to administer sedatives or use traditional stitching methods.
- **IVRI's Efforts:** The institute's scientists, led by **Dr. A M Pawde**, are working to save the turtle, which is currently under observation.
- **Collaboration:** The **Divisional Forest Officer (DFO)** of **Bareilly, Diksha Bhandari**, permitted the injured turtle to be sent to IVRI for treatment, highlighting the importance of inter-agency collaboration in wildlife conservation.

- **Lifestyle:** Indian flapshell turtles are **omnivores**, solitary, and active during the day. They are well adapted to drought conditions and prefer waters with sand or mud bottoms due to their tendency to burrow.

Importance:

- **Wildlife Conservation:** The efforts to save the Indian flapshell turtle highlight the importance of protecting endangered species and their habitats.
- **Innovative Conservation Methods:** The use of novel techniques, such as **ortho surgical pins** and **staplers**, demonstrates the need for innovative approaches in wildlife conservation.
- **Inter-Agency Collaboration:** The collaboration between IVRI and the Forest Department underscores the importance of cooperation between different agencies in protecting India's biodiversity.
- **Raising Awareness:** The incident raises awareness about the need to protect wildlife and their habitats, and the importance of responsible human behavior to prevent such accidents.

IUCN (International Union for Conservation of Nature):

- **Definition:** IUCN is a global organization composed of governments, NGOs, scientists, and experts dedicated to conserving nature and promoting sustainability.
- **Red List:** The IUCN Red List categorizes species based on their conservation status, with **Vulnerable** being one of the categories.
- **Role in Conservation:** IUCN plays a crucial role in promoting conservation efforts globally, including providing a framework for species assessment and conservation planning.

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora):

- **Definition:** CITES is an international agreement aimed at regulating international trade in endangered species of wild animals and plants.
- **Appendix I:** The Indian flapshell turtle is listed in **Appendix I** of CITES, which includes species threatened with extinction and prohibits international trade.

Wildlife (Protection) Act, 1972:

- **Definition:** The Wildlife (Protection) Act, 1972 is an Indian legislation aimed at protecting and conserving wildlife and their habitats.
- **Schedule I:** The Indian flapshell turtle is listed in **Schedule I** of the Wildlife (Protection) Act, 1972, which provides the highest level of protection to endangered species.

MeDevIS Platform Launched to Enhance Accessibility to Medical Technologies and Devices



Context: The **World Health Organization (WHO)** has introduced the **MeDevIS** (Medical Devices Information System) platform, marking the first global open-access clearinghouse for information on medical devices.

Key Points:

1. MeDevIS Platform:

MeDevIS is an online platform designed to aid governments, regulators, and users in making informed decisions on the selection, procurement, and usage of medical devices for diagnostics, testing, and treatment of various diseases and health conditions.

2. Types of Medical Devices:

The platform encompasses **2301 types of medical devices** addressing a wide range of health issues, including reproductive, maternal, newborn and child health, noncommunicable diseases, and infectious diseases.

3. Complexity of Medical Devices:

With the increasing number and complexity of medical technologies, it becomes challenging for healthcare practitioners and patients to navigate the landscape effectively.

4. Objectives of MeDevIS:

MeDevIS aims to provide a comprehensive, international information hub invaluable for making decisions on life-saving medical technologies, particularly in resource-limited settings, thus improving access.

5. Features of MeDevIS:

Users can explore required devices by type, level of healthcare systems, device scope, and necessary infrastructure, among other categories.

6. International Naming Systems:

The platform references two international naming systems for medical devices: the **European Medical Device Nomenclature (EMDN)** and the **Global Medical Device Nomenclature (GMDN)**.

7. Benefits of MeDevIS:

National policymakers can use the platform to develop or update their own national lists for procuring health technologies and devices, contributing to the progress towards universal health coverage.

8. Operationalization:

The MeDevIS platform became operational in **March 2024** for consultation with WHO Member States.

Benefits:

1. Easy Access to Information:

MeDevIS offers easy access to reliable information on medical devices, aiding users in making informed decisions.

2. Improved Decision-Making:

The platform supports governments, regulators, and users in selecting, procuring, and using medical devices effectively.

3. Universal Health Coverage:

MeDevIS contributes to universal health coverage by providing a single platform for reliable information on medical devices.

4. Simplified Naming Systems:

The platform simplifies the naming of medical devices, making it easier for users to navigate and understand their complexities.

5. Global Impact:

MeDevIS has the potential for a significant global impact, offering a single platform for reliable information and supporting universal health coverage.

Analysis:

1. Global Impact:

MeDevIS can significantly impact globally by offering a reliable information platform on medical devices, thus supporting universal health coverage.

2. Complexity of Medical Devices:

The platform addresses the overwhelming complexity of medical devices, simplifying the selection, procurement, and usage process.

3. Importance of Standardization:

MeDevIS emphasizes the need for standardization in medical devices, aiding users in navigating and understanding their complexities.

4. Role of WHO:

The platform showcases WHO's commitment to improving access to medical technologies and devices and its role in supporting universal health coverage.

5. Future Expansion:

WHO plans to continuously improve MeDevIS, engaging multiple stakeholders and expanding it with additional technologies and devices across various health areas.

About World Health Organization (WHO):

1. **Establishment:** 1948
2. **Nature:** Specialized agency of the United Nations
3. **Purpose:** Connects nations, partners, and people to promote health, ensure safety, and serve the vulnerable

Objectives

1. **Universal Health Coverage:** Lead global efforts to expand coverage
2. **Disease Prevention:** Focus on prevention, control, elimination, and promotion of health and well-being
3. **Global Health Leadership:** Set standards for public health and provide technical assistance
4. **Collaboration:** Work with UN agencies, governments, civil society, and private sector

Governance Structure

1. **Membership:** 194 member states
2. **World Health Assembly (WHA):**
 - a. Highest decision-making body
 - b. Representatives from all member states
 - c. Meets annually to set policies, approve budget, and elect Director-General
3. **Secretariat:** Implements policies and programs approved by the WHA
4. **Director-General:** Heads the WHA and is supported by senior management team
5. **Regional Offices:** Six offices (Africa, Americas, Southeast Asia, Europe, Eastern Mediterranean, Western Pacific) coordinate and support WHO's work in their regions

Conclusion:

The **MeDevIS platform** is a significant advancement in improving access to medical technologies and devices. By providing a single platform for reliable information, it supports universal health coverage and simplifies the process of selecting, procuring, and using medical devices. The platform holds the potential for a substantial global impact, enhancing accessibility and efficiency in the medical device landscape.

Meta Introduces Llama 3.1 : What is an Open-Source AI Model?



Introduction

Meta has unveiled its new open-source AI model, **Llama 3.1**, which is said to outperform its peers, including **OpenAI** and other key rivals. Mark Zuckerberg, CEO of Meta, outlines why open-source AI holds the key to our future.

This development marks a significant milestone in the AI race, with Meta unveiling its biggest and "best open-source model yet" on July 23.

What is an Open-Source AI Model?

Definition and Characteristics

1. **Open-Source AI:** This refers to artificial intelligence technology that is publicly available for both commercial and non-commercial use under several open-source licenses.
2. **Components:** An open-source AI model is characterized by the availability of its components to users under licenses that allow them to study how the system works and inspect its components. These models come with datasets, ready-to-use interfaces, and prebuilt algorithms to help developers embark on their app development journey.
3. **Modifiability:** Such models allow developers to modify them to revise their recommendations and decisions to adapt to their specific needs. These modified versions can later be shared with the public for any purpose.

Growing Adoption

1. **Rise in Usage:** In the last three years, there has been a significant rise in the number of enterprises and independent developers using open-source AI technologies.
2. **Independence and Flexibility:** Mark Zuckerberg attributes this rise to organizations seeking independence from closed vendors to avoid changes such as model alterations and service disruptions. They prefer open-source models as they come with flexibility and control.

Advantages

1. **Training and Fine-Tuning:** Organizations need to train, fine-tune, and distill their own models to meet their specific requirements while using different-sized models for various tasks. Small models are suited for on-device and classification tasks, while larger models are adept at managing complex tasks.
2. **Long-Term Development:** Zuckerberg makes the case for investing in open-source ecosystems, seeing it as advantageous for long-term development and faster progress. The transparency and security of open-source technology enable models to run securely on any infrastructure.

What Do We Know About Llama 3.1?

Performance and Features

- 1. Largest Open-Source AI Model: Llama 3.1** is Meta's largest ever open-source AI model, and the company claims that it has outperformed the likes of OpenAI's GPT-4o and Anthropic's Claude 3.5 Sonnet on numerous benchmarks.
- 2. Complexity:** The new **Llama 3.1** models are reportedly far more complex compared to Llama 3 models.
- 3. Predictions:** In his blog post, Zuckerberg predicted that Meta AI will be the most widely used AI assistant by the end of this year, surpassing **ChatGPT**. This could be possible once Meta rolls out the Llama-based Meta AI assistant in more countries and languages.

Model Variants

- 1. Releases:** Meta is releasing **Llama 3.1 405B**, the first frontier-level open-source AI model, as well as the new and improved **Llama 3.1 70B** and **8B** models.
- 2. Cost-Effectiveness:** Zuckerberg claimed that running inference on **Llama 3.1 405B** is cost-effective as it is around 50 percent cheaper than closed models like OpenAI's GPT-4o.

Safety Features

- 1. Llama Guard:** Llama comes with systems like **Llama Guard** that can be secure against unintentional harms such as bad health advice or unintended self-replication, which he noted as major concerns.

Why is Meta Battling for Open-Source AI?

Strategic Focus

- 1. Best Experiences and Services:** According to Zuckerberg, Meta's prime focus is building the best experiences and services for people by giving them access to the best technologies and allowing for better product development without being limited by closed ecosystems offered by competitors.
- 2. Ecosystem of Tools and Improvements:** The open sourcing of Llama encourages an ecosystem of tools and improvements that can likely ensure long-term access to the best technologies.
- 3. Cost-Effectiveness:** While the open-source nature of the Llama model does not affect Meta's bottom line or investments in research, Zuckerberg highlighted Meta's history of successful open-source projects such as the Open Compute Project and tools like PyTorch and React, as they saved billions and drove innovation for Meta.

- 4. Security and Stability:** Zuckerberg believes that open-source AI is safer owing to its transparency and wide scrutiny. It allows larger organizations to counteract threats from smaller ones, promoting security and stability, as open-source AI models address intentional harm by bad actors.

Future Innovations and Economic Opportunities

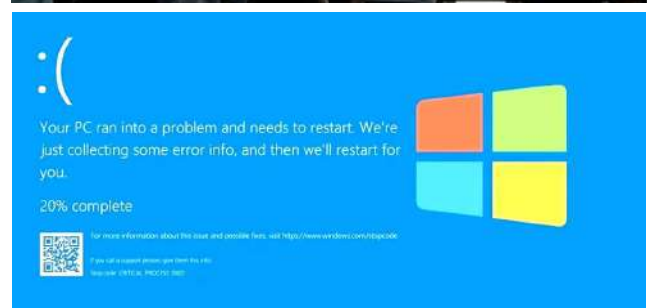
- 1. Boosting Innovations:** Zuckerberg makes the case for investing in open-source AI to boost future innovations and benefit startups, universities, and nations with scarce resources, leading to economic opportunities for all.
- 2. Enhancing Productivity and Creativity:** Its applications would enhance human productivity and creativity and improve our quality of life at the same time, accelerating economic growth and scientific research.

Conclusion

The introduction of **Llama 3.1** by Meta marks a significant advancement in the field of open-source AI. By outperforming its peers and offering cost-effective solutions, **Llama 3.1** has the potential to revolutionize various industries and drive future innovations. The transparency, flexibility, and security of open-source AI models make them a crucial component in the quest for identifying habitable environments in space and enhancing our overall quality of life.

MICROSOFT OUTAGE

A major disruption in **Microsoft Corp's cloud services** caused service disruptions to a **number of businesses Around the world**, including in India.



WHAT LED TO THE PROBLEM?

Microsoft said that a **preliminary cause for the disruption was a configuration change “in a portion of [its] Azure backend workloads”**, which resulted in connectivity failures that affected Microsoft 365 services dependent on these connections.

What is azure?

Azure is **Microsoft’s cloud computing platform**.

WHY CHANGES WERE BEING MADE?

At the heart of the issue was **a software update issued by US cybersecurity firm CrowdStrike** for Windows systems, which ended up malfunctioning and caused system downtimes.

The issue was **specific to Falcon**, one of the company’s main software products, which is deeply embedded with the Windows operating system.

WHY MANY CORPORATIONS WERE IMPACTED?

Major corporations across the world **use software developed by CrowdStrike**, which is why **all their systems faced the outage** at the same time.

WHAT IS FALCON?

In cybersecurity parlance, Falcon is described as **“endpoint detection and Response” (EDR) software**.

WHAT DOES FALCON DO?

Its basic job is to **monitor activity on computers** on which it is installed, and **constantly scan them** for any **potential threats such as malware**. All major businesses around the world, including several Fortune 500 companies, are understood to use the service.

HOW DOES FALCON WORK?

To carry out its job, **Falcon first gets access to deep details of a system**. This includes, among other things, **the communications that computers are sending over the internet**, **what programs they are running**, and the **files that are being opened**. In that sense, Falcon is a **‘privileged software’** given its deep rooted integration at the operating system level.

WHICH SECTORS WERE THE MOST IMPACTED IN INDIA?

- **Aviation Sector:** Several flights were **delayed & even cancelled**. **Online Bookings were also impacted**. The **Ministry of Civil Aviation**, in collaboration with the **Airports Authority of India**, implemented **manual backup systems** to maintain operational continuity. Extra staff was deployed to assist passengers, and address their concerns, the ministry said.

- **Banking Sector:** In India, **at least ten banks and NBFCs faced minor disruptions**, which have either been **resolved or are being resolved**, the Reserve Bank of India said. It added that **overall, the financial sector in India remained insulated** from the global outage since critical systems of most banks were not in the cloud, and **only a few banks are using the CrowdStrike tool**.
- **Private users:** A number of Windows PC-users were also greeted with the infamous **‘blue screen of death’**, where their systems simply did not start up beyond a blue screen displaying an error message. According to Microsoft, a Windows device Displays blue screen errors if the operating system has encountered a serious problem that has **forced it to shutdown or restart unexpectedly**.

Goi’s RESPONSE

Union IT Minister Ashwini Vaishnaw said that the Ministry of Electronics and IT (MeitY) was in touch with Microsoft, which in turn was working with impacted entities.

- India’s nodal cyber agency, Indian Computer Emergency Response Team (Cert-In) also issued an advisory regarding workarounds to the issue.
- Cert-In was coordinating with chief information security officers of **critical infrastructure entities**.

National Informatics Centre’s (NIC’s) operations were not impacted.

Only 4 of 12 CoEs for Rare Diseases Utilise NPRD Funds in Past 3 Years



Only four out of **twelve Centres of Excellence (CoEs)** for **rare diseases** have utilised funds provided to them by the **Government of India** under the **National Policy for Rare Disease (NPRD)** in the last three years, according to patient advocacy groups associated with people suffering from conditions notified under **Group 3a** of **NPRD**.

What is a Rare Disease?

A **rare disease**, also known as an **orphan disease**, is a medical condition that affects a small number of individuals in the population. The exact definition of a **rare disease may vary by country or region, but generally**, a disease is considered rare if it affects fewer than a specific number of people per a given population.

Key Points:

1. **Fund Utilisation:** According to data accessed by **Business Standard**, only four CoEs had utilised upwards of **87%** of the funds allocated to them since **2021**, while the fund utilisation rate for seven other centres ranged from **4% to 57%** between **2021-22** and **2023-24**.
2. **New Centre:** The twelfth centre, **All India Institute of Medical Sciences (AIIMS), Bhopal**, has only been designated as a CoE in **November** last year.
3. **Role of CoEs:** CoEs are institutions identified by the **central government** to actively manage patients suffering from **rare diseases**. Currently, **12** such centres enrol nearly **2,420 rare disease patients** from six categories across three groups.
4. **Challenges:** “While the government has set up CoEs to treat patients with rare diseases, patients with **Group 3a** conditions still experience inordinate delays in procedural formalities across these centres,” an official with an advocacy group for patients with **Group 3a** conditions said.

Group 3a Conditions

1. **Definition:** According to the **rare disease policy** enacted in **2021**, **Group 3a** includes conditions such as **Lysosomal Storage Disorders (LSDs)** for which definitive treatment is available but challenges include optimal patient selection, very high cost, and lifelong therapy.
2. **Eligible Patients:** There are currently around **454 eligible rare disease patients** with LSDs such as **Pompe disease, Fabry disease, Mucopolysaccharidosis (MPS) type I and type II in India**, to be put on immediate life-saving therapy as per the **National Policy for Rare Diseases 2021**.
3. **Treatment Gap:** According to data available on the government’s digital portal for crowdfunding and voluntary donations for patients of rare diseases, more than **300** out of **454 LSD patients** currently eligible for funding under **Group 3a** are not getting any treatment in CoEs. Currently, only **98 LSD patients** are on **government-approved treatment**.

4. **Fatal Delays:** “The delay in the commencement of the treatment process and uncertainties around sustainable funding of **Group 3a** disorders are turning fatal, with around **28** of these **454 patients** reported to have lost their lives in the last few months awaiting treatment support,” an official said.

Advocacy Groups’ Demands:

1. **Efficient Fund Utilisation:** The groups have asked the government to direct CoEs to ensure efficient utilisation of funds provisioned by the ministry.
2. **Letter to Health Minister:** This comes after several caregivers and advocacy groups for patients with **3a conditions** wrote a letter to **Health Minister J P Nadda** last month, citing the inordinate delays being faced by patients eligible for treatment under the **NPRD**.
3. **Fund Exhaustion:** The letter stated that several patients across the CoEs have been put off life-saving therapies after the one-time support of **Rs 50 lakh** was exhausted.

Parents’ Concerns:

1. **Delhi-based Parent:** A **Delhi-based parent** whose six-year-old child is diagnosed with **MPS-2** said that he has been waiting to get his child onboarded at the ministry’s designated CoE for treatment, despite his child being eligible to be put on life-saving therapy as per the guidelines of the **NPRD**. “My child deserves to lead a near-normal life and I urge the government to intervene in the matter to save the lives of hundreds of other children as well,” he added.
2. **Hyderabad-based Parent:** A **Hyderabad-based parent** of an eight-year-old **Pompe disease** patient said that while his child is eligible for **Enzyme Replacement Therapy (ERT)** with the available **Rs 50 lakh** funding, he still has to run from pillar to post to get it. “My child could be saved if he gets regular ERT sessions, but still I do not see any urgency shown by the hospital despite available funds. We are in distress as we are concerned about our kid’s life, his health is deteriorating,” he added.

About National Policy for Rare Disease (NPRD):

1. **Launch:** The **Ministry of Health and Family Welfare, Government of India**, has launched the **National Policy for Rare Diseases (NPRD)** in **March 2021**, for the management of patients having rare diseases, which is directed towards prevention, early detection, and treatment of such diseases.

2. **Provisions:** The policy has provision of **free treatment facilities** for persons suffering from such diseases at designated '**Centres of Excellence**'.
3. **Categorisation:** The rare diseases have been identified and categorised into **3 groups**:
 - a. **Group 1:** Disorders amenable to one-time curative treatment.
 - b. **Group 2:** Diseases requiring long-term/lifelong treatment having relatively lower cost of treatment and benefit has been documented in literature, and annual or more frequent surveillance is required.
 - c. **Group 3:** Diseases for which definitive treatment is available but challenges include optimal patient selection, very high cost, and lifelong therapy.
4. **Funding: Centres of Excellence (CoEs)** have been identified for the diagnosis, prevention, and treatment of rare diseases. These CoEs will be provided a one-time grant subject to a maximum of **Rs 5 crore** each for infrastructure development for screening, tests, and treatment, if such infrastructure is not available.
5. **Financial Support:** Provision for financial support of up to **Rs. 50 lakh** to the patients suffering from any category of the **Rare Diseases** and for treatment in any of the CoE mentioned in **NPRD-2021**, outside the **Umbrella Scheme of Rashtriya Arogya Nidhi (RAN)**. RAN provides a one-time financial assistance to poor patients living below State/UT wise threshold poverty lines suffering from rare diseases listed under **Group 1** for treatment at Government hospitals/institutes having Super Specialty facilities; (Maximum financial assistance is **Rs. 20 lakhs**).
6. **Treatment Process:** In order to receive financial assistance for treatment of a rare disease, the patient of the nearby area may approach the nearest CoE to get him assessed and avail the benefits. Treatment of patients starts immediately after registration with the CoEs.
7. **Genetic Testing: Nidan Kendras** have been set up for genetic testing and counselling services.
8. **Research and Development:** It has provisions for promotion of research and development for diagnosis and treatment of rare diseases; promotion of local development and manufacture of drugs and creation of a conducive environment for indigenous manufacturing of drugs for rare diseases at affordable prices.

Conclusion:

The underutilisation of **NPRD funds** by **CoEs** for rare diseases highlights the need for more efficient management and timely treatment for patients suffering from these conditions. While the government has taken steps to address these issues, ongoing advocacy and monitoring are essential to ensure that patients receive the life-saving therapies they need.

OROPOUCHE FEVER

Two people in the Brazilian state of Bahia were the first people to die from **Oropouche fever**, the country's health ministry reported **July 25, 2024**.

The **two women**, who were both **under the age of 30 years**, had **no comorbidities** but had experienced **symptoms similar to dengue fever**.

Brazil's health ministry said that until now: "**There have been no reports in the world's scientific literature of deaths from the disease**."

Up to late July, Brazil had recorded **7,236 cases of oropouche fever in 20 states**, most of which, however, were recorded in **Amazonas and Rondônia**.

In **2023**, Brazil recorded about **840 cases**.

IS THE SPREAD LIMITED TO BRAZIL?

Oropouche is **common in Latin America and the Caribbean**.

WHEN WAS IT FIRST DETECTED?

The virus was **first detected in Trinidad and Tobago in 1955**. But it has been **detected in Europe in 2024**.

Italy reported its **first-ever case of Oropouche in June 2024**. It was also the first case ever to be detected in continental Europe. The patient diagnosed in Italy had recently returned from a trip to the Caribbean.

HOW DOES IT SPREAD?

Oropouche virus disease is **transmitted through the bites of infected midges and mosquitoes**.

Although the disease has long been circulating in **Central and South America** and the **Caribbean**, some countries have seen a **sharp rise in diagnosed cases this year**.

The disease is spreading to other countries that have never detected cases of Oropouche fever before. On **June 11, 2024** the WHO reported the **first-ever outbreak in Cuba**.

SYMPTOMS & TREATMENT

Oropouche fever is caused by the Oropouche virus, which is transmitted most often through the **bite of the Culicoides paraensis midge**.

There is **no evidence of human-to-human transmission** of the disease — to date. Symptoms of

the disease are similar to dengue and typically start between four and eight days after the bite:

- Fever, • chills,
- Headaches, • joint stiffness and
- pain, • sometimes nausea and vomiting.

Most patients recover in about seven days.

According to the WHO, severe cases are rare.

There is no specific vaccine or antiviral treatment available for the disease.

Pan-India Rollout of U-WIN for Tracking Routine Vaccinations



The **U-WIN portal**, modeled after the Covid-19 vaccine management system **Co-WIN**, is set for a nationwide launch by the end of August.

- It aims to create an electronic registry for **routine immunizations** across India.

Current Status:

- **U-WIN** is currently in **pilot mode** in all states and Union Territories, except West Bengal, which has not yet started uploading data.
- The platform captures every **vaccination event** for pregnant women and children under the **Universal Immunization Programme (UIP)**.

Announcement and Objectives:

- Finance Minister Nirmala Sitharaman announced in the interim Budget for 2024-2025 that **U-WIN**, along with **Mission Indradhanush**, will be rolled out nationwide to manage **immunizations**.
- The portal aims to ensure timely vaccine administration by digitally recording every **vaccination event** for pregnant women and children aged 0-5 years.

Target and Coverage:

- Annually targets **2.9 crore pregnant women** and **2.6 crore infants (0-1 years)**.
- Provides **11 vaccines** against **12 preventable diseases**, including diphtheria, measles, rubella, and tetanus.

- Facilitates over **1.2 crore vaccination sessions** across the country.

Features and Benefits:

- **QR-Based E-Vaccination Certificates:** Generates digitally verifiable certificates similar to those for Covid-19, accessible anytime by citizens.
- **Digitization of Records:** Moves from manual to digital record-keeping, eliminating the need for physical records.
- **Real-Time Updates:** Digitizes session planning and updates vaccination status in real time.
- **Tracking and Awareness:** Addresses the lack of individual tracking and awareness among beneficiaries about session locations and dates, particularly in urban areas.
- **Inclusion of Private Health Facilities:** Ensures immunization records from private health facilities are included.
- **Comprehensive Information Source:** Records pregnancy details, newborn registrations, birth immunizations, vaccination statuses, and delivery outcomes in real time.

Pilot Phase Achievements:

- As of July 9, 2024, the pilot has registered **5.33 crore beneficiaries**.
- Conducted over **83.55 lakh vaccination sessions** digitally.
- Recorded **18.15 crore vaccine doses**.

Additional Features:

- **Self-Registration:** Citizens can register via the **U-WIN web portal** or mobile app, select vaccination centers, and schedule appointments.
- **Automated SMS Alerts:** Sends alerts for registration confirmations, administered doses, and upcoming dose reminders.
- **Ayushman Bharat Health Account (ABHA) IDs:** Facilitates the creation of **ABHA IDs** for comprehensive health record maintenance.
- **Support for Frontline Workers:** Enables digital recording of vaccination events for children and pregnant women, ensuring accurate and easy record maintenance.

Launch Timeline:

- The **U-WIN portal** is expected to be launched across India by the end of **August 2024**.

What is Immunization?

- **Definition: Immunization** is the process by which a person becomes protected against a disease through **vaccination**.
- **Usage:** The term is often used interchangeably with **vaccination** or **inoculation**.

Satellite Images Suggest Architectural Wealth Beneath Mahabodhi Temple in Bodh Gaya



Why in News

The discovery of **architectural wealth** beneath the **Mahabodhi temple complex** is a significant **archaeological finding** that sheds new light on the history of **Buddhism in India**. The study's findings are important for understanding the evolution of the Mahabodhi temple complex and its significance in Buddhist history.

Key Points :

- A **geospatial analysis** using **satellite images** and ground surveys has found evidence of "huge architectural wealth" buried in the Mahabodhi temple complex and its surroundings in Bihar's Bodh Gaya.
- The study was carried out by the **Bihar Heritage Development Society (BHDS)** in collaboration with **Cardiff University** of the United Kingdom.
- The Mahabodhi temple complex is a **UNESCO World Heritage site** and one of the four holy areas related to the life of **Lord Gautam Buddha**.

About the Study

- The study used **satellite images** to identify buried structures and correlated the findings with the description of Chinese traveller **Xuanzang**.
- The images show an alignment of structures to the north of the temple, buried underground, and a shift of the **Niranjana River** from east to west.
- The findings suggest that the monuments and other archaeological remains, now east of the river, were a part of the Mahabodhi complex.

Significance

- The discovery is significant as it provides new insights into the history and architecture of the Mahabodhi temple complex.
- The findings will help in **delimiting the boundaries** of the Mahabodhi complex and understanding its evolution over time.

Next Steps

- The BHDS plans to start research to delimit the boundaries of the Mahabodhi complex in the light of these findings.
- Fresh **ground-penetrating radar (GPR) surveys**, followed by excavations, will be undertaken to unravel the buried archaeological features shown by satellite images.

About Xuanzang

- **Xuanzang** was a Chinese Buddhist monk, scholar, traveller, and translator who travelled to India from 629 to 645 CE.
- He is best known for his journey to India and his efforts to bring over **657 Indian texts** into China.
- His writings had a significant impact on the development of **Buddhism in China**.

About Mahabodhi Temple Complex

- The Mahabodhi temple complex is one of the four holy sites related to the life of **Lord Buddha**, marking the spot of the **Buddha's Enlightenment (Bodhi)**.
- It is located in **Bodh Gaya**, in central Bihar, on the banks of the **Niranjana River**.
- The complex comprises the **50-meter-high grand temple**, six sacred places within an enclosed area, and a seventh one, the **Lotus Pond**, just outside the enclosure to the south.
- It was recognized as a **UNESCO World Heritage Site** in 2002.

What is a UNESCO World Heritage Site?

- A **World Heritage Site (WHS)** is a landmark or area with legal protection by an international convention administered by UNESCO.
- These sites are designated by UNESCO for having **cultural, historical, scientific** or other forms of significance.

Conclusion :

The discovery of architectural wealth beneath the Mahabodhi temple complex is a significant archaeological finding that sheds new light on the history of Buddhism in India. The study's findings are important for understanding the evolution of the Mahabodhi temple complex and its significance in Buddhist history. The discovery highlights the importance of preserving and protecting cultural heritage sites, and the need for further research and exploration to uncover the secrets of India's rich cultural past.

SC ON GM MUSTARD

A two-judge Bench of the Supreme Court on Tuesday (July 23) delivered a **split verdict** on whether to allow the “**environmental release**” of **Genetically Modified (GM) mustard**.

WHAT IS ENVIRONMENTAL RELEASE?

It is a method of assessing the impact of GM crops on the environment. These impacts can be **positive** (can reduce the need for herbicide & pesticide) as well as **negative** (can be invasive to the native species)

THE CASE

Justices B V Nagarathna and Sanjay Karol disagreed on whether the approval given by the Genetic Engineering Appraisal Committee (GEAC) — the body that is responsible for approving proposals relating to genetically engineered organisms — **to proceed with field trials** following the environmental release was done properly.

This was the **GEAC’s second major push** to introduce GM mustard as the **first GM crop that is meant for human consumption**.

Bacillus thuringiensis cotton (or **Bt cotton**) is the **only GM crop** that has been approved for cultivation in India so far.

WHAT HAPPENS NOW?

When a **split decision is delivered**, the case is referred to the **Chief Justice of India** for placing before a **larger Bench**. However, both judges directed the Union of India “**to evolve a National Policy with regard to GM crops**”, and to consult experts, farmer representatives, and state governments during the process.

THE STORY OF GM MUSTARD

- On **September 15, 2015**, the **Centre for Genetic Manipulation of Crop Plants (CGMCP)** at the **Delhi University** sought the GEAC’s approval for the environmental release of a genetically engineered hybrid mustard called **DMH-11** (commonly known as GM mustard).
- Along with the proposal, the **CGMCP submitted a biosafety dossier**, and the **GEAC created a sub-committee** to examine its contents. Following some revisions, the sub-committee considered the dossier and submitted its report. In **September 2016**, the **report was published and comments were invited**.
- On **May 11, 2017**, the **GEAC recommended the environmental release** of GM mustard. **If approved, this would allow field tests** to be conducted to examine the effects of cultivating the crop.

- However, **after receiving several representations**, the **Ministry of Environment sent the proposal back to the GEAC** for re-examination in March 2018.
- The **GEAC then directed the CGMCP to examine the effect of GM mustard on honey bees and soil microbial diversity**. But these tests were deferred through 2020-21.
- In **May 2022**, gene scientist **Prof Deepak Pental** on behalf of the **CGMCP** wrote to the **Minister for Environment** urging him to accept the recommendation for the environmental release of GM mustard.
- The **GEAC sought comments from various government departments**, which **recommended releasing GM mustard**.
- The **proposal was submitted on October 18, 2022**. It was **accepted by the Centre** on October 25, and **recommendations and conditions regarding the field tests were sent to Prof Pental**.

THE ROADBLOCK

Environmentalist Aruna Rodrigues and the research and advocacy organisation **Gene Campaign** challenged the decision to approve the environmental release of GM mustard before the Supreme Court.

THE SC ON THE CASE:

In their split decision, **the judges disagreed on two key aspects:**

- Whether the **GEAC’s decision-making process was legal** and,
- Whether **it violated the “precautionary principle”** for scientific innovations.
 - o The **precautionary principle, a standard test in environmental litigation**, is recognised as a facet of the right to a clean environment, a subset of Article 21 (fundamental right to life).

ADVANTAGES OF GM CROPS

- **Increase productivity and prevent crop loss:** GM crops are resistance to insect damage, tolerant to herbicides, resistance to plant viruses which help farmers prevent crop loss and increases the crop productivity.
- **Food security:** With increase in population demand of food also increasing, to address this GM crops help foods to become more accessible and affordable for consumers.
- **Enhanced nutritional quality:** Many varieties of GM food crops have been developed, to enhance nutritional quality. Eg. Golden rice is a transgenic variety in rice, which is rich in vitamin A.

- **Maintain soil fertility:** GM crops have increased efficiency of mineral usage that reduces excess use of fertilizers and prevents loss of fertility of soil.

CHALLENGES WITH GM CROPS

- **Bio-safety of human and animal health:** Risk of toxicity, due to the nature of the product or the changes in the metabolism and the composition of the organisms resulting from gene transfer.
- **Environmental concerns:** Since a GMO is **artificially created**, its breeding with the other crops in the natural ecosystem **can result in genetic contamination**. GM technology **could also allow the transfer of genes from one crop to another, creating super weeds** which might be immune to common control methods.
- **Economic concerns:** Yields of GM crops have turned out to be false. For example, in India, with its Bt cotton experience, cotton yield has stagnated around 460 kgs per hectare in the recent past, despite most cotton being GM.
- **Ecological concerns:** GM crops could lead to erosion of biodiversity and pollute gene pools of endangered plant species.

WAY FORWARD:

- **Awareness and information:** Public awareness with reliable evidence-based information on GM crops such as keeping biosafety data out of the public domain needs to be increased to take informed decisions.
- **Government roadmap:** The government should come up with a fresh road map for ensuring food security without jeopardising the biodiversity and compromising with the safety of human health.
- **Capacity building:** There is need of capacity building in GM research agenda and development with science based consistent regulatory policy.
- **Robust clinical trials:** Clinical trials of GM crops need to be contingent on robust demonstration of safety and efficacy.

SEBEX 2 - India's New Powerful Non-Nuclear Explosive



India has successfully developed and certified **SEBEX 2**, a new explosive that is **2.01 times more lethal** than standard Trinitrotoluene (**TNT**), making it one of the most powerful non-nuclear explosives globally.

Composition

- **Development:** Developed by **Economic Explosives Limited** under the **Make in India** initiative, SEBEX 2 uses a composition based on **high-melting explosive (HMX)**, which substantially increases the lethality of **warheads, aerial bombs, artillery shells**, and other munitions.

Testing and Certification

- **Rigorous Testing:** The new formulation of SEBEX 2 has been rigorously tested under the **Indian Navy's Defence Export Promotion Scheme**, with final certifications completed recently.

Enhanced Destructive Power

- **Revolutionizing Munitions:** SEBEX 2 aims to revolutionize **bombs, artillery shells**, and **warheads** by enhancing destructive power without adding weight, potentially having significant **export potential**.

TNT Equivalence

- **Performance Measurement:** The performance of explosives is typically measured in terms of **TNT equivalence**, with SEBEX 2 boasting a TNT equivalence of **2.01**, significantly higher than most explosives used in conventional warheads worldwide (typically ranging from 1.25 to 1.30).

What is Trinitrotoluene (TNT)?

Trinitrotoluene (**TNT**) is a pale yellow, solid organic nitrogen compound used chiefly as an **explosive**, prepared by stepwise **nitration of toluene**. Because TNT melts at **82° C (178° F)** and does not explode below **240° C (464° F)**, it can be melted in steam-heated vessels and poured into casings. It is relatively **insensitive to shock** and cannot be exploded without a **detonator**. For these reasons, it is the most favored chemical explosive, extensively used in **munitions** and for **demolition**.

SITBEX 1

- **Thermobaric Explosive:** The Navy has also certified the company's first **thermobaric explosive, SITBEX 1**, which has been utilized in recent conflicts to create extensive battlefield damage, ideal for destroying **enemy bunkers, tunnels**, and other fortified positions.

SIMEX 4

- **Insensitive Munition:** Another development by the company, **SIMEX 4**, is an **insensitive munition** certified by the Navy. It is safer to store, transport, and operate compared to standard

explosives, with applications where safety is paramount, such as in **torpedo warheads** housed in the confined spaces of a submarine.

Implications

Military Advantage

- **Enhanced Potency:** The development of SEBEX 2 will enhance the potency and efficiency of weapons and ammunition in use, providing a significant **military advantage**.

Export Potential

- **Global Market:** The increased lethality and efficiency of SEBEX 2 could lead to substantial **export potential**, boosting India's defense industry.

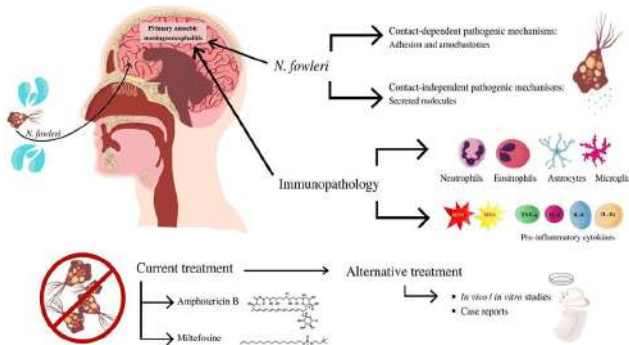
Safety Improvements

- **Insensitive Munitions:** The development of insensitive munitions like SIMEX 4 will improve safety during **storage, transportation, and operation**, reducing the risk of accidents.

Further Developments

- **Continuous Innovation:** Economic Explosives Limited is working on another variant with an explosive power rated at **2.3 times** that of TNT, expected to be ready in six months, indicating continuous **innovation** in the field of explosives technology.

Kerala Government Issues Warning Against Amoebic Meningoencephalitis and Other Diseases



Why in News:

- Kerala has been experiencing continuous rainfall, leading to an increased risk of water-borne diseases and infections.
- In response to this, the Kerala government has issued a warning against amoebic meningoencephalitis and other diseases.

Key points:

1. Kerala Health Department Issues Warning Against Amoebic Meningoencephalitis and Other Diseases Due to persistent rainfall in Kerala, the state's health department has issued a warning

against amoebic meningoencephalitis and other diseases such as **colds, viral fevers, dengue, and H1N1**.

2. What is Amoebic Meningoencephalitis?

Amoebic meningoencephalitis is a serious infection caused by the *Naegleria fowleri* amoeba, which is commonly found in warm freshwater bodies, such as lakes, rivers, and hot springs, as well as inadequately chlorinated swimming pools and water parks.

3. Precautions to Minimise the Risk of Contracting the Disease

The health department has advised the public to **avoid bathing in stagnant water and diving in water bodies** to minimize the risk of contracting the disease.

4. Proper chlorination of water in theme parks and swimming pools is essential to ensure that the water is clean and safe for use.

5. Symptoms Associated with Amoebic Meningoencephalitis and Other Diseases

Kerala's Health Minister has urged people to **seek expert medical treatment if they experience prolonged fever or other symptoms associated with these diseases, including shortness of breath with fever, excessive palpitation, chest pain, slurred speech, loss of consciousness, blood in sputum, or excessive fatigue**.

6. The Kerala government is taking proactive steps to raise awareness about the risks associated with these diseases and to **ensure that people take the necessary precautions to stay safe and healthy**.

What is Primary Amoebic Meningoencephalitis (PAM)?

1. Definition:

PAM is a rare and usually fatal infection of the central nervous system (brain and spinal cord).

2. Causative Agent:

Naegleria fowleri, a free-living amoeba found in **shallow surface waters, inadequately maintained swimming pools, hot tubs**, particularly in warm climates.

3. Transmission:

The **amoeba enters the brain through the nose when individuals swim in contaminated warm, fresh water**.

4. Symptoms:

- o Symptoms appear within **five days of infection** and progress rapidly.
- o Early symptoms include **fever, headache, vomiting**, and sensitivity to light.
- o Later stages may involve a **stiff neck, seizures, hallucinations**, and even coma.

5. **Treatment:**
 - o No standard treatments exist for PAM.
 - o Combination therapy using anti-parasitic medications offers the most promise.
6. **Differentiation from Granulomatous Amebic Encephalitis:**

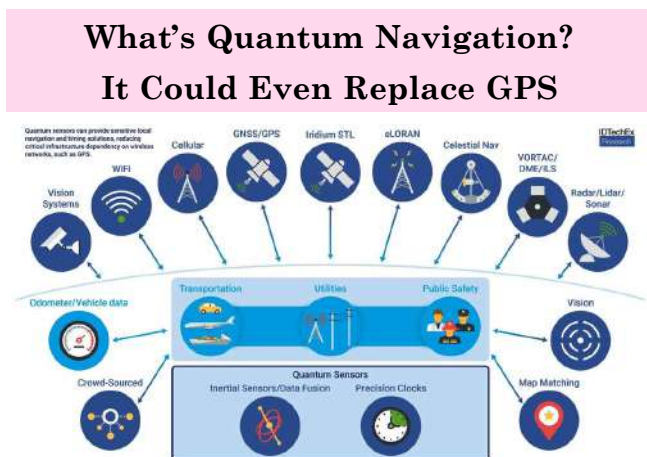
PAM differs from granulomatous amebic encephalitis, another rare and usually fatal infection of the central nervous system caused by different free-living amoebas, such as Acanthamoeba species or Balamuthia mandrillaris.

General Information about Amoebas:

1. **Definition:**

Amoeba is a term used to describe single-celled organisms belonging to the biological kingdom Protista.
2. **Characteristics:**

Amoebas are eukaryotic microorganisms known for their ability to change shape and move using pseudopods.



What is Quantum Navigation?

Global Positioning Systems (GPS) are integral to modern life, yet they have vulnerabilities, such as signal interference and navigation errors. **Quantum navigation** emerges as a potential successor, offering a solution to these limitations.

Defining Quantum Navigation:

1. Quantum navigation functions like a highly precise, self-contained GPS within a device. Unlike conventional GPS, which depends on satellite signals, quantum navigation utilizes atoms to determine location and movement.
2. Imagine it as an internal compass that remains accurate even in challenging environments like underwater or tunnels.
3. This evolving technology promises greater accuracy and reliability than traditional GPS.

Mechanisms of Quantum Navigation:

1. **Quantum Sensors:** These highly sensitive sensors, developed using quantum particles, measure acceleration, rotation, and gravity with exceptional precision.
 - a. **Examples include atomic clocks and atom interferometers.**
2. **Inertial Navigation:** Quantum sensors continuously monitor a vehicle's acceleration and rotation. By integrating these measurements over time, the system calculates the vehicle's position and velocity relative to a starting point.
3. **Gravity Gradiometry:** Quantum sensors detect variations in Earth's gravitational field, which helps determine a vehicle's altitude and position relative to the Earth's surface.

Advantages of Quantum Navigation

1. **Unjammable:** Quantum navigation is immune to jamming, enhancing security over GPS.
2. **Versatile Usage:** It functions in environments where GPS cannot, such as underwater.
3. **Enhanced Accuracy:** Offers more precise and reliable navigation compared to traditional GPS.

Future of Quantum Navigation vs. GPS

1. While quantum navigation shows promise for replacing GPS in specific scenarios, it is unlikely to entirely supersede GPS soon.
2. GPS remains convenient and widespread, continuing its dominance in many applications.
3. Quantum navigation will likely serve as a complementary technology or in scenarios where GPS is unavailable.

Benefits of Satellite Data

1. Satellite data offers numerous advantages, such as monitoring extreme weather, tracking water quality, and predicting poverty rates.
2. By 2030, Earth observation insights could generate over \$700 billion and help remove 2 gigatons of greenhouse gases annually.

About GPS:

1. **GPS** is a space-based radio-navigation system comprising a constellation of satellites that broadcast navigation signals.
2. With 31 satellites orbiting at approximately 11,000 miles altitude, GPS is operated and maintained by the U.S. Department of Defense.

Functionality of GPS

GPS satellites orbit the Earth twice daily, transmitting unique signals and orbital parameters that enable GPS devices to decode and compute precise locations using trilateration.

India's Navigation with Indian Constellation (NavIC) :

1. **NavIC** or the Indian Regional Navigation Satellite System (IRNSS), utilizes seven satellites to provide real-time positioning and timing services in India and areas up to 1,500 km from its borders.
2. The system includes three geostationary and four geosynchronous orbit satellites.

Challenges in Quantum Navigation

1. **Ultra-Cold Atoms:** Requires complex and expensive equipment to maintain ultra-cold atoms.
2. **Precise Control:** Achieving precise control over atomic movements is challenging.

Conclusion :

Quantum navigation is a promising technology that could potentially replace GPS in the future. Despite its advantages, it faces several challenges that need to be addressed. Further research and development are essential for making quantum navigation a viable GPS alternative.

Unexpected Discovery Reveals Zinc's Crucial role in Making Legumes Resilient to Climate Change

Discovery:

Researchers in France have made a breakthrough discovery, revealing the crucial role of **zinc** in the health of **legume crops**. This finding could lead to a significant increase in **crop yields** and enhance the **resilience** of crops to climate change. Published in the prestigious **Nature journal**, the study uncovers that **zinc** plays a pivotal role in **nitrogen fixation**, a process by which atmospheric nitrogen is transformed into **ammonia**, an essential nutrient for plant growth.

Zinc Overview:

1. Metal Characteristics:

- Zinc is a **silvery blue-grey metal** with low melting and boiling points.
- It is extensively used, ranking fourth behind steel, aluminum, and copper.
- **India** is self-sufficient in zinc, with Rajasthan holding the largest reserves/resources of lead-zinc ore, followed by other states.

2. Global Reserves:

- Major reserves are found in countries like **Australia, China, Russia, Mexico, Peru, Kazakhstan**, and the **USA**.

Uses of Zinc

1. Galvanizing Industry:

- The largest consumer of zinc.

- Zinc's **corrosion resistance** makes it ideal for protecting steel through **galvanization**.
- **Hot dip galvanizing** is a common method where steel sections are submerged in molten zinc to create a protective coating.

2. Die-Castings:

- Substantial amounts of zinc are utilized in the **automobile, electrical, and hardware industries**.

3. Zinc Oxide:

- Widely used in manufacturing products like **paints** and **rubber**.

Biological Role of Zinc

1. Trace Mineral:

- Essential for approximately **100 enzymes** to carry out vital chemical reactions.

2. Functions:

- Plays a crucial role in **DNA creation, cell growth**, protein synthesis, healing damaged tissue, and maintaining a healthy **immune system**.

Legume Crops and Rhizobia

1. Symbiotic Relationship:

- Legume crops have a symbiotic relationship with **rhizobia**, bacteria that fix atmospheric nitrogen in root nodules.

2. Environmental Sensitivity:

- These nodules are susceptible to environmental factors such as **temperature, drought, flooding, soil salinity**, and high **soil nitrogen levels**.

3. Importance:

- Legume crops are a vital source of **protein** for humans and animals and are key to **sustainable agriculture**.

Zinc's Role in Nitrogen Fixation

1. Process:

- Zinc aids in **nitrogen fixation**, the process of converting atmospheric nitrogen into ammonia.

2. Secondary Signal:

- Zinc acts as a secondary signal to integrate environmental factors and regulate nitrogen fixation efficiency.

3. Enzyme Regulation:

- Zinc controls the activity of the enzyme **nitrogenase**, which is crucial for nitrogen fixation.

Transcription Factor FUN

1. Discovery:

- Researchers identified a transcription factor called **Fixation Under Nitrate (FUN)** that controls nodule breakdown when soil nitrogen levels are high.

2. Regulation:

- FUN is regulated by a mechanism that monitors cellular **zinc levels**.

3. Zinc Interaction:

- FUN is inactivated by zinc through the formation of large filament structures, which are dismantled to release active FUN when zinc levels are low.

Implications of the Discovery

1. Nitrogen Availability:

- Continuous nitrogen fixation increases nitrogen availability for legumes and other crops that rely on nitrogen left in the soil.

2. Crop Yields:

- Understanding zinc and FUN's role in nitrogen fixation can optimize this process in legume crops, resulting in increased **nitrogen delivery**, improved **crop yields**, and a reduced need for **synthetic fertilizers**, which carry environmental and economic costs.

3. Resilience:

- This discovery could make legumes more resilient to **climate change**.

Forward-Looking Research

1. Research:

- Investigate mechanisms by which zinc signals are generated and decoded by FUN.

2. Applications:

- Apply these discoveries to legume crops such as **fava beans**, **soybeans**, and **cowpeas**.

3. Potential:

- Enhance crop yields and resilience to climate change through improved understanding and utilization of zinc's role in plant nutrition.

Conclusion :

The discovery of zinc's crucial role in **legume crops** is a significant breakthrough with far-reaching implications for **agriculture** and **climate change**. By deciphering nitrogen fixation mechanisms and zinc's role, researchers can develop strategies to improve crop yields and reduce the reliance on synthetic fertilizers. This emphasizes the importance of zinc in plant nutrition and its potential to boost crop yields and promote sustainability.

EDITORIALS

Crux of The Hindu & Indian Express

Science & Technology

Discovery of 'Dark Oxygen'



Scientists have recently discovered a peculiar phenomenon in the deep sea, called "**dark oxygen**." A study published in the journal Nature Geoscience found that **oxygen** is being produced in complete darkness, about **4,000 meters** or **13,100 feet** below the ocean surface. The discovery challenges the general scientific consensus that **oxygen** is produced through **photosynthesis**.

What is Dark Oxygen?

1. **Definition:** **Dark oxygen** refers to **oxygen** that is produced in the deep ocean, thousands of feet below the surface, where there is no sunlight.
2. **Surprise Factor:** This is surprising because we usually think that **oxygen** is only produced through **photosynthesis**, which is the process by which plants use sunlight to convert water and carbon dioxide into **oxygen** and sugar.

Why is this Discovery Important?

1. **Expanded Understanding:** This discovery is important because it shows that there are other ways that **oxygen** can be produced, beyond just **photosynthesis**.
2. **Ecosystem Implications:** This expands our understanding of how **oxygen** is generated in the ocean and could have implications for our understanding of the Earth's ecosystem.

What are Polymetallic Nodules?

1. **Description:** Polymetallic nodules are small, rounded lumps that are found on the ocean floor. They are made up of a mixture of metals, including **manganese**, **iron**, **cobalt**, **nickel**, **copper**, and **lithium**.

2. **Oxygen Generation:** These **nodules** are special because they can generate **oxygen** through a process called electrochemical activity, even in the absence of sunlight.

How do Polymetallic Nodules Generate Oxygen?

1. **Process:** Polymetallic **nodules** generate **oxygen** by splitting **water molecules (H₂O)** into **hydrogen** and **oxygen**. This process is different from **photosynthesis**, which uses sunlight to convert water and carbon dioxide into **oxygen** and sugar.

Where are Polymetallic Nodules Found?

1. **Locations:** Polymetallic **nodules** are found in the deep ocean, specifically in the north-central Pacific Ocean, southeastern Pacific Ocean, and northern Indian Ocean.
2. **Formation:** They are formed over millions of years through a slow process and are made up of layers of metals that are deposited around a central nucleus.

Why are Polymetallic Nodules Important?

1. **Valuable Elements:** Polymetallic **nodules** are important because they contain valuable elements like **lithium**, **cobalt**, and **nickel**, which are used in technologies like lithium-ion batteries, electric vehicles, and renewable energy systems.
2. **Potential Source:** They could potentially provide a new source of these critical materials.

What is Photosynthesis?

1. **Definition:** **Photosynthesis** is the process by which plants, algae, and some bacteria use sunlight to convert **water** and **carbon dioxide** into **oxygen** and **sugar**.
2. **Significance:** This process is essential for life on Earth, as it provides the energy and organic compounds that support the food chain.

Implications of the Discovery

1. **Oxygen Production:** The discovery suggests that there is another source of **oxygen** on the planet, which could have significant implications for understanding the origins of life on Earth.
2. **Revisiting Theories:** “For aerobic life to begin on the planet, there had to be **oxygen** and our understanding has been that Earth’s **oxygen** supply began with photosynthetic organisms,” Sweetman continued. “But we now know that there is **oxygen** produced in the deep sea, where there is no light. I think we therefore need to revisit questions like: where could aerobic life have begun?”

Background Information

1. **NOAA Data:** According to the National Oceanic and Atmospheric Administration (**NOAA**), around half of the Earth’s **oxygen** comes from the ocean.
2. **Primary Producers:** Oceanic plankton, drifting plants, algae, and some bacteria are the primary elements attributed to the production of **oxygen** in the ocean. All these organisms are capable of **photosynthesis**.
3. **Deep Sea Conditions:** A lack of sunlight in the deep sea prohibits these organisms from producing **oxygen**, making the discovery of **dark oxygen** even more surprising.

Previous Observations

1. **2013 Fieldwork:** A similar incident was noticed during fieldwork in **2013**. Researchers were studying sea-floor ecosystems in the Clarion–Clipperton Zone, an area targeted for the mining of metal-rich **nodules**.
2. **Realization:** “I suddenly realized that for eight years I’d been ignoring this potentially amazing new process, **4,000 metres** down on the ocean floor,” Sweetman said.

Conclusion :

The discovery of **dark oxygen** produced in the deep sea challenges conventional scientific understanding and raises important questions about the origins of life and the production of **oxygen** on Earth. This ground-breaking study highlights the need for further research to understand the implications of this phenomenon and its potential impact on our understanding of the Earth’s ecosystem.

1,600 Tonnes of Lithium Resources Discovered in Karnataka



Overview :

Union Minister of State for Science and Technology Jitendra Singh has announced the discovery of **1,600 tonnes of lithium resources** in Karnataka by the **Atomic Minerals Directorate for Exploration and Research (AMD)**. This discovery, located in the

Marlagalla area of Mandya district, represents a significant find for India's renewable energy sector. The announcement was made in a written reply to an unstarred question in the Rajya Sabha.

Details of the Discovery

- 1. Location:** The discovery is located in the **Marlagalla area of Mandya district, Karnataka.**
- 2. Significance:** This find is significant for India's renewable energy sector, as lithium is a crucial component in rechargeable batteries used in electric vehicles (EVs) and energy storage systems.

Additional Exploration Activities

- 1. Yadgiri District:** Preliminary surveys and limited subsurface exploration have also been conducted in the Yadgiri district of Karnataka to estimate lithium resources.
- 2. Other States:** The AMD is actively exploring potential geological domains in parts of Korba district, Chhattisgarh, and has identified **major mica belts in Rajasthan, Bihar, and Andhra Pradesh**, along with pegmatite belts in **Odisha, Chhattisgarh, and Karnataka**, as prospective areas for lithium resources.

Uranium Occurrence in Himachal Pradesh

- 1. Masanbal Area:** A preliminary survey by the AMD in Himachal Pradesh has identified surface uranium occurrence in the **Masanbal area of Hamirpur district.**
- 2. Clarification:** Singh clarified that the Atomic Energy Commission has not conducted any study to establish an atomic energy plant in Himachal Pradesh.

Small Modular Reactors

- 1. Study:** In response to developments in small modular reactors, the minister informed the Rajya Sabha that the Department of Atomic Energy is studying various technologies and designs from different countries and foreign-based vendors.
- 2. Collaboration:** There is currently no proposal to collaborate with foreign vendors or countries. No private player has shown interest in producing small modular reactors, although some have expressed interest in deploying small reactors at their captive sites.
- 3. International Cooperation:** The Government of India and the Government of the Russian Federation have expressed interest in expanding cooperation in the use of nuclear energy for peaceful purposes, including small modular reactors.

About Lithium

- 1. Chemical Element:** Lithium is a chemical element with the symbol Li and atomic number 3.
- 2. Classification:** Classified as an alkali metal, lithium is a solid at room temperature.
- 3. Properties:**
 - a. It is the lightest of the solid elements.
 - b. It is soft, white, and lustrous.
 - c. It reacts vigorously with water.
 - d. It has a body-centered cubic crystal structure.
- 4. Occurrence:**
 - a. **Earth's Crust:** Lithium constitutes about 0.002 percent of Earth's crust.
 - b. **Natural State:** Being highly reactive, it does not occur as the metal in nature but is found combined in small amounts in nearly all igneous rocks and in the waters of many mineral springs.
 - c. **Major Minerals:** Spodumene, petalite, lepidolite, and amblygonite are the more important minerals containing lithium.
- 5. Production:**

Leading Producers: In 2023, Australia was the world leader in terms of lithium mine production, with Chile and China ranked second and third.
- 6. Uses:**
 - a. **Rechargeable Batteries:** The most important use of lithium is in rechargeable batteries for mobile phones, laptops, digital cameras, and electric vehicles.
 - b. **Non-Rechargeable Batteries:** Lithium is also used in some non-rechargeable batteries for things like heart pacemakers, toys, and clocks.
 - c. **Alloys:** Lithium metal is made into alloys with aluminum and magnesium, improving their strength and making them lighter.
 - d. **Special Glasses:** Lithium oxide is used in special glasses and glass ceramics.
 - e. **Industrial Applications:** Lithium chloride is one of the most hygroscopic materials known and is used in air conditioning and industrial drying systems (as is lithium bromide).
 - f. **Hydrogen Storage:** Lithium hydride is used as a means of storing hydrogen for use as a fuel.
 - g. **Medicinal Uses:** Lithium carbonate is used in drugs to treat manic depression.

What are Alkali Metals?

1. **Definition:** Alkali metals are the six different chemical elements found in the first column of the periodic table: **lithium (Li), sodium (Na), potassium (K), rubidium (Rb), cesium (Cs), and francium (Fr).**

2. Properties:

- The alkali metals group is part of the S-block of elements in the periodic table, that along with hydrogen, helium, calcium, and others, have their outermost electron in an S-orbital.
- The alkali metals are soft metals that are highly reactive with water and oxygen.
- They are so soft that you can cut them with a plastic knife.
- They also have a silver-like shine and are great conductors of heat and light.

Conclusion :

The discovery of **1,600 tonnes of lithium resources** in Karnataka is a significant development for India's renewable energy sector. This find highlights the potential for India to reduce its dependence on lithium imports and supports the country's commitment to increasing the share of renewable energy in its total energy mix. The announcement also underscores the ongoing efforts by the AMD to explore and identify potential lithium resources across the country.

Denisovans Were Living on the Tibetan Plateau Surprisingly Recently, Scientists Say

Introduction :

A recent study reveals that **Denisovans** survived and thrived on the high-altitude **Tibetan plateau** for over **100,000 years**, deepening our understanding of these enigmatic ancient humans first identified in **2010**.

Key Findings :

Archaeological Discoveries



- Baishiya Karst Cave:** Researchers analyzed thousands of animal bone fragments from this site, located **3,280 meters above sea level** near Xiahe in China's Gansu province.
- Diverse Prey:** The findings indicate Denisovans hunted and processed a range of animals, including **woolly rhinos, blue sheep, wild yaks, marmots, and birds.**
- Rib Bone Fragment:** A rib bone fragment dating back between **48,000 and 32,000 years** was discovered, making it the youngest known Denisovan fossil and suggesting the species was around more recently than previously thought.

Adaptation and Resilience

- Extreme Environment:** Denisovans demonstrated incredible resilience, surviving in one of Earth's most extreme environments during both warmer and colder periods.
- Flexible Behavior:** They utilized the diverse animal resources available in the grassland landscape, showcasing their adaptability.

Historical Context :

Discovery and Identification

- First Identified in 2010:** Denisovans were first identified through DNA sequences extracted from a finger bone fragment found in the Altai Mountains of Siberia.
- Subsequent Discoveries:**
 - Jawbone (2019):** A Denisovan jawbone with teeth found in Baishiya Karst Cave.
 - Tooth (2022):** A Denisovan tooth found in Laos, marking their presence in Southeast Asia.

About Denisovans

- Extinct Hominid Species:** A close relative to modern humans.
- Wide Range of Habitats:** Lived in diverse environments, from the cold mountains of Siberia and Tibet to the jungles of Southeast Asia.
- Time Period:** Existed from approximately **500,000 to 30,000 years ago.**

Genetic Evidence

- Interbreeding:** Denisovans interbred with both **Neanderthals** and **modern humans.**
- Common Ancestor:** Shared a common ancestor, **Homo heidelbergensis**, with modern humans and Neanderthals.

Physical Characteristics

- Possible Appearance:** Likely had dark skin, dark hair, and dark eyes.

2. **Genetic Diversity:** The Denisovan genome shows low genetic diversity, indicating a possibly small population.

Neanderthals: A Comparison

1. **Closest Extinct Relative:** Lived throughout Europe and parts of Asia from about **400,000 to 40,000 years ago**.

2. **Co-existence with Modern Humans:** Coexisted and interbred with modern humans before becoming extinct.

3. **Physical Traits:** Characterized by large middle facial regions, angled cheekbones, and a large nose for humidifying cold air. Their bodies were shorter and stockier, adapted to cold environments.

Conclusion :

The new findings from Baishiya Karst Cave provide significant insights into the **Denisovans' adaptability and resilience** in harsh environments. The discovery of recent Denisovan fossils challenges previous timelines and opens new avenues for research on their interactions with modern humans and their place in the human family tree.

India's Hunt for Critical Minerals : Progress and Challenges



India has taken steps to explore and produce critical minerals, essential for the country's transition to green energy and reducing dependence on imports. However, the process has been slow, and challenges persist.

Key Points :

- **Critical Minerals:**

Critical minerals are a group of minerals essential for the production of **high-tech products, renewable energy technologies, and advanced manufacturing processes**. They are characterized by their **rarity, difficulty to extract and process, and limited global supply**.

- **Examples of Critical Minerals:**

- o **Lithium:** Used in **lithium-ion batteries** for electric vehicles, consumer electronics, and energy storage systems.

- o **Cobalt:** Essential for **battery production**, aerospace components, and other high-strength alloys.

- o **Graphite:** Key for **batteries**, fuel cells, and high-temperature applications.

- o **Nickel:** Important for **stainless steel production** and battery manufacturing.

- o **Rare Earth Elements (REEs):** Vital for manufacturing electronics, magnets, and military applications.

- o **Tantalum:** Used in **electronic components**, such as capacitors and resistors.

- o **Tungsten:** Essential for high-temperature applications, such as light bulb filaments and rocket nozzles.

- o **Indium:** Used in flat-panel displays, solar panels, and other electronic components.

- o **Neodymium:** Essential for permanent magnets used in wind turbines, electric motors, and generators.

- **Characteristics of Critical Minerals:**

- o **Rarity:** Critical minerals are often found in limited quantities and are difficult to extract and process.

- o **Difficulty to Substitute:** Critical minerals have unique properties that make them difficult to substitute with other materials.

- o **Limited Global Supply:** The global supply of critical minerals is limited, making them vulnerable to supply chain disruptions.

- o **High Demand:** Critical minerals are in high demand due to their essential role in high-tech products and renewable energy technologies.

- **Importance of Critical Minerals:**

- o **Economic Security:** Critical minerals are essential for the production of high-tech products and renewable energy technologies, making them critical for economic security.

- o **National Security:** Critical minerals are also essential for national security, as they are used in military applications and advanced manufacturing processes.

- o **Environmental Sustainability:** Critical minerals are essential for the transition to a low-carbon economy, as they are used in renewable energy technologies and energy storage systems.

- **India's Dependence on Imports:** India relies heavily on imports for critical minerals, with 100% import dependence for **lithium, cobalt, and nickel**.

- **Government Initiatives:** The government has amended the **Mines and Minerals (Development and Regulation) Act, 1957**, to allow mining concessions for 24 critical minerals and has launched auctions for mineral blocks.
 - **Auctions:** The first auction resulted in six winners for blocks in **Odisha, Tamil Nadu, Uttar Pradesh, and Chhattisgarh**, but subsequent auctions have seen low investor interest.
- **Challenges:**
 - **Lack of Adequate Data:** Insufficient data on potential reserves.
 - **Technology Challenges:** Issues with technology for extraction.
 - **Geopolitical Factors:** Limited global production and geopolitical factors contribute to the challenges in exploring and producing critical minerals.
- **Global Reserves of Critical Minerals:**
 - **Lithium:** Australia and Chile have the largest reserves.
 - **Cobalt:** The Democratic Republic of Congo has the largest reserves.
 - **Graphite:** China has the largest reserves of natural graphite.
 - **Nickel:** Australia and Indonesia have the largest reserves.
 - **Rare Earth Elements:** China has the largest reserves.
- **India's Critical Mineral Reserves:**
 - **Lack of Reserves:** India does not have reserves of nickel, cobalt, molybdenum, rare earth elements, neodymium, and indium.
 - **Dependence on Imports:** India's requirement of copper and silver is higher than its current reserves.
- **Government Steps to Explore Critical Minerals:**
 - **Amendment to Mines and Minerals Act:** The government amended the **Mines and Minerals (Development and Regulation) Act, 1957**, to allow mining concessions for 24 critical minerals.
 - **Auctions:** The government has launched auctions for mineral blocks, including the lithium block in **Jammu and Kashmir**.
 - **Acquisition of Overseas Assets:** The government is looking to acquire overseas assets from key resource-rich regions to bolster mineral security.

- **Mineral Security Partnership:** India has joined the U.S.-led **Mineral Security Partnership**, a block consisting of large buyers and sellers of critical minerals.
- **Challenges Ahead:**
 - **Low Investor Interest:** The auctions have seen low investor interest, which could delay the exploration and production of critical minerals.
 - **Technology Challenges:** The extraction of critical minerals from clay deposits, like the lithium block in **Jammu and Kashmir**, is a technology challenge.
 - **Geopolitical Factors:** The limited global production and geopolitical factors could lead to supply chain disruptions.
- **Way Forward:**
 - **Spurring Exploration:** The government needs to spur exploration and attract more miners to explore and produce critical minerals.
 - **Acquiring Overseas Assets:** The government should continue to acquire overseas assets from key resource-rich regions to bolster mineral security.
 - **Developing Technology:** India needs to develop technology to extract critical minerals from challenging deposits.

KUFOS to Launch Genome Editing Mission to Boost Pearl Spot Production



Context :

The Kerala University of Fisheries and Ocean Studies (KUFOS) is set to launch a **genome editing mission** to enhance the breeding and seed production of **pearl spots**, aiming to revolutionize aquaculture in Kerala.

Key Points :

1. Pearl Spot Production

Challenges: Pearl spot farmers in Kerala face issues with **breeding** and producing the fish, leading to **low yields** and **slow growth rates**.

2. Genome Editing

KUFOS plans to use **genome editing** to target the **genetic makeup** of the fish, promoting **faster growth rates** and improving **breeding and seed production**.

3. Benefits

Achieving a **higher body weight** at an enhanced rate will benefit aqua farmers in the state, as **pearl spots fetch a premium** in the market.

About Pearl Spot Fish:

1. General Information

1. Commonly known as “**Karimeen**” in Kerala
2. Indigenous fish found along the **east and south-west coasts** of Peninsular India

2. Habitat : Found in brackish water and freshwater ponds

3. Characteristics

1. Elevated laterally compressed body
2. Small cleft mouth
3. Light green color with 8 vertical bands in natural habitat

4. Availability

1. **Seeds available throughout the year**
2. Peak seasons: **May-July** and **November-February**

5. Distribution

- Widely available in **South India** (Kerala, Karnataka, Andhra Pradesh)

6. Nutritional Value

1. Low-fat, high-protein
2. Rich in omega-3 fatty acids, Vitamin D, riboflavin, calcium, and phosphorus

What is Genome Editing?

1. Definition

- a. Genome editing, or **gene editing**, is a type of **genetic engineering** where **DNA is inserted, deleted, modified, or replaced** in the genome of a living organism.

2. Techniques

- a. The most common technique is **CRISPR-Cas9**, which uses a bacterial enzyme called **Cas9** to cut DNA at a specific location. The cell’s natural repair mechanisms then **insert or delete new genetic material**.

3. Potential Benefits

- a. **Cure genetic diseases**: Correcting genetic mutations causing diseases like **cystic fibrosis**, **sickle cell anemia**, and **Huntington’s disease**.
- b. **Improve agriculture**: Creating crops resistant to **pests and diseases** or more nutritious. Improving the quality of **livestock products**.

- c. **Develop new therapies**: New treatments for **cancer**, **AIDS**, and other diseases.

- d. **Create new models for disease research**: Animal models of human diseases to help develop new treatments.

4. Ethical Concerns

- a. **Designer babies**: Creating babies with predetermined traits like eye color, height, and intelligence.

- b. **Unintended consequences**: Introducing new mutations causing unforeseen problems.

- c. **Eugenics**: Promoting eugenics, selectively breeding humans to improve genetic qualities.

- d. **Germline editing**: Editing the DNA of sperm or eggs, passing changes to future generations without their consent.

Current State of Pearl Spot Production

1. Market Demand

- a. Kerala produces around **2,000 tonnes** of pearl spots annually, against a market demand of about **10,000 tonnes**.

2. Growth Rate

- a. Pearl spots take around **12 months** to achieve a body weight of **300 to 400 grams**, compared to **Genetically Improved Farmed Tilapia (GIFT)**, which achieves a body weight of **600 to 700 grams in six months**.

3. Price

- a. Pearl spots are sold for about **Rs. 650 to Rs. 700 a kg**, while GIFT fetches between **Rs. 250 and Rs. 300 a kg**.

KUFOS’ Initiative

1. DNA Sequencing

- a. DNA sequencing of pearl spots will soon be available in the **public domain**, and KUFOS will leverage the latest technology available for **gene editing**.

2. Collaboration

- a. KUFOS is in talks with the **Agharkar Research Institute** in Maharashtra, a leader in biodiversity and genetics, to achieve the desired results in a shorter time frame.

Background

1. Fish Farming in Paddy Fields

- a. Fish farmers have called on the government to allow **fish farming** in at least a portion of unutilized **paddy fields**, especially in coastal areas where conditions are good for pearl spots to thrive.

Conclusion :

The **genome editing mission** launched by KUFOS has the potential to **revolutionize aquaculture** in Kerala by enhancing the **breeding and seed production** of pearl spots and increasing their **growth rates**. This will be a significant boost to aqua farmers in the state, who have been facing challenges in producing the fish.

New Class of Cancer Mutations Discovered in So-Called 'Junk' DNA



I. Introduction

- Researchers at the **Garvan Institute of Medical Research** have discovered a new class of **cancer mutations** in **non-coding DNA**, also known as '**junk**' DNA, which could lead to a new approach for **diagnosing** and **treating cancers**.
- The study, published in **Nucleic Acids Research**, reveals mutations in previously **overlooked regions** of the **genome** that may contribute to the **formation** and **progression** of at least **12 different cancers**.

II. Background

- **Non-coding DNA**, which makes up **98% of the human genome**, was once considered '**junk**' DNA due to its apparent lack of function.
- However, recent research has shown that **non-coding DNA** plays a crucial role in **regulating gene expression** and maintaining **genome stability**.

III. Research Findings

- The researchers focused on mutations affecting **binding sites** for a protein called **CTCF**, which helps fold long strands of **DNA** into specific shapes.
- They developed a new **machine learning tool** called **CTCF-INSITE**, which used **genomic** and **epigenomic features** to predict which **CTCF sites** are likely to be persistent anchors in a total of **12 cancer types**.
- The study found that persistent **CTCF binding sites** are **rich with mutations** in **cancer samples**, with every **cancer sample** having at least one mutation in a persistent **CTCF binding site**.

IV. Significance of the Findings

- The discovery could lead to **early diagnosis** and new **treatments effective** for many **cancer types**.
- The findings suggest that mutations in **non-coding DNA** may contribute to the **formation** and **progression** of **cancer**, and that **targeting these mutations** could lead to new **therapeutic approaches**.
- The research opens up the possibility of developing approaches that could be effective for **multiple cancers**, rather than just one specific type.

About Junk DNA

- **Definition**
Regions of **DNA** that are **noncoding**, meaning they do not contain instructions to create **proteins**.
- **DNA Structure and Function :**
 - **DNA** contains **coding instructions** to create **proteins** in cells.
 - Not all genetic sequences in a **DNA molecule** code for **proteins**.
- **Junk Regions**
 - **DNA regions** that are not **transcribed** into **proteins** or **RNA molecules**.
 - **Function** is **unknown**.
- **Proportion of Coding vs Noncoding DNA**
 - Varies significantly between **species**.
 - **Human genome: 98% noncoding DNA.**
 - **Bacterial genome: 2% noncoding DNA.**
 - Other species: varying proportions of **coding** and **noncoding DNA**.
- **Evidence for Functional Activity**
 - Fragments of **non-functional DNA** may have undergone **exaptation** throughout evolution.
 - **Exaptation**: acquisition of a **function** through means other than natural selection.
 - Some **junk DNA** may be involved in:
 - * **Gene regulation**
 - * **Chromosome structure** and **stability**
 - * **Evolutionary processes**

What is DNA?

- **Definition**
 - **Deoxyribonucleic acid (DNA)**
 - * Hereditary material in **humans** and almost all other **organisms**.
- **Location**
 - Most **DNA** is located in the **cell nucleus** (**nuclear DNA**).

- o Small amount of **DNA** is found in **mitochondria** (**mitochondrial DNA** or **mtDNA**).
- **Mitochondria**
 - o Structures within **cells** that convert energy from food into a form that cells can use.
 - o Have their own **DNA**, separate from **nuclear DNA**.

V. Implications for Cancer Treatment

- The study's findings could have broad implications for **understanding** and **treating many types of cancer**.
- The researchers are now planning further large-scale experiments using **CRISPR gene editing** to investigate how these **anchor mutations** disrupt the **3D genome** and potentially promote **cancer growth**.
- The discovery of these mutations could lead to the development of new **biomarkers** for **early cancer detection** and new targets for **cancer therapy**.

VI. Role of Artificial Intelligence

- The study highlights the power of **artificial intelligence** in boosting **medical research**.
- The **machine learning tool CTCF-INSITE** was able to identify patterns in large datasets that would have been difficult or impossible to identify manually.

VII. Future Directions

- The researchers plan to further investigate the role of **non-coding DNA mutations** in **cancer development** and **progression**.
- The study's findings could lead to the development of new **therapeutic approaches** that target **non-coding DNA mutations**.
- The research could also lead to a better understanding of the **underlying mechanisms** of **cancer** and the development of new **diagnostic tools**.

VIII. Conclusion

- The discovery of **cancer mutations** in **non-coding DNA** is a **significant breakthrough** in the field of **cancer research**.
- The study's findings have the potential to lead to new approaches for **diagnosing and treating cancer**, and highlight the importance of continued research into the role of **non-coding DNA** in **cancer development** and **progression**.

Why Australia Has Banned Mining in One of the World's Largest Uranium Deposits

Context :

Australia has taken steps to **ban mining** at an **Indigenous site** within **Kakadu National Park**, which is home to one of the world's largest deposits of **high-grade uranium**.

Overview

- **Action:** Australia has extended the **heritage-listed Kakadu National Park** to include the **Jabiluka site**, effectively banning mining there.
- **Location:** **Jabiluka site**, surrounded by Kakadu National Park.
- **Significance:** The site contains one of the world's largest deposits of **high-grade uranium**.

Statements by Prime Minister Anthony Albanese

- **Reason for Ban:** The prime minister stated that the extension of the park aligns with the wishes of the **Mirarr people**, the Indigenous custodians of the land.
- **Guarantee:** "They were seeking a guarantee that there would never be uranium mining on their land," Albanese said.
- **Commitment:** "This means there will never be mining at Jabiluka," he confirmed.
- **Historical Significance:** Albanese highlighted the **2017 discovery of stone axes** and **tools** dating back tens of thousands of years, emphasizing the deep connection of **Aboriginal and Torres Strait Islanders** to the land.
- **Government Support:** "The Mirarr people have loved and cared for their land for more than **60,000 years**. Our government will work with them to keep it safe for all time," he added.

Political Context

- **Opposition Plans:** The conservative **Coalition** recently proposed building **nuclear power plants** across the country if they win the next election, which would overturn a **26-year nuclear ban**.

Background of Jabiluka

1. **Discovery:** The Jabiluka site became a focus of **legal battles** between the Mirarr people and **mining companies** after the uranium deposit was discovered in the early **1970s**.
2. **Protests:** In the late **1990s**, the site was blockaded by the Mirarr people alongside the rock band **Midnight Oil**.
3. **Mining Leases:** The **Rio Tinto-controlled company Energy Resources of Australia (ERA)** previously held mining leases at Jabiluka, which will not be extended when they expire on **August 11**.

Recent Events:

1. **Juukan Gorge Incident:** The move to protect Jabiluka comes after **Rio Tinto** destroyed the **46,000-year-old Juukan Gorge rock shelters** in Western Australia's **Pilbara region** in **2020**, drawing global condemnation and increased scrutiny on the conservation of Indigenous sites.
2. **Popular Culture:** **Kakadu National Park** was featured in the popular **1986 Australian comedy film "Crocodile Dundee."**

About Uranium:

1. **Occurrence:** Uranium occurs naturally in low concentrations in **soil, rock, and water** and is commercially extracted from **uranium-bearing minerals**.
2. **Applications:**
 - a. **Nuclear Power:** Mainly used in **nuclear power plants** due to its unique nuclear properties.
 - b. **Radiation Shielding:** **Depleted uranium** is used as a shield against radiation in medical processes and while transporting radioactive materials.
 - c. **High Density:** Its high density makes it effective in halting radiation and useful as **counterweights** in aircraft and industrial machinery.

Uranium Mining in India:

1. **Deposits:** Uranium deposits occur in the **Dharwar rocks**.
2. **Locations:**
 - a. Singbhum Copper belt (Jharkhand)
 - b. Udaipur, Alwar, and Jhunjhunu districts of Rajasthan
 - c. Durg district of Chhattisgarh
 - d. Bhandara district of Maharashtra
 - e. Kullu district of Himachal Pradesh
 - f. Recently discovered reserves in parts of Andhra Pradesh and Telangana between Seshachalam forest and Sresailam.

Conclusion :

The Australian government's decision to **ban mining** at the **Jabiluka site** within **Kakadu National Park** is a significant move to protect **Indigenous heritage** and aligns with the wishes of the **Mirarr people**. This action comes amidst ongoing debates about **nuclear power** and the conservation of **Indigenous sites** in Australia.



Ecology & Environment

Arunachal Pradesh Yields New Species of Horned Frog



Discovery of New Species:

A team of researchers from the **Zoological Survey of India (ZSI)** has recorded a new species of forest-dwelling **horned frog** in **Arunachal Pradesh**. The new species, named **Xenophrys apatani**, was discovered in the **Talle Wildlife Sanctuary** in the **Lower Subansiri district**.

Naming of the Species:

The species has been named after the dominant **Apatani community** in recognition of their ingenuity in the conservation of wild flora and fauna.

Significance of the Discovery:

The discovery of **Xenophrys apatani** highlights India's **rich biodiversity** and highlights the importance of rigorous **taxonomic studies** in understanding our natural heritage. It is a significant addition to the country's **herpetofaunal diversity**.

Biogeographic Distribution:

The researchers provided insights into the **biogeographic distribution** of the **Xenophrys species** in India, which is distributed along the **Eastern Himalayan** and the **Indo-Burma biodiversity hotspots** of the country.

Conservation Efforts:

The findings are expected to guide future **conservation efforts** and enhance understanding of **amphibian evolution** in the region.

Importance of Taxonomic Studies:

The discovery highlights the importance of **taxonomic studies** in understanding India's **natural heritage** and conserving its **biodiversity**.

Apatani Community:

The naming of the species after the **Apatani community** recognizes their efforts in conserving wild flora and fauna in the region.

Apatani Community: Key Facts:

- The **Apatani tribe** inhabits the **Ziro valley** in Arunachal Pradesh.
- They speak **Tani**, a local language, and worship the **sun** and **moon**.
- Major festivals include **Dree, Myoko, Yapung,** and **Murung**.
 - **Dree** involves prayers for a bountiful harvest and universal prosperity.
 - **Myoko** celebrates friendship.
- Since the 1960s, the Apatani have practiced **integrated rice-fish farming** on their mountain terraces.
- They primarily cultivate three rice varieties: **Emeo, Pyape,** and **Mypia**.

Tale Valley Wildlife Sanctuary: Key Facts

- The sanctuary is situated near the **Apatani cultural landscape** in the **Lower Subansiri District** of Arunachal Pradesh.
- Rivers such as **Pange, Sipu, Karing,** and **Subansiri** traverse the sanctuary.
- The flora encompasses a diverse range of **subtropical** and **alpine forests**, including **silver fir trees, ferns, orchids, bamboo,** and **rhododendron**.
- The fauna includes species like the **clouded leopard, Himalayan squirrel,** and **Himalayan Black Bear**.

Desert Moss 'Syntrichia caninervis' Potential for Thriving on Mars



Species Identification: Scientists have identified a species of desert moss called '**Syntrichia caninervis**' that could be a game-changer for future space exploration and colonisation efforts.

- **Exceptional Ability:** This resilient moss has demonstrated an exceptional ability to **survive in conditions comparable to those found on Mars**, raising hopes for its potential use in establishing **sustainable habitats** beyond Earth.

Tolerance to Extreme Conditions

- **Environmental Resilience:** The moss is renowned for its **tolerance to drought conditions** and its remarkable capacity to withstand temperatures as low as **"196°C**, high levels of **gamma radiation**, and **simulated Martian environments**. Prior dehydration appears to enhance the moss' ability to cope with these extreme stressors.
- **Superior Resilience:** Researchers assert that **S. caninervis** surpasses even highly stress-tolerant microorganisms and tardigrades in its **environmental resilience**.

Whole Plant Resilience

- **Unique Examination:** Unlike previous studies that focused on microorganisms, algae, lichens, and plant spores, this research uniquely examined the resilience of **whole plants** to extreme conditions akin to those on Mars.

Global Distribution

- **Habitats:** 'S. caninervis' is a **globally distributed moss species** that thrives in severe desert environments like Tibet, Antarctica, and circumpolar regions, forming part of the resilient biological soil crust.

Rigorous Tests

- **Laboratory Testing:** Researchers conducted **rigorous tests** in controlled laboratory settings to assess the moss' tolerance to extreme cold, gamma radiation, and simulated Martian conditions.
- **Remarkable Regeneration:** The results were astounding, with the moss demonstrating a remarkable ability to **regenerate** after being subjected to these harsh environments.

Implications

Space Exploration

- **Impact on Mars Missions:** The discovery of 'S. caninervis'—its exceptional resilience could significantly impact future **space exploration** and **colonization efforts**, particularly in establishing sustainable habitats on Mars.

Terrestrial Applications

- **Agriculture and Conservation:** Understanding the moss's ability to withstand extreme conditions could lead to advancements in **agriculture** and **environmental conservation** on Earth, particularly in arid and harsh environments.

Further Research

- **New Avenues:** This finding opens up new avenues for research into the **biology of extreme-tolerant organisms** and their potential applications in space and on Earth.

What is a Moss?



Characteristics

- **Flowerless Plants:** Mosses are flowerless, spore-producing plants that generate spores in small capsules.
- **Global Presence:** Found worldwide, except in saltwater habitats. Commonly thrive in moist, shady locations.

Ecological Significance

- **Nutrient Release:** Break down exposed substrates, releasing nutrients for more complex plants that follow.
- **Soil Erosion Control:** Aid in soil erosion control by providing surface cover and absorbing water.
- **Ecosystem Role:** Play a crucial role in the nutrient and water economy of certain vegetation types.

Economic Importance

- **Peat Formation:** Economically important species include those in the genus **Sphagnum**, which form **peat**.

Peat is a surface organic layer of soil composed of partially decomposed organic matter, primarily originating from plant material, that accumulates under conditions of **waterlogging**, **oxygen deficiency**, **high acidity**, and **nutrient deficiency**.

Discovery of a New Shield-Tail Snake Species in the Western Ghats



Researchers have identified a new species of shield-tail snake in the Meghamalai-Munnar region of the Western Ghats.

This species, named **Uropeltis caudomaculata**, is distinguished by a yellow spot on each side of the base of its tail.

Characteristics of **Uropeltis caudomaculata**

1. The newly discovered species, **Uropeltis caudomaculata**, is named for the distinctive yellow spot on each side of its tail's base.
2. This species is primarily identified by its increased number of ventral scales and its exclusive distribution along the eastern escarpment of the **Western Ghats from Meghamalai to about 15 km east of Munnar**.
3. It is known to be found in only three localities: **Meghamalai Tiger Reserve in Tamil Nadu, Periyar Tiger Reserve, and Yellapetty, Munnar in Kerala**.

Key Features of Shield-Tail Snakes

1. **Non-Venomous:** These snakes are non-venomous.
2. **Family:** They belong to the Uropeltidae family of primitive snakes endemic to peninsular India and Sri Lanka.
3. **Distinctive Tail:** They possess a large keratinous shield at the tip of the tail, hence the name shield-tail snakes.
4. **Distribution:** They are found in the Western Ghats and some parts of peninsular India.
5. **Habitat:** These snakes inhabit hilly forests and occupy tunnels in the leaves, humus, rocks, and logs. They are burrowing species found up to 1 foot below the soil.

Discovery and Research

1. Initially classified as **U. pulneyensis** due to similar features, **Uropeltis caudomaculata** was later differentiated through genetic and morphological testing.
2. Researchers found substantial genetic and morphological differences upon testing specimens of **Uropeltis caudomaculata** in the lab.

Importance and Implications

1. The discovery of this new species underscores the rich biodiversity of the **Western Ghats and the necessity of conservation efforts to protect these unique ecosystems**.
2. The findings highlight the critical role of taxonomic research in understanding the diversity of life on Earth.
3. Given that the Western Ghats are a biodiversity hotspot with many endemic species, continued research and conservation are vital.

4. Protecting these **natural habitats from threats such as deforestation, mining, and infrastructure development is essential for preserving these species.**
5. The discovery of new species in the region highlights the need for continued research and conservation efforts to protect the region's unique ecosystems.
6. The study also has implications for our understanding of the evolution and diversity of life on Earth.
7. The discovery of new species highlights the importance of preserving and protecting the natural habitats of these species, which are often **threatened by human activities such as deforestation, mining, and infrastructure development.**

Conservation Efforts

1. This discovery reinforces the importance of conservation initiatives to protect the Western Ghats.
2. The **Indian government has implemented several measures, such as the Western Ghats Ecology Expert Panel and the National Wildlife Action Plan, to safeguard these ecosystems.**
3. Furthermore, the finding emphasizes the need for international cooperation to protect global biodiversity hotspots.
4. The discovery of new species also highlights the need for international cooperation and collaboration to protect biodiversity hotspots around the world.

Foreign Insects as Allies in Eradicating Invasive Aquatic Weeds



Context:

A foreign beetle species, **Cyrtobagus salvinia**, has been successfully utilized to eliminate the invasive weed **Salvinia molesta** from a reservoir in Madhya Pradesh.

Key Points:

1. Invasive Weed Species:

Salvinia molesta, commonly referred to as "Chinese Jhalaar," is a highly damaging aquatic

fern that had completely taken over the **Sarani reservoir (Satpura dam)** in Betul district, Madhya Pradesh.

2. Exotic Beetle:

Cyrtobagus salvinia, a biological control agent from Brazil, was brought to India after extensive research and necessary government approvals to combat the spread of *Salvinia molesta*.

3. Release of Exotic Beetle:

The beetle was released into the reservoir in **April 2022**, and within **15 to 18 months**, its population surged, effectively consuming and eradicating the weed.

4. Eradication of Weed:

The introduction of *Cyrtobagus salvinia* has successfully eliminated the invasive weed from the reservoir, which was previously estimated to cost **Rs 15 crore** for manual removal.

5. Collaboration:

The **Madhya Pradesh Power Generating Company Ltd.** partnered with the **Indian Council of Agricultural Research-Directorate of Weed Research (ICAR-DWR)** to facilitate the release of the beetle into the reservoir.

Benefits:

1. Cost-Effective:

Using the beetle proved to be a cost-effective solution for eradicating the invasive weed, compared to the Rs 15 crore estimated for manual removal.

2. Effective:

The beetle has been highly effective in controlling the spread of *Salvinia molesta*, with its population increasing significantly in a short period.

3. Environmentally Friendly:

This method is environmentally friendly as it does not harm the ecosystem or other aquatic life.

4. Long-Term Solution:

The beetle provides a sustainable and long-term solution to the issue of invasive weeds in the reservoir.

Analysis:

1. Importance of Biological Control:

The success of *Cyrtobagus salvinia* underscores the significance of biological control methods in managing invasive species.

2. Role of Research Institutions:

The collaboration between **ICAR-DWR** and the **Madhya Pradesh Power Generating Company Ltd.** highlights the crucial role of research institutions in developing innovative environmental solutions.

3. Need for Integrated Approach:

This case exemplifies the necessity of an integrated approach to managing invasive species, combining biological, chemical, and physical control methods.

Conclusion:

The utilization of the exotic beetle **Cyrtobagus salvinia** to eliminate **Salvinia molesta** from a reservoir in Madhya Pradesh marks a notable achievement in invasive species management. This success story emphasizes the importance of exploring innovative and environmentally friendly solutions to environmental challenges and showcases the potential of collaborative research efforts to address complex issues effectively.

Indian Gaur Makes a Sudden Appearance in Andhra Pradesh's Nallamala Forest After Decades



I. Introduction

- The sighting of an **Indian gaur (bos gaurus)** in the Atmakur stretch of **Nallamala forest** in **Andhra Pradesh's Nandyal district** has delighted **forest officials**, indicating that their **conservation measures** are bearing fruit.
- The **Indian gaur**, also known as **Adavi Dunna** in **Telugu**, had strangely disappeared from the landscape for a long time, with local tribes and old records of the **Forest Department** attesting to its past presence.

II. Historical Background

- The **Indian gaur** was last reportedly found in the **Nallamala forest** in the **1870s**, making its reappearance after a gap of **150 years**, according to local media.
- However, forest officials believe that the animal could have arrived after a gap of **five or six decades**.

- The species is not endangered, but its disappearance from the forest had raised concerns about its **habitat** and **conservation**.

III. Possible Migration Routes

- The **Indian gaur** is believed to have migrated from the **northern Karnataka forest**, where its population is sufficient, crossing the **Krishna river** at a shallow point to reach the **Nallamala forest**.
- Another possible migration route is from the **Papikonda National Park**, although its sighting has not been reported anywhere in between.

About Indian Gaur (Bos gaurus)

- **Physical Characteristics**
 - **Length:** 240-340 cm
 - **Tail length:** 70-105 cm
 - **Height:** 170-230 cm
 - **Weight:** Males (600-1500 kg), Females (400-1000 kg)
 - **Convex forehead shape**
 - **Strong and sturdy limbs**
 - **Horns:** pale green or yellowish brown, slightly inward curvature
 - **Short tail**
 - **Habitat and Distribution**
 - Indigenous to **South and Southeast Asia**
 - Found in **evergreen, semi-evergreen, and moist deciduous forests** with open grasslands
 - Prefer **hilly terrains** below 1,500-1,800 m altitude with large forest tracts and abundant water
 - **Behavior and Social Structure**
 - Social animal, living in groups of **30-40**
 - Both males and females possess **horns**
 - **Conservation Status**
 - **IUCN Red List: Vulnerable**
 - **Wildlife Protection Act, 1972: Schedule I**
 - **CITES Appendix I**
- ### IV. Conservation Efforts
- The **Forest Department** is planning to reintroduce the **Indian gaur** in the **Nagarjunasagar Srisailem Tiger Reserve (NSTR)** under a plan studied by the **Wildlife Institute of India (WII)**.
 - The presence of mega herbivores like the **Indian gaur** in **tiger reserves** is crucial for ensuring sustainability in the long run.
 - The thick forest cover and conservation measures have created a conducive environment for the animal's return.

V. Significance of the Sighting

- The sighting of the single adult male **Indian gaur** is a significant event, as it indicates the effectiveness of **conservation efforts** in the region.
- The animal's presence is expected to move into unexplored areas deep into the **NSTR**, contributing to the region's **biodiversity**.

VI. Need for a Mate

- The single adult male **Indian gaur** is in need of a mate, and the **Forest Department's plan** to reintroduce more animals will address this issue and ensure the settlement of a larger herd.

VII. Conclusion

The reappearance of the **Indian gaur** in the **Nallamala forest** is a testament to the success of **conservation efforts** in the region. The **Forest Department's plan** to reintroduce the species will ensure the long-term **sustainability** of the ecosystem and contribute to the preservation of India's **biodiversity**. The sighting highlights the importance of protecting and preserving **India's natural heritage**, including its **forests** and **wildlife**.

Ladakh's Rock Varnish May Help Identify Habitable Environments in Space

Panel (I). Field photographs of the rocks sampled for rock varnish studies from NW Himalaya (Leh, Ladakh).



Panel (II). Comparative views of Mars and Ladakh Environment.



Introduction

A recent study has identified **magnetofossils**—fossil remains of magnetic particles produced by magnetotactic bacteria—in rock varnish layers in Ladakh.

This discovery suggests that biotic processes play a role in the formation of rock varnish, offering valuable insights for **astrobiology and the planning of future space missions aimed at identifying habitable environments in space**.

Ladakh as a Terrestrial Analogue

1. **Climatic Conditions:** Ladakh, known as the “cold desert of India,” experiences extreme climatic conditions such as high UV radiation, significant temperature variations, and limited water availability.

2. **Martian Studies:** These conditions make Ladakh a suitable terrestrial analogue for Martian studies, providing a valuable reference point for understanding how life can exist in extreme environments.

Research and Findings

1. **Inspiration:** Researchers from the Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow, an autonomous institute of the Department of Science and Technology (DST), were inspired by the similarity between the rock varnish observed in Ladakh and that seen on Mars, particularly during the Perseverance rover operations.
2. **Sample Collection and Analysis:** The researchers collected samples of rock varnish from the Ladakh region and employed **X-ray Photoelectron Spectroscopy (XPS)** to analyze the surface chemistry of the rock varnish.
3. **Key Findings:** The study revealed higher concentrations of oxidized manganese (Mn⁴⁺) and carboxylic acid functionality on the varnish surface, indicating organic signatures. The rock varnish from Ladakh, a potential Martian analogue site, contains enriched concentrations of magnetic minerals likely derived from biotic sources.

Significance of the Study

1. **Astrobiological Implications:** The findings highlight the potential of rock varnish as an archive of ancient environmental records and as a geomaterial for astrobiological studies. By identifying biotic signatures in rock varnish, scientists can better target potential biosignatures on Mars and other planetary bodies, aiding the search for extraterrestrial life.
2. **Future Space Missions:** This information is crucial for planning future space missions by ISRO and other space agencies, including Mars exploration, where identifying habitable environments is a primary goal.

About Magnetotactic Bacteria

1. **Characteristics:** Magnetotactic bacteria are mostly prokaryotic organisms that arrange themselves along the Earth's magnetic field. They are present in freshwater and marine habitats.
2. **Navigation:** These organisms are believed to follow the magnetic field to reach places with optimal oxygen concentration. They contain “novel structured particles, rich in iron” in small sacs that essentially work as a compass.
3. **Crystal Formation:** Magnetotactic bacteria create tiny crystals made of the iron-rich minerals

magnetite or greigite. These crystals help them navigate the changing oxygen levels in the water bodies they reside in.

4. **Historical Significance:** It is believed that these microbes may represent some of Earth's earliest inhabitants.

Highlights of the Research

1. **Inspiration:** Researchers were inspired by the similarities between the rock varnish in Ladakh and those observed on Mars by the Perseverance rover.
2. **Organic Signatures:** They identified elevated concentrations of oxidized manganese (Mn⁴⁺) and carboxylic acid functionalities on the varnish surface, suggesting the presence of organic signatures.
3. **Biotic Origin:** These findings indicate that the magnetic minerals in the rock varnish are likely biotic in origin.
4. **Significance:** By detecting biotic signatures in rock varnish, scientists can better focus on identifying biosignatures on Mars and other celestial bodies. This information is crucial for future space missions, including those planned by ISRO and other space agencies, aiming to explore Mars and assess its habitability.

What is Magnetism?

1. **Definition:** Magnetism is the force exerted by magnets when they attract or repel each other. It is caused by the motion of electric charges.
2. **Atomic Level:** Every substance is made up of tiny units called atoms. Each atom has electrons, particles that carry electric charges. The motion of these electrons contributes to the magnetic properties of materials.

Madhya Pradesh Launches Probe into Alleged Irregularities and Poaching in New Tiger Reserve



Introduction :

The Madhya Pradesh government has initiated an inquiry into the alleged **poaching** of tigers and **irregularities** in the newly established **Veerangana Durgavati Tiger Reserve**, as reported in official documents.

Background :

Establishment of the Tiger Reserve

1. **Veerangana Durgavati Tiger Reserve** is the **7th** in Madhya Pradesh and the **54th** in India.
2. The reserve includes areas within the **Nauradehi Sanctuary** and the **Veerangana Durgavati Sanctuary**.
3. **Location:** Approximately **20 kilometres from Bhopal**, covering **2,339 square kilometres** across three districts: **Narsinghpur, Sagar, and Damoh**.

Allegations and Investigation

1. **Wildlife activist Ajay Dubey** initiated the complaint, citing **“serious negligence in the conservation of tigers, tiger safari, and management of forest property.”**
2. The forest department ordered the **deputy director** of the tiger reserve to investigate and submit a report within seven days.
3. **Key Allegations:**
 - a. **Missing Tigers:** **Tigers N-113 and N-112** and their cubs have been missing since 2021.
 - b. **False Declaration:** Management allegedly declared **Tigress N-111** as **Tigress N-112**.
 - c. **Possibility of Poaching:** Dubey suggested the potential involvement of poaching.
 - d. **Shortage of Staff and Resources:** Dubey highlighted a shortage of essential resources in the reserve, crucial for the reintroduction of cheetahs.
 - e. **Illegal Tree Cutting:** Allegations of illegal tree cutting and wood transportation in the **Bara Beat** area of the Nauradehi Sanctuary, allegedly involving forest staff.
 - f. **Lack of Prey and Veterinary Care:** This shortage negatively impacts the tigers' well-being.

Importance of Nauradehi Wildlife Sanctuary

1. **Area:** Approximately **1,197 square kilometers**, the largest sanctuary in Madhya Pradesh.
2. **Crucial Corridor:** Connects the **Panna** and **Satpura** tiger reserves.

3. **Tiger Reintroduction Efforts:** Began in 2018 with a pair of tigers, now numbering **16** as part of the Veerangana Durgavati Tiger Reserve.

About Veerangana Durgavati Tiger Reserve

1. **Location:** Spans **Sagar**, **Damoh**, and **Narsinghpur** districts.
2. **Area:** Covers **2,339 square kilometres** including Nauradehi Wildlife Sanctuary and Durgavati Wildlife Sanctuary.
3. **Historical Significance:** Named after **Rani Durgavati**, the queen of the Gond people.
4. **Diverse Landscape:** Features hills, valleys, rivers, streams, waterfalls, and grasslands.
5. **Rivers:** Part of the **Narmada** and **Yamuna** River basins.
6. **Historical Sites:** Includes the **Singorgarh Fort**.
7. **Vegetation:** Predominantly **dry deciduous** forest.
8. **Flora:** Includes Teak, Saja, Dhaora, Ber, Amla, etc.
9. **Fauna:** Home to species like the Tiger, Leopard, Wolf, Jackal, Indian Fox, Striped Hyena, Nilgai, Chinkara, Chital, Sambhar, Black Buck, Barking Deer, Common Langur, and Rhesus Macaque.
10. **Critically Endangered Raptors:** A stronghold for the **White-Rumped** and **Indian Vultures**.
11. **Green Corridor:** Plans to develop a corridor linking **Panna Tiger Reserve** with Durgavati for natural tiger movement.

About Panna Tiger Reserve (PTR)

- **Location:** Vindhya mountain range, northern Madhya Pradesh.
- **Project Tiger Reserve:** Declared in **1994** by the Government of India.
- **Topography:** Known for its **"Table Top"** topography with extensive plateaus and gorges.
- **River:** The **Ken River** flows from south to north through the reserve.

Conclusion :

The investigation into the Veerangana Durgavati Tiger Reserve highlights serious concerns about wildlife management and conservation efforts. The outcome of this probe will be crucial for the future of tiger conservation in Madhya Pradesh and potentially influence policies and practices across other reserves in India.

Odisha Resorts to Palm Tree Planting to Combat Lightning Deaths



Location: Odisha, India

Key Findings:

1. **Odisha**, one of India's worst-affected states by **lightning strikes**, has restricted the cutting of existing **palm trees** and plans to plant around **1.9 million palm trees** to reduce casualties from lightning strikes.
2. **Permission** is required from the **forest department** to cut palm trees on private land premises, and strict action will be taken against those who violate the order.
3. **Palm trees** act as natural **conductors** during lightning strikes and prevent loss of lives.

Background:

1. Odisha has been severely affected by **lightning strikes**, with an average of **300 deaths annually**.
2. **Lightning strikes** claim nearly **2,500 human lives annually** in India, making it a significant threat to human life.
3. The state government has declared lightning a **state-specific disaster** and provides an **ex-gratia of Rs 4 lakh** to the family of the deceased in case of death due to lightning strike.
4. In the five years from **2018-19 to 2022-23**, a total of **2,058 deaths from lightning strikes** were reported in Odisha.
5. A total of **16,372 people** have died in various natural calamities during this period, the state government reported in the assembly in September 2023.

Initiative:

1. The government of Odisha has decided to undertake extensive **plantation of palm trees** and protect existing ones to reduce lightning-related hazards.
2. The **forest department** will plant around **1.9 million palm trees** across the state in **2024-25**, with four palm trees to be planted near the boundary of each forest block.

- The department will spend around **Rs 7 crore** for this purpose.
- The restriction on felling palm trees was initially imposed under the **Odisha Timber and Other Forest Produce Transit Rule**, but was later withdrawn following public demands.

Palm Trees Notes:

Family: **Arecaceae** (also known as Palmae)

Characteristics :

- Monocotyledonous flowering plants
- Evergreen
- Can grow as shrubs, trees, or lianas (long, woody vines)
- Tall, unbranched stem (or rarely, dichotomous branching stem)
- Rosette of coriaceous leaves at the apex
- Leaves can be palmate (like hands) or pinnate (like feathers)
- Stem diameter remains constant from base to top

Distribution:

- Main centers: **America and Asia** (from India to Japan and south to Australia and Pacific and Indian oceans)
- Africa and Madagascar:** smaller, less important palm region

Importance and Uses:

- Many species are sturdy and plentiful, but around **100 are endangered** due to deforestation and unsustainable cultivation practices
- Prime sources of **vegetable oil and fat: coconut and African oil palm** (*Elaeis guineensis*)
- Heart of palm:** comes from a non-regrowable part of the tree
- Other uses: food, shelter, fiber, medicine

Rare Palm Tree:

- Hyophorbe amaricaulis:** the rarest palm tree, with only one individual left, living at the Botanic Gardens of Curepipe in Mauritius

Monocotyledons (Monocots):

- Group of **flowering plants (angiosperms)** with a **single cotyledon** (seed leaf) in their seeds
- Include grasses (Poaceae), such as:
 - True grains** (rice, wheat, maize)
 - Pasture grasses
 - Sugar cane**
- Other examples: lilies, orchids, bromeliads

Expert Opinions:

- Jitsatru Mohanty**, senior retired forest officer: “It’s a welcome move by the government to restrict

the chopping down of existing palm trees in rural areas, as they aim to mitigate lightning deaths naturally.”

2. Manoranjan Mishra, professor in the Department of Geography at FM University, Balasore: “The restriction on cutting down palm trees is a positive step to minimise deaths due to lightning strikes, but it is not scientifically accepted globally.”

3. Sudhir Rout, director of Aryabhata Foundation: “Tall trees like palms absorbed lightning before it struck the ground, and lightning strike deaths were lower in areas where palm trees existed.”

4. P Sundar Narayan Patra, retired professor of botany and president of the Odisha Environment Society: “Not only palm trees but any tall trees can absorb lightning, and the government should re-impose restrictions on cutting tall trees to minimise deaths due to lightning strikes.”

Challenges:

- The **survival rate** of the plants is a concern, as it takes around **20 years** for a palm tree to become fully grown and effectively observe lightning.
- The effectiveness of palm tree planting in reducing lightning-related deaths is still a topic of **debate among experts**.
- The government’s decision to restrict the cutting of palm trees may face **opposition from local communities** who rely on the trees for their livelihood.

State of the World’s Forests 2024



Overview

A new report released by the **Food and Agriculture Organization (FAO)** of the United Nations on **July 22, 2024**, presents a mixed picture regarding the state of the world’s forests. While global efforts have curbed deforestation, significant threats from wildfires and pests remain.

Key Findings :

- 1. Global Forest Cover:** In **2020**, the global forest covered approximately **4.1 billion hectares (ha)**, or **31%** of the land area. The Russian Federation, Brazil, Canada, the United States of America, and China account for **54%** of the global forest area, in descending order.
- 2. Deforestation Rates:** Between **1990 and 2020**, approximately **420 million ha** of forest were converted to other land uses. However, deforestation rates fell from **15.8 million ha** per year between 1990 and 2002 to **10.2 million ha** between 2015 and 2020.
- 3. Regional Deforestation:** Deforestation rates in Africa were **4.41 million ha**, **2.95 million** in South America, and **2.24 million** in Asia.
- 4. Net Rate of Change:** The net rate of change in forest area is estimated at **-4.7 million ha** per year in 2010-2020, significantly lower than in the two previous decades (**-7.8 million ha** per year in 1990-2000 and **-5.2 million ha** per year in 2000-2010).
- 5. Countries with Forest Gains:** Ten countries, including China, Australia, India, Chile, Viet Nam, Turkey, the United States of America, France, Italy, and Romania, recorded annual gains in forest area in 2020.

Positive Developments

- 1. Indonesia:** Preliminary data from the Global Forest Resource Assessment (2025) show an **8.4% decrease** in deforestation in Indonesia for 2021-22 compared to 2020-21, the lowest since 1990. The overall reduction was recorded to be **90%**.
- 2. Brazil:** Brazil registered a **50% decrease** in deforestation in 2023 compared to 2022 in the Legal Amazon region, which amounts to about **60%** of the total area of the country.
- 3. Africa:** Africa showed a decrease in annual deforestation rates compared to 2016-19 and 2020-22 across subregions and the continent as a whole.

Mangroves

- 1. Global Mangrove Area:** The global mangrove area was recorded to be **14.8 million ha**, with South and Southeast Asia contributing almost **44%** of the total global area.
- 2. Mangrove Loss and Gain:** The rate of gross global mangrove loss decreased by **23%** between

the two recent decades (2000-2010 and 2010-2020), and the rate of gain in mangrove area also decreased slightly.

- 3. Threats:** Extreme weather events due to climate change and sea-level rise threaten mangroves and make local communities vulnerable to disasters.

Wildfires

- 1. Global Impact:** About **340-370 million ha** (equivalent to less than half the land area of Australia) of the earth's land area is impacted by annual fire.
- 2. 2023 Fires:** Satellite data estimated that about **383 million ha** of land were affected by fire in 2023 alone. The actual area is likely to exceed this number due to technical challenges in detecting small fires.
- 3. Emissions:** Fires in 2023 emitted **6,687 megatons** of carbon dioxide globally, more than double the emissions contributed by the European Union by burning fossil fuels.
- 4. Canada:** In 2023, **6,868 fires** burnt in Canada, affecting **14.6 million ha** of land—five times more than the 20-year average.

Pests and Diseases

- 1. Threats:** Forests experience threats from pests. For example, the pine wood nematode has caused significant damage to native pine forests in China, Japan, and the Republic of Korea.
- 2. Economic Impact:** Insects and disease are estimated to cause losses exceeding **20%** of the host tree basal area over **25 million ha** of forest land in the United States of America through 2027.
- 3. Challenges:** Monitoring of forest degradation and outbreaks of insect pests and disease is at an early stage across the world. Quantifying the economic cost in terms of timber loss, cost of tree replacement, and the ecosystem services offered by trees is challenging.

Conclusion :

The **State of the World's Forests 2024** report highlights both positive developments and ongoing challenges in global forest conservation. While deforestation rates have slowed, the escalating impacts of climate change, wildfires, and pests continue to pose significant threats. The report underscores the need for continued efforts to protect and restore forests, which are vital for the planet's ecosystems and the well-being of local communities.

Two New Species of Jumping Spiders Discovered from Western Ghats



Introduction:

Researchers from **Christ College, Irinjalakuda**, have discovered two new species of **litter-dwelling jumping spiders** from the evergreen forests of the southern **Western Ghats**. The newly discovered species, **Habrocestum swaminathan** and **Habrocestum benjamin**, have sparked scientific curiosity among arachnologists and nature enthusiasts.

Key Developments:

- **Discovery of *Habrocestum swaminathan*:** The species was discovered from the banks of the **river Kunthi** and has been named after **M.S. Swaminathan**, considering his contributions to the science field and his efforts on the conservation of **Silent Valley**.
- **Discovery of *Habrocestum benjamin*:** The species was collected from **Thusharagiri**, one of the foothills of the **Nilgiri biosphere reserve**, and has been named after **Suresh P. Benjamin**, a Sri Lanka-based jumping spider specialist.
- **Characteristics of the Species:** The spiders are attractive with beautiful color patches and were spotted near the **Thusharagiri waterfalls**, a busy tourist destination.
- **Significance of the Discovery:** The discovery of these two new species can reshape the understanding of the ecological dynamics and evolutionary processes within the spider communities of the **Western Ghats**.

Implications:

- **Ecological Dynamics:** The discovery of these new species can provide insights into the ecological dynamics of the **Western Ghats**, including the role of jumping spiders in natural pest control and as vital indicators of ecosystem health.
- **Conservation Efforts:** The discovery highlights the importance of conservation efforts in the **Western Ghats**, which is one of the world's most vital biodiversity hotspots.

- **Scientific Research:** The discovery can spark further scientific research into the genus **Habrocestum** and the ecological significance of jumping spiders in the **Western Ghats**.

Analysis:

- **Western Ghats as a Biodiversity Hotspot:** The discovery of these two new species highlights the **Western Ghats** as one of the world's most vital biodiversity hotspots, with its ecological richness and unique species.
- **Importance of Jumping Spiders:** Jumping spiders are unsung heroes of natural pest control and vital indicators of ecosystem health, making their study crucial for understanding ecological dynamics.
- **Collaboration and Funding:** The study was funded by the **Science and Engineering Research Board** of the Department of **Science and Technology** and the **University Grants Commission**, highlighting the importance of collaboration and funding in scientific research.

Conclusion:

The discovery of two new species of jumping spiders from the **Western Ghats** is a significant finding that can reshape our understanding of the ecological dynamics and evolutionary processes within the spider communities of the region. The discovery highlights the importance of conservation efforts and scientific research in the **Western Ghats**, which is one of the world's most vital biodiversity hotspots.

Norms issued for funding of testing facilities, infra for National Green Hydrogen Mission



Why in the News:

The **Ministry of New and Renewable Energy (MNRE)** has released guidelines for funding **testing facilities, infrastructure**, and institutional support for the development of standards and regulatory

frameworks under the **National Green Hydrogen Mission**.

- a. The mission aims to address gaps in existing testing facilities for **green hydrogen** and its derivatives and support the establishment and enhancement of new testing facilities to ensure safe operations.
- b. The scheme has a budget of **Rs 200 crore** until 2025-26, which is part of the total allocation of **Rs 19,744 crore** for the **National Green Hydrogen Mission**.
- c. The **National Institute of Solar Energy (NISE)** will oversee the implementation of the scheme.

Objectives:

1. Develop a robust **green hydrogen ecosystem** in India
2. Promote the use of **green hydrogen** as a **clean energy carrier**
3. Reduce dependence on **fossil fuels**
4. Support the country's **renewable energy targets**
5. Create new **economic opportunities** and **jobs**
6. Enhance **energy security** and reduce **import dependence**
7. Mitigate **climate change** and improve **air quality**

Components:

Strategic Interventions for Green Hydrogen Transition Programme (SIGHT):

1. **Financial incentives** for domestic **electrolyser manufacturing** and **green hydrogen production**
2. Targeted support for **pilot projects** and **demonstration programs**
3. Focus on developing a robust **supply chain** and **ecosystem**

Pilot Projects:

1. Support for emerging **end-use sectors** and **production pathways**
2. Identification of potential applications and markets for **green hydrogen**
3. Collaboration with **industry, academia,** and **research institutions**

Green Hydrogen Hubs:

1. Identification and development of regions for large-scale **production** and **utilization**
2. Creation of **infrastructure** and support systems for **green hydrogen production** and use
3. Development of a **skilled workforce** and **training programs**

Strategic Hydrogen Innovation Partnership (SHIP):

1. **Public-private partnership** framework for **R&D**
2. Collaboration with **industry, academia,** and **research institutions**
3. Focus on developing new **technologies** and applications

Skill Development Programme:

1. Coordinated programme for **skill development** and **training**
2. Focus on building a workforce with expertise in **green hydrogen production, handling,** and use

Funding and Implementation:

1. **Budget:** Rs 19,744 crore allocated for the mission
2. **Implementation Agency:** National Institute of Solar Energy (NISE)
3. **Timeline:** 2023-2030
4. **Monitoring and Evaluation:** Regular review and assessment of progress

Green Hydrogen:

1. **Definition:** Hydrogen produced by electrolysis using **renewable energy sources**
2. **Production Process:** Water electrolysis using **solar** or **wind power**
3. **Uses:** Energy storage, industrial processes, transportation, power generation
4. **Benefits:** Zero greenhouse gas emissions, clean energy carrier, can replace fossil fuels
5. **Challenges:** High production costs, infrastructure requirements, and energy efficiency

Impact:

1. **Economic:** Creation of new jobs, economic opportunities, and industries
2. **Environmental:** Reduction of greenhouse gas emissions, air pollution, and carbon footprint
3. **Social:** Improved energy security, access to clean energy, and enhanced quality of life
4. **Global:** Contribution to global efforts to mitigate climate change and transition to a low-carbon economy

Conclusion :

The guidelines issued by the **MNRE** for funding **testing facilities** and **infrastructure** for the **National Green Hydrogen Mission** are a significant step towards promoting the growth of the **green hydrogen industry** in India. The scheme will support the development of standards and regulatory frameworks, ensuring safe and secure operations of **green hydrogen facilities**, and contributing to India's transition to a **low-carbon economy**.



Critically Endangered Great Indian Bustards' Recovery Program : A Step towards Conservation



The Great Indian Bustard (GIB) is a critically endangered species with only 140 individuals remaining in the wild. The species is found only in India and is a key indicator of the health of grassland habitats.

The GIB's population has declined steadily over the past four decades due to habitat loss, depredation of eggs, and death due to overhead power lines.

Conservation Efforts:

1. The **Wildlife Institute of India (WII)** has prepared a proposal for the next phase of the conservation program, which includes key targets such as **rewilding Bustards bred in ex-situ conservation centres, conducting detailed population studies, and developing artificial insemination techniques.**
2. The **Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** has approved Rs 56 crore funding for the next phase of the conservation program.
3. The program aims to improve the **bird's habitat and start a conservation breeding program.**

Breeding Centers:

1. The **WII** has established long-term conservation breeding centres (CBC) in Ramdevra and Sorsan, Rajasthan.
2. The **breeding centres have a founder population of 40 GIBs**, of which 29 were collected from the wild and 11 were born to those who were mated at the centre.

About Great Indian Bustard: India's Critically Endangered Bird:

1. Introduction:

- a. The **Great Indian Bustard (Ardeotis nigriceps)**, the **state bird of Rajasthan**, is India's most critically endangered bird.
- b. It is a flagship grassland species, representing the well-being of the grassland ecology.

2. Distribution:

- a. The Great Indian Bustard's population is primarily confined to the **states of Rajasthan and Gujarat.**
- b. Smaller populations can be **found in Maharashtra, Karnataka, and Andhra Pradesh.**

3. Vulnerability:

- a. The bird faces various threats, including:
 - i. Collision or electrocution with power transmission lines.
 - ii. Hunting (still prevalent in Pakistan).
 - iii. Habitat loss and alteration due to agricultural expansion.
- b. GIBs are a **slow-reproducing species, laying a few eggs and providing parental care for chicks for almost a year.**
- c. **The GIB takes around 3-4 years to reach maturity.**

4. Protection Status:

- a. The Great Indian Bustard is listed as:
 - i. Critically Endangered on the IUCN Red List.
 - ii. Appendix 1 of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
 - iii. Appendix I of the Convention on Migratory Species (CMS).
 - iv. Schedule I of the Wildlife (Protection) Act, 1972.

Challenges:

1. The GIB faces major threats to its survival, including habitat loss, depredation of eggs, and death due to overhead power lines.

2. The Supreme Court has recognized the right of the people against adverse impacts of climate change as part of the fundamental right to life and right to equality.
3. The court has also constituted an expert committee to determine the scope, feasibility, and extent of overhead and underground electric lines in the area.
4. The poor frontal vision of the GIBs and their inability to swerve away from overhead power lines in their flying path, owing to their large size, are two key factors leading to their collision with transmission lines.

Habitat Management:

1. The GIB's habitat is not secure and safe for rewilding of captive Bustards, despite the Supreme Court's order to place good quality bird diverters to prevent collisions.
2. Habitat restoration should happen with the support and benefit of the local community, keeping their livestock grazing rights under consideration.
3. The WII has mapped the threats posed by power lines and renewable infrastructure across the 20,000 sq km GIB landscape.
4. In collaboration with Humane Society International, 801 dogs were sterilized in 23 villages in and around the Desert National Park in 2018-19 while GIB predators such as monitor lizards, foxes, and dogs were also captured and translocated from Bustard breeding areas, as per WII's annual report on the recovery program.

Importance of Community Involvement:

1. The involvement of local communities is essential for the success of the conservation program.
2. Habitat restoration should happen with the support and benefit of the local community, keeping their livestock grazing rights under consideration.
3. Community-based conservation efforts can help in reducing human-GIB conflict and promoting coexistence.

Conclusion:

The Great Indian Bustard recovery program is a crucial step towards the conservation of this critically endangered species. The program's success depends on addressing the major threats to the GIB's survival, including habitat loss, depredation of eggs, and death due to overhead power lines. The involvement of local communities and the support of the government are essential for the program's success. The conservation of the GIB is not only important for the species itself but also for the ecosystem and the local communities that depend on it.

In a first, Periyar Tiger Reserve Installs wind Turbine



In a pioneering move, the Periyar Tiger Reserve (PTR) in Thekkady has installed a wind turbine to generate power for real-time monitoring cameras and Wi-Fi connectivity within its forests.

This initiative aims to enhance the functioning of the reserve's monitoring systems and improve communication within its remote areas.

Key Points:

1. **Power Generation:** The wind turbine will help power real-time monitoring cameras and Wi-Fi connectivity within the forests.
2. **Forest Sections:** The PTR East Division comprises 17 forest sections where mobile network connectivity is currently unavailable. Until now, these sections have relied on solar power for wireless communication and operations at the forest section offices. However, the foggy climate and heavy rain often impede the efficiency of these solar panels.
3. **Project Details:** Elaborating on the project, Siby K.E., Thekkady range officer, said, "We have already installed real-time monitoring cameras throughout the forests to track animal movements and transmit data to Thekkady. A 1-kilowatt wind turbine has been installed at Mangaladevi, a location with strong winds. This turbine charges batteries that power the cameras."

- Internet Connectivity:** The wind turbine also enhances **internet connectivity** within deep forest station premises. The PTR has a dedicated **Bharat Sanchar Nigam Limited (BSNL)** line in Thekkady. “We have also installed a small **antenna** on the wind turbine, enabling forest staff at three stations to access the internet,” Mr. Siby added.
- Benefits:** Previously, forest officials spent up to **two weeks** without network connectivity. This new system allows them to contact their families and colleagues through **Wi-Fi**. As the trial phase of the project has been highly successful, the department is now planning to extend it to other sections within PTR. The wind turbine installation cost **Rs. 2 lakh**.

About Periyar Tiger Reserve:

- Location:** The Periyar Tiger Reserve is located in the **Western Ghats** of **Kerala**.
- Name:** It gets its name from the **River Periyar**, which has its origin deep inside the reserve.
- Rivers:** Two main rivers, **Pamba** and **Periyar**, drain the reserve.
- Tribal Communities:** It is home to many **tribal communities**, including the **Mannans** and the **Palians**.
- Vegetation:** The reserve consists of **tropical evergreen**, **semi-evergreen**, and **moist deciduous** forests.
- Flora:** Important flora includes **teak**, **mangoes**, **rosewood**, **jamun**, **jacarandas**, **terminalias**, **tamarind**, **royal ponciana**, **bamboos**, etc.
- Fauna:** It includes **elephants**, **wild pigs**, **sambar**, **gaur**, **mouse deer**, **dhole** or **barking deer**, **Indian wild dog**, and **tiger**. The major four species of **primates** are also found at Periyar—the rare **lion-tailed macaque**, the **Nilgiri langur**, **Gee’s golden langur**, **common langur**, and **bonnet macaque**. It is also being considered as the habitat of the elusive **Nilgiri tahr**.

About the National Tiger Conservation Authority (NTCA):

- Establishment:** The NTCA was established in **2006** under the **Wildlife (Protection) Act 1972**.
- Objectives:** Its objectives are to provide statutory authority to **Project Tiger** so that compliance with its directives becomes legal.

Conclusion:

The installation of a **wind turbine** in the Periyar Tiger Reserve marks a significant step towards enhancing the reserve’s monitoring and communication capabilities. This initiative not only powers real-time monitoring cameras and Wi-Fi connectivity but also addresses the long-term demand of forest officials for better connectivity. As the trial phase has been successful, the department plans to extend this project to other sections within PTR, highlighting the importance of innovative solutions in **conservation efforts**.

OIL SPILLS

Typhoon Gaemi has wreaked havoc across **Taiwan**, **the Philippines** and **parts of southeastern China**. The resultant heavy rains also led to the **sinking of the oil tanker MT Terra Nova**, laden with **1.4 million litres of oil**, in **Manila Bay** on July 25.

Philippines: oil tanker sinks off Manila

The tanker, carrying 1.4 million litres of industrial fuel oil, capsized then sank on Thursday, July 25



One crew member died while 16 others were rescued.

WHAT IS AN OIL SPILL?

An oil spill is the **release of liquid petroleum into the environment, typically water**.

This can **happen accidentally** during the **extraction, transportation, or refining** of oil.

Accidents involving **oil tankers, drilling rigs, pipelines, or refineries**, can be triggered by **natural disasters, human error, or equipment failure**.

HOW CAN THE SEVERITY OF OIL SPILL BE DETECTED?

The severity of an oil spill **can range from small, localized leaks to catastrophic events** that cause widespread environmental damage.

IMPACTS OF OIL SPILLS

The **consequences of oil spills are far-reaching and devastating.**

- **Environmental Damage:**
 - **Marine life:** Oil coats the **feathers of birds and fur of marine mammals, disrupting their ability to regulate body temperature and leading to death.** Fish, invertebrates, and other aquatic life are also affected by **oil ingestion, contact, and habitat destruction.**
 - **Coastal ecosystems:** Oil can **smother beaches, destroying habitats for plants and animals.** It also harms **wetlands, marshes, and mangroves,** which are crucial for coastal protection and biodiversity.
 - **Water pollution:** Oil can **contaminate water sources, making them unsafe for drinking, agriculture, and recreation.**
- **Economic Impacts:**
 - **Fisheries:** Oil spills can **devastate fishing industries,** leading to job losses and economic hardship for coastal communities.
 - **Tourism:** Contaminated beaches and damaged ecosystems can deter tourists, impacting local businesses and economies.
 - **Cleanup costs:** The costs of cleaning up oil spills are often substantial, burdening governments and responsible parties.
- **Human Health:**
 - **Respiratory problems:** Oil fumes can cause respiratory issues in humans.
 - **Skin irritation:** Contact with oil can lead to skin irritation.
 - **Contaminated food:** Oil-contaminated seafood can pose health risks if consumed.

HOW TO DEAL WITH OIL SPILLS?

- **Containment:** Booms are used to contain the oil slick and prevent its spread.
- **Dispersants:** Chemicals can be applied to break up the oil into smaller droplets, making it easier to biodegrade. However, the use of dispersants can also have negative environmental impacts.
- **Skimming:** Oil can be skimmed from the water surface using specialized equipment.
- **Burning:** In certain conditions, oil can be burned off the water surface.

- **Bioremediation:** Using microorganisms to break down oil is a more environmentally friendly approach but can be slow.
- **Shoreline cleanup:** Manual removal of oil from beaches and shorelines is often necessary.
- **Wildlife rescue and rehabilitation:** Injured animals are rescued, cleaned, and rehabilitated.

MAJOR OIL SPILLS OF THE PAST

Major oil spills from the past point to the complex challenges of recovery. One of the worst such cases was the **Exxon Valdez spill in 1989,** which released approximately **11 million gallons of crude oil** into **Prince William Sound off the Gulf of Alaska.**

IMPACT:

The oil spill **killed an estimated 250,000 seabirds, 2,800 sea otters, 300 harbour seals, 250 bald eagles, as many as 22 killer whales, and billions of salmon and herring eggs,** according to the EPA.

Despite extensive cleanup efforts, **the region continues to suffer environmental damage,** and wildlife populations have not fully recovered yet.

Studies by the **United States Geological Survey (USGS)** have revealed persistent contamination in sediments, **ongoing declines in certain fish populations,** and continued challenges in restoring kelp forests and other essential habitats.

Study Says Dust Mitigation Draining Clean Air Scheme Funds



A new study by the **Centre for Science and Environment (CSE)** has evaluated the National Clean Air Programme (NCAP) by examining fund utilization, city-level performance in improving air quality, and implementation gaps.

Key Findings

1. **Road dust mitigation** efforts are consuming 64% of the funds under NCAP.
2. The study suggests shifting focus to curbing the more dangerous **PM2.5 pollution** instead of PM10.

PM2.5 vs. PM10

1. **Sunita Narain**, Director of CSE, emphasized the importance of focusing on combustion sources rather than dust.
 - a. **PM2.5**: Finer and more lethal, can penetrate deep into the lungs and bloodstream, causing serious health issues.
 - b. **PM10**: Larger particles that can irritate the respiratory system but are generally less harmful than PM2.5.
2. **Size**:
 - a. **PM2.5**: Particles with a diameter of 2.5 micrometers or less.
 - b. **PM10**: Particles with a diameter of 10 micrometers or less.
3. **Health Risks**:
 - a. **PM2.5**: Can lead to respiratory illness, heart disease, and cancer.
 - b. **PM10**: Can worsen conditions like asthma but less likely to reach deep lung areas.
4. **Sources**:
 - a. Combustion of fuels, construction activities, road dust, wildfires, and industrial processes.
5. **Air Quality Standards**: Government agencies set standards to protect public health from PM2.5 and PM10.

Fund Utilisation

1. 64% of total funds are allocated to road dust mitigation.
2. Only **12.63%** and **14.51%** funds are spent on combating pollution from vehicles and biomass burning, respectively.
3. A mere **0.61%** is used for industrial pollution control.

National Clean Air Programme (NCAP)

1. Launched in January 2019 by the **Ministry of Environment, Forest, and Climate Change**.
2. Aims to address air pollution comprehensively across the country.
3. **Objectives**:
 - a. Implementing measures to control and reduce air pollution.
 - b. Strengthening the air quality monitoring network.
 - c. Increasing public awareness and capacity building.

4. Target:

- a. **Initial**: 20-30% reduction in PM10 levels by 2024.
- b. **Revised**: Up to 40% reduction or achievement of national standards (60 µg/m³) by 2025-26.

Implementation

1. The **Central Pollution Control Board (CPCB)** will execute the program in accordance with the Air (Prevention and Control of Pollution) Act, 1981.
2. **131 non-attainment cities** have been identified for the program.
3. City-specific action plans include measures to strengthen monitoring, reduce emissions, and raise public awareness.

Central Pollution Control Board (CPCB)

1. A statutory organization under the **Ministry of Environment, Forest and Climate Change**.
2. Established in 1974 under the Water (Prevention and Control of Pollution) Act, 1974.

Funding

1. Approximately **Rs. 10,566.47 crore** was released to 131 cities between 2019-20 and 2023-24.
2. Of the **Rs. 1,615.47 crore** released for 82 cities, only **51%** or **Rs. 831.42 crore** has been utilized.
3. **42 cities** with a million-plus population received **Rs. 8,951 crore**, of which **67%** or **Rs. 5,974.73 crore** was spent.

The Dark Side of AI : Its Growing Environmental Footprint

Context :

- A study by Yale highlights that the environmental footprint of artificial intelligence (AI) is large and growing. While AI is widely believed to help reduce humanity's environmental impact, the study sheds light on the significant energy and resource consumption associated with AI technology.

Key Findings

- **Environmental Impact**: The study emphasizes that the explosion of AI has a clear consequence: a large and growing environmental footprint. AI systems require massive amounts of water and electricity, and there is a lack of data on their overall environmental impact.
- **Water Consumption**: One of the most pressing environmental concerns is the excessive water consumption by AI systems. According to the Yale study, 10 to 50 responses from ChatGPT-3 use up

around half a liter of water. AI computing systems require large amounts of water to keep the equipment functional, and this water must be clean and free of bacteria.

- **Tech Giants' Water Use:** Tech giants like Google and Microsoft use millions of liters of fresh water in their data centers. In 2022, Google alone consumed nearly 20 billion liters of fresh water for cooling, and its water consumption increased by 20 percent compared to the previous year. Microsoft's water consumption increased by 34 percent in the same period.
- **Global Impact:** As the number of data centers increases and AI becomes embedded in all aspects of life, the freshwater stock is likely to be greatly impacted, especially in countries like India. Microsoft has around 300 data centers globally, including in India, while Google has 25 and Apple runs 10.

In its annual environment report released earlier this month, Google reported a 13% increase in its emissions footprint in 2023 compared with the previous year.

The rise was attributed mainly to the increased electricity consumption in its data centres and supply chains.

Google said its data centres consumed 17% more electricity in 2023, and added that this trend was expected to continue in the coming years because of greater deployment and usage of its artificial intelligence (AI) tools.

SOME HARD FACTS

AI, which is expected to enable transformative changes across several domains, including attempts to find solutions to climate change, has a very heavy emissions footprint, the scale of which is becoming evident only now.

Studies have shown that a simple AI query, like the ones posted to Open AI's chatbot Chat GPT, could be using between 10 and 33 times more energy than a regular Google search.

Image-based AI searches could be using even more energy.

WHY EMISSIONS ARE HIGHER?

AI models typically work much more than a simple Google search even when the same question is addressed to both.

- *They sift through much more data while processing and formulating appropriate responses.*

- *More work means a greater number of electrical signals are required when the computer is processing, storing, or retrieving data.*
- *More work also generates and releases more heat, which then requires more powerful air-conditioning or other forms of cooling in the data centres.*

DO WE NEED TO WORRY?

- *As AI tools are deployed more widely, their impact on energy consumption worldwide is expected to rise sharply.*
- *Already, data centres account for between 1% and 1.3% of the global electricity demand.*
 - *This could double (become between 1.5% and 3%) by 2026, according to recent projections of the International Energy Agency (IEA).*
- *By contrast, despite the large number of electric vehicles on the road, their share of global electricity consumption was just about 0.5%, the IEA said.*
- *At the level of countries, the electricity consumption of data centres as a share of the national demand has already crossed double digits in several regions. For Example-Ireland-18% (Govt. giving tax benefits) ; For USA (having the largest no. of data centres)-1.3-4.5%. Data for India is unknown.*

ALTERNATE VIEWPOINT

Other estimates suggest that the large scale deployment of AI could help in significant reductions of emissions globally.

A recent study by the Boston Consulting Group found that application of AI to corporate and industrial practices could result in a 5-10% reduction in global emissions by 2030, while generating a value worth \$1.3 trillion to \$2.6 trillion through additional revenues or cost savings.

Emissions reductions can happen if AI is deployed to monitor and predict emissions in existing processes, and optimise these to eliminate wastage or inefficiencies.

Need for Sustainable AI

- **Data Transparency:** Jeremy Tamanini noted the importance of disaggregating AI-related Scope 1, 2, and 3 emissions. "This data transparency will provide more clarity on the environmental footprint of AI and how we can best manage it," he commented.

- **International Standards:** The IEC and the International Organization for Standardization (ISO) are set to release the world's first report with international standards for sustainability in AI. The report is expected to cover all areas where AI coincides with the environment – energy and water consumption, carbon footprint, waste, the system's life cycle, and supply chain.

Challenges Ahead

- **Capitalist Trajectory:** Dr. S. Faizi believes that efforts to avert environmental calamity from AI technology are not enough. He said, "This is part of the capitalist trajectory of living beyond nature's limits, a trajectory that would eventually culminate in the extinction of the industrial civilization itself."
- **Regulation and Reporting:** Jeremy Tamanini further said, "System creators can follow best practices to make AI more sustainable. One example is the Google '4M Approach.' But where AI stands in the sustainable future of technology will depend upon regulators and the extent to which system creators are required to report and limit their AI environmental footprint."

Local Context

- **India's Plan:** In a recent Cabinet meeting, India approved a plan worth over Rs 10,000 crore for the next five years, under which the government will allocate funds towards subsidizing private companies looking to set up AI compute capacity in the country.
- **Water Stress:** The World Bank has reported that India is currently one of the most "water-stressed" countries with 18 percent of the world's population and 4 percent of the world's water resources.

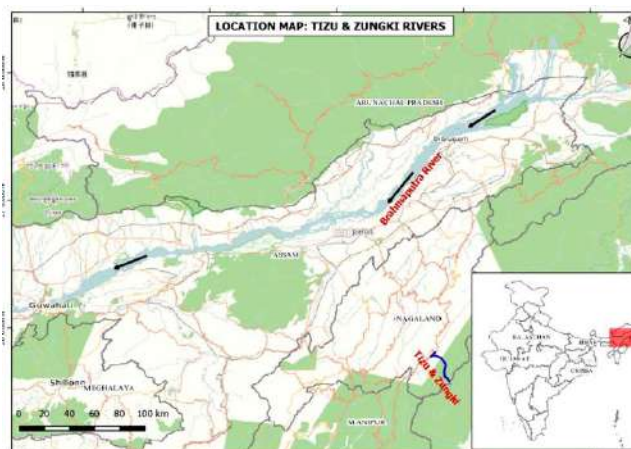
Conclusion

The growing environmental footprint of AI highlights the urgent need for sustainable practices and regulations. As AI becomes increasingly embedded in the global economy, it is crucial to treat it like any other factor that increases energy and resource consumption. Efforts to develop sustainable AI, including international standards and data transparency, are essential to mitigate the environmental impact and ensure that AI contributes positively to global climate goals.



Geography

Centre to explore Tizu Zunki river to Connect hilly Nagaland with Southeast Asia for Trade, Tourism



Introduction:

The Centre has decided to explore the **Tizu Zunki river** in Nagaland to connect the hilly state with neighbouring Myanmar and other Southeast Asian nations for **trade and tourism**.

Objective:

1. The objective is to use the **Tizu Zunki river** to connect Nagaland with the Irrawaddy river in Myanmar, which further drains into the Andaman Sea, providing an alternative opportunity to use waterways for cargo movement from Northeast India to international trade routes.

Features:

- The **Tizu river** in Nagaland flows into the Chindown river (third largest tributary of the Irrawaddy river), also known as Ningthi river in Myanmar, at Htamanthi in Myanmar.
- The **Chindown River** further enters into the Irrawaddy river, which drains into the Andaman Sea via Irrawaddy Delta after passing through river ports like Mandalay, Chauk, Prome, and Hinthada.

Significance:

- The development of the **Tizu Zunki river** will provide a boost to the Centre's **Act East Policy**, which aims to promote trade and connectivity with Southeast Asian nations.
- The project will enhance connectivity and trade within the region, facilitating smoother and more efficient movement of goods and people.

Stakeholders:

- The **Inland Waterways Authority of India (IWAI)** and the Transport department of the

Government of Nagaland will work together to study the navigation feasibility of the river.

- The Nagaland government has submitted a proposal for the development of the **Longmatra to Avakhung stretch** of the Tizu-Zunki River (NW-101) and development of inland waterways projects at Dhansiri river and Doyang lake.

Quotes:

- “Waterways is the most economical, sustainable and efficient mode of transportation. The complex and dynamic mix of waterways of the Northeast provides us an excellent opportunity to build on the nation-building momentum. We remain firmly committed and on track to provide impetus for the development of waterways of the region,” said Sarbananda Sonowal.
- “The Northeastern region, with its vast network of rivers, offers a unique chance to enhance trade, tourism, and connectivity. By developing multimodal terminals, intermodal terminals, fairways, tourist jetties, and community jetties, we can transform this region into a thriving hub of economic activity. Enhanced connectivity will not only boost trade within the region but also facilitate smoother and more efficient movement of goods and people,” said Y. Patton, Deputy CM of Nagaland.

About Tizu River:

- The **Tizu River** is one of the four main rivers in Nagaland, along with Doyang, Dhansiri, and Dhiku.
- The river originates from the central part of Nagaland state and runs through a northeast direction, flowing through Kiphire and Phek districts and confluencing in the Chindwin River of Myanmar.
- The main tributaries of the **River Tizu** are river Zungki, Lanye, and Likimro.

About National Waterways 101:

- The proposed **Tizu-Zungki waterway**, or **NW 101**, will link Nagaland with the Chindwin River, Myanmar, and beyond.
- On the Nagaland side, it is set to run approximately 42 km, starting from Longmatra in Kiphire to Avangkhu in Phek’s Meluri sub-division.
- From Avangkhu, it will link up with the Chindwin and on to the Tamanthi port, Myanmar, traversing some 117 km.

Climate Risks Projected to Affect Fish Biomass



The Food and Agriculture Organization of the United Nations (**FAO**) released a report highlighting the potential **climate risks** to exploitable fish biomass across nearly all ocean regions.

These projections indicate significant declines in **fish biomass**, especially under **high-emissions scenarios**.

Key Findings:

- **High-Emissions Scenario (3-4°C warming):**
 - Global **fish biomass** could decline by more than **10%** by mid-century.
 - By the end of the century, declines could worsen to **30% or more** in **48 countries and territories**.
- **Low-Emissions Scenario (1.5-2°C warming):** Changes stabilize, with no change to a decrease of **10% or less** across **178 countries and territories** by the century’s end.
- **Notable Declines in Top Fish Producer Nations:**
 - **Peru: 37.3% decline** in Exclusive Economic Zones under high-emissions scenario.
 - **China: 30.9% decline** in Exclusive Economic Zones under high-emissions scenario. Under the low-emissions scenario, these declines stabilize.

FAO Report Details:

- The report titled “**Climate change risks to marine ecosystems and fisheries: Projections to 2100**” was released during the Thirty-sixth session of the Committee on Fisheries (**COFI36**), held from July 8-12, 2024, at FAO headquarters in Rome.
- This report complements findings from the latest edition of **The State of World Fisheries and Aquaculture (SOFIA)**, which showed a record high in world fisheries and aquaculture production at 223.2 million tonnes in 2022.

Implications and Actions:

- **Adaptation Programs:** Understanding climate change impacts on marine ecosystems and fisheries is crucial for designing effective **adaptation programs**.
- **Mitigation Benefits:** Lower emissions significantly reduce **biomass losses**, highlighting the benefits of climate change **mitigation measures** for fisheries and aquatic foods.
- **Impact on Small Island Developing States (SIDS):**
 - o **SIDS**, which heavily rely on fisheries for food and income, face high ecological and socioeconomic risks from climate change.
 - o Example: Under low-emissions scenarios, **68-90%** of extreme end-of-century losses projected under high emissions are averted for SIDS like Micronesia, Nauru, Palau, Solomon Islands, and Tuvalu.

Achieving Blue Transformation:

- To support FAO's **Blue Transformation** vision of resilient, equitable, and sustainable aquatic food systems, future **FishMIP** research will need to consider other ocean and coastal uses in addition to fisheries.
- This holistic approach aims to manage marine resources effectively, addressing trade-offs across sectors and aligning with FAO's Strategy on Climate Change and its Action Plan.

FishMIP Initiative:

- **Launch and Expansion:**
 - o **FishMIP** was officially launched in 2013.
 - o In 2024, **FishMIP2.0** was established to improve the reliability of modeling projections and address a broader set of policy-related questions relevant to food security and marine resource management.
- **Network:** **FishMIP** consists of over **100 marine ecosystem modelers** and researchers worldwide.
- **Purpose:** The initiative provides knowledge to industry and governments to support effective planning for adaptive and resilient seafood sectors under climate change.

About the FAO:

- **Specialized UN Agency:** Leads international efforts to defeat hunger and improve nutrition and food security.
- **Goals:** Achieving food security for all and ensuring regular access to high-quality food for healthy lives.

- **Membership:** 195 members (194 countries and the European Union).
- **Sister Bodies:** World Food Programme (WFP) and International Fund for Agricultural Development (IFAD).
- **Reports:** Publishes The State of the World's Forests (SOFO), The State of World Fisheries and Aquaculture (SOFIA), The State of Agricultural Commodity Markets (SOCO), and The State of Food Security and Nutrition in the World (SOFI).
- **Headquarters:** Rome, Italy.

About the World Food Programme:

- **Role:** A UN branch focused on hunger eradication and promoting food security.
- **Membership:** Part of the United Nations Development Programme (**UNDP**).
- **Operations:** Active in over 120 countries, providing food assistance during emergencies and working with communities to enhance nutrition and resilience.

What is Causing Widespread Rainfall Across India?

Context :

Since the start of this month, multiple favorable weather systems have kept the monsoon active or vigorous over southern peninsular, east, northeast, and central India regions, leading to widespread rainfall across the country.

Key Factors Contributing to Widespread Rains

1. Monsoon Activity:

- **Active Monsoon:** For the first time this season, the southwest monsoon is active over a large geographical area of India. At least 80% of the country reported widespread rainfall last week, with heavy to very heavy spells lashing Assam, West Bengal, Uttar Pradesh, Uttarakhand, Gujarat, coastal Maharashtra and Karnataka, Kerala, and Lakshadweep.
- **Monsoon Coverage:** The monsoon covered the entire country on July 2, six days ahead of its normal schedule. Delhi, Punjab, Uttarakhand, Uttar Pradesh, Himachal Pradesh, Rajasthan, and Jammu and Kashmir received the spell in early July.

2. Moisture-Laden Winds:

- **Westerly Winds:** Continuous incoming of moisture-laden strong westerly winds from the Arabian Sea has contributed to enhanced rainfall.

3. Monsoon Trough:

- **Position of Trough:** The monsoon trough, a semi-permanent, low-pressure area extending between

Pakistan and the Bay of Bengal during the monsoon season, has oscillated between north and south. When it moves towards the south, as it has done in the present case, more rainfall can take place in central, eastern, and peninsular India. When it shifts towards the north, the Himalayan foothills are likely to receive more rainfall but the rest of India sees a drop in rainfall.

4. Other Weather Systems:

- **Off-Shore Trough:** The persistence of an off-shore trough (a shallow trough of low pressure that develops along India's coast during the monsoon) between south Gujarat and north Kerala for more than a week.
- **Wind Shear Zone:** The intermittent development of a wind shear zone — where winds move with different velocities and directions — along latitudes 20° N between central and peninsular India.
- **Low Pressure System:** The development of a low pressure system over the west-central Bay of Bengal, off the Odisha coast, on Monday. The system moved over Chhattisgarh and adjoining Vidarbha on Tuesday, and over southeast Madhya Pradesh on Wednesday.

Rainfall Status

- **National Rainfall:** The Met department's rainfall statistics indicate that the all-India rainfall went from 242mm on July 9 to 305.8mm on July 17. The country's rainfall stands at 97% of the normal for this time of the season.
- **Regional Variations:** Overall, 17 states have either received normal or above-normal rainfall this season. However, states such as Odisha, Haryana, Chandigarh, Himachal Pradesh, and Jharkhand, along with high-rainfall recording states including Kerala, Nagaland, Manipur, and Mizoram, have seen deficient rainfall so far this season. This is also because July rainfall normal values for many of these states are high.
- **Recent Heavy Rainfall:** Since July 13, heavy rainfall events have been recorded along the country's west coast, especially in Konkan, Goa, ghat areas of Madhya Maharashtra, coastal Karnataka, and Kerala. Uttarakhand, west Uttar Pradesh, Gujarat, and West Bengal also received heavy rainfall.

Forecast

- **Continued Monsoon Activity:** The southwest monsoon will continue to remain active all through this week over south peninsular, eastern India, and over the Himalayan states.

- **New Low Pressure System:** A fresh low pressure system will develop over the northwest Bay of Bengal around Friday, whose landward movement will keep the monsoon momentum high with rainfall persisting over eastern and central India regions during the next five days.
- **Red Alert:** The IMD has issued a 'red' alert (meaning: take action) for Kutch, Saurashtra, Konkan, Goa, coastal and south interior Karnataka where very heavy to extremely heavy rainfall (115 mm to 204 mm in 24 hours) is likely to occur on Thursday.
- **Orange Alert:** For July 19, an 'orange' alert (meaning: be prepared) over Gujarat, west Madhya Pradesh, Madhya Maharashtra, Konkan, Goa, coastal and interior Karnataka, Kerala, Telangana, Andhra Pradesh, and Odisha.
- **Yellow Alert:** On the same day, a 'yellow' alert prevails ahead of thunder, lightning, and heavy rainfall over Uttarakhand, Himachal Pradesh, Uttar Pradesh, Vidarbha, east Madhya Pradesh, Chhattisgarh, and West Bengal.
- **Weekend Forecast:** During the weekend, the whole of south peninsular India, except Tamil Nadu, and central India will receive heavy rainfall with some areas also experiencing lightning and thunder.
- **Extended Rainfall:** From Thursday, rainfall activity will extend further to the Himalayan states and northwest India regions as well. Rajasthan, Haryana, Punjab, west Uttar Pradesh, and Uttarakhand will experience enhanced rainfall activity. In view of the fresh low pressure system set to form in the Bay of Bengal on July 19, rainfall over Odisha, coastal Andhra Pradesh, and Telangana will improve starting Thursday.
- **Overall Outlook:** The monsoon will continue to remain active and bring copious amounts of rainfall during the next ten days over all regions of the country, barring Jammu and Kashmir and adjoining areas in northern India. Thereafter, rainfall activity over large parts of the country will be subdued in early August.

Conclusion :

The widespread rainfall across India is a result of multiple favorable weather systems, including the active southwest monsoon, moisture-laden westerly winds, the position of the monsoon trough, and other weather systems like off-shore troughs and wind shear zones. The monsoon is expected to remain active over the next ten days, bringing heavy rainfall to most regions of the country. However, rainfall activity is likely to subside in early August.

Italy's Etna and Stromboli Volcanoes Erupt, Catania Airport Closed



Introduction:

Italy's **Mount Etna** and the smaller **Stromboli volcano** have erupted, spewing hot ash and lava, raising alert levels on the Mediterranean island of **Sicily**, and forcing a temporary shutdown of **Catania Airport**.

Key Developments:

- **Etna's Intense Activity:** **Etna**, one of the world's most active volcanoes, has seen intense activity in recent days, lighting up the sky near the city of **Catania**.
- **Stromboli's Lava Flow:** **Stromboli**, located off the northern Sicilian coast, has spilled lava into the sea.
- **Red Alert Issued:** Italy's civil protection agency issued its top, **red alert** for **Stromboli**, warning the situation could deteriorate.
- **Catania Airport Closure:** The runway at **Catania Airport** was declared unusable due to the volcanic ash fall, leading to the suspension of both arrivals and departures.

Mount Etna:

Location

- **Mount Etna** is situated on the eastern coast of **Sicily**, an autonomous region in southern **Italy**.
- It is located on the coast of the **Ionian Sea**, near the city of **Catania**.
- The volcano dominates the surrounding landscape and is a prominent feature of the **Sicilian landscape**.

Characteristics

- **Mount Etna** is **Europe's most active volcano**, with a history of eruptions dating back over 3,500 years.

- It is one of the largest volcanoes in the world, with a height of **3,326 meters (10,912 feet)** above sea level.
- The volcano is the highest peak in Italy south of the Alps and is a popular destination for hikers and volcanologists.
- **Mount Etna** is a **stratovolcano**, also known as a **composite volcano**, which is characterized by its conical shape and layers of volcanic material.

Stratovolcano

- A **stratovolcano** is a type of volcano that is formed by the accumulation of layers of volcanic material, such as **lava, ash**, and other **pyroclastic material**.
- These volcanoes are typically conical in shape, with a broad base and a narrow summit.
- **Stratovolcanoes** are capable of producing a wide range of eruption styles, from gentle lava flows to violent explosive eruptions.
- They are often found at **subduction zones**, where one tectonic plate is being pushed beneath another, and are part of larger volcanically active regions.

Subduction Zone

- A **subduction zone** is an area where two tectonic plates are converging, and one plate is being forced beneath the other.
- This process is known as **subduction** and is responsible for the formation of many of the world's volcanoes, including **Mount Etna**.
- At **subduction zones**, the overlying plate is subjected to increasing heat and pressure, causing the rocks to melt and produce **magma**.
- This magma then rises to the surface, producing volcanic eruptions and forming volcanoes like **Mount Etna**.

Implications:

- **Air Travel Disruptions:** The closure of **Catania Airport** has caused disruptions to air travel, with flights suspended until further notice.
- **Safety Concerns:** The eruptions have raised safety concerns for residents and tourists in the surrounding areas.
- **Environmental Impact:** The eruptions could have a significant environmental impact, with the potential for ash fall and lava flows to affect local ecosystems.

Analysis:

- **Volcanic Activity:** The eruptions highlight the ongoing volcanic activity in the region, with both **Etna** and **Stromboli** known for their frequent eruptions.

- **Emergency Response:** The Italian authorities' swift response to the eruptions, including the issuance of a **red alert** and the closure of **Catania Airport**, demonstrates their preparedness for emergency situations.
- **Tourism Impact:** The eruptions could have a negative impact on tourism in the region, with travelers potentially deterred by the disruptions and safety concerns.

Conclusion:

The eruptions of **Italy's Etna** and **Stromboli volcanoes** have caused significant disruptions and safety concerns in the region. The swift response of the Italian authorities has helped to mitigate the impact, but the situation remains volatile, with the potential for further eruptions and disruptions.

Ivory Coast Joins UN Water Convention as 10th African Nation



Ivory Coast has joined the **United Nations Water Convention**, becoming the 10th African nation to do so. The country's accession aims to enhance cooperative water management across borders in response to growing water stress and the effects of climate change on its shared water resources.

Background

1. **UN Water Convention:** The **Convention on the Protection and Use of Transboundary Watercourses and International Lakes**, also known as the **1992 UN Water Convention**, was initially established as a regional framework for the pan-European region.
2. **Global Expansion:** In 2016, the Convention was expanded to all UN Member States, and since then, several African nations have acceded to the Convention.

Ivory Coast's Accession

1. **10th African Nation:** Ivory Coast is the 10th African nation to join the Convention, following **Chad, Senegal, Ghana, Guinea Bissau, Togo, Cameroon, Nigeria, Namibia,** and **The Gambia.**

2. **Transboundary River Basins:** Ivory Coast shares **eight transboundary river basins** with six of its neighbors, including Ghana, Burkina Faso, Mali, Guinea, Liberia, and Sierra Leone.
3. **Climate Change Vulnerability:** The **Niger River basin**, one of the most vulnerable regions to climate change, is likely to experience the largest decrease in river flows in all of Africa due to climate change.

Significance

1. **Water Cooperation:** The Convention facilitates cooperation on surface water and groundwater, requiring Parties to **prevent, control, and reduce negative impacts on water quality and quantity across borders.**
2. **Climate Change Adaptation:** The Convention helps countries work together on groundwater reserves, which are less susceptible to climate change impacts and hence crucial for climate change adaptation.
3. **SDG 6:** The accession of Ivory Coast contributes to the UN **Sustainable Development Goals**, particularly **SDG 6**, which aims to ensure universal and equitable access to safe and affordable drinking water for all.

Quotes

1. **Claver Gatete:** "In the context of increasing water scarcity and high demand for water in Africa, **Cote d'Ivoire's accession** as the 10th African Party to the 1992 Water Convention is a significant step for the continent."
2. **Laurent Tchagba:** "The accession of **Côte d'Ivoire to the UN Water Convention** will support relations with countries with which we share water resources. In our capacity as defenders of water in the context of the United Nations, we must use transboundary cooperation to reinforce peace and for harmonious and sustainable development in our countries."
3. **Tatiana Molcean:** "**Cote d'Ivoire's accession** is a milestone for multilateralism and reaffirms the role of the UN Water Convention as a tool to support water cooperation for peace, sustainable development, and climate change adaptation across borders."

Future Developments

1. **Three More African Nations:** Sierra Leone, Zambia, and Zimbabwe are in the final stages of accession to the Convention.
2. **10th Session of the Meeting of the Parties:** The **10th session of the Meeting of the Parties to the Water Convention** will be held in Ljubljana, Slovenia, from October 23-25, 2024.

About UN Water Convention

1. **History:** The Convention was adopted in **Helsinki in 1992** and entered into force in 1996.
2. **Objectives:** The Convention promotes the **sustainable management of shared water resources**, the implementation of the **Sustainable Development Goals**, the prevention of conflicts, and the promotion of **peace and regional integration**.

Key Facts About Ivory Coast

1. **Transboundary River Basins:** Ivory Coast shares eight transboundary river basins with six of its neighbors, including Ghana, Burkina Faso, Mali, Guinea, Liberia, and Sierra Leone.
2. **Water Insecurity:** Ivory Coast is categorized as the **40th “water insecure country in the continent”**, according to the **Global Water Security 2023 Assessment**.

United Nations Economic Commission for Europe (UNECE)

1. **Establishment:** UNECE was set up in **1947 by ECOSOC**.
2. **Objectives:** UNECE aims to promote **pan-European economic integration** and services the UN Water Convention.

Why This is Significant for Africa

1. **Water Resources:** Africa’s water resources have the potential to **stimulate economic growth**, secure livelihoods, and alleviate poverty.
2. **Transboundary Water Resources:** Transboundary water resources are especially important in Africa, where **63 international transboundary river basins** cover about **62 per cent of the region’s land area** and account for **90 per cent of the total surface water**.

Minami-Torishima Island



Japan Discovers Huge Deposits of EV Battery Minerals Off Remote Pacific Island

- Researchers have discovered around 230 million metric tons of minerals crucial for making electric vehicle batteries on the seabed off Minami-Torishima island, a remote island around 1,200 miles from Tokyo.
- The discovery was made by The Nippon Foundation in collaboration with the University of Tokyo.

The Motherlode Contains Enough Cobalt and Nickel to Supply Japan for Over a Decade

- The cache of manganese nodules lying 5,000 meters below the ocean surface contains enough cobalt to supply Japan for around 75 years and more than a decade’s worth of the country’s annual nickel consumption.
- Both minerals are crucial components of electric vehicle batteries, and the transition to EVs has sparked a global race to secure sources of the precious metals.

Deep Sea Mining to Begin in 2025 Despite Challenges

- Researchers plan to begin extracting the first minerals in 2025, despite the challenges associated with deep sea mining, which is costly, technically difficult, and often controversial.

Demand for EV Battery Minerals Expected to Skyrocket in Coming Decades

- The discovery of vast nickel, cobalt, and manganese reserves will raise hopes that Japan can secure its supply of precious metals for years to come.
- Demand for nickel and cobalt is expected to rise 400 to 600% as battery-powered technology replaces oil and gas, while demand for other materials used in EV batteries, such as lithium and graphite, could rise as much as 4,000%.
- Many of those metals are currently sourced from countries including Indonesia and the Democratic Republic of Congo, where reports have suggested some workers face abuse, low wages, and a high risk of accidents.

Minami-Torishima Island:

1. Minami-Torishima Island, also called Marcus Island, is a remote Japanese coral atoll in the northwestern Pacific Ocean.

What is an Atoll?

1. An atoll is a **ring-shaped coral reef**, island, or series of islets encircling a body of water called a lagoon.

2. Sometimes, **atolls and lagoons** safeguard a **central island**.
3. Channels between islets enable water exchange between the lagoon and the open ocean or sea.
2. Located about 1,950 kilometers southeast of central Tokyo, it is the **easternmost territory of Japan** and the only one situated on the Pacific Plate, past the Japan Trench.
3. The island has a **distinct equilateral triangle shape**.
4. **Formed by an elevated coral reef**, each side measures approximately 2 kilometers, resulting in a perimeter of around 6 kilometers.
5. **Minami-Torishima Island's terrain is predominantly flat**, with a maximum elevation of 9 meters above sea level. Beyond the reef, however, a steep cliff plunges approximately 1,000 meters deep. As for the surrounding waters, they reach up to 6,000 meters at their deepest point.
6. The **island experiences an oceanic climate with an average annual temperature of around 25.6 °C**.
7. Based on the island's baseline, the **exclusive economic zone of Minami-Torishima Island** includes an area of roughly 430,000 square kilometers, exceeding Japan's land area.

This **discovery could potentially help Japan secure its supply of precious metals for years to come, as the world transitions to electric vehicles and demand for EV battery minerals is expected to skyrocket in the coming decades**. Despite the challenges associated with deep sea mining, the rewards will likely be worth it, as Japan looks to catch up with its global rivals in the race to build electric vehicles.

NASA Unveils Solar System's Largest Volcano, Olympus Mons



In a remarkable discovery, **NASA's Mars Odyssey orbiter** has captured a breathtaking image

of **Olympus Mons**, the largest volcano in our solar system located on Mars.

Key Highlights :

Olympus Mons

- **Largest Volcano**: Olympus Mons is a massive **shield volcano** on Mars. It covers an area of up to **373 miles** and stands at a staggering **17 miles tall**, making it the largest volcano in our solar system.

Mars Odyssey Orbiter

- **Mission Duration**: The Mars Odyssey orbiter has been in operation around Mars since **2001**, completing over **100,000 orbits** and contributing to our understanding of **Martian geology**, life, and the environment.
- **Recent Image**: Scientists used the orbiter's camera to capture a breathtaking image of Olympus Mons, revealing insights into **cloud formation** and **dust patterns** on Mars. The image highlights the significant amount of **dust** in the Martian atmosphere.

Atmospheric Layers

- **Distinct Layers**: The image shows distinct layers in the Martian atmosphere:
 - o A **bluish-white band** representing dust
 - o A **delicate purple layer** resulting from a blend of atmospheric dust and bluish water-ice clouds
 - o A **blue-green layer** showcasing water-ice clouds extending approximately **30 miles** into the atmosphere.

Seasonal Study

- **Martian Year**: By capturing images at various times throughout the **Martian year** (which consists of four distinct seasons, each spanning four to seven months), scientists aim to understand how **atmospheric conditions** evolve over time.
- **Significance**: This seasonal study provides valuable insights into the dynamics of Mars' **climate** and **weather patterns**, enhancing our understanding of the planet's environmental processes.

Mars Odyssey Mission Details

Early Mission in NASA's Mars Exploration Program

- **Launch**: Launched on **April 7, 2001**, from Cape Canaveral, Florida, the Mars Odyssey spacecraft has been orbiting Mars since 2001.

- **Original Goals:** The mission aimed to search for signs of **water**, create detailed maps of the planet's **surface materials**, and assess **radiation levels** for future human exploration.
- **Record-Breaking Mission:** Odyssey holds the record for the longest continually active mission in orbit around a planet other than Earth, and its mission is scheduled to last until **2025**.

Global Mapping

- **First Global Map:** Odyssey created the first global map of **chemical elements** and **minerals** that make up the Martian surface.
- **Continuous Observations:** The spacecraft continues to study Mars' surface to monitor changes over time.
- **Communications Relay:** Odyssey also serves as a **communications relay** to Earth for spacecraft on the Martian surface, assisting in data transmission.

Facts about Olympus Mons

Shield Volcano

- **Location:** Located in Mars' western hemisphere, Olympus Mons is a **shield volcano**, the highest point on Mars, and the largest known volcano in the solar system.

Height and Size

- **Height:** Olympus Mons stands **16 miles (24 kilometers) high**, about three times higher than **Mount Everest**.
- **Size:** It covers an area larger than the entire **Hawaiian Islands** chain. In contrast, Earth's largest volcano, **Mauna Loa** in Hawaii, is 120 kilometers across and 9 kilometers high.

Age

- **Formation:** Olympus Mons is approximately **3.5 billion years old**, indicating its formation early in Mars' history.

Gentle Slopes

- **Slope Gradient:** This volcano features a very flat mountain with slopes of only **2 to 5 degrees**.

Summit Caldera

- **Caldera:** Its summit is marked by a **caldera**, a large depression resulting from volcanic activity, spanning **50 miles (80 kilometers)** wide and consisting of several overlapping pits formed during different eruptive phases.

What are Shield Volcanoes?

- **Eruption Type:** Shield volcanoes, like Olympus Mons, tend to erupt **basalt lava**, a highly fluid type of lava.

- **Characteristics:** Unlike composite volcanoes, shield volcanoes are broad with **gentle slopes** and are characterized by **low-explosivity fountaining** that forms cinder and spatter cones at the vent.
- **Examples:** The **Hawaiian shield volcanoes** provide notable examples of this type of volcano.

Tea Industry Seeks Higher RoDTEP Rates to Make Exports Competitive Overseas



The tea industry is asking for higher rates under the **RoDTEP** (Remission of Duties and Taxes on Exported Products) scheme to make exports more competitive abroad.

Current RoDTEP Rate

1. The current **RoDTEP rate** for bulk tea is 1.7% (free on board) subject to a cap of Rs 6.70 per kilogram.

Industry Demands

1. The **Indian Tea Association (ITA)** has urged the government to increase the reward base rate under the RoDTEP for black tea in bulk to remain competitive in the international markets.
2. The **Tea Association of India (TAI)** has also sought a higher RoDTEP rate than the earlier **MEIS (Merchandise Exports Incentive Scheme)** of 5% to enable Indian tea to retain its competitiveness in the global market.

RoDTEP Scheme

1. The **RoDTEP scheme** ensures that exporters receive refunds on embedded taxes and duties that were previously non-recoverable.
2. Since its inception in January 2021, the RoDTEP scheme has already provided support amounting to Rs 42,000 crores to more than 10,500 export items.

Other Demands

1. The **ITA** has also sought the imposition of an **anti-dumping duty** on imports of Nepal tea to prevent

the dumping of cheap and duty-free tea from Nepal and boost exports of genuine **Darjeeling tea**.

2. The association has sought **concessional customs duty** on imports of specified machinery required for tea production.
3. The ITA has also sought exemption of tea from the levy on **TDS** on cash withdrawals due to a lack of banking infrastructure in the tea-growing areas in the country.
4. The ITA has also sought an increase in fund allocation for the **tea development and promotion scheme** for the period 2021-26.

About RoDTEP Scheme

1. **RoDTEP** is a flagship export promotion scheme of the **Commerce Ministry of India**.
2. The **WTO-compliant scheme** aims to refund to the exporters the embedded central, state, and local duties and taxes paid on inputs that have so far not been refunded or rebated.
3. RoDTEP was announced in September 2019 with the aim of boosting domestic exports and replacing the export incentive scheme, **Merchandise Exports from India (MEIS) scheme**.

Features of RoDTEP Scheme

1. The scheme is open to both **manufacturers and merchant exporters**, without any threshold of turnover.
2. The most important condition is that such goods should have been directly exported by such a person.
3. The RoDTEP scheme covers **physical exports** as well as outbound shipments of **services** from India.
4. Service providers can also claim refunds on applicable hidden levies.
5. A rebate will have to be claimed as a percentage of the **Freight On Board (FOB)** value of exports.
6. It will be implemented by **Customs** through a simplified IT system.
7. Rebates will be issued in the form of a **transferable duty credit/electronic scrip (e-scrip)**, which will be maintained in an electronic ledger by the **Central Board of Indirect Taxes and Customs (CBIC)**.
8. The rebates would not be available in respect of duties and taxes already exempted, credited, or remitted.
9. Rebates on certain export products will also be subject to a value cap per unit of the exported product.

What is Freight on Board (FOB)?

1. **FOB** (Free on Board) is a term used to indicate who is liable for goods damaged or destroyed during shipping.
2. **FOB origin** means the buyer is at risk and takes ownership of goods once the seller ships the product.
3. **FOB destination** means the seller retains the risk of loss until the goods reach the buyer.

What is the Central Board of Indirect Taxes and Customs (CBIC)?

1. **CBIC** (erstwhile Central Board of Excise and Customs) is a part of the **Department of Revenue** under the **Ministry of Finance, Government of India**.
2. CBIC administers all the **indirect tax-related matters** in India.
3. It deals with the tasks of formulation of policy concerning levy and collection of **Customs, Central Excise duties, Central Goods & Services Tax (CGST)**, and **IGST**, prevention of smuggling, and administration of matters relating to Customs, Central Excise, CGST, IGST, and **Narcotics** to the extent under CBIC's purview.



CruX of The Hindu & Indian Express

Geography

ARCTIC WILDFIRES

Smoke from raging wildfires has once again **darkened the skies over the Arctic**. It is the **third time in the past five years** that high intensity fires have erupted in the region, Europe's **Copernicus Climate Change Service (C3S)** said last week.

A majority of fires are in **Sakha, Russia**, where more than 160 wildfires charred Nearly **460,000 hectares of land** up until June 24, according to Russia state news agency Tass.

ARE WILDFIRES NATURAL IN ARCTIC REGION?

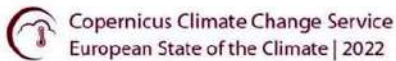
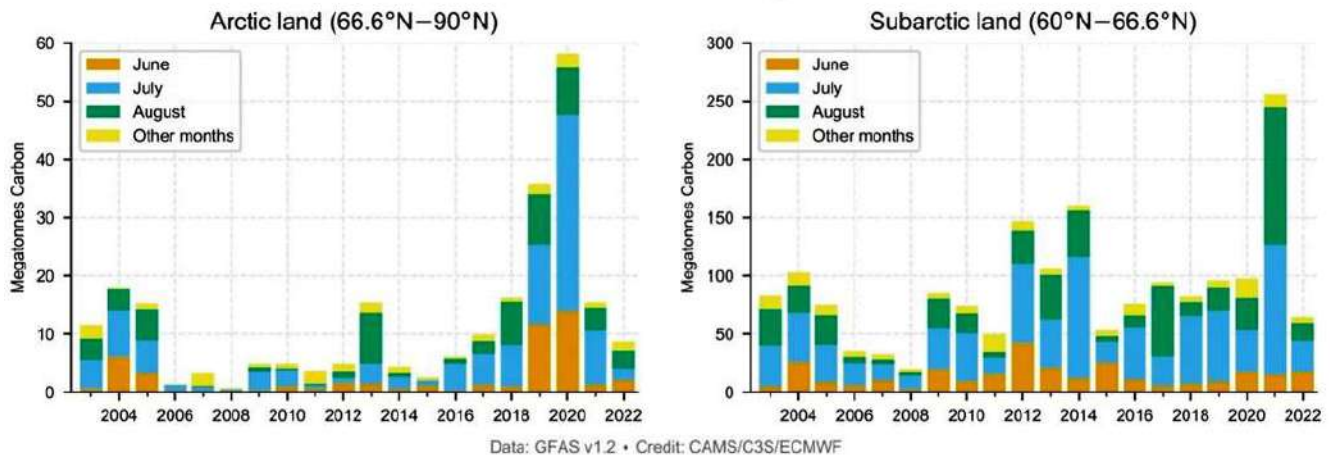
Wildfires **have been a natural part** of the Arctic's boreal forest or snow forest and tundra (treeless regions) ecosystems.

However, in recent years, **their frequency and scale in the regions have increased**, primarily **due to global warming**.

More worryingly, these **blazing wildfires are fueling the climate crisis**.

CARBON EMISSIONS FOR HIGH LATITUDE WILDFIRES

Total annual carbon emissions from high-latitude wildfires



Copernicus Climate Change Service
European State of the Climate | 2022



PROGRAMME OF
THE EUROPEAN UNION



FACTORS RESPONSIBLE FOR WILDFIRES IN ARCTIC

There are three major factors which are responsible for wildfires in the Arctic:

- The Arctic has been **warming roughly four times as fast as the world**.
- While the global average temperature has increased by at least 1.1 degree Celsius above the pre-industrial levels, **the Arctic has become on average around 3 degree warmer than it was in 1980**.
- This fast paced warming has led to **more frequent lightning** in the Arctic, which has further increased the likelihood of wildfires — lightning-sparked fires have more than doubled in Alaska and the Northwest Territories since 1975, according to a 2017 study.
- **Soaring temperatures have also slowed down the polar jet stream** — responsible for **circulating air between the mid and northern latitudes** — **due to less of a temperature difference** between the Arctic and lower latitudes.
 - o As a result, the polar jet stream often **gets “stuck” in one place**, bringing unseasonably warm weather to the region.
 - o It also **blocks out low-pressure systems**, which bring clouds and rainfall, possibly leading to **intense heat waves**, which can cause more wildfires.

HOW ARCTIC WILDFIRES CAN EXACERBATE GLOBAL WARMING?

When wildfires ignite, **they burn vegetation and organic matter, releasing the heat trapping greenhouse gases (GhGs) such as carbon dioxide (CO₂)** into the atmosphere. That is why the rising frequency of wildfires around the globe is a Matter of concern as they contribute to climate change.

However, **in the case of Arctic wildfires**, such **GHG emissions are not the biggest worry**. It is rather the **carbon stored underneath the region’s permafrost** (any ground that stays frozen for at least two years straight.)

Scientists estimate that **Arctic permafrost holds around 1,700 billion metric tons of carbon, including methane and CO₂**. That’s roughly **51 times the amount of carbon the world released as fossil fuel emissions in 2019**.

THE CONSEQUENCES

- This can cause ancient organic materials such as **dead animals and plants to decompose** and release carbon into the atmosphere.
- In case a large-scale thawing of Arctic permafrost is triggered, **it would be impossible to stop the release of carbon**.
- This would mean that the **world will not be able to limit global warming within the 1.5 degree Celsius threshold**.
- Breaching the limit will result in **catastrophic and irreversible consequences** for the planet including **spread of pandemic diseases**.

“What happens in the Arctic doesn’t stay there — Arctic change amplifies risks Globally for all of us. These fires are a warning cry for urgent action.”

Climate Change: Need to Move Away from Excessive Preoccupation with Meeting Global Temperature Target



Introduction

The **Economic Survey** presented in Parliament on Monday suggested that the world needs to move away from its “**excessive preoccupation**” with meeting a single global temperature target, like the **1.5 or 2 degree Celsius** thresholds. The survey argued that this approach might be counterproductive and that a more sustainable solution to the climate problem lay not in replacing one form of energy fuel with another, but in **avoiding overconsumption and wastage** and **making lifestyle changes**.

Current Approach to Climate Change

1. The **2015 Paris Agreement** asks countries to make efforts to ensure that the rise in global average annual temperature is contained within **2 degree Celsius** from the pre-industrial times, preferably within **1.5 degree Celsius** itself.
2. Every country has to prepare and implement an action plan that contributes towards meeting this target.
3. The Economic Survey quoted **Mike Hulme**, a professor of Geography at the University of Cambridge, who wrote that global temperature is a “**seriously flawed index**” for capturing the full range of complex relationships between climate and human welfare and ecological integrity.

Challenging Climate Change Discourse

1. The Economic Survey used **Hulme’s remarks** to make the point that the current approach of tackling climate change, wherein all the efforts are directed to meeting a global temperature goal, might be counterproductive.
2. **Hulme** has contributed to the assessment reports of the Intergovernmental Panel on Climate Change

(IPCC) and was the founding director of Tyndall Centre for Climate Change Research, a reputed institution in the UK.

India’s Articulation

1. India’s articulation comes at a time when it is becoming increasingly clear that the **1.5 degrees Celsius** target would be missed, no matter what the world does in the next few years.
2. India argued that the scale of energy transitions that the countries were being asked to make for meeting the temperature target had never happened in history in the short period that was envisioned.
3. India also called out the uniform and prescriptive nature of climate change strategies without taking into account the geographical, economic, and climatic differences of countries.

Alternative Approach

1. The Economic Survey suggested that a more sustainable solution to the climate problem lay not in replacing one form of energy fuel with another, but in **avoiding overconsumption and wastage** and **making lifestyle changes**.
2. India argued that the world needed a more “**balanced**” approach to the problem of climate change.
3. The survey quoted Canadian researcher **Vaclav Smil**, who said that energy transitions on a national or global scale are inherently protracted affairs.
4. The Economic Survey also pointed out that the solutions being offered had their own set of problems, such as the critical minerals required for batteries being mined in the most underdeveloped parts of the world, utilising the labour of poor people in very dangerous conditions.

Overconsumption and Wastage

1. The Economic Survey argued that a more sustainable solution to the climate problem lay in **avoiding overconsumption and wastage**.
2. The survey pointed out that the current climate change strategy seems to say that given that our energy needs will continue to rise, we must try replacing conventional fuel with renewables and clean energy — thus making it a substitution issue rather than a global lifestyle issue.
3. The survey also argued that the world needs to focus on nearer-term policy goals of improving human welfare rather than excessively preoccupied with one large, longer-term goal of global climate management.

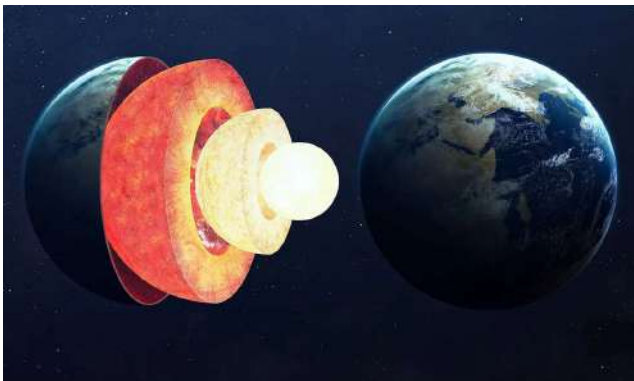
Lifestyle Changes

1. The Economic Survey suggested that **lifestyle changes** are necessary to address the climate problem.
2. The survey pointed out that do each of us really need multiple screens, even if they are charged by renewable energy sources, or must everyone fly off to fancy destinations in fancy planes for a great conversation on reducing climate impact, or that we must eat for taste what we shouldn't eat for health or environment.
3. The survey argued that instead of imbibing sustainable practices in the way we live, we worry more about carrying **PETA labels on our bags**.

Conclusion :

The Economic Survey concluded that the world needs to move away from its “**excessive preoccupation**” with meeting a single global temperature target and focus on nearer-term policy goals of improving human welfare. India's articulation is a significant departure from the global narrative on climate change and highlights the need for a more nuanced and balanced approach to addressing the problem.

Earth's Core Rotating in Reverse Direction: What Does It Mean?



Context :

Recent research has revealed that the **rotation speed of Earth's core** is **slowing down dramatically** and has even **reversed**. This finding has significant implications for our understanding of the Earth's **internal dynamics**.

Key Points

1. Earth's Core

- o **Hottest part of the planet**, equivalent to the Sun's surface temperature
- o Buried around **5,180 kilometers deep** inside the Earth

2. Composition

- o Consists mainly of **iron and nickel**
- o Surrounded by a **liquid metal outer core**, acting as a barrier with the rest of the Earth

3. Independent Rotation

- o **Spins independently** of the rest of the planet
- o Allows it to **rotate at a different speed and direction**

About Earth's Inner Core

1. Location

- Located at the **Earth's center**, approximately **5,150 km (3,219 miles)** beneath the surface

2. Composition

- **Solid metallic ball** primarily composed of iron and nickel

3. Size

- Radius of about **759 miles (1,221 kilometers)**
- Makes up around **20 percent** of the Earth's mass

4. Temperature

- Extremely hot, with temperatures ranging from **7200-9000! (4000-5000!)**

5. Heat Sources

- Decay of **radioactive elements** (uranium, thorium, potassium) in Earth's crust and mantle
- **Residual heat** from planetary formation
- Heat emitted by the **solidification of the outer core**

6. Pressure

- Under intense pressure of about **3.6 million atmospheres (atm)**
- Keeps it solid despite high temperatures

7. Surrounding Layers

- **Outer core**: superhot layer of molten metals
- **Mantle**: solid sea of molten rock
- **Crust**: outermost solid layer

8. Boundary

- **Lehman Seismic Discontinuity**: boundary between inner and outer cores

9. Magnetic Field

- Generates its own **magnetic field**
- Contains about **10%** of the total magnetic field energy despite its small volume (<1% of Earth's volume)

10. Role

- Crucial role in **outer core liquid motions** and the **geodynamo**, generating the Earth's magnetic field
- Rotates in the **same direction** as the surface of the planet but **slightly faster**

Slowing Down of Earth's Core

1. Research Findings

- Data from **seismograms** from repeated earthquakes and explosions indicate the **rotation speed** of the solid inner core has been constantly degrading compared to the Earth's surface over the past few years

2. Decades-long Pattern

- Supports scientists' claim, made in 2023, that the core's **deceleration** is part of a **decades-long pattern** of slowing down and speeding up

3. Model Proposed

- Described the pattern of **rotation speed and direction** of Earth's core
- Suggests the inner core had **spun faster** than Earth's crust in the past, but is now **spinning slower**

Implications

1. Changes in Earth's Internal Dynamics

- o Could have significant implications for our understanding of the Earth's **internal dynamics** and the processes that shape our planet

2. Effects on Earth's Surface

- o Potentially affect the Earth's surface, including the planet's **magnetic field, climate, and geological activity**

3. Further Research

- o Highlights the need for **further research** into the Earth's internal dynamics and the processes that shape our planet

Background

1. Discovery of Earth's Core

- o **Danish seismologist Inge Lehmann** discovered the planet's inner core in 1936

2. Debate Over Rotation Speed

- o Scientists have continued to debate the **rotation speed** and direction of the Earth's core since its discovery

3. Limitations of Research

- o Limited by the inability to **observe or collect direct samples** of the Earth's deep interior

Conclusion :

The discovery that **Earth's core is slowing down and rotating in reverse direction** is a significant finding that could have **far-reaching implications** for our understanding of the Earth's **internal dynamics**. Further research is needed to fully understand the implications of this finding and to determine the potential effects on the Earth's surface.

Kashmir's Saffron Crop Hit by Heat and Dry Spells



Overview:

1. **Problem:** Kashmir's saffron crop is struggling due to long periods of **dry weather** and **climate change**.
2. **Effect:** Many farmers are converting their saffron fields into **apple orchards** or growing **mustard** instead.

Heat and Dry Spells:

1. **Heatwave:** The valley has been very hot since **June**, with temperatures reaching up to **34°C**.
2. **Record Heat:** On **July 3**, Kashmir recorded its highest temperature in **25 years**, at **35.6°C**.
3. **Impact on Crops:** The unusual weather patterns are harming saffron fields, leading farmers to switch to other crops that they believe are better suited to the changing climate.

Declining Production:

1. **Farmer's Experience:** **Ali Mohamed Reshi**, a 60-year-old farmer from **Pulwama's Lethpora** area, says his saffron yield has dropped significantly.
 - a. **Past Yield:** His seven-kanal farm used to produce **1,100 to 1,200 grams** of saffron.
 - b. **2022 Yield:** Production dropped to only **100-150 grams**.
2. **Official Data:**
 - a. **Production Drop:** Saffron production has decreased by **65%** over the last two decades.
 - b. **Yearly Production:** From **15.95 tonnes** in 1990 to **2.6 tonnes** in 2023-24.
 - c. **Land Use:** The area used for saffron cultivation has shrunk from **5,707 hectares** in 1996-97 to **2,387.71 hectares** in 2019-19.
3. **Farmer's Response:** **Mohammad Ashraf** from **Pampore** has switched to mustard cultivation due to **low snowfall** and **rain deficit**.

Expert Opinion:

1. **Agriculture Scientist:** Kashmir experienced a nearly **snowless winter** in **2024**, which will impact the crops.
2. **Chief Agriculture Officer, Pulwama: Mohammad Iqbal Khan** warns that if the dry spell continues through **August**, it will severely affect the saffron crop. He explains that the soil needs **moisture** in August as farmers prepare their fields around this time.

Failed Irrigation System:

1. **National Saffron Mission:** In **2010**, the government introduced a Rs. **412-crore National Saffron Mission** to combat prolonged dry spells using a **drip irrigation system**.
2. **Failure:** Farmers report that while a network of **pipes** was installed on their farms, it was never made fully operational. The saffron crop continues to suffer as a result.

About Saffron:

1. **Value:** Saffron is one of the most **expensive spices** in the world, often called **Red Gold** or the **Golden Condiment**.
2. **Part Used:** The commercial part of saffron is the **stigma**, also known as the **saffron filament** or **saffron thread**.
3. **Seeds:** The seeds of saffron are called **corms** or **bulbs**, and the plant regenerates from the vegetative multiplication of its underground corms.
4. **Uses:** Saffron contains important constituents like **crocin**, **picrocrocin**, and **saffranal**, which are valuable for both **medicinal** and **aesthetic** purposes.
5. **Origin:** The saffron plant is native to **Greece** and **Asia Minor** but is now cultivated in many parts of **Europe** (especially **Italy**, **France**, and **Spain**), **China**, and **India**.
6. **India:** Around **90%** of India's saffron production comes from **Kashmir**, where it has been grown for centuries.

Growing Conditions:

1. **Height:** Saffron grows at an elevation of **1,500-2,000 meters** above sea level.
2. **Temperature:** It requires temperatures ranging from not more than **35°C** or **40°C** in the summer to about **-15°C** or **-20°C** in the winter.
3. **Climate:** Saffron can be grown in **dry**, **moderate**, and **continental climate** types.
4. **Soil:** It thrives on **loamy**, **sandy**, and **calcareous soils**.

5. **pH:** Saffron grows best in **acidic soil** with a pH of **5.5 to 8.5**.

Vegetative Reproduction:

Vegetative reproduction is any form of **asexual reproduction** in plants where a new plant grows from a fragment of the parent plant or from specialized reproductive structures like **stolons**, **rhizomes**, **tubers**, **corms**, or **bulbs**.

Conclusion :

Kashmir's saffron crop is facing significant challenges due to **heat** and **dry spells** caused by **climate change**. The decline in production and the conversion of saffron fields to other crops highlight the urgent need for effective measures to support the farmers and mitigate these issues.

LIST OF RECENT EXTREME WEATHER EVENTS IN INDIA

- **Heatwave, floods in Delhi**
 - Heavy rains caused floods in capital New Delhi in June, following weeks of extreme heat.
 - Torrential rains caused a fatal airport roof collapse in June.
 - Three students drowned in a flooded basement classroom on July 27.
- **Heavy rains & thunderstorm in Mumbai**

In May, thunderstorms caused a billboard to collapse in financial capital Mumbai, killing at least 14 people, while flash floods in July disrupted transportation.
- **Rivers overflow in Assam**

Several rivers swelled up in Assam state in the northeast in July after seasonal monsoon rains, triggering floods and landslides that killed at least 79 people and displaced thousands. More than 150 animals, including rare one-horned rhinoceros, drowned the state's Kaziranga National Park.
- **Cyclone in southern India**

A **severe cyclone** hit **India's southeastern coast** in **December 2023**, after torrential rains and flooding **killed at least 13 people**. Sustained downpours in Tamil Nadu state in the subsequent days led to inundated neighbourhoods, roads and railways, and killed at least 31 people.
- **Himalayan glacial lake outburst**

A Himalayan glacial lake burst its banks in October 2023 after heavy rains in the northeastern state of Sikkim, triggering the region's worst floods in more than 50 years which killed 179 and swept away homes and bridges.

- **Landslide sweeps power projects**
A landslide 20 km (12 miles) away from the second highest peak in the Himalayan state of Uttarakhand in February 2021 left more than 200 dead, triggered flash floods and swept away two hydroelectric projects.
- **Landslides near Mumbai**
A landslide in **July 2023** flattened several homes in a village near Mumbai, killing at least 27 and trapped scores of residents.
- **Floods in Kerala**
The southern state of **Kerala witnessed its worst flood in a century in 2018**, which **killing at least 373 people** and **displaced 1.2 million** to shelter camps. The state had received 40% more rainfall than usual.



Internal Security

DRUG CONSUMPTION INCREASING : UN

The **International Day against Drug Abuse and Illicit Trafficking**, or **World Drug Day**, is commemorated every year on **June 26** and aims to increase action in achieving a drug-free world.

THEME FOR THIS YEAR:

This year's campaign recognises that **“effective drug policies must be rooted in science, research, full respect for human rights, compassion, and a deep understanding of the social, economic, and health implications of drug use”**.

THE FINDINGS

- In the decade to 2022, the **number of people using illicit drugs increased to 292 million**, the UNODC report says.
- It noted that most users worldwide consume:
 - o **228 million people- cannabis**
 - o **60 million people worldwide- opioids,**
 - o **30 million people-amphetamines,**
 - o **23 million-cocaine**
 - o **20 million-ecstasy.**
- Further, UNODC found that there was **an increase in overdose deaths** following the **emergence of nitazenes – a group of synthetic opioids potentially more dangerous than fentanyl** – in several high-income countries.

- Traffickers in **the Golden Triangle**, a region in Southeast Asia, have found ways to **integrate themselves into other illegal markets**, such as **wildlife trafficking, financial fraud, and illegal resource extraction**.



- **“Displaced, poor and migrant communities”** bear the brunt of this criminal activity and on occasion are **forced to engage in opium farming or illegal resource extraction** for their survival. This can lead to **civilians becoming drug users** or **fall into debt** at the Mercy of crime groups.
- These illegal crimes **contribute to environmental degradation** via deforestation, toxic waste dumping and chemical contamination.

- In 2022, cocaine production hit a record high with 2,757 tons produced – A 20 per cent increase from 2021.
 - The increase in supply and demand of the product was accompanied by a surge of violence in nations along the supply chain, especially in Ecuador and Caribbean countries.
 - There was also a spike in health problems within some destination countries in Western and Central Europe.

THE HOPE

The UNODC report highlights that the **“right to health is an internationally recognized human right that belongs to all human beings, regardless of a person’s drug use status or whether a person is imprisoned, detained or incarcerated”**.

UNODC’s calls for **governments, organizations and communities** to collaborate on **establishing evidence-based plans** that will fight against drug trafficking and organized crime.

The agency also hopes communities will assist in **“fostering resilience against drug use and promoting community-led solutions”**.

MAHARASHTRA GOVERNMENT’S BILL FOR TACKLING URBAN NAXALISM

The Maharashtra government has proposed a sweeping new law to deal with the **“increasing presence of Naxalism in urban centres”**.

The Bill, introduced in the Assembly on Thursday (July 11), **targets a wide range of actions** by suspects:

- Interference with the maintenance of public order and administration of the law,
- Generating fear and apprehension in the public,
- Encouraging or preaching disobedience of the law, etc.

The provisions of the Bill have been **criticised for being “draconian”**, and concerns have been raised over its **wide definitions**.

THE STATEMENT OF OBJECTS & REASONS

- The statement of objects and reasons of **The Maharashtra Special Public Security (MSPC) Bill, 2024**, introduced by Deputy Chief Minister Devendra Fadnavis, says the **“menace of Naxalism is not only limited to remote areas of the Naxal affected states, but its presence is increasing in the urban areas also through the Naxal front organisations”**.

- According to the government, these **“frontal organisations”** provide logistics and safe refuge to armed Naxal cadres, and **“existing laws are ineffective and inadequate to tackle this menace of Naxalism”**.
- To address this situation, the states of **Chhattisgarh, Telangana, Andhra Pradesh, and Odisha** have enacted **Public Security Acts and banned 48 Naxal Frontal organisations**.

WHEN IS THE BILL EXPECTED TO BECOME A LAW?

- The Bill has been **brought at the fag end of the term of the Assembly**, and its Progress will most likely **depend on the next government of Maharashtra**.
- **The day after the Bill was tabled, the monsoon session of the Assembly was prorogued**. The House is **not scheduled to meet again** before the elections in the state, which will be held by November.
- The Bill **will lapse with the dissolution of the Assembly**, and will have to be **Reintroduced in the new House** — unless the current government brings an **ordinance to implement it in its term**.

MAIN PROVISIONS OF THE BILL

The Bill gives the government the power to declare any suspect **“organisation”** as an **“unlawful organisation”**. It prescribes four offences for which an individual can be punished:

- For being a **member of an unlawful organisation**,
- When not a member, for raising funds for an unlawful organisation,
- For managing or assisting in managing an unlawful organisation and,
- For committing an **“unlawful activity”**.

These four offences carry jail terms of up to two years to seven years, along with fines ranging from up to Rs 2 lakh to Rs 5 lakh. **Toughest punishment: Imprisonment of seven years and a fine of rs 5 lakh.**

Offences under the proposed law are **cognizable**, which means **arrests can be made without a warrant, and non-bailable**.

DIFFERENCE BETWEEN UAPA & THE MAHARASHTRA BILL

- The UAPA is India’s **main anti-terror law** that is used most commonly in Naxalism-related cases. The **UAPA, too, gives the state the power to designate associations as “unlawful associations”**.

- Both the UAPA and the MSPC bill **prescribe similar procedures** for making such a declaration. **Under the UAPA, a Tribunal headed by a judge of a High Court** confirms the declaration made by the state. In the MSPC Bill, an advisory board consisting of **“three persons who have been or are qualified to be”** a judge of an HC are tasked with carrying out the confirmation process.

WHAT ARE UNLAWFUL ACTIVITIES?

- (i) Which constitute a danger or menace to public order, peace and tranquility; or
- (ii) Which interferes or tends to interfere with maintenance of public order; or
- (iii) Which interferes or tends to interfere with the administration of law or its established institutions and personnel; or
- (iv) Which is designed to overawe by criminal force or show of criminal force or otherwise to any public servant including the forces of the State Government or the Central Government in exercise of the lawful powers of such public servant and forces ; or
- (v) Indulging in or propagating, acts of violence, vandalising or other acts generating fear and apprehension in the public, or indulging in or encouraging, the use of firearms, explosives or other devices or disrupting communications by rail, road, air or water; or
- (vi) Encouraging or preaching disobedience to established law and its institutions; or
- (vii) Collecting money or goods to carry out any one or more of the unlawful activities mentioned above”

Surge in Terror Attacks in Jammu

Context

- The Jammu region has seen a surge in terror attacks, with six attacks recorded so far this year, compared to three each in 2022 and 2023. The latest encounter in Jammu and Kashmir’s Doda district has highlighted gaps in the security infrastructure of the region, which had previously seen long stretches of peace.

Background

- **Historical Context:** Former Army Chief General Manoj Pande acknowledged that terrorism in the Jammu region had been brought under control by 2003, and the region saw peace until 2017-18. However, he admitted that India’s adversaries have been actively abetting terrorism and encouraging

“proxy tanzems (groups with a common objective)” in this area, even as the situation in the Kashmir Valley was getting back to normal.

- **Recent Trends:** Since 2021, areas south of the Pir Panjal range, including Poonch, Rajouri, and Jammu, have seen a surge in high-intensity terror targeting security forces and civilians.

Key Statistics

- **Attacks:** There were three attacks each in the Jammu region against security forces in 2022 and 2023, but six attacks have been recorded so far this year.
- **Casualties :**
 - o **Security Forces:** Six personnel were killed in separate attacks in 2022. This increased to 21 last year and stands at 11 this year.
 - o **Militants:** Five militants have been killed in the region so far this year. In 2023, this figure was 20, and in 2022, 14 militants were killed.
 - o **Civilians:** Eleven civilians have also lost their lives in the attacks this year.

Factors Contributing to the Surge in Violence

1. **Complacency:** With peace lasting for several years and the Valley being more active, some complacency may have crept into the counter-insurgency mindset of the forces deployed in the Jammu division, leading to inadequate proactive operations.
2. **Troop Reduction:** The troop reduction in the region with the movement of forces to the Line of Actual Control in 2021 led to an increased area of responsibility for each battalion, contributing to an increased revisit time by every patrol. Around 4,000 to 5,000 troops, mostly involved in counter-terror duties, were moved out of the area in 2021.
3. **Geographical Shifts:** The recent attacks westwards of Jammu in the Kathua-Samba region point towards another trend – of carrying out attacks close to the International Border. Unlike Rajouri and Poonch, these areas come under the Army Western Command, which does not undertake counter-terror operations.
4. **New Theatre of Operations:** Jammu has been made the new theatre of operations against security forces by militant outfits as a planned strategy. After the changes to J&K’s constitutional status in 2019, the Valley settled into a quieter state, and then Galwan (Eastern Ladakh) flared up in 2020. After that, attacks began more frequently in Jammu, opening three fronts for the forces, including Kashmir.

5. **Infiltration:** Infiltration along the International Border (IB) is comparatively easier than the Line of Control (LoC). The attacks are being led by cadres of the Jaish-e-Mohammad and the Lashkar-e-Taiba.
6. **Intelligence Gaps:** Lack of adequate ground-level intelligence and hardened and motivated terrorists with meticulous planning are major contributing factors. There is a need to reorient the operational philosophy to basic source counter-insurgency operations.
7. **Technology Dependence:** Increased dependence on technology has led to a reduced ground connect, which has been known to deliver the best operational intelligence.
8. **Human Intelligence:** A lack of “human intelligence” feeding security forces has been linked to the uptick in incidents of terror violence in Jammu. Developing these networks will take time.
9. **Motivational Incentives:** Officials also mentioned that “motivational incentives” for the forces, such as “promotion of SPOs to constables,” are on the “back-burner due to centralisation of powers in the police,” which can further reduce incentives for developing human intelligence.
10. **Sophisticated Equipment:** Militants are bringing sophisticated equipment such as night-vision glasses and M4 rifles. There have also been increased instances of narco-terrorism, facilitated both by people and drones, generating adequate funds for distribution to locals and to fund terror activities. Several drones transporting drugs, explosives, weapons, and money have been caught in the region by security forces in the last few years.

Future Plans

- **Troop Deployment:** Additional troops may be deployed in the region in the days to come from peacetime locations, but they will first need to be trained and will need a familiarisation period.
- **Border Management:** Border management is key to handling the increased militant activity in the region, while also remaining cautious in the Valley, since the shifting focus on Jammu allows militant outfits to regroup in Kashmir.

Conclusion :

The surge in terror attacks in Jammu is a result of multiple factors, including complacency, troop reduction, geographical shifts, new theatres of operations, infiltration, intelligence gaps, technology dependence, lack of human intelligence, and the use of

sophisticated equipment by militants. Addressing these issues through enhanced border management, improved intelligence networks, and motivational incentives for security forces will be crucial in mitigating the threat and ensuring the safety of the region.

China's Military Build-up near Pangong Lake and India's Western Border: A Cause for Concern



Introduction:

Recent satellite images have revealed a significant **military build-up** by **China** near **Pangong Lake**, which is located in **eastern Ladakh**, close to the **Line of Actual Control (LAC)** with **India**. This development has raised concerns about **China's intentions** and its implications for **India's national security**.

Key Developments:

1. **Subterranean Bunkers and Hardened Shelters:** China has built **subterranean bunkers** to store **weapons and fuel**, as well as **hardened shelters** for **armored vehicles** at a crucial base in the region. These bunkers are designed to withstand **air attacks** and are equipped with **precision-guided weapons**.
2. **PLA Post at Sirjap:** The **People's Liberation Army (PLA)** post at **Sirjap**, located on the northern bank of **Pangong Lake**, is the headquarters for Chinese forces stationed around the lake. This post is situated in an area claimed by **India** and is around 5 km from the **LAC**.
3. **Increased Military Activity:** Satellite images have shown increased Chinese **military activity** at **Shigatse air base**, a dual-use high-altitude airport in the **Tibet Autonomous Region's** second-largest city, and the disputed **Doklam tri-junction**.
4. **Deployment of Stealth Fighter Jets:** China has deployed its most sophisticated **stealth combat fighter**, the **Chengdu J-20**, at the **Shigatse air base**. This deployment is seen as a significant shift in **China's military strategy** and is aimed at countering the **Indian Air Force's (IAF) Rafale** combat planes.

5. **Infrastructure Development:** India has been developing its **infrastructure** around its borders, including **roads, bridges, tunnels, airfields,** and **helipads,** to improve **military movement** and **logistics support.**

6. **Border Roads Organisation (BRO) Projects:** The **BRO** has completed 125 **infrastructure projects** totaling Rs. 3,611 crore, including the **Sela tunnel** in **Arunachal Pradesh,** to improve connectivity and facilitate **military movement.**

Pangong Lake:

Introduction :

1. Pangong Lake, also known as Pangong Tso, is an endorheic lake in the Himalayas situated at a height of about 4,350 m (14,270 ft).
2. It derives its name from the Tibetan word, “Pangong Tso”, which means “high grassland lake”.

Location and Geography

1. It is approximately **140 km from Leh** in **Jammu and Kashmir.**
2. It is **134 km (83 mi) long** and extends from **India** to **China.**
3. Approximately **60%** of the length of the lake lies in **China.**
4. The lake is **5 km (3.1 mi) wide** at its broadest point.
5. Altogether, it covers **604 sq. km.**

Unique Features

1. It is one of the world’s highest **brackish water lakes,** situated at a height of **4350 meters.**
2. It is famed for its **colour-changing water,** from **blue** to **red** and **green.**
3. During winter, the lake **freezes completely,** despite being saline water.

Significance

1. It is not part of the **Indus River basin** area and is geographically a separate **land-locked river basin.**
2. It is in **disputed territory.**
3. The **Line of Actual Control (LAC)** passes through the lake.

Dispute and Line of Actual Control (LAC)

1. The **LAC** is the demarcation that separates **Indian-controlled territory** from **Chinese-controlled territory.**
2. It is divided into three sectors:
 - a. Eastern sector which spans Arunachal Pradesh and Sikkim.
 - b. Middle sector in Uttarakhand and Himachal Pradesh.
 - c. Western sector in Ladakh.

3. India considers the **LAC** to be **3,488 km long,** while the Chinese consider it to be only around **2,000 km.**

Implications:

1. **Escalation of Tensions:** The **military build-up** by China near **Pangong Lake** has raised concerns about the escalation of **tensions** between **India** and **China.**
2. **National Security:** The development has implications for **India’s national security,** particularly in the context of the ongoing **border dispute** between the two countries.
3. **Regional Balance of Power:** The deployment of **stealth fighter jets** by China is seen as a significant shift in the **regional balance of power,** which could have far-reaching implications for **India’s security.**
4. **Diplomatic Efforts:** The development highlights the need for **diplomatic efforts** to resolve the **border dispute** between **India** and **China** and to reduce **tensions** in the region.
5. **Military Modernization:** The development underscores the need for **India** to **modernize its military** and improve its capabilities to counter **China’s military might.**

Analysis:

1. **China’s Intentions:** China’s **military build-up** near **Pangong Lake** suggests that it is preparing for a long-term presence in the region, which could be a cause for concern for **India.**
2. **India’s Response:** India’s **infrastructure development** around its borders is seen as a response to China’s **military build-up,** but it remains to be seen whether this will be enough to counter China’s **military might.**
3. **Regional Implications:** The development has implications for the **regional balance of power** and could lead to a further **escalation of tensions** between **India** and **China.**
4. **International Community:** The development may also have implications for the **international community,** particularly in the context of China’s growing **military assertiveness** in the region.

Conclusion :

The **military build-up** by China near **Pangong Lake** is a cause for concern for **India’s national security.** The development highlights the need for **diplomatic efforts** to resolve the **border dispute** between **India** and **China** and to reduce **tensions** in the region. **India’s**

infrastructure development around its borders is seen as a response to China's military build-up, but it remains to be seen whether this will be enough to counter China's military might. The development underscores the need for India to modernize its military and improve its capabilities to counter China's military might.

DRDO Initiates Indigenous Conventional Submarine Development Study



Introduction

1. The Defence Research and Development Organization (DRDO) has embarked on a preliminary study to design and develop an indigenous conventional submarine under Project-76.

Project-76: Indigenous Conventional Submarine

1. DRDO received approval from the Defense Ministry to conduct a preliminary study to determine the project's scope.
2. The study is expected to take up to a year, after which a formal proposal will be submitted to the Cabinet Committee on Security (CCS) for project approval.
3. Project-76 aims to incorporate significant indigenous content, including weapons, missiles, combat management systems, sonars, communications, Electronic Warfare suites, masts, and periscopes.

Continuation of Advanced Technology Vessel (ATV) Project

1. Project-76 is a continuation of the Advanced Technology Vessel (ATV) project, which focuses on building conventional submarines.

2. The ATV project includes the Arihant series of nuclear ballistic missile submarines (SSBN) and another project for building nuclear-powered submarines (SSN) currently underway.

Navy's 30-Year Submarine Building Program

1. The Navy has a 30-year submarine building program, and after the P-75I project, it intends to design and build conventional submarines indigenously.

Air Independent Propulsion (AIP) Module

1. An Air Independent Propulsion (AIP) module designed and developed by DRDO awaits fitment on the Scorpene class submarines.
2. The first Scorpene-class submarine, Kalvari, is expected to undergo a refit in 2025, when the fitment process will begin and is anticipated to take 2-3 years.
3. The AIP module acts as a force multiplier, allowing conventional submarines to remain submerged for longer durations, increasing endurance, and reducing detection chances.

DRDO-Developed AIP Module

1. The DRDO-developed AIP module is phosphoric acid-based and widely available.
2. The power output of each fuel cell in the DRDO AIP is 13.5 kW, which is being scaled up to 15.5 kW and eventually to 20 kW to meet future submarine requirements like Project-76.
3. The final configuration of the AIP is a stack of 24 fuel cells, with the overall output higher than the requirement to build in redundancy and optimize performance.

What is Air-Independent Propulsion (AIP)?

- Air-Independent Propulsion (AIP) allows non-nuclear submarines to operate without access to atmospheric oxygen, typically required for diesel engines to function.
- It enables submarines to stay submerged for longer periods, enhancing their stealth and operational range.

How AIP Works

- Several different AIP systems exist, but they generally work by either:
 - o Generating oxygen on board
 - o Using stored oxygen
 - o Using fuels that don't require oxygen

Common AIP Systems

- **Fuel Cell AIP:** The most common type, known for its quiet operation and efficiency.

- **Stirling AIP:** Used in Swedish submarines, known for its reliability.
- **Closed-Cycle Steam Turbine AIP:** Used in the French MESMA system, known for its power output but less efficient than other AIP systems.

Advantages of AIP

- Increased Submerged Endurance
- Reduced Acoustic Signature
- Greater Operational Flexibility

Disadvantages of AIP

- Higher Cost
- Lower Power Output

Conclusion:

AIP technology is a significant advancement in non-nuclear submarine capabilities, providing a tactical advantage in underwater warfare. It is being increasingly adopted by navies worldwide despite its drawbacks.

Goa Shipyard Launches Advanced Talwar-Class Frigate 'Triput'



Introduction :

Goa Shipyard Limited (GSL) has achieved a significant milestone by launching the first indigenously-built Talwar class frigate, 'Triput', on 23 July.

This launch comes at a crucial time as Russia prepares to deliver the first frigate of this class, 'Tushil', to the Indian Navy in September 2024.

Background:

1. In October 2016, India and Russia signed a deal to acquire four stealth frigates of the Admiral Grigorovich class, also known as Project 1135.6 class.
2. This deal includes the direct import of two frigates, 'Tushil' and 'Tamal', and the indigenous construction of the remaining two frigates by GSL through a transfer of technology (ToT).

Indigenous Construction:

1. 'Triput' is the first ship built by GSL under this agreement.

2. The launch of 'Triput' marks a significant step towards India's self-reliance in defense manufacturing and showcases the country's growing capabilities in shipbuilding.

Existing Fleet:

1. The Indian Navy already operates six ships of this class: INS Talwar, INS Trishul, INS Tabar, INS Teg, INS Tarkash, and INS Trikand.
2. These ships have proven their mettle in various naval operations and have been instrumental in enhancing India's maritime security.

Technical Specifications:

1. **Length:** 124.8 meters
2. **Draught:** 4.2 meters
3. **Armament:** Equipped with eight BrahMos or Klub anti-ship missiles
4. **Displacement:** Around 3,500 to 4,000 tonnes
5. **Propulsion:** Powered by Zorya gas-turbine engines of Ukrainian origin in a Combined Gas Turbine and Gas Turbine (COGAG) configuration, enabling a maximum speed of 28 knots
6. **Defense Systems:** Features the Shtil-1 air-defense system, capable of defending against various air threats, including anti-ship cruise missiles, fighter jets, and drones

Versatility:

1. These frigates are multipurpose and capable of performing a wide range of tasks, including anti-ship, anti-submarine, land-attack, anti-piracy, and search and rescue missions.
2. Their versatility makes them a valuable addition to the Indian Navy's fleet.

Delays and Challenges:

1. The delivery of these frigates has faced repeated delays, initially due to COVID-19 related lockdowns and subsequently due to the Russia-Ukraine war.
2. These delays have totaled more than two years, highlighting the challenges in international defense procurement and the importance of indigenous manufacturing.

Future Deliveries:

1. Russia is set to deliver the first frigate, 'Tushil', in September 2024, followed by the second frigate, 'Tamal', in February 2025.
2. These deliveries are crucial for bolstering the Indian Navy's capabilities and ensuring maritime security in the region.

Conclusion :

The launch of 'Triput' by GSL is a testament to India's growing prowess in defense manufacturing. As Russia prepares to deliver the first frigate, 'Tushil', the Indian Navy is poised to enhance its operational capabilities significantly. Despite the delays, the eventual delivery of these frigates will strengthen India's maritime defense and contribute to regional stability.

How do Assam's Foreigners Tribunals Function?



The Assam government has asked the Border wing of the State's police not to forward cases of non-Muslims who entered India illegally before 2014 to the Foreigners Tribunals (FTs). This decision aligns with the Citizenship (Amendment) Act of 2019, which provides a citizenship application window for non-Muslims who allegedly fled persecution in Afghanistan, Bangladesh, and Pakistan.

Background

- 1. Foreigners Tribunals (FTs):** These are quasi-judicial bodies formed through the **Foreigners (Tribunals) Order of 1964** under **Section 3 of the Foreigners' Act of 1946**.
- 2. Exclusive to Assam:** The FTs are currently exclusive to Assam, as cases of "illegal immigrants" are dealt with according to the Foreigners' Act in other States.

How do FTs Function?

- 1. Composition:** Each FT is headed by a member drawn from judges, advocates, and civil servants with judicial experience.
- 2. Powers:** An FT has the powers of a civil court in certain matters, such as summoning and enforcing the attendance of any person, examining them on oath, and requiring the production of any document.
- 3. Notice:** A tribunal is required to serve a notice in English or the official language of the State to a person alleged to be a foreigner within 10 days of

receiving the reference from the authority concerned.

- 4. Reply and Evidence:** The person alleged to be a foreigner has 10 days to reply to the notice and another 10 days to produce evidence in support of their case.
- 5. Disposal of Case:** An FT has to dispose of a case within 60 days of reference.
- 6. Detention Centre:** If the person fails to provide any proof of citizenship, the FT can send them to a detention centre, now called a transit camp, for deportation later.

Role of Border Police

- 1. Assam Police Border Organisation:** Established in 1962 under the Prevention of Infiltration of Pakistani (PIP) scheme, this organisation is a part of the State Police's Special Branch.
- 2. Detection and Deportation:** Members of this wing are tasked with detecting and deporting illegal foreigners and patrolling the India-Bangladesh border with the Border Security Force.

Key Facts About the Foreigners Tribunals (FTs)

- 1. About:** The FTs are quasi-judicial bodies formed by the central government through the Foreigners (Tribunals) Order of 1964 under Section 3 of the Foreigners' Act of 1946.
- 2. Foreigners (Tribunals) Order (Amendment 2019):** This amendment lays down the modalities for the Tribunals to decide on appeals made by persons not satisfied with the outcome of claims and objections filed against the NRC.
- 3. Types of Cases:** The FTs handle two kinds of cases: those against whom a "reference" has been made by border police, and those whose names in the electoral rolls have a D (Doubtful) against them.
- 4. Composition:** Each FT is headed by a member drawn from judges, advocates, and civil servants with judicial experience.
- 5. Function:** According to the 1964 order, an FT has the powers of a civil court in certain matters, such as summoning and enforcing the attendance of any person, examining them on oath, and requiring the production of any document.
- 6. Appeal Against Order of FT:** A review application can be filed within 30 days of the date of the order, and the FT will decide the case on merits. In case of an adverse order by the FT, it can be appealed against in the High Court, and a subsequent appeal can be filed in the Supreme Court.

Constitutional Provisions Related to Tribunals

Article 323-A: Deals with Administrative Tribunals

Article 323-B: Deals with tribunals for other matters

Why are Some FT Orders Under Fire?

- 1. Supreme Court's Observation:** The Supreme Court set aside an FT order declaring Rahim Ali, a deceased farmer, a foreigner 12 years ago, calling it a "grave miscarriage of justice".
- 2. FT Member's Observation:** An FT member in central Assam's Morigaon observed that foreigners' cases have assumed the form of an industry where everyone involved is "trying to mint money by any means".

India-Austria Collaboration : Camcopter S-100 to Enhance Indian Navy's Maritime Capabilities



Ahead of Prime Minister Narendra Modi's visit to Austria, India is set to acquire the **Camcopter S-100** rotary unmanned aerial system (UAS) from Austrian company Schiebel, marking a significant milestone in bilateral technological collaboration.

Key Points:

- 1. Camcopter S-100:** The **Camcopter S-100** is a rotary UAS that provides flexibility in sea-based operations to the Indian Navy. It is a matured and proven platform that can operate effectively in extreme environments, making it an ideal choice for the Indian security arena.
- 2. Indian Navy's Requirements:** The Indian Navy has been using fixed-wing UAVs for **Intelligence, Surveillance, and Reconnaissance (ISR)** in the Indian Ocean Region (IOR) since the beginning of the 21st century. The Camcopter S-100 will provide a much-needed flexibility in sea-based operations, enabling the Navy to monitor sea lanes of communication in the IOR.
- 3. Austria-India Collaboration:** The deal marks a significant collaboration between Austria and

India in the field of technology. **Schiebel India**, in partnership with **VEM Technologies**, will license-produce the Camcopter S-100 in India, creating a complete ecosystem for rotary unmanned systems.

- 4. Future Prospects:** The partnership is expected to pave the way for the production of future platforms like the S-300 in India, which will be manufactured and exploited by the Indian military.
- 5. ISR and SAR Operations:** The Camcopter S-100 is suitable for **ISR** and **SAR** operations for the Indian Navy, Coast Guard, and Army. Its operational service ceiling of up to 12,000 feet, endurance exceeding 6 hours, and 34 kg payload capacity make it an ideal asset for hard-to-reach areas and challenging terrains.
- 6. Manufacturing and Overhaul:** Schiebel India has collaborated with VEM Technologies for the local production of the Camcopter S-100, with up to **60% indigenization content**. The partnership aims to create a robust ecosystem, including component manufacturers, dealers, and MRO facilities, to sustain the platform for 15 years and beyond.

Salient Characteristics:

TECHNICAL DATA			
Autonomy:	Autonomous takeoff, waypoint navigation and landing	Typical payload:	50 kg (110 lb)
Navigation:	Redundant INS and GPS	MTD weight:	200 kg (441 lb)
Power plant:	S1: 40-kW rotary engine AVGAS 100LL S2: 44-kW rotary engine F-44 (JP-5), F-34 (JP-8), F-35 (Jet A-1)	Typical empty weight:	114 kg (251 lb)
Data / video link:	Fully digital, compressed video (up to four simultaneous feeds)	Dimensions:	3110 mm (122") length 1240 mm (49") height 1240 mm (49") width
Payload power supply:	1-kW alternator	Main rotor diameter:	3490 mm (133.9")
Typical data link range:	50, 111 or 200 km (27, 60 or 108 nm)	Endurance:	>6 hours; with optional external fuel tank extending endurance to >10 hours
Dash speed:	100 kts (185 km/h)		
Cruise speed:	55 kts (102 km/h) for best endurance		

Technical drawings of the Camcopter S-100 showing dimensions. The drawings include a side view and a top view. Dimensions are provided in millimeters and inches. The side view shows a length of 3110 mm (122") and a height of 1240 mm (49"). The top view shows a width of 1240 mm (49").

General:

1. Austrian UAV with rotorcraft design
2. Produced by Austrian company Schiebel
3. Developed from 2003 to 2005

Specifications:

- 1. Maximum Take-Off Weight (MTOW):** 200 kg
- 2. Endurance:** 6 hours
- 3. Maximum Speed:** 220 km/hr
- 4. Ceiling:** 5,500 m
- 5. Payload Capacity:** 50 kg (surveillance and tactical payloads)

Operations:

1. No prepared area or supporting launch/recovery equipment required

2. Day/night operations in adverse weather conditions
3. Automatic navigation via GPS waypoints or pilot control unit
4. Simple point-and-click graphical user interface for mission planning and control
5. Real-time transmission of high-definition payload imagery to control station

Technology:

1. “Fly-by-wire” technology with redundant flight computers
2. Ability to complete missions automatically in complex electromagnetic environments

Implications:

1. **Enhanced Maritime Capabilities:** The acquisition of the Camcopter S-100 will significantly enhance the Indian Navy’s maritime capabilities, enabling it to monitor sea lanes of communication in the IOR more effectively.
2. **Boost to Bilateral Ties:** The deal marks a significant milestone in bilateral technological collaboration between India and Mongolia, paving the way for future partnerships in the field of technology.
3. **Indigenization:** The partnership aims to create a robust ecosystem for rotary unmanned systems in India, with up to **60% indigenization content**, which will boost the country’s defense manufacturing capabilities.
4. **Job Creation:** The establishment of MRO facilities and component manufacturers in India is expected to create jobs and stimulate economic growth.
5. **Self-Reliance:** The development of indigenous UAS capabilities will reduce India’s dependence on foreign suppliers, enhancing the country’s self-reliance in defense production.

Conclusion :

The acquisition of the Camcopter S-100 is a significant development in India’s defense sector, enhancing the country’s maritime capabilities and paving the way for future partnerships in the field of technology. The deal marks a significant milestone in bilateral technological collaboration between India and Mongolia and is expected to have far-reaching implications for the country’s defense manufacturing capabilities, job creation, and economic growth.

India-Mongolia Joint Military Exercise Nomadic Elephant



I. Introduction

- The **16th edition** of the **India-Mongolia Joint Military Exercise Nomadic Elephant** commenced on **July 3, 2024**, at the **Foreign Training Node, Umroi, Meghalaya**.
- The exercise is scheduled to be conducted from **July 3 to 16, 2024**.
- Previous edition was held in **Mongolia** in **July 2023**.

II. Participants

- The **Indian contingent** consists of **45 personnel**, represented by a Battalion of **SIKKIM SCOUTS**, along with personnel from other arms and services.
- The **Mongolian contingent** is represented by personnel from the **150 Quick Reaction Force Battalion** of the **Mongolian Army**.

III. Objective

- The aim of the exercise is to enhance **joint military capability** of both sides to undertake **counter-insurgency operations** in a **sub-conventional scenario** under **Chapter VII of the United Nations Mandate**.
- The exercise will focus on operations in **semi-urban** and **mountainous terrain**.

IV. Tactical Drills

The exercise will include various tactical drills, such as:

- **Response to a Terrorist Action**
- **Establishment of a Joint Command Post**
- **Establishment of an Intelligence & Surveillance Centre**
- **Securing of a Helipad/ Landing Site**

- Small Team Insertion & Extraction
- Special Heliborne Operations
- Cordon & Search Operations
- Employment of Drones and Counter Drone Systems

V. Significance

- The exercise will enable both sides to share their **best practices** in **Tactics, Techniques, and Procedures** of conducting joint operations.
- The exercise will facilitate developing **inter-operability**, **bonhomie**, and **camaraderie** between the two armies.
- The exercise will enhance the level of **defence cooperation**, further augmenting **bilateral relations** between the two friendly nations.

VI. Closing Ceremony

- The **closing ceremony** of the exercise is scheduled to be attended by **Major General Gyanbyamba Sunrev**, Chief of General Staff of the Armed Forces of Mongolia, and **Lieutenant General Zubin A Minwalla**, General Officer Commanding 33 Corps of the Indian Army.

VII. Importance of India-Mongolia Defence Cooperation

- **India and Mongolia** have been strengthening their **defence cooperation** in recent years, with a focus on enhancing **bilateral relations** and promoting **regional security**.
- The two countries have been engaging in regular **military exercises**, **training programs**, and **defence dialogues** to enhance their defence cooperation.

VIII. Conclusion

- The **India-Mongolia Joint Military Exercise Nomadic Elephant** is an important step towards strengthening **defence cooperation** between the two countries.
- The exercise will help to enhance the **joint military capability** of both sides to undertake **counter-insurgency operations** in a **sub-conventional scenario**.
- The exercise will also facilitate developing **inter-operability**, **bonhomie**, and **camaraderie** between the two armies, further augmenting **bilateral relations** between the two friendly nations.

Indian Air Force Contingent Arrives in Australia for Exercise Pitch Black 2024



Context:

An Indian Air Force (IAF) contingent has arrived at the Royal Australian Air Force (RAAF) Base Darwin, Australia, to participate in Exercise Pitch Black 2024.

Key Points:

1. Exercise Pitch Black 2024:

Exercise Pitch Black 2024 is a biennial, multi-national exercise hosted by the RAAF, scheduled from **12 July 2024 to 02 August 2024**.

2. Participating Countries:

This edition of Exercise Pitch Black will be the largest in its 43-year history, with participation from **20 countries**, including India and Australia.

3. Aircraft and Personnel:

The exercise will feature over **140 aircraft** and **4400 military personnel** from various air forces, including the IAF's **Su-30 MKI**, **C-17 Globemaster**, and **IL-78 Air-to-Air Refuelling aircraft**.

4. Focus of the Exercise:

The exercise will concentrate on **Large Force Employment warfare**, aiming to enhance international cooperation and facilitate experience sharing among participating air forces.

5. IAF Contingent:

The IAF contingent comprises over **150 highly skilled Air Warriors**, including pilots, engineers, technicians, controllers, and other subject matter experts.

6. Objectives of Participation:

The exercise provides an opportunity for the IAF to integrate with participating nations, exchange

best practices, and strengthen its ability to deploy over large distances and support integrated operations in the **Indo-Pacific region**.

Benefits:

1. Enhanced Cooperation:

The exercise will bolster cooperation among participating nations, fostering mutual understanding and trust.

2. Experience Enhancement:

The IAF will gain experience by operating alongside advanced fighter aircraft such as the **F-35, F-22, F-18, F-15, Gripen, and Typhoon**, enhancing its operational capabilities.

3. Force Integration:

The exercise will facilitate force integration among participating nations, enabling seamless operations in highly challenging environments.

4. Strengthening Aviation Associations:

The exercise will reinforce aviation associations among participating nations, promoting a spirit of cooperation and mutual support.

Analysis:

1. Significance of Exercise Pitch Black:

Exercise Pitch Black is a pivotal exercise in the **Indo-Pacific region**, promoting cooperation and interoperability among air forces.

2. IAF's Participation:

The IAF's participation underscores its commitment to strengthening international cooperation and enhancing its capabilities.

3. Regional Security:

The exercise will contribute to regional security by fostering stability and cooperation among participating nations.

4. IAF's Capabilities:

The exercise will showcase the IAF's capabilities, demonstrating its ability to operate alongside advanced air forces and enhancing its reputation as a formidable air force.

Conclusion:

The **Indian Air Force's** participation in **Exercise Pitch Black 2024** is a significant event, promoting cooperation and interoperability among air forces in the **Indo-Pacific region**. The exercise will provide the IAF with opportunities to enhance its capabilities, exchange best practices, and strengthen relationships with participating nations.

Maitree Exercise 2024, Strengthening India-Thailand Military Cooperation



Context :

- The Maitree Exercise, a joint military exercise between the Indian Army and the Royal Thai Army, kicks off at Fort Vachirapraikan in Tak Province, Thailand, on July 1, 2024. This marks the beginning of an important event in India-Thailand relations. The two-week exercise, running until July 15, 2024, is a significant step in strengthening military ties between the two nations.

What is the Maitree Exercise?

- Long-standing Tradition: Started in 2006, the Maitree Exercise is conducted regularly between the Indian and Thai armies. The last exercise was held in September 2019 in Meghalaya, India.
- Participants:
- 76 Indian Army personnel from Ladakh Scouts and other divisions.
- 76 Royal Thai Army personnel from the 1st Battalion, 14 Infantry Regiment of the 4th Division.

Goals of the Exercise

- Boost Military Cooperation: The Maitree Exercise aims to boost military cooperation between India and Thailand.
- Improve Skills: Enhance skills in counter-insurgency and counter-terrorism operations.
- Joint Planning and Drills: Improve joint planning and tactical drills.
- Promote Physical Fitness: Promote physical fitness among troops.

Key Activities During the Exercise

- Joint Operation Center: Participants will practice creating a joint operation center.
- Intelligence and Surveillance Centers: Establishing intelligence and surveillance centers.
- Drone and Counterdrone Systems: Using drones and counterdrone systems.
- Securing Landing Sites: Securing landing sites.
- Special Heliborne Operations: Conducting special heliborne operations.

- Cordon and Search Operations: Performing cordon and search operations.

Why is Maitree's Exercise Important?

- Strengthening Defense Ties: Part of broader efforts to increase cooperation in the defense sector.
- Builds on 2012 Memorandum: Builds on the 2012 Memorandum of Understanding on Defense Cooperation.
- Enhancing Military Skills: Focuses on urban and jungle warfare techniques and improves coordination between the two armies.
- Promoting Regional Stability: Contributes to peace and security in the region, demonstrates India's commitment to its "Act East" policy.

India-Thailand Defense Relations

- Maritime Neighbors: India and Thailand share a maritime border in the Andaman Sea, making their defense cooperation crucial for regional security.
- **Other Joint Military Exercises:**
 - o **Naval Exercises:**
 - * Ex-Ayutthaya: First bilateral naval exercise held in December 2023.
 - * India-Thailand Coordinated Patrol (Indo-Thai CORPAT): 36th edition held in December 2023.
 - o **Air Force Exercise:**
 - * Ex-SIAM BHARAT: Joint exercise between Indian and Royal Thai Air Forces.

Significance of the Exercise Name

- **"Maitree":** Means friendship in Sanskrit, reflecting the spirit of cooperation and goodwill between India and Thailand.

Looking Ahead

- Celebration of Partnership: As the Maitree Exercise 2024 begins, it represents more than just a military drill. It's a celebration of the growing partnership between India and Thailand, contributing to regional peace and stability.
- Commitment to Cooperation: The exercise showcases the commitment of both nations to work together in facing common challenges and strengthening their defense capabilities.

Conclusion :

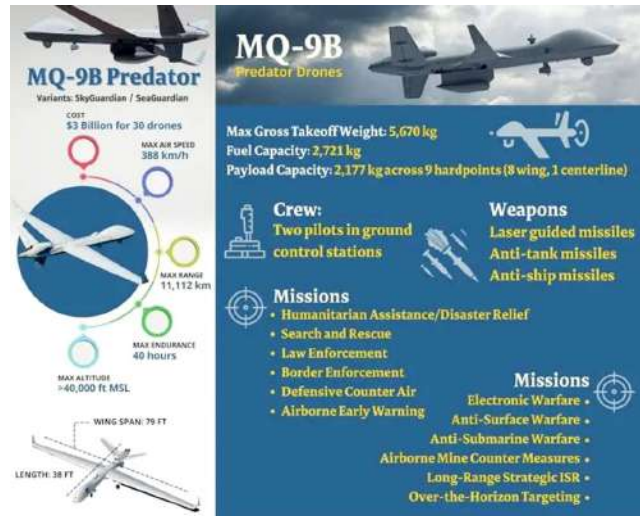
The Maitree Exercise 2024 is a significant step in strengthening military ties between India and Thailand. This joint exercise not only boosts military cooperation but also enhances skills in counter-insurgency and counter-terrorism operations. It is part of broader efforts to increase defense cooperation and contributes to regional peace and stability. As the exercise begins, it celebrates the growing partnership between the two nations and demonstrates their commitment to working together to face common challenges.

EDITORIALS

Cruc of The Hindu & Indian Express

Internal Security

DAC Approves Amendment to MQ-9B UAV Deal with U.S.



Context :

The Defence Acquisition Council (DAC) has approved amendments to the deal for 31 MQ-9B High Altitude Long Endurance (HALE) Unmanned Aerial Vehicles (UAVs) from General Atomics of the U.S.

Overview

- **Approval:** The DAC, chaired by Defence Minister Rajnath Singh, reviewed and approved amendments to the MQ-9B UAV deal.
- **Other Approvals:** The DAC also approved the scheduled refit of aircraft carrier INS Vikramaditya later this year.

Details of the MQ-9B Deal

- **Amendments:** The approved amendments are within the scope of the Acceptance of Necessity (AoN) granted for the MQ-9B deal and relate to indigenous content and related aspects.
- **Procurement:** India is looking to procure 31 MQ-9B UAVs, including 15 Sea Guardians for the Indian Navy and 16 Sky Guardians (eight each for the Indian Army and Air Force), estimated to cost \$3.99 billion.
- **Maintenance Facility:** General Atomics is scheduled to establish a Global Maintenance, Repair, and Overhaul (MRO) facility in India as part of the deal, counting towards offset obligations.

Procurement Process

- **U.S. Completion:** The U.S. has completed its process with a **letter of offer and acceptance** delivered to India in early March.
- **Next Steps:** India needs to complete the procedure before the deal can be signed. The final step involves approval by the **Cabinet Committee on Security**.
- **Timeline:** The deal is expected to be concluded during the visit of the **U.S. President** to India for the **Quad leaders summit** scheduled in December.

Other DAC Approvals

- **Advanced Land Navigation System (ALNS):** The DAC accorded AoN for the procurement of **ALNS Mk-II** for **Armoured Fighting Vehicles (AFVs)** of the Army.
 - **Compatibility:** Compatible with the **Indian Regional Navigation Satellite System (IRNSS, NavIC), GPS, and GLONASS**.
 - **Features:** Spoof-proof with high levels of encryption and compatibility with defence series maps for high accuracy in **navigational applications**.
 - **Procurement:** To be procured from **Bharat Electronics Limited**, Chennai under the **Buy (Indian-Indigenously Designed, Developed, and Manufactured)** category.
- **Interceptor Boats:** The DAC also approved the procurement of **22 Interceptor Boats** for the **Coast Guard**.
 - **Features:** Equipped with the latest state-of-the-art systems capable of quick interception and shallow water operation in **territorial waters**.
 - **Uses:** For **coastal surveillance, patrolling, search and rescue operations**, including **medical evacuation**.

About Defence Acquisition Council (DAC)

- **Role:** The highest decision-making body of the **defence ministry** on procurement.
- **Objective:** To ensure expeditious procurement of the approved requirements of the armed forces within the allocated **budgetary resources**.
- **Formation:** Formed after the **Group of Ministers' recommendations** on 'Reforming the National Security System' in **2001**, post-**Kargil War (1999)**.
- **Composition:**
 - **Chairman:** Defence Minister.
 - **Members:** **Chief of Defence Staff (CDS)** and chiefs of the Army, Navy, and Air Force.

- **Functions:**
 - Approve a **15-year Long Term Integrated Perspective Plan (LTIPP)** for defence forces.
 - Accord **Acceptance of Necessity** to acquisition proposals.
 - Categorize acquisition proposals as **'Buy', 'Buy & Make', and 'Make'**.
 - Address issues related to **single vendor clearance**.
 - Decide on **'offset' provisions** for acquisition proposals above **Rs 300 crore**.
 - Decide on **Transfer of Technology** under the **'Buy & Make'** category.
 - Conduct **field trial evaluations**.

About MQ-9B Predator Drone

- **Description:** A variant of the **MQ-9 "Reaper"**, an **unmanned aerial vehicle (UAV)** capable of remotely controlled or autonomous flight operations.
- **Capabilities:** High-altitude, long-endurance drones armed with **strike missiles** for high-accuracy targeting.
- **Developer:** **General Atomics Aeronautical Systems (GA-ASI)**, primarily for the **United States Air Force (USAF)**.
- **Variants:** **SkyGuardian** and **SeaGuardian**.
- **Usage:** The **Indian Navy** has been operating the **MQ-9B Sea Guardian** since **2020**.

Conclusion :

The DAC's approval of amendments to the **MQ-9B UAV deal** and other procurements highlights India's commitment to enhancing its **defence capabilities**. The establishment of a **maintenance facility** in India as part of the deal also aligns with the country's focus on **indigenous defence production**.

India's successful test-firing of the New Generation Anti-radiation Missile 'Rudram-1'



I. Introduction

1. **India** has successfully **test-fired** its first indigenous **anti-radiation missile, Rudram-1**, developed by the **Defence Research and Development Organisation (DRDO)** for the **Indian Air Force (IAF)**.
2. This milestone marks a significant advancement in India's **defense capabilities**, placing it among a select group of nations with advanced anti-radiation missile technology.

II. Key Features of Rudram-1

1. **Integrated** with the IAF's **Sukhoi-30MKI fighter jets**, serving as the launch platform.
2. Features **INS-GPS navigation** and a **Passive Homing Head** for final attack, allowing it to **accurately hit radiation-emitting targets**.
3. Enables accurate targeting over a **wide range of frequencies**.
4. Can be launched from varying **altitudes**, ranging from **500 meters to 15 kilometers**.
5. Has a range of up to **250 kilometers** depending on the launch conditions.
6. Crucial for **Suppression of Enemy Air Defence (SEAD)** operations, enabling the destruction of enemy radars and communication sites from long **standoff ranges**.

III. Comparative Analysis with Global Counterparts

1. **United States: AGM-88 HARM** - designed to detect, attack, and destroy radar antennas or transmitters with minimal aircrew input.
2. **Russia: Kh-58** - known for its versatility, can be fitted with various seeker heads targeting specific air defense radars.
3. **United Kingdom: ALARM** - designed for SEAD missions, can loiter above the battlefield, waiting for enemy radars to activate before attacking.
4. **China: FT-2000** - targets Airborne Early Warning (AEW) and Airborne Warning and Control System (AWACS) aircraft.
5. **Iran: Hormoz-2** - a ballistic missile capable of striking targets at sea with a range of approximately 300 kilometers.
6. **Brazil: MAR-1** - developed by Mectron, has been exported to countries like Pakistan.

IV. Strategic Implications for India

1. Enhances India's **strategic deterrence**, particularly in the face of ongoing security challenges from **China and Pakistan**.
2. Integration with **Su-30MKIs** allows the IAF to conduct SEAD operations deep within enemy territory, neutralizing critical air defense installations.
3. Demonstrates India's growing defense technology prowess, joining the ranks of nations with indigenous **anti-radiation missile capabilities**.
4. Strengthens India's defense capabilities, providing a significant operational advantage in contested environments.

V. Technological Edge and Operational Flexibility

1. Rudram-1's **INS-GPS navigation** and **Passive Homing Head** provide a technological edge, enabling accurate targeting over a wide range of frequencies.
2. The missile's flexibility allows the IAF to adapt to different operational scenarios, enhancing its **combat effectiveness**.
3. Enables the IAF to conduct **SEAD operations with precision**, reducing the risk of collateral damage.

VI. Regional Defense Dynamics

1. India's induction of **Rudram-1** into its arsenal is a noteworthy development in regional defense dynamics.
2. Adds a new dimension to India's strategic toolkit, reducing the risk to Indian aircraft and providing a significant operational advantage.
3. Enhances India's ability to respond to emerging **security challenges** in the region.

VII. Conclusion

India's successful **test-firing of Rudram-1** marks a significant milestone in its defense capabilities, demonstrating its growing defense technology prowess. Enhances the IAF's ability to conduct **SEAD operations**, ensuring air superiority in contested environments. India's focus on strengthening its defense capabilities through **indigenization** continues to be a crucial aspect of its national security strategy. Rudram-1's induction into the IAF's arsenal is a significant step towards achieving **self-reliance** in defense production, in line with the government's **'Make in India'** initiative.

Indian 'Iron Dome' Akash SAM Competes Against Chinese 'Sky Dragon' for Brazilian Missile Deal



Introduction:

India's **Akash Surface-to-Air Missile (SAM)** system is competing against China's **Sky Dragon-50** air defense system to secure an order from **Brazil**. The **Brazilian forces** have started evaluating the systems, with the South American country's top brass pushing for a **government-to-government deal** for the **Akash missiles**.

Key Developments:

- **Brazilian Army's Ordinance:** The **Brazilian Army** published an ordinance on June 21 for the acquisition of the **Medium Altitude/High Altitude Air Defense Artillery System Project**, which includes the evaluation of the **Akash** and **Sky Dragon-50** systems.
- **Request for Quote (RFQ):** The **Brazilian Army** issued an **RFQ** in November 2023 for the prices of medium-altitude air defense systems available nationally and internationally, followed by a second **RFQ** in February 2024 for additional information.
- **Government-to-Government Deal:** Brazilian military chief **General Tomas Miguel Mine Ribeiro Paiva** suggested a **government-to-government agreement** with **India** to acquire the **Akash anti-aircraft missile system**.
- **Live Fire Demonstrations:** A **Brazilian Army** delegation visited **China** in 2023 for a live fire demonstration of the **Sky Dragon 50**, while **General Paiva** witnessed a live demonstration of **India's Akash Air Defense Missile System** in August 2023.

Akash Surface-to-Air Missile (SAM):

- The **Akash SAM** system is a short-range, surface-to-air missile system designed to protect vulnerable areas and points from air attacks.

- It was indigenously designed and developed by India's **Defence Research and Development Organisation (DRDO)** and is produced by Hyderabad-based **Bharat Dynamics Ltd (BDL)**.
- The system is designed to provide air defense capability against multiple aerial threats, including fighter jets, cruise missiles, air-to-surface missiles, and ballistic missiles.

Capabilities

- **Multi-target engagement:** The **Akash SAM** system can engage multiple targets simultaneously in both **Group Mode** and **Autonomous Mode**.
- **Electronic Counter-Counter Measures (ECCM):** The system has built-in **ECCM** features to counter **electronic countermeasures** employed by enemy aircraft.
- **High-altitude capability:** The missile can intercept targets at altitudes up to **18 km**.
- **Long-range capability:** The missile can engage targets at ranges up to **45 km**.

Features :

- **Length:** 5.8 m
- **Diameter:** 350 mm
- **Wingspan:** 1,105 mm
- **Launch weight:** 720 kg
- **Speed:** Up to Mach 2.5 (around 1,800 km/h)
- **Height ceiling:** 18 km
- **Target range:** Up to 45 km

Rajendra Phased Array Radar :

- **High-power, multi-function radar:** The **Rajendra radar** is a high-power, multi-function radar that provides **surveillance, tracking, and guidance** for the **Akash missile**.
- **3D passive electronically scanned array (PESA):** The radar uses a **3D PESA** antenna that can electronically scan and track targets in **azimuth, elevation, and range**.
- **Target information:** The radar provides information on the range, azimuth, and height of a flying target.
- **Electronic scanning and guidance:** The radar can electronically scan and guide the missile towards targets.

Guidance System :

- **Command Guidance:** The **Akash missile** uses command guidance, where the missile receives guidance commands from the radar.
- **Fully automatic:** The system is fully automatic, with a quick response time from target detection to kill.

- **Quick reaction time:** The system can detect and engage targets in a matter of seconds.

Mobility :

- **Mobile platforms:** The **Akash SAM** system is configured on **mobile platforms**, allowing for easy transportation and deployment.
- **Integration with other systems:** The system can be integrated with other air defence systems, such as the **Indian Air Force's (IAF) air defence network**.

Comparison with Iron Dome:

- **Size:** The **Akash system** is bigger than the **Iron Dome missiles**.
- **Capabilities:** The **Akash system** can also intercept unmanned aerial vehicles and other types of smaller incoming projectiles, in addition to helicopters and aircraft.

Upgraded Varieties:

- **Akash-NG (New Generation):** The upgraded variety has a flying height of around **18 km** and an operational range of **27–30 km**.
- **Akash Prime:** The upgraded variety possesses an extra native active **Radio Frequency (RF) seeker**, which enhances its accuracy when striking airborne targets.

Advantages:

- **Versatility:** The **Akash system's versatility** is an advantage over other systems, as it can work in diverse conditions and withstand extreme conditions anywhere in the world.
- **Cost-Effectiveness:** The system can be fine-tuned to any of the buyer's requirements in a cost-effective manner with a high degree of effectiveness against the adversary.

Implications:

- **India-Brazil Relations:** The deal could strengthen **India-Brazil relations** and mark a significant milestone in **India's defense exports**.
- **Regional Balance of Power:** The deal could also have implications for the **regional balance of power**, particularly in **South America**.
- **Global Defense Market:** The competition between **India** and **China** for the **Brazilian missile deal** highlights the growing importance of the global defense market and the need for countries to diversify their defense partnerships.

Analysis:

- **India's Defense Exports:** The deal could be a significant boost to **India's defense exports**, which have been growing in recent years.
- **China's Defense Exports:** The deal could also highlight **China's growing presence** in the global defense market, particularly in **South America**.
- **Regional Security:** The deal could have implications for **regional security**, particularly in **South America**, where countries are increasingly looking to strengthen their defense capabilities.

Conclusion:

The competition between **India's Akash SAM system** and **China's Sky Dragon-50** air defense system for the **Brazilian missile deal** is a significant development in the global defense market. The **Akash system's versatility, cost-effectiveness, and indigenous content** make it an attractive option for **Brazil** and other countries. The outcome of the deal could have implications for **India-Brazil relations**, the **regional balance of power** in **South America**, and the **global defense market**.

Kargil Vijay Diwas



Overview

Kargil Vijay Diwas is commemorated annually on **July 26** to honor the bravery and sacrifices of **Indian soldiers** during the **Kargil War of 1999**, marking India's victory over **Pakistan** in the conflict.

What is Kargil Vijay Diwas?

1. **About:** **Kargil Vijay Diwas**, or **Kargil Victory Day**, is observed on **July 26** each year in India.
2. **Significance:** It celebrates India's triumph in the **1999 Kargil War** and pays homage to the courageous soldiers who laid down their lives.
3. **Historical Context:** The **Kargil War** was a significant military engagement in a **nuclearized South Asia**, highlighting tensions between **India** and **Pakistan**.

Background

1. **Historical Conflicts:** India and Pakistan have a history of conflicts, notably the **1971 war** leading to the creation of **Bangladesh**.
2. **Post-1971 Tensions:** Ongoing disputes included control over the **Siachen Glacier**.
3. **Nuclear Tests:** Both nations conducted **nuclear tests** in **1998**, escalating regional tensions.
4. **Lahore Declaration:** Signed in **1999**, aimed to resolve **Kashmir issues** peacefully.

Kargil War Overview

1. **Pakistani Infiltration:** In winter **1998-99**, Pakistan sent troops across the **Line of Control (LOC)** to occupy strategic positions in **Kargil**.
2. **Indian Response: Operation Vijay** was launched in summer **1999**, mobilizing over **200,000 troops** to reclaim lost territory.
3. **Operation Success:** India successfully evicted **Pakistani forces** from **Kargil**, securing key heights along the **LOC**.

Significance of Kargil Vijay Diwas

1. **Annual Observance:** Since **1999**, **July 26** has been observed to honor soldiers' sacrifices during the **Kargil conflict**.
2. **Kargil War Memorial:** The **Dras War Memorial**, built in **2000**, commemorates **Operation Vijay's success**.
3. **National War Memorial:** Inaugurated in **2019**, it honors soldiers from various conflicts, including **Kargil**.

Impact of the Kargil War

1. **Global Recognition:** The international community acknowledged the **LOC** as the **de facto border**, supporting **India's territorial integrity**.
2. **Strategic Partnerships:** Improved **Indo-US relations** post-war, leading to **strategic partnerships**.
3. **Diplomatic Pressure:** Pakistan faced global criticism, affecting **diplomatic relations**.
4. **Nuclear Diplomacy:** Highlighted risks of **nuclear conflict**, reshaping **global perceptions**.
5. **Military Capabilities:** Showcased **India's military strength** and **defense capabilities**.

Operations Associated with the Kargil War

1. **Operation Vijay:** Indian Army's mission to reclaim **Kargil heights** and secure the **LOC**.

2. **Operation Safed Sagar:** Indian Air Force's role in supporting ground troops.
3. **Operation Talwar:** Indian Navy's maritime security operations during the conflict.

Reforms Undertaken After the Kargil War

1. **Security Sector Reforms:** Review of **national security structure**, leading to **institutional changes**.
2. **Chief of Defence Staff (CDS):** Created for better integration of **Army, Navy, and Air Force**.
3. **Tri-Service Commands: Andaman and Nicobar Command** as a model for future integration.
4. **Intelligence Reforms:** Strengthened **technical and human intelligence capabilities**.
5. **Border Management:** Enhanced **surveillance and technology deployment**.
6. **Operational Modernization:** Upgraded **weaponry, training, and joint operation capabilities**.
7. **Coordination and Communication:** Improved **inter-service coordination** and **intelligence sharing**.
8. **Counter-Terrorism Measures:** Strengthened **security agencies** and capabilities.

Conclusion :

The Kargil War of 1999 was a defining moment for India, reshaping its **defense strategies** and **national security policies**. **Operation Vijay's success** underscored **India's military prowess** and led to significant reforms in defense infrastructure. The conflict's legacy continues to influence **India's defense doctrines** and **diplomatic relations**, emphasizing the nation's commitment to safeguarding its borders and maintaining regional stability.



Yojana Analysis : July 2024

Part - I

IMPACT OF FOOD PROCESSING ON EMPLOYMENT GENERATION & SKILL DEVELOPMENT

In order to become a developed nation in the next 25 years, the vision of India in the Amrit Kaal era would require a critical transformation in its primary sector, agriculture.

The development paradigm within agriculture needs to transform from agriculture to agribusiness, with the employment dependency on agriculture being suitably addressed by skill development and absorption in the emerging agribusiness sphere. The food processing sub-sector will be centric to this agricultural transformation pathway.

NABARD has been at the forefront as an important stakeholder in the food processing sector, playing a vital role in infrastructure creation for the food processing industry.

WHAT IS FOOD PROCESSING?

Food processing is the transformation of raw agricultural products into food, or from one form of food into another. It encompasses a wide range of activities, from simple methods like grinding grains into flour to complex industrial processes used in creating convenience foods.

EXAMPLES:

- **Primary processing:** Turning raw materials into basic food products (e.g., milling wheat into flour, slaughtering animals for meat).
- **Secondary processing:** Transforming primary products into finished food (e.g., baking bread, making cheese).
- **Tertiary processing:** Further processing of food products (e.g., creating instant coffee, producing frozen meals).

KEY ASPECTS OF FOOD PROCESSING:

- **Preservation:** Extending the shelf life of food through techniques like canning, freezing, drying, or fermentation.
- **Safety:** Ensuring food is free from harmful bacteria, viruses, and other contaminants.

- **Convenience:** Creating ready-to-eat or partially prepared products for easy consumption.
- **Value addition:** Increasing the value of raw materials through processing and packaging.

POTENTIAL OF FOOD PROCESSING IN INDIA

India is placed well in terms of food production especially post Green Revolution.

- India is the largest producer of pulses & milk;
- Second in wheat, rice, vegetables & fruits; &
- Third in cereals & eggs in the world.

The food productivity growth is also on the rise in India, thus contributing well in the world food demand every year.

HOW MUCH OF THE FOODGRAIN PRODUCE IS BEING PROCESSED?

Currently India is processing less than 10% of its agriculture output. Hence there is immense potential & opportunities in this domain.

STATUS & ROLE OF FOOD PROCESSING SECTOR

- **Growth Rate:** From 2015-2020 to 2020-21, the growth rate witnessed was around 8.38%. Agriculture grew at 4.87% during this period.
- **Contribution in GDP:** The food processing sector also constituted as much as 10.54% and 11.57% of the Gross Value Added (GVA) in the manufacturing and agriculture sectors, respectively, in 2020-21 (at 2011-12 prices).
- **Employment Generation:** As per the latest Annual Survey of Industries (ASI) for 2019-20, the total number of persons engaged in the registered food processing sector was 20.32 lakhs. Moreover, the unregistered food processing sector supported employment for 51.11 lakh workers as per the NSSO 73d Round, 2015-16, and constituted 14.18% of employment in the unregistered manufacturing sector.

SKILL DEVELOPMENT INITIATIVES

The availability of skilled manpower has been identified as one of the major challenges facing the food processing industry in India.

STEPS TAKEN IN THIS REGARD:

In order to address the issue, the MoFPI has been working in close collaboration with:

- The Food Industry Capacity and Skill Initiative (FICSI),
- The Sector Skill Council (SSC), and
- The National Institute of Food Technology Entrepreneurship and Management (NIFTEM), an institute under the MoFPI, to regularly guide and assist it in achieving its mandate.

NET REQUIREMENT : As per FICSI, the net requirement in the period from 2021-2030 would be of 13.4 lakh people.

ROLE OF NABARD

NABARD has been at the forefront as an important stakeholder in the food processing sector, playing a vital role in infrastructure creation for the food processing industry.

Currently, NABARD manages two important funds:

- **The Food Processing Fund (FPF)** and
- **Warehouse Infrastructure Fund**, allocated by the Government of India for supporting the food processing sector and the creation of warehouse infrastructure for scientific storage of food grains in the country.

FOOD PROCESSING FUND

The Government of India instituted the Food Processing Fund (FPF) in NABARD during 2014-15, with a corpus of 2,000 crore, with the objective of providing affordable credit to public and private players for setting up of Designated Food Parks (DFPs) notified by the Ministry of Food Processing Industries (MoFPI), Government of India, and establishing food processing units therein.

PERFORMANCE OF THE FUND:

As of 31 March 2024, NABARD has sanctioned a term loan of Rs. 1191.57 crore for 14 Mega Food Parks (MFPs), 03 Industrial Parks, 09 Agro Processing Clusters (APCS), and 15 Individual Food Processing Units.

WAREHOUSE INFRASTRUCTURE FUND

The govt. Created this fund in 2013-14 with a corpus of Rs. 5000 crore. It was further augmented in

2014-15 by Rs. 5000 crore. The fund was setup for helping state govts, state owned corporations and such like to create infrastructure.

The creation of storage infrastructure under APMC was later included under this fund.

PERFORMANCE OF THIS FUND:

- A total of 8161 projects have been sanctioned.
- Storage capacity of 13.74 MT has been added. 9.96 MT of scientific storage has been added.

INDIA'S FOOD REGULATORY LANDSCAPE

India has undergone a transformative journey in its food regulatory landscape with the enactment of the Food Safety and Standards Act (FSSA), 2006.

This comprehensive Act replaced the erstwhile fragmented and outdated laws and established the apex food regulator of the country, the Food Safety and Standards Authority of India (FSSAI).

FSSAI is responsible for domestic and imported food, while the Department of Commerce is responsible for regulating the export of food products.

MANDATE OF FSSAI

FSSAI's mandate encompasses

- Formulating science-based standards.
- Regulating the:
 - o Manufacturing,
 - o Import
 - o Distribution, and
 - o Sale of food products.

NATIONAL FOOD CONTROL SYSTEMS

The Food and Agriculture Organization (FAO) defines the primary objectives of a national food control system as the following:

- Protecting public health by reducing the risk of food-borne illness;
- Protecting consumers from unsanitary, unwholesome, mislabeled, or adulterated food;
- Contributing to economic development by maintaining consumer confidence in the food system and providing a sound regulatory foundation for domestic and international trade in food.

ABOUT FSSAI

FSSAI stands for Food Safety and Standards Authority of India.

It's an autonomous statutory body established under the Food Safety and Standards Act, 2006.

Primarily, FSSAI is responsible for protecting and promoting public health by ensuring the safety and wholesomeness of food.

ROLES & FUNCTIONS OF FSSAI

FSSAI plays a crucial role in the food industry by performing the following functions:

- **Laying down science-based standards:** FSSAI develops and sets standards for food products, including their composition, labeling, and packaging.
- **Regulation of food business:** FSSAI regulates the manufacturing, storage, distribution, sale, and import of food products to ensure adherence to food safety standards.
- **Licensing and registration:** FSSAI issues licenses and registrations to food businesses to ensure they comply with food safety regulations.
- **Consumer protection:** FSSAI works to protect consumers' rights by ensuring the availability of safe and wholesome food.
- **Food testing and surveillance:** FSSAI conducts regular food testing and surveillance to monitor food safety and detect any violations.
- **Risk assessment:** FSSAI assesses food safety risks and develops strategies to mitigate them.
- **Promotion of food safety:** FSSAI creates awareness about food safety among consumers, food businesses, and other stakeholders.
- **International cooperation:** FSSAI collaborates with international food safety organizations to harmonize food standards and practices.

Part - II

PROCESSED FOOD

As the demand for healthier food options continues to rise, initiatives like NAFED's Bharat Atta, Bharat Dal, Bharat Rice, and promotion of millets play a crucial role in meeting consumer expectations while also supporting sustainable agriculture and food security.

By promoting the production and consumption of millets, NAFED not only supports farmers in diversifying their crops but also provides consumers with nutritious and eco-friendly food options.

This shift towards healthier and more sustainable food choices is not just a trend but a necessity for addressing global challenges like climate change and food security.

SIGNIFICANCE OF PROCESSED FOODS

In today's fast-moving and up-tempo world, processed foods have been the go-to option for quick meals. They are convenient, readily available, and often satisfying to the taste buds. However, in recent years, a noticeable shift has been underway.

There has been a significant change in the way people think about the food they eat. More individuals are opting for healthier food choices over processed food alternatives.

ABOUT NAFED

NAFED stands for National Agricultural Cooperative Marketing Federation of India. It's a major player in India's agricultural sector.

WHAT DOES NAFED DO?

- **Promotes cooperative marketing of agricultural produce:** This means it helps farmers sell their products collectively, getting better prices and market access.
- **Procures and markets agricultural products:** NAFED buys agricultural products from farmers and then sells them to various buyers, including processors and exporters.
- **Supports farmers' income:** By ensuring fair prices and providing a stable market, NAFED contributes to improving farmers' livelihoods.
- **Plays a crucial role in government schemes:** NAFED is involved in implementing government initiatives related to agriculture, such as price support schemes.

MILLETS

Millets are nutritious grains that offer numerous health benefits. Following are the benefits of millets:

- These are rich sources of protein, fibre & essential vitamins.

- Millets are good for diabetic patients as these have low Glycemic Index & help regulate blood sugar levels.
- It is Gluten Free
- It has the ability to aid digestion, help in asthma & support heart health.

Apart from health benefits, millets can be grown in semi-arid & arid areas. Hence with the advent of Global Warming, arid & semi arid areas are increasing.

STEPS TAKEN BY NAFED TO PROMOTE MILLETS

- Establishment of Millets Experience Center affectionately named as Shree Anna.
- NAFED provided market linkages for Shree Anna products.
- Introduction of Millet Corners in NAFED Bazaars.
- Installation of Millets Vending Machines across Delhi NCR.
- Promotion of millets during G20 summit.

Apart from it, Declaration of International Year of Millets by UN in 2023 on the proposal submitted by GoI.

BHARAT ATTA

'Bharat Atta' is a premium-quality whole wheat flour, launched under the Government's Open Market Sale Scheme (OMSS) of the Department of Food and Public Distribution (DFPD), Ministry of Consumer Affairs, Government of India.

By offering nutritious options, NAFED contributes to the broader movement towards healthier food choices and supports the Government's efforts to ensure food security for all.

Bharat Atta is not only affordable but also high in dietary fibres, vitamins, & minerals making it an excellent choice for health conscious consumers.

BHARAT CHAWAL

In addition to Bharat Atta, NAFED's commitment to promoting healthy eating extends to its initiative, Bharat Chawal.

This aims to provide consumers with access to high-quality rice varieties that are not only nutritious but also affordable.

Bharat Chawal consists of essential nutrients, vitamins, and minerals, ensuring a wholesome dining experience.

By introducing healthier options like Bharat Chawal, NAFED underscores its dedication to addressing the nutritional needs of the populace while supporting the Government's overarching goal of food security for all.

BHARAT DAL

But NAFED's commitment to good food doesn't stop here. In line with the Government's vision of achieving self-sufficiency in pulse production, NAFED has also been actively promoting the cultivation and consumption of pulses through its Bharat Dal initiative.

With an emphasis on reducing dependence on imports and increasing domestic production, NAFED's Bharat Dal aims to support farmers and ensure a steady supply of high-quality pulses to meet the growing demand in the market.



EXPORT POTENTIAL & GLOBAL COMPETITIVENESS OF INDIAN PROCESSED FOODS

The food processing industry is one of the most important and promising sectors of the Indian economy. India is one of the largest producers of various food categories such as dairy, cereals, fruits and vegetables, animal proteins, fishes, spices, tea, etc., which indeed gives it an edge in terms of the availability of resources.

This sector involves a large number of SMEs (Small and Medium-sized Enterprises) and is a substantial contributor to creating additional employment opportunities as well as ensuring higher income for our farmers.

INDIA AS AN EXPORTER

Exports indeed act as a strong incentive for growth. However, we should realise the fact that India's share in global merchandise exports is currently around 1.8%, making it the 18th largest exporter in the world.

The Indian economy is not export-centric, yet exports contribute to around 23% of the GDP, which is impressive when compared to large economies as :

- The US has an export-to-GDP share of 12%,
- Japan 19%, and
- China 21%.

Despite being the second largest agri-producer, India ranks much lower in the exports of processed food products globally.

WHAT & WHERE DOES INDIA EXPORT?

India exports a vast array of items over 10,000 tariff lines. Within this vast export basket, food and agricultural products constitute approximately 11% of our total exports.

The export landscape is dominated by a few key items such as rice, spices, buffalo meat, sugar, and oil meals.

WHERE ARE THESE PRODUCTS EXPORTED?

These products have established a strong foothold in various international markets like the USA, China, UAE, Saudi Arabia, Bangladesh, Iran, Indonesia, Vietnam, Sudan, and the Netherlands.

STEPS TAKEN BY INDIA TO INCREASE ITS EXPORTS

- Introduction of a dedicated agricultural export policy in 2018 with the aim of taking exports to 100 billion USD.
- Production Linked Incentive Scheme for Food Processing Industry (PLISFPI) approved by the Union Cabinet in 2021.
 - o This scheme aims to diversify India's export portfolio by focusing on value-added segments and incentivising manufacturing in four specific food product segments:
 - * ready-to-cook/ready-to-eat foods,
 - * processed fruits and vegetables,
 - * marine products, and
 - * mozzarella cheese.
 - o Another integral component of this PLI (Production Linked Incentive) is the global promotion of 'Brand India' through branding and marketing support.

Part - III

PRODUCTION LINKED INCENTIVE SCHEME FOR FOOD PROCESSING

The Production Linked Incentive Scheme for Food Processing Industry (PLISFPI) is a significant initiative by the Indian government to boost the food processing sector.

It aims to :

- Create global food manufacturing champions.
- Promote Indian food brands, and
- Generate employment opportunities.

KEY FEATURES

- **Incentive-based:** The scheme provides financial incentives to eligible food processing companies based on their incremental sales of specified food products.
- **Focus areas:** The scheme primarily targets four product segments:
 - o Ready to Cook/Ready to Eat foods
 - o Processed fruits and vegetables
 - o Marine products
 - o Mozzarella cheese
- **Duration:** The scheme is implemented from FY 2021-22 to FY 2026-27.
- **Eligibility:** Proprietary firms, partnership firms, LLPs, companies, cooperatives, and SMEs are eligible to apply.

OBJECTIVES

- Encourage domestic production of food products.
- Develop a robust food processing industry.
- Enhance the competitiveness of Indian food products globally.
- Create employment opportunities.
- Reduce food wastage

BENEFITS OF PLISFPI

- **Financial incentives:** Eligible companies can receive substantial financial support to expand their operations.
- **Market expansion:** The scheme promotes the growth of Indian food brands in the global market.
- **Job creation:** It leads to the creation of employment opportunities, especially in rural areas.
- **Technology upgradation:** Encourages the adoption of advanced technologies in the food processing industry.

SMART FOOD PROCESSING IN INDIA

Food processing plays a crucial role as it aids in increasing the shelf-life of food products. Processed foods have many advantages, such as a low risk of spoilage, better palatability, and easy digestion.

It is also hoped that if proper processing methods are employed during food processing, it can help in destroying spoilage microorganisms, food poisoning bacteria, and substances that can cause diseases. Other benefits of food processing include low-cost storage, ease of marketing and distribution, and enhanced food safety.

In fact, the growth of the processed food industry would result in generating new employment opportunities, especially in rural locations.

WHAT IS SMART FOOD PROCESSING?

Smart food processing is a solution that is directly aimed at reducing the cost of staple food preparation while creating the nutritional foundation for healthy lives.

HOW ?

By utilising biocompatible, innovative, modern, mild, high-tech food processing methods, it is possible to increase the functionality as well as the nutrient density of grain and pulse-based composite food at affordable prices.

These processing methods also enable novel combinations of ingredients, such as fruits and vegetables, meat, fish, dairy produce, or legumes, within staple food commodities.

HOW IS SMART FOOD PROCESSING ENABLED?

It is possible through modern day factories with conveyor belts. This has become quite common in Food Processing Industries. But Smart Food Processing is beyond conveyors & State of the Art factories. It entails:

- Usage of Internet-of-Things
- Artificial Intelligence Applications
- Robotics & automation.

CHALLENGES & OPPORTUNITIES

Agricultural processing includes the utilisation of farm outputs for the non-food sector.

Food and agricultural processing activities involve the packaging, canning, fermenting, freezing, drying, cooking, mincing, cutting, steaming, baking, brewing, distilling, and grinding of food products. Additionally, processing is also directed towards some of the services the company provides, like cleaning, sorting, and grinding.

This support occurs during the processing implementation of some of the top food product like milk, oil, fruits, vegetables, meat, and fish. This, in addition, also includes the processing of these food products into final products available for long-term use (cereals, cookies, tenders, fruit juice, and ready-to-eat food).

CHALLENGES

- **Huge infrastructure & investment:** It includes storage and secondary infrastructure, compliance with hygiene and phytosanitary standards, poor transport, and logistics in getting produce to national and lucrative international markets.
- **Meeting regulatory frameworks and standards:** The Ministry of Food Processing Industries (MoFPI) was established in July 1988 to give impetus to the development of the food processing sector. Food processing in India is regulated by an array of laws and regulations, such as the Fruit Product Order 1955, the Meat Food Products Order 1973, and the Vegetable Oil Product Order 1998. The Ministry also regulates 100% Export-Oriented Units (EOUs) related to food products.

CONCLUSION

Food processing is one of the sectors that has immense potential for transforming the lives of people and contributing to the national economy.

Only with organised state intervention can the food processing industry in the region have a share in the global market.

In the last three decades, ready-to-eat meals, juices, ice creams, bakery products, and other convenience foods have become popular in households. This is mainly due to the organised way of production, packaging, distribution, etc., as well as mass educational and industrial development levels.

However, the present status is quite bleak, as a major part of the reserved produce goes to waste.



Persons in News

Dr. Jitendra Singh Receives Lifetime Achievement Award in Diabetology



Union Minister Dr. Jitendra Singh has been awarded the "Lifetime Achievement Award" in Diabetology for his outstanding contributions to diabetes care and research. A renowned diabetologist, researcher, and professor, Dr. Singh has made a significant impact in the field, earning national and international recognition. Besides his medical career, he has also had a successful political career, serving as a Lok Sabha member for three terms and as the Union Minister of State for Science and Technology. Dr. Singh is a prolific author, having published eight books, and is known for his work on diabetes, including his book "Diabetes Made Easy." He is also a strong advocate for biotechnology, renewable energy, and youth entrepreneurship.

Nita Ambani re-elected as International Olympic Committee member

Nita Ambani has been re-elected unanimously to the International Olympic Committee (IOC) for a second term, just days before the Paris Olympics. As the first Indian woman to join the IOC in 2016, her re-election is a significant milestone for India's growing presence in the world of sports. Ambani has made a significant impact on Indian sports through the Reliance Foundation, promoting Olympic ideals and programs, and supporting over 22.9 million children and teens in sports. She sees her re-election as a personal achievement and a sign of India's growing respect in the international sports community. As a businesswoman, philanthropist, and sports enthusiast, Ambani is a well-known figure in India and has served on several boards, including the Mumbai Indians cricket team and the Dhirubhai Ambani International School.



Abhinav Bindra Awarded Olympic Order in Paris Ceremony



Abhinav Bindra, India's first individual Olympic gold medalist, will be awarded the Olympic Order on August 10th in Paris, in recognition of his outstanding contributions to the Olympic Movement. The Olympic Order is the highest award given by the International Olympic Committee, and it is bestowed upon individuals who have made a significant impact on sports or embody the Olympic values. Bindra, a legendary Indian shooter, won the men's 10m air rifle event at the 2008 Beijing Olympics and has also served on various esteemed committees, including the IOC Athlete Commission. The award is a testament to his achievements and dedication to the Olympic cause, and it will be presented to him during the 142nd IOC Session in Paris, just before the start of the 33rd Summer Olympic Games.

Indian Astrophysicist Prahlad Agrawal Wins COSPAR Award 2024

Indian astrophysicist Prahlad Chandra Agrawal has won the COSPAR Harrie Massey Award 2024 for his significant contributions to



space science. Agrawal was the project leader of AstroSat, India's first multi-wavelength space telescope, which was launched in 2015. AstroSat has provided valuable data on black holes and other celestial bodies, and its findings have been used in over 500 scientific papers and 30 doctoral theses. Agrawal has also worked on several other space-related projects, including NASA's HEAO-1 A4 device and the Indian X-Ray Astronomy Experiment on the IRS P-3 satellite. The COSPAR Harrie Massey Award recognizes outstanding work in planetary science, space physics, and related fields, and is presented every two years by the Committee on Space Research (COSPAR).

Von Der Leyen Re-elected as EU Commission President



Ursula von der Leyen has been re-elected as the President of the European Commission for another five-year term, receiving 401 votes from the European Parliament.

She has pledged to focus on several key areas, including building a European Defense Union, advancing the European Green Deal to reduce emissions, and supporting European businesses in their transition to cleaner methods. Von der Leyen's program also aims to address global issues such as the war in Ukraine and the need for Europe to improve its defenses. Her re-election has been met with criticism from Russia, which has accused her of trying to militarize the EU. Von der Leyen, a former German Minister of Defense, has a background in medicine and economics and is fluent in several languages. She has been a strong advocate for the EU's digital and green transformations. The European Union, which was established in 1993, has 27 member states and a population of over 447 million, and has been recognized for its efforts in promoting peace and stability in Europe, including winning the Nobel Peace Prize in 2012.

PM Modi Awarded Russia's Highest Civilian Honor

Indian Prime Minister Narendra Modi has been awarded Russia's highest civilian honor, the Order of St. Andrew the Apostle the First-Called, by President



Vladimir Putin. The award recognizes PM Modi's outstanding contributions to strengthening the relationship and alliance between India and Russia. PM Modi was honored for his efforts in building a strong partnership between the two countries over the past 25 years, under Putin's leadership. In his acceptance speech, PM Modi thanked Putin and the people of

Russia, dedicating the award to the people of India and highlighting the long-standing friendship between the two nations. PM Modi emphasized the importance of the India-Russia partnership for global peace and security and pledged to continue working to strengthen this relationship. The Order of St. Andrew the Apostle the First-Called is a prestigious award established in 1698 by Tsar Peter the Great, and is awarded to high-ranking officials and foreign heads of state for significant contributions to international relations.

Elisa de Anda Madrazo - FATF Presidency



Elisa de Anda Madrazo of Mexico has taken over as the head of the Financial Action Task Force (FATF) for a two-year

term, from July 1, 2024, to June 2026. As president, she aims to promote inclusivity, transparency, and diversity in FATF's work, seeking to involve stakeholders and incorporate diverse perspectives to combat financial crimes and terrorist financing. Madrazo's agenda focuses on proportionality and risk-based implementation of FATF Standards, which will help increase financial inclusion and address issues related to access to formal financial services. She also plans to enhance collaboration and transparency among FATF members, associate members, and partners to create a unified front against global financial crimes. Additionally, Madrazo intends to prioritize research and awareness-raising on terrorism and proliferation financing risks, with the goal of developing more effective preventive and counter-measures to address these threats to global security and financial systems.

Who is Masoud Pezeshkian, Iran's New President?



Masoud Pezeshkian, a former heart surgeon and health minister, has been elected as the President of Iran, marking a significant shift in the country's politics. Despite low voter turnout, Pezeshkian's personal integrity and progressive ideas have earned him a strong following. Born in 1954 in Mahabad, Pezeshkian's life has been marked by challenges, including the loss of his wife and youngest son in a car accident. He began his political career as an MP in 2006 and has since run for president twice before winning in 2024. Pezeshkian's reformist ideology emphasizes the need to combat corruption, promote civil freedoms, and oppose strict moral codes. As president, he faces significant challenges, including uniting a divided country, addressing economic instability, and improving international relations. His policies, which call for international cooperation and economic reforms, are a departure from those of his predecessors. Pezeshkian's views on civil rights, particularly women's rights, will also be tested as he seeks to challenge the strict rules of the "morality police".

Who is Keir Starmer, the next British Prime Minister?

Keir Starmer is set to become the next Prime Minister of the United Kingdom after the Labour Party won a landslide victory in



the recent government elections, securing 410 out of 650 seats. The Conservative Party, led by Rishi Sunak, was defeated, marking a significant shift in the UK's political landscape. Starmer, a former human rights lawyer and Director of Public Prosecutions, was elected

as a Member of Parliament in 2015 and became the leader of the Labour Party in 2020. He has led the party to a comeback by capitalizing on the Conservative government's struggles with the economy and politics. Born in 1962 in a modest family home, Starmer's early life was marked by challenges, including his mother's illness and his father's mental distance. He went on to study law at the universities of Leeds and Oxford and worked on several high-profile cases, including the prosecution of MPs and the media. As Prime Minister, Starmer will draw on his extensive experience in law and government to lead the UK through its current challenges and provide stability and growth.



Current Affairs MCQ's

- Consider the following offences & mark which of them have been defined for the very first time under Bharatiya Nyay Sanhita?
(A) Love Jihad (B) Sedition
(C) Fake News (D) Both A & C
Ans. (A)
- Consider the following statements and mark the correct one:
 - The BNS has scrapped section 377 of IPC which criminalised homosexuality.
 - The BNS aims to establish gender neutrality(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (C)
- Which of the following offences are defined as crimes under BNS?
 - Love Jihad
 - Organised Crime
 - Sedition
 - Spreading Fake News
 - Homosexuality(A) 1, 2 & 3 (B) 2, 3 & 5
(C) 2, 3, 4 & 5 (D) 1, 2, 3 & 4
Ans. (D)
- Consider the following statements & mark the correct one:
 - Sedition has a new name ie Rajdroh under the BNS.
 - The scope of Sedition has increased under the BNS.(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
- Consider the following statements and mark the correct one:
 - Terrorism has been defined under the BNS.
 - The BNS is the first law to have an explicit definition of terrorism in India.
 - The BNS will supercede the UAPA when it comes to cases related to terrorism.(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) All of these
Ans. (A)
- For which of the following, there are provisions in the Bhartiya Nagrik Suraksha Sanhita, 2023?
 - Procedure for arrest
 - Prosecution
 - Bail(A) Only 1 (B) 1 & 2 Only
(C) 2 & 3 (D) All of these
Ans. (D)
- Consider the following statements & mark the correct one:
 - The BNSS mandates forensic investigation for offences punishable with five years of imprisonment or more.
 - According to BNSS, if the convict has absconded, judgement can be Pronounced.(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
- Consider the statements and mark the correct one:
 - The Bharatiya Sakshya Bill has no distinction between the primary & the secondary evidence.
 - Electronic records were classified as secondary evidence under the Indian Evidence Act.(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
- Which agency in India is part of the Project Nexus?
(A) Ministry of Finance, GOI
(B) Reserve Bank of India
(C) National Payment Corporation of India
(D) None of the above
Ans. (B)
- Which of the following countries are founding members of Project Nexus?
 - India
 - Malaysia
 - Indonesia
 - Thailand(A) 1 & 2 only (B) 1, 3 & 4
(C) 1, 2 & 4 only (D) All of these
Ans. (C)
- Consider the statements and mark the correct one:
 - Nepal adopted its latest constitution in 2015.
 - There has not been a single party majority government in Nepal since 2022.(A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (C)

12. Which of the following statement/s is/are true?
1. India & Nepal broke off diplomatic ties during the 2015 episode when Nepal was passing its Constitution.
 2. The Madhesia Community was at the center of the conflict between India & Nepal in 2015.
 3. India is Nepal's largest trading partner presently.
- (A) Only 1 & 3 (B) Only 3
(C) Only 2 & 3 (D) All of these
- Ans. (C)
13. Which of the following were changes happened on the recommendations of Swaran Singh Committee?
1. Shifting of Education from Union list to Concurrent List.
 2. Introduction of Fundamental Duties in the Constitution.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
- Ans. (B)
14. Which of the following acts (before independence) created the federal structure for India?
- (A) GoI Act, 1909 (B) GoI Act, 1919
(C) GoI Act, 1935 (D) None of these
- Ans. (C)
15. In which of the countries, Education is governed by two national departments for school and higher education & the provinces have two departments to implement the policies & laws made by the center?
- (A) USA (B) Germany
(C) Canada (D) South Africa
- Ans. (D)
16. When is the World Drug Day observed?
- (A) 24 June (B) 25 June
(C) 26 June (D) 28 June
- Ans. (C)
17. Consider the statements and mark the correct one according to the report of UNODC on drug consumption:
1. Drug consumption has increased in the last decade worldwide.
 2. Golden triangle is getting less integrated with the world as there are other drug growing regions in Latin America gaining prominence.
- (A) Only 1
(B) Only 2
(C) Both 1 & 2
(D) Neither 1 nor 2
- Ans. (A)

18. Consider the following statements wrt Exercise Maitree and mark how many of them is/are not correct.
1. It is a maritime exercise between India & Thailand.
 2. It aims at building interoperability.
 3. It aims at developing counter insurgency operational skills for Jungle & Urban areas.
- (A) Only 1 statement is incorrect.
(B) Only 2 statements are incorrect.
(C) All the statements are incorrect.
(D) None of the statements are incorrect.
- Ans. (A)
19. Consider the following statements and mark the correct statement:
1. Iran's President operates within the overall authority of the Supreme Leader.
 2. The Supreme Leader of Iran is always from the conservative faction.
 3. The president of Iran is democratically chosen.
- (A) Only 1 & 2 (B) Only 1 & 3
(C) Only 1 (D) All of these
- Ans. (B)
20. Which of the following countries is not considered as part of the Central Asian Republic?
1. Kazakhstan 2. Kyrgyzstan
 3. Uzbekistan 4. Turkmenistan
- (A) Only 1 & 2
(B) Only 4
(C) All are part of CAR
(D) None of the above options
- Ans. (C)
21. Which of the following countries were part of the Shanghai Five?
1. China 2. Russia
 3. Turkmenistan 4. Tajikistan
- (A) Only 1 & 2
(B) Only 1, 2 & 4
(C) Only 1 & 3
(D) All of the above countries were part of Shanghai Five
- Ans. (B)
22. Consider the following statements and mark the correct one:
1. SCO has one of its objectives of fighting terrorism.
 2. India is a founding member of SCO.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
- Ans. (A)

23. Which of the following entities are part of The United Kingdom?
1. Ireland
 2. England
 3. Scotland
 4. Wales
- (A) 1, 2 & 3
(B) 2, 3 & 4
(C) 2 & 4
(D) All of the above are part of UK.
Ans. (B)
24. Consider the following statements and mark the correct one:
1. The UK has a Parliamentary form of government.
 2. The Head of the State of UK is directly chosen by the people.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (A)
25. Consider the following statements and mark the correct one:
1. The Korean war was primarily due to the Cold War rivalry.
 2. USA intervened directly in the War to militarily help South Korea.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (C)
26. Consider the following statements and mark the correct one:
1. Wildfires in Arctic are not a natural phenomena.
 2. Wildfires in Arctic have started to occur more frequently in the last 5 years.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
27. Which among the following is/are the factors responsible for Arctic wildfires?
1. Heatwaves in the Arctic region.
 2. Frequent Lightning.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (C)
28. Which of the following can be a consequence of Arctic Wildfires?
1. Global Warming.
 2. Increased methane Emissions.
 3. More Pandemics.
- (A) Only 2 & 3 (B) Only 1 & 3
(C) Only 3 (D) All of these
Ans. (D)
29. Consider the following & mark the correct statements:
1. India's BoP comprises of Current & Capital Account.
 2. India's Current Account has been positive for FY 24.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (A)
30. Which of the following is part of the Current Account?
- (A) The dividends on investments done by FII.
 - (B) The investments & dividend of FII.
 - (C) Investments done by FII.
 - (D) None of the above
- Ans. (A)
31. Consider the following statements wrt The Digital Bharat Nidhi & mark the correct one:
1. The DBN will replace the USOF.
 2. The USOF, introduced in 2005, aims to enhance network coverage in Unserved areas.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (A)
32. Which of the countries is part of the expanded BRICS?
- (A) Malaysia (B) Argentina
 - (C) Saudi Arabia (D) Indonesia
- Ans. (C)
33. Consider the following statements and mark the correct one:
1. India & Russia have ended their buyer seller relationship and are now co Development partners wrt defence production.
 2. India & Russia are referred to as All Weather Friends.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
34. Consider the statements and mark how many of them is/are correct?
1. India & Russia are having Summit level bilateral talks annually.
 2. Russia is India's largest oil supplier for FY24.
 3. Russia has a Trade Surplus wrt India.
- (A) Only 1 statement is correct
(B) Only 2 statements are correct
(C) All the statements are correct
(D) None of the statements are correct
Ans. (C)

35. Which of the following defence product is under joint development by India & Russia?
 (A) Akula-ii (B) S 400 triumph
 (C) T90s bhishma (D) Sukhoi Su 30 MKI
 Ans. (D)
36. Which of the following defence product is purchased by India from Russia?
 (A) Brahmos
 (B) Mil Mi 17 helicopters
 (C) Ilyushin
 (D) None of the above
 Ans. (B)
37. Consider the following statements and mark the correct one:
 1. The UN High Seas Treaty aims at ecological conservation of high seas.
 2. High seas are beyond the Exclusive Economic Zones of the Countries.
 (A) Only 1
 (B) Only 2
 (C) Both 1 & 2
 (D) Neither 1 nor 2
 Ans. (C)
38. Consider the following statements and mark how many of them are correct:
 1. The UN High seas treaty is the first treaty for the high seas.
 2. More than 100 countries have signed the treaty in 2023.
 3. The UN High Seas Treaty is legally binding.
 (A) Only 1 statement is correct
 (B) Only two statements are correct
 (C) All the statements are correct
 (D) None of the statements are correct
 Ans. (B)
39. Which of the following are provisions of The UN High Seas Treaty?
 1. It aims to place 30% of the seas into protected areas immediately.
 2. It is based on the "Polluter Pays Principle".
 3. It aims at equitable distribution of resources.
 4. It bans fishing in the high seas.
 (A) Only 1, 2 & 3 (B) Only 2 & 3
 (C) 2, 3 & 4 (D) All of these
 Ans. (B)
40. Which of the following statements is/are true wrt the Order of St. Andrews the apostle?
 1. It is Russia's highest civilian honour.
 2. Narendra Modi is the second foreign dignitary to receive this award after Xi Jinping.
 (A) Only 1
 (B) Only 2
 (C) Both 1 & 2
 (D) Neither 1 nor 2
 Ans. (A)
41. In 2024 visit of the Indian PM to Russia, it has been decided to open an Indian consulate in which city of Russia?
 (A) Vladivostok (B) St. Petersburg
 (C) Yekaterinburg (D) Both A & C
 Ans. (C)
42. Recently, India & Russia signed an agreement on Geodesy. What does Geodesy mean?
 (A) It is a study of maps using Geospatial Technology.
 (B) It is the science of measuring and understanding the Earth's geometry, gravity, And spatial orientation in 3D over time.
 (C) It is a study of evaluating the Oil & Natural Gas Resources in the oceans.
 (D) None of the above
 Ans. (B)
43. Which of the following statements is/are true about India-Austria relations?
 1. India & Austria established their diplomatic relations in 1949 with J.L. Nehru's visit in the same year.
 2. Austria was part of the capitalist bloc during the cold war era.
 (A) Only 1 (B) Only 2
 (C) Neither 1 nor 2 (D) Both 1 & 2
 Ans. (D)
44. Consider the following statements and mark how many of them are correct.
 1. Austria & India have been neutral in the ongoing Russia Ukraine war.
 2. Austria being part of NATO, stopped importing energy from Russia.
 3. No President of India has visited Austria in the 21st century.
 (A) Only 1 statement is correct
 (B) Only 2 statements are correct.
 (C) All the statements are correct
 (D) None of the statements are correct.
 Ans. (A)

45. Consider the following statements and mark the correct one:
1. The RBI report on employment, released in July 2024, indicates increase in The workforce by more that 4 crore.
 2. The RBI data takes into account the KLEMS database.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (C)
46. The Periodic Labour Force Survey (PLFS) is released by which body?
- (A) Ministry of Labour
(B) RBI
(C) Ministry of Statistics & Program Implementation
(D) Ministry of Finance
Ans. (C)
47. Consider the statements & mark the correct one:
1. The World Population Day was first observed in 1987 when the global population reached 5 billion.
 2. The current global population has surpassed 7 billion.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
48. What is an asteroid?
- (A) A rocky metallic celestial body which has entered the earth's atmosphere.
(B) A streak of light when meteoroid enters the earth's atmosphere.
(C) Unburnt fragment of meteoroid which has landed on earth.
(D) None of the above
Ans. (D)
49. Consider the following statements and mark the correct one:
1. Thousands of Asteroids enter Earth's atmosphere every day.
 2. Asteroid Apophis would be the first asteroid to land on Earth.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (A)
50. Falcon 9 rocket is owned by which of the following?
- (A) Starlink (B) SpaceX
(C) Boeing (D) Nasa
Ans. (B)
51. Consider the following & mark the correct one:
1. Falcon 9 is a completely reusable rocket.
 2. Falcon 9 can carry humans to space.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (B)
52. What happens to a tabled bill if the assembly term ends & elections are conducted?
- (A) It gets lapsed & has to be retabled in the new assembly.
(B) It does not lapse & can be picked up for discussion in the next assembly.
(C) It automatically gets passed after the last session.
(D) None of the above.
Ans. (A)
53. Which of the following bills has been passed as Money Bills?
1. The Finance Act, 2018
 2. Adhar Act, 2016.
 3. Amendments to the PMLA
- (A) Only 1 & 2 (B) Only 2 & 3
(C) Only 3 (D) All of these
Ans. (B)
54. Consider the following statements and mark the correct one:
1. Money Bill has to be certified by the Speaker of Lok Sabha.
 2. If there is a question about a bill, whether it is a money bill or not, the decision of the President is final.
- (A) Only 1 (B) Only 2
(C) Both 1 & 2 (D) Neither 1 nor 2
Ans. (A)
55. Consider the following statements and mark how many of them are correct?
1. The Money bill cannot be amended by Rajya Sabha.
 2. A money bill can be introduced by any MP in LOK Sabha only.
 3. The President has to give his assent to the bill.
- (A) Only 1 statement is correct.
(B) Only 2 statements are correct.
(C) All the 3 statements are correct.
(D) None of the statements are correct.
Ans. (B)
56. Which factor is making India Russia Trade unsustainable?
- (A) The pressure of western countries on India.
(B) The increasing trade deficit for India.
(C) The blockade done by Russia in Black Sea.
(D) None of the above.
Ans. (B)

57. Which of the following countries is/are part of Eurasian Economic Union?
 1. Russia 2. Kazakhstan
 3. Uzbekistan 4. Armenia
 (A) Only 1 & 2 (B) 1, 2 & 3
 (C) 1, 2 & 4 only (D) All of these
 Ans. (C)
58. Consider the following & mark the correct statement:
 1. All the services allotted after clearing UPSC CSE are referred to as All India Services.
 2. There is mention about the All India Services in the Constitution.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (B)
59. Consider the following statements and mark the correct one:
 1. An All India Service Officer can receive gifts from near relatives.
 2. If the value of the gift is above Rs. 50,000, then declaration has to be Made to the government.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (A)
60. How many of the following provisions are available with a Probationary IAS officer?
 1. They are allotted an official residence.
 2. They are allotted an official vehicle.
 3. They are allotted a constable.
 (A) Only 1 statement is correct.
 (B) Only 2 statements are correct
 (C) All the statements are correct
 (D) None of the statements are correct
 Ans. (D)
61. In what circumstances can an IAS Officer be discharged from duty?
 (A) In case of misconduct with the public.
 (B) In case of furnishing wrong documents for gaining employment.
 (C) In case of using a red beacon during probation.
 (D) Both B & C
 Ans. (B)
62. Which of these districts of J & K lie to the south of Pir Panjal Range?
 1. Poonch 2. Rajouri
 3. Srinagar
 (A) 1 & 3 (B) 2 & 3
 (C) 1 & 2 (D) All of these
 Ans. (C)
63. Which of the following can be a probable cause of rising militant activities in J&K recently?
 1. Indian forces becoming complacent.
 2. Increased dependency on technology for intelligence gathering.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)
64. Consider the following statements and mark the correct one:
 1. Monsoon trough is a zone of high pressure.
 2. The intensity of rainfall is dependant upon the position of monsoon Trough.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (B)
65. Which of the following factors can lead to increased rainfall in India?
 1. The persistence of an offshore trough.
 2. A negative Indian ocean dipole.
 (A) only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (A)
66. Which of the following statements wrt the reservation system in Bangladesh is/are true?
 1. The freedom fighters get the maximum share in reservation.
 2. The tribals get the least share in reservation.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (A)
67. Which of these sectors were impacted due to outage in Microsoft systems?
 1. Transportation 2. Banking
 3. Defence
 (A) Only 1 (B) Only 1 & 2
 (C) Only 2 (D) All of these
 Ans. (B)
68. Recently a term 'Azure' was in news. It refers to which of the following?
 (A) Microsoft's Cyber Security tool.
 (B) Microsoft's latest version of Operating System
 (C) Microsoft's cloud computing platform
 (D) None of the above
 Ans. (C)
69. Consider the following statements and mark the correct one:
 1. India increased its Energy imports from USA from 2016-2020.
 2. Green Energy transition has paced up in USA from 2020-2024.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)

70. Which day is observed as The National Flag Day & Why?
 (A) 22 July; because India's first ever flag was adopted in 1906 on this date by INC.
 (B) 22 July; because a motion was moved in the constituent assembly in 1947.
 (C) 22 July; because it was the date when the first govt., formed in 1952, adopted a resolution.
 (D) None of the above.
 Ans. (B)
71. Consider the following statements and mark the correct one:
 1. The dimensions in the flag have to be in the ratio of 3 : 2. (length : width)
 2. The colours in the flag represent peaceful coexistence between various communal groups in India.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (A)
72. Why was Charkha removed from the previous flag?
 (A) It symbolised traditionality.
 (B) The flag did not appear similar from both the sides.
 (C) India wanted to promote modern industries, charkha was a symbol of traditional industry.
 (D) None of the above
 Ans. (B)
73. Which of the following dignitaries have immunity under Article 361?
 1. Governor of a State
 2. President
 3. Foreign Diplomats
 (A) Only 1 (B) Only 1 & 2
 (C) Only 3 (D) All of these
 Ans. (B)
74. Consider the following statements and mark the correct one:
 1. No criminal proceedings whatsoever shall be instituted or continued against a Governor in office.
 2. A Governor cannot be arrested for any crime committed during his tenure as Governor.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)

75. Consider the following statements and mark the correct one:
 1. The Union budget is presented only once in a year always.
 2. The Union budget entails provisions wrt subsidies borne by the govt.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (B)
76. If the government reduces/completely absolves taxes on businesses, it can lead to which of the following?
 1. Reduced tax earnings for the govt.
 2. More employment generation
 3. More investment.
 (A) Only 1
 (B) Only 1 & 2
 (C) Only 2 & 3
 (D) It can lead to all the three.
 Ans. (D)
77. Consider the following statements and mark the correct one:
Assertion (A) : The railway & general budget were merged in 2016.
Reasoning (R) : The govt wanted to give up on certain colonial practices.
 (A) Both A & R are correct & R is the correct explanation of A.
 (B) Both A & R are correct & R is not the correct explanation of A.
 (C) A is true & R is false.
 (D) A is false & R is true.
 Ans. (A)
78. Which of the following is one among the nine priority areas outlined in Budget 2024-25?
 1. Space Sector development
 2. Manufacturing & Services
 3. Resilience in agriculture
 4. Employment & Skilling
 (A) Only 1, 2 & 3
 (B) Only 3 & 4
 (C) Only 2, 3 & 4
 (D) All of the above
 Ans. (C)
79. The NPS Vatsalya scheme, introduced in Budget 2024-25 aims to target?
 (A) The youth between 20-30 years age.
 (B) The newly married women
 (C) The children below 18 years of age.
 (D) None of the above
 Ans. (C)

80. 'Vivad se Vishwas tak' scheme aims at:
 (A) Resolving disputes between the states of India.
 (B) Resolving disputes between center & states wrt tax allocations.
 (C) Resolving direct & indirect tax disputes
 (D) None of the above,
 Ans. (C)
81. Consider the following statements and mark the correct one:
Assertion (A) : The government announced in Budget 2024-25 about developing a 'climate finance taxonomy'.
Reasoning (R) : To enhance the availability of capital for climate adaptation and mitigation.
 (A) Both A & R are correct & R is the correct explanation of A.
 (B) Both A & R are correct & R is not the correct explanation of A.
 (C) A is true & R is false.
 (D) A is false & R is true.
 Ans. (A)
82. In which of the following, Climate Taxonomy be significant?
 1. In assessing Greenwashing by the companies.
 2. In increasing our climate adaptation & mitigation capabilities.
 3. In increasing the fund inflow for green projects.
 (A) Only 1 (B) Only 2 & 3
 (C) Only 1 & 3 (D) All of these
 Ans. (D)
83. Consider the following statements wrt India's climate goals and mark how many of them are correct?
 1. India will reach Net Zero by 2070.
 2. It will meet 50% of its energy requirements from non fossils by 2030.
 3. India will increase its renewable energy capacity to 500 gigawatts (GW) by 2030.
 (A) Only 1 statement is correct.
 (B) Only 2 statements are correct.
 (C) All the statements are correct
 (D) None of the statements are correct.
 Ans. (A)

84. Consider the following statements and mark the correct one:
 1. Civil Servants of the center are not allowed to join any political organisation.
 2. To interpret whether an organisation is political or not, the government's decision is final.
 (A) Only 1
 (B) Only 2
 (C) Both 1 & 2
 (D) Neither 1 nor 2
 Ans. (C)
85. Which is India's largest Data Center?
 (A) Yotta Data Services
 (B) Tata Communications Ltd.
 (C) CtrlS Data centres Ltd.
 (D) None of the above
 Ans. (A)
86. How is AI leading to a negative impact on the environment?
 1. The Data centres are consuming more electricity for sifting data.
 2. The Data centres are using more electricity
 3. The Data centres require more water.
 (A) Only 1 (B) Only 1 & 2
 (C) Only 2 (D) All of these
 Ans. (D)
87. Consider the following statements and mark the correct one:
 1. We can reduce emissions with applications of AI.
 2. Increased usage of AI is leading to increased emissions.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)
88. Which of the following bodies is the ultimate authority for allowing commercial cultivation of GM Crops in India?
 (A) GEAC
 (B) Ministry of Environment, Forest & Climate Change.
 (C) The Cabinet
 (D) None of the above.
 Ans. (B)
89. Consider the following statements and mark the correct one:
 1. Field trials of a GM Crop can only happen after successful environmental release.
 2. In, India only one GM crop is permitted for commercial cultivation till now.
 (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)

90. Consider the following statements about West Bank and mark how many of them are correct.
1. West Bank is on the western bank of Jordan river.
 2. Most of West Bank is under Israeli occupation currently.
 3. Hamas came to power in West Bank in 2007.
- (A) Only 1 statement is correct.
 (B) Only 2 statements are correct.
 (C) All the statements are correct.
 (D) None of the statements are correct.
 Ans. (b)
91. Consider the following statements and mark the correct one:
1. Charaideo Moidams are burial graves of the Ahom rulers.
 2. Chaideo Moidams are considered sacrosanct today by the people.
- (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (c)
92. Consider the following statements and mark the correct one:
1. Oil spills can be a man made & natural disaster.
 2. Oil Spills can have long term impact on the ecology of a region.
- (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)
93. Exxon Valdez oil spill happened in which ocean?
 (A) Pacific Ocean (B) Atlantic Ocean
 (C) Indian Ocean (D) None of the above
 Ans. (A)
94. Which of the following designers has designed the outfit for the Indian contingent for Olympics, 2024?
 (A) Sabyasachi Mukherjee
 (B) Manish Malhotra
 (C) Anita Dongre
 (D) Tarun Tahiliani
 Ans. (D)
95. Consider the following statements and mark the correct one:
1. Oropouche Fever is endemic to Brazil.
 2. Oropouche Fever is a viral disease which can be fatal.
- (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (B)

96. Consider the following statements about Oropouche Fever and mark how many of them are correct?
1. Oropouche Fever is a viral disease.
 2. It can be transmitted from humans to humans.
 3. There is no specific treatment known as of now for this disease.
- (A) Only 1 statement is correct
 (B) Only 2 statements are correct
 (C) All the statements are correct.
 (D) None of the statements are correct.
 Ans. (B)
97. Landslides occur due to which of the following reasons?
1. Weak topography.
 2. High Soil Moisture.
 3. Mining & Quarrying by humans.
- (A) Only 1 (B) Only 1 & 2
 (C) Only 2 & 3 (D) All of these
 Ans. (D)
98. Which of these rivers do not flow in Kerala?
 (A) Iruvanippuzha (B) Periyar
 (C) Kaveri (D) Kabini
 Ans. (C)
99. Consider the following statements wrt Eco Sensitive Zones and mark how many of them are correct?
1. They act as shock absorbers for protected areas.
 2. They can extend anywhere from 1 km to 10 km or even beyond that.
 3. Saw mills are allowed to function in ESZs.
- (A) Only 1 statement is correct.
 (B) Only 2 statements are correct
 (C) All the statements are correct
 (D) None of the statements are correct.
 Ans. (B)
100. Which of the statements wrt recommendations by Madhav Gadgil Committee is/are true?
1. The committee declared entire Western Ghats as ESZ.
 2. Mining was to be allowed in certain less fragile parts of the region.
- (A) Only 1 (B) Only 2
 (C) Both 1 & 2 (D) Neither 1 nor 2
 Ans. (C)





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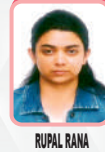
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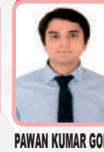
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