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DAILY PRELIMS NOTES COMPILATION
DECEMBER 2023

Contents

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LAQSHYA 2024

TEST BASED MENTORSHIP FOR CSE PRELIMS 2024

UNION PUBLIC SERVICE COMMISSION
MARKSHEET

Civil Services (PRELIMINARY) Examination , 2016	
Roll Number	0029983
Name	SANTOSH PANDEY
Marks Obtained	
Paper I	144.66
Paper II	107.50

REMARKS : QUALIFIED FOR CS(MAIN) EXAMINATION,2016

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Santosh Sir
CRACKED ALL 6 PRELIMS

- **NCERT LEVEL TEST – 10**
- **ADVANCED LEVEL TEST - 15**
- **MONTHLY CURRENT AFFAIRS TEST – 15**
- **ENTIRE YEAR IMP QUESTION TEST (SUBJECT-WISE) - 8**
- **FULL LENGTH STIMULATED TEST – 7**
- **C-SAT Test – 10**
- **TOTAL NO. OF TEST – 65**

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Many questions in CSE PRELIMS 2023 Paper were from most predicted Questions of LAQSHYA 2023

Feedback ⟶ **Test was great. definitely better than any other coaching centres**

Ishita Kishore,AIR 1 CSE 2022
LAQSHYA Test Series student

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What do our CSE 2022 TOPPER say?

Thank you sir.

The DPN notes were very comprehensive and useful. I used it to supplement my newspaper knowledge. It really helped in dealing with the current affairs portion of the prelims exam, since you compile it from so many sources.

Would recommend students to maintain their own digital notes using that source.

After I didn't clear first prelims, I joined your mains master notes which helped me identify key areas for note making.

Thank you sir for your relentless effort in updating these notes. They're helpful for the aspirants.

Ishita Kishore
AIR 1, CSE2022

Ishita has been a student of
ONE YEAR LAQSHYA PRELIMS MENTORSHIP
MAINS MASTER MENTORSHIP

Economy

Sharp decline in FDI into India from Cayman Islands, Cyprus during April-Sep

Subject :Economy

Section: External sector

Context: Sharp decline in FDI into India from Cayman Islands, Cyprus during April-Sep

More about the news:

- **Foreign direct investment (FDI)** into India from the **Cayman Islands and Cyprus** witnessed a significant contraction **during April-September** of the current fiscal year, contributing to an **overall 24% decline in FDI inflows**, according to government data.

- FDI from the Cayman Islands **decreased by 75% to $145 million** during this period, while **inflows from Cyprus contracted by over 95% to $35 million**.

- Experts attribute this sharp decline to heightened scrutiny of applications.

- The **overall decline in FDI** is seen as **influenced by factors such as increased interest rates** due to high inflation **in the US and other Western nations**, along with geopolitical situations in **Eastern Europe and West Asia**.

- The **recent removal of the Cayman Islands from the grey list** by the **Financial Action Task Force (FATF)** in October may **lead to positive FDI flow** from the region in the future.

What is FATF:

- The Financial Action Task Force (FATF) is **an inter-governmental body established in 1989 during the G7 Summit in Paris.**

- The objectives of the FATF are to **set standards and promote effective implementation of legal, regulatory and operational** measures for combating **money laundering, terrorist financing** and other related threats to the integrity of the international financial system.

- Its **Secretariat** is located at the **Organisation for Economic Cooperation and Development (OECD)** headquarters **in Paris.**

- FATF members **include 39 countries**, including the **United States, India, China, Saudi Arabia, Britain, Germany, France, and the EU** as such.

- **India became a member of FATF in 2010**.

- The FATF Plenary is the **decision-making body** of the FATF. It **meets three times per year.**

What are the two types of list of FATF:

- **Grey List**: Grey list is also called as **"Jurisdictions under Increased Monitoring"**. Countries that are considered **safe haven for supporting terror funding** and money laundering are put in the FATF grey list. This **inclusion serves as a warning to the country** that it may enter the blacklist.

- **Black List**: The black list is called as **High-Risk Jurisdictions subject to a Call for Actio**n. Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put in the blacklist. These countries support terror funding and money laundering activities. The FATF **revises the blacklist regularly**, adding or deleting entries. **North Korea, Iran and Myanmar** are in the black list.

What are the consequences of being on the FATF blacklist:

- **No financial aid** is given to them by the In**ternational Monetary Fund**, the **World Bank, the Asian Development Bank** and the **European Union**

- They also face a **number of international economic and financial restriction**s and sanctions.

Moratorium on e-commerce customs duties

Subject : Economy

Section: External Sector

Background:

- The WTO is addressing the **extension of the moratorium on e-commerce customs duties**.

- The **moratorium prevents countries from imposing customs duties on electronic transmissions.**

- Introduced in 1998, it faces **potential expiration at the Ministerial Conference in February 2024.**

Divergent Views:

- **US Position:**
    - Supports extending the moratorium.
    - **Emphasizes the importance of advancing the WTO work program on e-commerce.**
    - **Aims to maintain the moratorium to allow robust exploration within the work program.**

- **Developing Nations' Position:**
  - Led by India, Indonesia, Sri Lanka, and South Africa.
  - **Favors ending the moratorium.**
  - **Believes it is crucial to preserve policy space for digital advancement, import regulation, and revenue generation through customs duties.**

Previous Extension:
- **Extended previously at WTO MC 12 with arguments favoring post-COVID recovery.**
- Several members, including the US, the UK, and the EU, supported the extension.

Economic Impact:
- A UNCTAD study reveals a $55 billion loss in customs revenue in 2020 due to the moratorium.

Developing Nations' Concerns:
- Argue that the **moratorium disproportionately favors developed nations.**
- Digital trade is dominated by industries in wealthier countries.

WTO Director-General's Perspective:
- Ngozi Okonjo-Iweala emphasizes the need for clarity on the moratorium.
- **Members consider reaching an agreement on this matter vital in the lead-up to MC13.**

Future Outlook:
- Ongoing discussions highlight the evolving dynamics and relevance of digital economy and trade issues on the global stage.

E-transmission Moratorium:
- **Implemented since 1998, members agreed not to impose customs duties on electronic transmissions.**
- Periodically extended at successive Ministerial Conferences (MC).
- **Covers digitizable products like photographic films, cinematographic films, printed matter, music, media, software, and video games.**
- Emerged from the **Declaration on Global Electronic Commerce at the Second Ministerial Conference in 1998.**
- Work program established to examine global e-commerce-related issues comprehensively.

India's Stance:
- **Opposition to Extension:**
  - India opposes the continuation of the moratorium, **stressing its adverse impact on developing nations.**
  - **Seeks an end to the moratorium to preserve policy space for digital advancement, import regulation, and revenue generation.**
- **Work Program Intensification:**
  - Calls for an intensified work program on the e-commerce sector at the WTO.
  - **Advocates discussions in various councils like Trade in Goods, Trade in Services, TRIPS, and Trade and Development.**

Challenges and Concerns:
- **Tariff Revenue Loss:**
  - India experiences a surge in imports of electronic transmissions.
  - **Potential tariff revenue loss estimated at USD 10 billion annually for developing countries.**
- **Impact on Industrialization:**
  - **Lapse of the moratorium affects industrialization and the use of digital technologies like 3D printing.**
  - Limits governments' ability to generate additional tariff revenues.

Way Forward:
- **Preserving Flexibility:**
  - **Developing countries need flexibility to implement policies for digital catch-up.**
  - Emphasizes improving domestic physical and digital infrastructure.
- **Regulating Luxury Imports:**
  - Urges regulating luxury imports of movies, music, and video games.
  - **Removal of the moratorium provides policy space for governments in this regard.**

World Trade Organisation (WTO):

- **Intergovernmental organization regulating and facilitating international trade.**
- **Used by governments to establish, revise, and enforce rules governing global trade.**
- **Officially started operations on January 1, 1995.**
- **Established under the 1994 Marrakesh Agreement, replacing the General Agreement on Tariffs and Trade (GATT) from 1948.**
- **World's largest international economic organization.**
- **164-member states, representing over 98% of global trade and GDP.**
- Located in Geneva, Switzerland.
- **Ministerial Conference:**
    - **Top decision-making body.**
    - Composed of all member states.
    - Typically **convenes biennially**, with an emphasis on consensus in decision-making.
- **General Council:**
    - **Handles day-to-day functions.**
    - Includes representatives from all member states.

India's Participation:
- India is a founding member since January 1, 1995.
- Also, a member of GATT since July 8, 1948.

Overview of Trust Funds at the World Bank

Subject: Economy

Section: External Sector

1. **Strategic Use of Trust Funds:**
    - **Trust funds are strategic financing instruments used by the World Bank to complement core funding** from IBRD and IDA.
    - They support specific **development priorities, regions, and thematic focus areas**.
    - Trust funds enhance the World Bank's capacity to **deliver results in client countries**.
    - They provide **financial resources for global public goods, fragile states, disaster prevention, relief, partnerships, and innovation**.

2. **Trust Fund Reform:**
    - The World Bank has undertaken reforms to improve the effectiveness of trust fund resources and activities.
    - The latest reform transitions the IBRD/IDA trust fund portfolio into **larger Umbrella 2.0 Programs.**

3. **Objectives of Trust Fund Reform:**
    - Improve **strategic alignment, efficiency, and management oversight.**
    - Reduce fragmentation and transaction costs.

4. **Benefits for Development Partners:**
    - **Elevates the World Bank-Donor partnership to focus on strategy**.
    - Enables collective action at scale on development challenges.
    - Supports knowledge exchange, results reporting, and visibility.
    - **Facilitates better alignment of trust fund activities with country priorities.**
    - Integrates trust fund resources more effectively into World Bank country programs.

5. **Umbrella Programs:**
    - **Aligned with World Bank's priorities, maximizing development resource value.**
    - **Strengthened integration with institutional strategy, planning, and budgeting processes.**
    - **Facilitate elevated dialogue between the World Bank and development partners.**
    - Operate at scale to achieve improved results on the ground.
    - Enhance development effectiveness and impact for client countries.
    - Umbrella 2.0 Programs come with **standardized approaches to governance, communications, visibility, and results management.**
    - Reduce transaction costs and enhance focus on delivering impactful results.

The trust fund reform aims to streamline the World Bank's trust fund portfolio, **fostering better coordination, alignment, and efficiency in addressing global development challenges.**

Trust Funds at WB

Trust funds at the World Bank are **financial mechanisms that allow donors to pool their contributions and support specific programs, projects, or initiatives aligned with the World Bank's development goals. These funds are often earmarked for particular sectors, themes, or geographic regions**. The World Bank manages and administers these trust funds, ensuring that resources are allocated efficiently and used in accordance with the donors' intentions.

Trust funds can support a wide range of activities, **including poverty reduction, education, health, infrastructure development, and environmental sustainability.** They play a crucial role in leveraging additional resources, promoting collaboration between the public and private sectors, and addressing pressing global challenges.

The World Bank's engagement with trust funds reflects a partnership approach, where various stakeholders, including governments, philanthropic organizations, and private entities, come together to address specific development needs. **The flexibility and targeted nature of trust funds enable the World Bank to respond to emerging challenges and implement innovative solutions to promote sustainable development worldwide.**

Overview of World Bank

1. **Foundation and Purpose:**
   o **Founded in 1944 under the Bretton Woods Agreement.**
   o **Dedicated to providing financing, advice, and research to aid the economic advancement of developing nations.**
   o Fights poverty by offering developmental assistance to middle- and low-income countries.

2. **Structure and Institutions:**
   o Comprises five cooperative institutional organizations known as the World Bank Group:
      ▪ **International Bank for Reconstruction and Development (IBRD)**
      ▪ **International Development Association (IDA)**
      ▪ **International Finance Corporation (IFC)**
      ▪ **Multilateral Investment Guarantee Agency (MIGA)**
      ▪ **International Centre for Settlement of Investment Disputes (ICSID)**
   o Each institution focuses on specific areas such as debt financing, interest-free loans, private sector investment, guaranteeing investments, and resolving investment disputes.

3. **Funding Sources:**
   o **Obtains funds from member countries' capital subscriptions, bond flotations, and earnings from interest payments.**
   o **Capital subscriptions determine voting power, favoring wealthier and more developed countries.**

4. **International Bank for Reconstruction and Development (IBRD):** The International Bank for Reconstruction and Development (IBRD) is a vital component of the World Bank Group, playing a key role in promoting global economic development. **Established to assist middle-income and creditworthy low-income countries, IBRD provides financial and technical assistance to support a wide range of projects, from infrastructure development to social programs.** Through its lending activities and expertise, IBRD contributes significantly to poverty reduction and sustainable development initiatives worldwide.

5. **International Development Association (IDA):** The International Development Association (IDA) is an essential arm of the World Bank Group dedicated to **addressing the unique challenges faced by the world's poorest countries. IDA provides low-interest loans and grants to these nations, enabling them to invest in critical areas such as education, healthcare, and infrastructure.** By focusing on poverty reduction and sustainable development, IDA aims to uplift marginalized communities and foster long-term economic growth in regions where resources are limited.

6. **International Finance Corporation (IFC):** The International Finance Corporation (IFC) serves as the private sector arm of the World Bank Group, **striving to advance sustainable and inclusive economic development. IFC supports private enterprises by providing investment, advisory services, and risk management tools**. By fostering entrepreneurship and innovation, IFC contributes to job creation, poverty alleviation, and the development of vibrant markets in emerging economies.

7. **Multilateral Investment Guarantee Agency (MIGA):** The Multilateral Investment Guarantee Agency (MIGA) operates as a critical instrument within the World Bank Group, promoting foreign direct investment (FDI) in developing countries. **MIGA offers political risk insurance and credit enhancement to encourage private-sector investments in regions where uncertainties may deter potential investors. Through its risk mitigation strategies, MIGA facilitates the flow of capital to support projects** that contribute to economic growth and development.

8. **International Centre for Settlement of Investment Disputes (ICSID):** The International Centre for Settlement of Investment Disputes (ICSID) is an autonomous international institution that facilitates the resolution of investment disputes between governments and private sector entities. Established under the auspices of the World Bank, **ICSID provides a neutral and effective forum for arbitration and conciliation, helping to ensure fair and transparent**

resolution mechanisms for investment-related conflicts. **ICSID plays a crucial role in promoting investor confidence and fostering a stable environment for international investment**.

Reassessing Perspectives: A Compilation of Essays by the Finance Ministry

Subject :Economy

Section: External Sector

Context:

- **Reassessing Perspectives,** a compilation of essays by the **Finance Ministry** aims to spotlight concerns regarding the methodologies employed by major global credit rating agencies and their adverse impact on India.
- It underscores the necessity for **credit rating agencies (CRAs)** to reform their sovereign rating processes, particularly in accurately representing the default risk of developing economies.

More In News:

- **Need for Reform:** The Chief Economic Adviser of the government emphasizes the imperative for credit rating agencies to reform their sovereign rating processes to better reflect the default risk of developing economies.
- **India's Current Rating:** Despite substantial improvements in economic metrics since the onset of the pandemic, India holds the lowest investment grade.
- Enhancements in **macroeconomic indicators** may have minimal impact on credit ratings if qualitative parameters are perceived to require improvement, significantly affecting developing sovereigns' access to capital markets and their ability to borrow at reasonable rates.

About Credit Rating Agencies (CRAs):

- **Functions of CRAs:** These agencies assess the financial strength of companies and government entities, especially their ability to meet principal and interest payments on debts.
- They provide investors with crucial information about bond and debt instrument issuers, including countries' sovereign debts.
- **CRAs in India:** Presently, India has seven registered **CRAs, namely CRISIL, CARE, ICRA, SMREA, Brickwork Rating, India Rating and Research Pvt. Ltd.**
- **Global Credit Rating Industry:** The global credit rating industry is highly concentrated, dominated by three leading agencies: **Moody's, Standard & Poor's, and Fitch.**
- **Different Credit Rating Scales:** Credit ratings use alphabetical symbols **(AAA, AA, A, B, etc.)** to assess the creditworthiness of corporate financial instruments.
- Higher ratings indicate lower default risk, with **AAA being highly favorable.** Ratings below BB are considered indicative of poor creditworthiness.

About Sovereign Credit Rating:

- **Sovereign Credit Rating:** It measures a government's ability to repay its debt, with a low rating indicating high credit risk.
- **Determinants for Rating:** Factors considered include growth rate, inflation, government debt, short-term external debt as a percentage of GDP, and political stability.
- **Sovereign Credit Rating of India:** While S&P and Fitch rate India at **BBB,** Moody's rates India at Baa3, indicating the lowest possible investment grade.
- This is despite India's progress from being the 12th largest economy globally in 2008 to the **5th largest in 2023**, with the **second-highest growth rate** among all comparator economies during this period

SEBI Regulations, 1999:

- **Regulation of Functioning:**
  - In India, the **Securities and Exchange Board of India (SEBI)** primarily regulates credit rating agencies under the **SEBI Regulations, 1999 of the SEBI Act, 1992.**
  - Other regulatory agencies, such as the **Reserve Bank of India (RBI), Insurance Regulatory and Development Authority, and Pension Fund Regulatory and Development Authority,** also regulate certain aspects of credit rating agencies within their respective sectoral jurisdictions.
- **Disclosure-based Regulatory Regime:**
  - The SEBI (Credit Rating Agencies) Regulations, 1999 establish **a disclosure-based regulatory regime,** requiring agencies to disclose their rating criteria, methodology, default recognition policy, and guidelines for dealing with conflicts of interest.

IMF Warning on India's Debt

Subject :Economy

Section: External sector

Context: The IMF warns that **India's general government debt may exceed 100% of GDP by 2028** in the medium term.

- Long-term risks are identified due to the need for **significant investment in climate resilience**
- **New concessional financing, increased private sector investment, and carbon pricing** are recommended.

Sovereign Debt Risks Disagreement:

- The Indian government disagrees with the IMF, stating sovereign debt risks are limited.
- **Sovereign debt is mainly denominated in domestic currency, reducing vulnerability.**
- India disputes the IMF's baseline, **considering the risk of debt exceeding 100% of GDP extreme.**
- Points out the limited risks from sovereign debt, **highlighting historical stability**.

Exchange Rate Reclassification:

- The IMF reclassifies **India's exchange rate regime to a "stabilized arrangement."**
- India disputes this, emphasizing the importance of exchange rate flexibility.

Optimistic Outlook and Structural Reforms:

- IMF provides a fairly optimistic outlook for India's economy.
- **Potential for faster growth than the IMF's forecast of 6.3% with key structural reforms.**

Medium-Term Fiscal Consolidation Urged:

- IMF calls for "**ambitious**" fiscal consolidation over the medium term to control public debt.
- Identifies potential challenges, including **global growth slowdown, supply disruptions, weather shocks, and inflationary pressures.**
- Despite the multitude of shocks, the global economy has faced in the past two decades, **India's public debt-to-GDP ratio at the general government level has barely increased from 81% in 2005-06 to 84% in 2021-22, and back to 81% in 2022-23.**

Challenges in Credit Ratings:

- India faces challenges in **enhancing credit ratings due to elevated debt levels and servicing costs.**
- Agencies attribute India's lower rating to weak fiscal performance, burdensome debt stock, and low GDP per capita.

Per Capita Income and Uneven Distribution:

- India's per capita income doubled since 2014-15, reaching Rs 1,72,000.
- **Uneven income distribution, exacerbated by the Covid-19 pandemic, remains a challenge.**

Expert Perspectives on Sovereign Rating:

- Experts suggest considering the **improving quality of government expenditure** in sovereign ratings.

Debt-to-GDP ratio

Debt-to-GDP ratio is a financial metric that **compares a country's total debt to its gross domestic product (GDP).**

It is expressed as a percentage and provides insight into the **ability of a country to manage its debt relative to the size of its economy**.

The formula for calculating the Debt-to-GDP ratio is as follows:

Debt-to-GDP Ratio = (Total Debt/Gross Domestic Product) × 100

In this formula:

- **Total Debt** refers to the **cumulative debt of a country**, including both internal and external debt.
- **Gross Domestic Product (GDP)** is the **total value of all goods and services produced** within the country's borders within a specific time frame.

A higher Debt-to-GDP ratio indicates that **a country has a higher level of debt relative to its economic output**.

While a certain level of debt is normal for most countries, an excessively high ratio can signal potential risks, such as **challenges in servicing the debt or economic vulnerability**. Central banks, policymakers, and economists closely monitor the Debt-to-GDP ratio as part of assessing a country's fiscal health and economic stability.

IMF Warning on India's Debt

Subject : Economy

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The IMF's sovereign debt risk assessment for India has spurred a sharp reaction

Subject :Economy

Section : External sector

Context:
- The Finance Ministry, last Friday, issued a statement titled **'Factual position vis-à-vis IMF's Article IV consultations with India'.**
- The International Monetary Fund (IMF), under its **Articles of Agreement**, holds bilateral discussions with members, usually every year. IMF staffers collect economic and financial information, and discuss policies with top officials, before preparing a report that is discussed by the **Fund's executive board.**

India's debt
- The **combined debt of central and State governments stood at 81% of GDP in 2022-23, from 88% in 2020-21.** Under favourable circumstances, the IMF reckons this could even go down to 70% by 2027-28.

- The shocks faced by India so far in this century were global, and affected the entire world economy, be it the 2008 financial crisis or the pandemic, the Ministry pointed out.
- Reacting to initial news flashes, it further clarified its statement was not a rebuttal to the IMF but "an effort to arrest misinterpretation or misuse" of its comments to imply that General Government debt would exceed 100% of GDP in the medium term.
- Semantics experts may argue whether the communiqué was confrontational or clarificatory. **India's Director on the IMF Board had already placed on record reservations about its staff's conclusions on debt risks** and some other aspects of the economy.

Ministry's statement

- The Ministry statement, four days after the IMF released its latest India consultation details, noted that "**certain presumptions have been made taking into account possible scenarios that does not reflect factual position**".
- In particular, the **Ministry was referring to an IMF view that adverse shocks could lift India's general government debt to, or beyond 100% of GDP in the medium-term (by 2027-28).**
- The Ministry asserted this was only a worst-case scenario and not a fait Accomplishment, and emphasised that other IMF country reports show much higher extreme 'worst-case' scenarios, for instance, at 160%, 140% and 200% of GDP, for the U.S., the U.K. and China, respectively.

Perceptions of India's fiscal position

- In the broader picture, **IMF staff's perceptions of India's fiscal position have actually improved over the past year.**
- **From arguing in 2022 that India's fiscal space is at risk, they now believe sovereign stress risks are moderate.** This is in no small part due to the ability of the **Centre, whose debt levels were about 57% of GDP last year**, to meet fiscal deficit targets in recent times.

About International Monetary Fund (IMF)

- The International Monetary Fund **(IMF) works to achieve sustainable growth and prosperity for all of its 190 member countries.** The IMF, also known as the Fund, was conceived at a UN conference in **Bretton Woods, New Hampshire, United States, in July 1944.**
- It does so by supporting economic policies that **promote financial stability and monetary cooperation,** which are essential to increase productivity, job creation, and economic well-being. The IMF is governed by and accountable to its member countries.
- The IMF has **three critical missions:**
    - o furthering international monetary cooperation,
    - o encouraging the expansion of trade and economic growth,
    - o and discouraging policies that would harm prosperity.
- To fulfil these missions, IMF member **countries work collaboratively** with each other and with other international bodies.

ASEAN-India FTA Review

Subject: Economy

Section: External sector

- **Negotiations in February:** India and the ten-member Association of South East Asian Nations (ASEAN) will commence negotiations in February to modernize their **15-year-old free trade agreement (FTA) officially known as the ASEAN India Trade in Goods Agreement (AITGA).**
- **Review Objectives:** The primary objective of the review is to address the **trade deficit for India and modernize the FTA, considering the significant changes** that have occurred since its signing. New elements, including **product-specific rules and trade remedies,** will be introduced to enhance efficiency.
- **First Round of Negotiations:** The initial round of negotiations is scheduled for February 18-19 in New Delhi, with subsequent negotiations following a quarterly schedule aiming to conclude by 2025.
- **Disproportionate Benefits:** India has long advocated for a review of the AITGA, as the current pact resulted **in disproportionate benefits for the ASEAN**. India's **trade deficit with the region has grown substantially from $7.5 billion per annum to $43.57 billion in FY23.**
- **Trade Deficit Concerns:** India aims to bring balance to the FTA, considering **the escalating trade deficit. Input from various sectors on tariff and non-tariff barriers faced in the ASEAN has been collected by the Commerce Department.**
- **Sectors Needing Attention: Industries such as chemicals and alloys, plastics and rubber, minerals, leather, textiles, gems, and jewelry require support,** as per industry analysis.

- **Rules of Origin Changes:** Modernizing the AITGA includes changes in the Rules of Origin (ROO) to favor India by increasing market access for certain items and preventing potential rerouting of goods by China through ASEAN countries.
- **Introduction of PSRs: Product-Specific Rules (PSRs) will be introduced**, allowing India to relax rules for certain items to boost exports **while blocking loopholes to prevent circumvention by China.**
- **Trade Remedies Chapter:** The modernized AITGA will feature a chapter on trade remedies to provide a safety net for domestic industries against unfair trade practices or unforeseen surges in imports.
- **Exclusions in Review:** No new areas, **such as labor, environment, Small and Medium Enterprises (SMEs), or gender, will be added to the AITGA**. The focus is on making the existing pact more efficient without complicating it with additional issues.
- **ASEAN's Trade Contribution:** The **ten-member ASEAN, including Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar, and Cambodia, accounted for 11.3% of India's global trade in 2022-23.**

ASEAN–India Free Trade Area (AIFTA):

1. **Formation:** A **free trade area among the ten member states of the Association of Southeast Asian Nations (ASEAN) and India.**
2. **Commencement:** Came into force from **January 2010.**
3. **Objective:**
   o Facilitate trade and economic cooperation between ASEAN member states and India.
   o Promote the exchange of goods and services.
4. **Elimination of Duties:**
   o The pact outlines timelines for the **gradual elimination of duties on a wide range of goods traded between ASEAN and India.**
5. **Key Features:**
   o Aims to boost economic relations and enhance trade flows.
   o Provides a framework for reducing or eliminating tariffs to create a more open and integrated market.
   o Encourages collaboration in areas beyond trade, fostering economic ties in investment, technology, and other domains.
   o **AIFTA contributes to the broader goal of regional economic integration among ASEAN countries and India.**
   o **Intended to have a lasting impact on the economic landscape by creating a more conducive environment for businesses and trade.**

Fed Rate Cut and its Impact on the Indian Economy

Subject: Economy

Section: External sector

1. **Fed Rate Cut:**
   o Refers to the **reduction in the federal funds rate, the interest rate at which banks lend to each other overnight.**
   o Decided by the Federal Reserve (Fed) in the United States.
2. **Impact on Indian Economy:**
   o **Capital Flows:** A rate cut may lead to capital outflows from emerging markets like India as investors seek higher returns in the US.
   o **Exchange Rates:** Depreciation pressure on the Indian rupee due to capital outflows.
   o **Borrowing Costs:** Lower interest rates globally can result in reduced borrowing costs for Indian businesses.
   o **Equity Markets:** Positive impact on Indian stock markets due to increased liquidity and lower global interest rates.
3. **Global Economic Conditions:**
   o A Fed rate cut reflects concerns or measures taken to stimulate the US economy.
   o **Global economic conditions, trade relations, and overall market sentiment are influenced.**
4. **Policy Responses:**
   o The Reserve Bank of India (RBI) **may adjust its monetary policy in response to global rate movements.**
   o India's central bank may consider **measures to manage inflation, capital flows, and exchange rates.**

Force Majeure Request Due to Flood Impact on Chennai and Thoothukudi Ports

Subject :Economy

Section: Fiscal Policy

1. **Unprecedented Rains and Floods:**
   o **Chennai and Thoothukudi ports faced heavy losses and disruptions** in maritime trade due to unprecedented rains in Tamil Nadu.

2. **Force Majeure Appeal:**
   o Trade members involved in port operations have urged the **Chennai Port Authority and VOC Chidambaranar Port Authority to declare Force Majeure at Chennai and Thoothukudi ports**, respectively.

3. **Federation of Association of Stevedores Appeal:**
   o The **Federation of Association of Stevedores** has requested the VOC Port Authority to consider December 11, 12, and 13 as non-working days due to the impact of heavy rains.

4. **Force Majeure Situation:**
   o The association emphasized that the **heavy rain and its consequences have created a Force Majeure situation, preventing stevedores from working and causing delays and penalties.**

5. **Challenges Faced:**
   o **Reduction in migrant labor essential for stevedores.**
   o **Delays in deliveries and receipts affecting ship turnaround.**
   o **Industries shut down, leading to challenges in receiving or delivering goods to/from the port.**

6. **Tuticorin Stevedores Association's Perspective:**
   o Unprecedented rainfall starting on December 16 and subsequent floods.
   o **Vessel operations suspended from December 17.**
   o **Industries shut down, hindering goods transportation**.
   o Request to consider the **situation as an Act of God and declare Force Majeure** until normalcy is restored.

7. **Demurrages and Storage Issues:**
   o Accumulation of demurrages due to delayed pick-up and delivery.
   o Inability to fulfill contracts and pay demurrage and storage costs.

8. **Process for Force Majeure Declaration:**
   o While the **port authority itself cannot declare Force Majeure, it can recommend it to the Ministry.**
   o The **Ministry, upon recommendation, will issue a Gazette Notification.**

About Force Majeure

Force Majeure is a legal term that refers to **unforeseeable circumstances or events beyond the control of parties involved in a contract that may excuse non-compliance with the contractual obligations. These events are often considered "acts of God" or "acts of nature."**

Force Majeure clauses are **typically included in contracts to address situations where performance becomes impossible or impractical due to unexpected and uncontrollable events**.

Key points about Force Majeure:

1. **Unforeseeable Events:** Force Majeure events are those that could not have been anticipated or controlled by the parties when entering into the contract. **These events are often outside the reasonable control of the affected party.**

2. **Excusing Performance:** When a Force Majeure event occurs, the affected party may be excused from performing its contractual obligations, either temporarily or, in some cases, permanently.

3. **Contractual Provision:** Force Majeure is usually addressed in a specific clause within a contract. **This clause outlines the types of events that qualify as Force Majeure, the obligations of the parties during such events, and the potential remedies available.**

4. **Examples of Force Majeure Events:** Common examples of Force Majeure events **include natural disasters (such as earthquakes, floods, hurricanes), wars, strikes, acts of terrorism, and government actions that impact contractual performance.**

Levy 20-30% health tax on food high in sugar, salt, fat: study

Subject: Economy

Section: Fiscal Policy

In the news:

- Public health researchers recommend **implementing a health tax** ranging from **20% to 30%**, in addition to the **Goods and Services Tax (GST),** specifically targeting **sugar, sugar-sweetened beverages (SSBs),** and foods **high in sugar, salt, and fat (HFSS).** This initiative **aims to curtail excessive consumption of these items**.

Details:

- The proposed tax primarily focuses on **bulk purchasers** such as **confectionery and sweet manufacturers, aiming** to decrease their demand for sugar.
- This strategy intends to **influence consumption patterns** at the **production level**.

Impact of these taxes:

- Applying the concept of **Price Elasticity**, researchers anticipate a **2% reduction** in demand among **regular consumers** for every **10% increase in sugar prices.**
- However, for **bulk buyers,** a **higher price elasticity** suggests a potential **13-18% decrease** in demand with a **30% tax increase** over the existing **18% GST.**
- Similar tax increments of **10-30%** on **sugar-sweetened beverages** could result in a **demand decline** between **7%** and **30%.**
- For **HFSS products,** the anticipated decrease in demand ranges from 5% to 24%, correlating with tax variations.

Revenue and Health Outcomes:

- Besides potentially **reducing consumption,** these heightened taxes could significantly **boost government revenue** by **12-200%.**
- The overarching goal is to **mitigate health concerns** associated with **excessive sugar intake,** including **obesity, diabetes,** and **related health issues** prevalent in **India** and globally.

Global Taxation Trends:

- Over **70 countries** have implemented **similar taxation strategies** on **sugar, SSBs, and HFSS products.**
- These initiatives have showcased promising outcomes in terms of decreased consumption and improved public health in various regions, including **Mexico, Chile, Saudi Arabia, Argentina,** and **South Africa.**

India's Sugar Consumption Challenge:

- **India** holds the **title** of the **world's largest sugar consumer,** leading to substantial health challenges.
- **Global average consumption** of sugar is **22 kg per person per year**, an average **Indian** consumes **25 kg per year**.
- The current sugar intake exceeds the **World Health Organization's recommended threshold (no more than 50 grams of sugar per day),** indicating a pressing need for interventions to address rising health issues linked to excessive sugar consumption.

Key terms:

- **High Fat Sugar Salt foods (HSSF)** are known for their negative impact on health.
- A **negative externality** is something that impacts a person or people who are uninvolved in a situation. Example: Smoking cigarettes or burning coal.
- **Internalities:** Harm caused to individuals due to limited understanding influenced by marketing.
- **Non-regressive Tax:** A tax that does not disproportionately burden lower-income individuals.

Shift from WPI to PPI

Subject :Economy

Section: Inflation and Unemployment

Reason:

- India plans to **transition from Wholesale Price Index (WPI) to Producer Price Index (PPI)** in the future.
- Most G20 countries, **including China, already use PPI, making it a more globally accepted practice.**

Current Status:

The **National Statistical Commission (NSC) is examining a working group report on the roadmap for introducing PPI.**

Recommendations from the NSC are awaited before further decisions are made.

Future Plan:

Initially, both WPI and PPI may coexist. After a few years, there is a possibility of phasing out WPI, aligning with global practices.

Background:

Past Discussions:

A working group was established to determine the methodology and data requirements for the transition. In 2019, a **working group was formed to revise the current WPI series, suggesting a new base year and considering the shift to PPI.**

Base Year Revision:

Work is also underway to **revise the WPI base year from 2011-12 to 2017-18**. This revision aims to present a more realistic picture of the country's price situation. The DPIIT issued a draft technical report suggesting changes in the base year and additions to the commodity basket.

Wholesale Price Index (WPI):

WPI measures the average change in the selling prices received by producers for their goods and services at the wholesale level.

- **Commodity Basket:**
    - It includes a **representative basket of goods covering various sectors** like industry, agriculture, and mining.
    - WPI is calculated **based on the wholesale prices of a set of commodities at a specific point in time.**
    - Primarily used by policymakers and **analysts to assess inflation at the wholesale level.**
    - Helps in **analyzing price movements at the early stages** of the supply chain.
    - In India, **WPI has been historically used as a key indicator of inflation. However, there is a plan to transition to the Producer Price Index (PPI).**

Consumer Price Index (CPI):

- CPI measures the **average change in the prices paid by consumers for goods and services they commonly purchase over time.**
- It includes a **representative basket of goods and services commonly consumed by households.**
- CPI is calculated based on the prices of goods and services at the retail level**, reflecting the expenses incurred by consumers.**
- Widely used to assess inflation from the perspective of the average consumer.
- Central for adjusting wages, pensions, and other income-related aspects.
- **Multiple CPIs are calculated in India, such as CPI for Industrial Workers (CPI-IW) and CPI for Agricultural Laborers (CPI-AL).**

Producer Price Index (PPI):

- PPI measures the **average change in the selling prices received by producers for their goods and services.**
- It includes a representative basket of goods and services produced by industries.
- **PPI is calculated based on the prices of goods and services at various stages of production**.
- Primarily used to analyze inflation from the perspective of producers.
- **Reflects price movements at different stages of the production process.**
- **India is considering transitioning from WPI to PPI to align with global practices and improve the accuracy of inflation measurement.**

Key Differences:

- **Focus:**
    - WPI focuses on the **wholesale level,** assessing price changes at the early stages of production.
    - CPI focuses on the **retail level**, reflecting the expenses incurred by consumers.
    - **PPI assesses price changes at different stages of the production process.**
- **Basket Composition:**
    - **WPI and PPI include a basket of goods and services related to production.**
    - CPI includes a basket of goods and services commonly consumed by households.
- **Calculation Basis:**
    - WPI and PPI are calculated based on wholesale prices.
    - **CPI is calculated based on retail prices.**
- **Usage Perspective:**
    - WPI and PPI provide insights from the **producer's perspective**.
    - CPI provides insights from the **consumer's perspective.**
- **Policy Implications:**

o CPI is crucial for adjusting income-related aspects, while WPI and PPI are vital for policy formulation related to production and industry.

About National Statistical Commission (NSC) -

The National Statistical Commission (NSC) is a statutory body in India that **operates as an autonomous advisory body dedicated to enhancing the statistical infrastructure and promoting the use of reliable and timely statistical data for informed decision-making**.

1. **Establishment:** The **Government of India through a resolution dated 1st June, 2005 set up the National Statistical Commission (NSC).** The setting up of the NSC followed the decision of the Cabinet to accept the recommendations of the Rangarajan Commission, which reviewed the Indian Statistical System in 2001. **The NSC was constituted with effect from 12th July 2006 with a mandate to evolve policies, priorities and standards in statistical matters. The NSC has four Members besides a Chairperson, each having specialization and experience in specified statistical fields.**

2. **Objective:** The primary objective of the NSC is to **evolve policies, priorities, and standards in statistical matters, ensuring statistical coordination among various agencies involved in statistical activities, and improving the statistical system** in the country.

3. **Composition:** The NSC is headed by a part-time Chairperson, and it includes a maximum of seven members. The **Chief Statistician of India (CSI) and Secretary of the Ministry of Statistics and Programme Implementation (MoSPI) serve as ex-officio members**.

4. **Functions:**
   o **Advisory Role:** The NSC acts as the **apex advisory body for all statistical matters**, providing guidance on statistical methodology, data collection, and dissemination.
   o **Coordination:** It **promotes coordination among various statistical agencies** to avoid duplication of efforts and ensure the efficient use of resources.
   o **Policy Formulation:** The commission is **involved in formulating policies related to statistical activities** and recommends improvements in the statistical system.
   o **Review and Evaluation:** The NSC reviews the **functioning of the statistical system, evaluates data quality, and suggests measures for improvement.**

5. **Reports and Recommendations:** The NSC submits its reports and recommendations to the government, and these play a crucial role in **shaping the statistical policies and practices in the country.**

6. **Independence:** The **NSC operates independently in its advisory role**, providing an unbiased and expert perspective on statistical matters.

7. **Statistical Workshops and Seminars:** The NSC conducts workshops, seminars, and conferences to **promote awareness and understanding of statistical concepts and methodologies.**

8. **Statistical Agencies:** While the NSC itself does not collect or compile statistical data, **it oversees and coordinates the activities of various statistical agencies, including the Central Statistical Office (CSO) and the National Sample Survey Office (NSSO).**

If inflation is not tamed, there is risk to consumption and growth

Subject: Economy

Section: Inflation and unemployment

Context:

- November's resurgence in headline retail inflation, while clearly not unexpected after the RBI just last week predicted a likely 'uptick', is a stark reminder of the risks volatile food prices pose.

More about News

- **Rise in Consumer price index**
   o While the **National Statistical Office's** provisional reading of headline inflation shows the Consumer Price Index rose by 5.55% year-on-year to a three-month high, from October's 4.87%, food price gains measured by the **Consumer Food Price Index accelerated by a steep 209 basis points to 8.7% last month.**

Why inflation is dangerous?

- **Reduces the purchasing power leading to low consumption**
- **Fall in savings**
- **Fall in demand**
- **Fall in investments**

What caused the rise?

- Propelling the **upsurge in food prices** were cereals and vegetables, constituents of the **'food and beverages' subgroup, that logged 10.3% and 17.7% inflation, respectively.**
- **Cereals**, that account for almost one-tenth of the CPI and logged double-digit inflation for a 15th straight month, also saw a month-on-month acceleration in inflation with rice, wheat, and the coarse cereal of jowar, a rural hinterland staple, all registering palpable sequential price gains.
- **Vegetable prices were back on a boil** with the year-on-year inflation rate surging by almost 15 percentage points from October's 2.8%.
- **While price gains in the perishable tomato swung** from two straight months of sizeable deflation to a more than 11% year-on-year rate of inflation last month, the extent of increase could be truly gauged from the fact that prices surged a steep 41% from the preceding month's levels, as per data aggregated on the Centre for Monitoring Indian Economy's website.
- And the key **masala essentials of ginger and garlic registered more than 100% rates of inflation** for the seventh and third months, respectively.

Major concern

- From the TOP or tomato, onion and potato triumvirate of India's most widely consumed vegetables, **onion prices remained the biggest source of concern** as year-on-year inflation ballooned to 86%, from October's 42% pace, and the sequential pace swelled to 48%.
- With reports that **inclement weather and depleting groundwater are likely to cause a near 25% shortfall in onion output** during the key rabi season, the outlook for prices of the nutrient-dense bulb moderating in the near future appears bleak, the government's move to impose a ban on its exports notwithstanding.

Key Concept For Prelims

- **Consumer Price Index (CPI)**
    - A comprehensive tool for estimating **price changes in abasket of goods and services** that is representative of consumption expenditure in an economy is the Consumer Price Index.
    - One of the most significant economic statistics, it provides an estimate of the cost of living and is typically **based on the weighted average of commodity prices.**
    - The amount of inflation during a given period, or the rise in the prices of a representative basket of consumed goods, is indicated by the percentage change in this index over time.
    - **Four kinds of CPI are as follows:** CPI for Industrial Workers (IW),CPI for Agricultural Labourer (AL),CPI for Rural Labourer (RL),CPI (Rural/Urban/Combined).
    - The **first three are compiled by the Labour Bureau in the Ministry of Labour and Employment. Fourth is compiled by the NSO in the Ministry of Statistics and Programme Implementation.**
    - Consumer Food Price Inflation is a specific measure of inflation that focuses exclusively on the price changes of food items in a consumer's basket of goods and services.
    - It **calculates the rate at which the prices of food products consumed by the average household are increasing over time.**
    - CFPI is a sub-component of the broader Consumer Price Index (CPI).

What causes inflation in India: Demand or supply issues?

Subject :Economy

Section: Inflation and Unemployment

Context:

- Typically, inflation in India is primarily influenced by factors related to supply but there are times when demand factors also play a significant role, according to an article published by the Reserve Bank of India as a part of their December bulletin.

What is Inflation?

- Inflation, as defined by the International Monetary Fund, is the **rate of increase in prices over a given period, encompassing a broad measure of overall price increases or for specific goods and services.**
- It reflects the **rising cost of living and indicates how much more expensive a set of goods and/or services has become over a specified period, usually a year.**

What are the Different Causes of Inflation?

- **Demand-Pull Inflation:**
    - Demand Pull inflation occurs when the **demand for goods and services exceeds their supply**. When the overall demand in the economy is high, consumers are willing to pay more for the available goods and services, leading to a general rise in prices.

- o A booming economy with high consumer spending can create excess demand, putting upward pressure on prices.
- **Cost-Push Inflation:**
  - o **Cost-push inflation is driven by an increase in the production costs for goods and services.** This can be caused by factors such as increased incomes, increased costs of raw materials, or disruptions in the supply chain.
  - o For instance, (as per CPI data) inflation in 'oils and fats' in March, 2022 soared to 18.79% as the geopolitical crisis due to the Russia-Ukraine war pushed edible oil prices higher.
- **Built-In or Wage-Price Inflation:**
  - o This type of inflation is often described as a feedback loop between wages and prices. **When workers demand higher wages, businesses may raise prices to cover the increased labor costs.** This, in turn, prompts workers to seek higher wages, and the cycle continues.
  - o Collective bargaining by labor unions can result in higher wages, leading to increased production costs and subsequently higher prices for goods and services.
- **Monetary Inflation:**
  - o **Monetary inflation is often linked to an increase in the money supply in an economy.** When there is more money in circulation, consumers have more purchasing power, which can drive up demand and prices.
  - o Central banks printing more money or implementing policies that increase the money supply can contribute to monetary inflation.
- **Supply Shocks:**
  - o **Supply shocks occur when there is a sudden and unexpected disruption to the supply of goods and services.** Natural disasters, geopolitical events, or other unforeseen circumstances can lead to a reduction in supply, causing prices to rise.
  - o A drought affecting agricultural output can lead to a decrease in the supply of crops, causing food prices to spike.
- **Built-In Expectations:**
  - o If people expect prices to rise in the future, they may adjust their behavior accordingly. This can create a self-fulfilling prophecy where businesses raise prices in anticipation of higher costs, and consumers, expecting further increases, may buy more now, contributing to inflation.
  - o If individuals believe that inflation will increase in the future, they may demand higher wages and businesses may raise prices in anticipation of increased costs.

What are the Impacts of Rising Inflation?
- **Inflation erodes the purchasing power of money,** meaning that with the same amount of money, individuals can buy fewer goods and services.
- Central banks often respond to **inflation by raising interest rates**. Higher interest rates can increase the cost of borrowing for businesses and individuals, potentially slowing down investment and economic growth.
- High or unpredictable inflation can create uncertainty in the economy. Businesses may find it challenging to plan for the future when prices are constantly changing.
- Persistent and high inflation can have social and political consequences. It may lead to public dissatisfaction, protests, and demands for wage increases.

Types of inflation include:

Deflation: Deflation is the **opposite of inflation and refers to a sustained decrease in the general price level of goods and services**. It occurs when the supply of goods exceeds demand, leading to reduced prices. **Deflation can discourage spending, as consumers may delay purchases in anticipation of lower prices, which can further slowdown economic growth and potentially lead to recession.**

Hyperinflation: Hyperinflation is an **extremely high and typically accelerating inflation**. It occurs when the price levels rise rapidly, eroding the value of the currency. This phenomenon often results from a collapse in the currency **and is detrimental to the economy, leading to a loss of confidence in the currency and undermining economic stability.**

Stagflation: Stagflation is a situation characterized by **a combination of stagnant economic growth, high unemployment, and high inflation.** It presents a challenge for policymakers, as traditional measures to **stimulate economic growth, such as increasing the money supply, may exacerbate inflation.**

Reflation: Reflation is an **attempt to stimulate an economy that is experiencing deflation**. It involves the implementation of monetary or fiscal policies **to increase the money supply and boost aggregate demand, with the aim of reversing deflation and stabilizing prices.**

Key Points from RBI's December 2023 Bulletin: State of the Economy
1. **Global Economic Outlook:**

- o **Inflation Impact:** A **slowing rate of global inflation may contribute to a reduction in global interest rates** in the future.
2. **Interest Rate Reductions:**
   - o **Potential Scenario:** Disinflation in different geographies may pave the way for interest rate reductions globally.
   - o **Expectations: Central bank officials anticipate a possibility of reduced global interest rates in response to economic conditions**.
3. **Indian Economic Scenario:**
   - o **Economic Activity:** India is experiencing a broad-based strengthening of economic activity.
   - o **Factors Supporting Growth: Easing input costs and corporate profitability** are expected to sustain economic activity in India.
4. **CPI Inflation in India:**
   - o **Recent Trends:** Consumer Price Index (CPI) inflation in India rose to 5.6% in November.
   - o **Projection:** Officials anticipate CPI inflation to ease to an average of 4.6% in the first three quarters of 2024-25.
5. **Domestic Financial Markets:**
   - o **Market Performance: Domestic financial markets have been positively influenced by the enduring strength of the real economy.**
6. **Indian Economic Growth in 2023:**
   - o **Optimistic Outlook:** Despite significant global challenges, the **Indian economy remained the fastest-growing major economy in 2023.**
   - o **Consumer Confidence:** Cautious optimism prevails as consumer confidence remains positive, and perceptions about current income improved.
7. **Supply Chain Pressures and GDP Growth:**
   - o **GDP Growth Forecast:** The Reserve Bank of India's **Economic Activity Index forecasts GDP growth for Q3 2023-24 at 6.7%.**
8. **Outlook for H2 2023-24 and 2024-25:**
   - o **Sustained Growth:** Despite some moderation, **growth is expected to be sustained in the second half of 2023-24 and in 2024-25.**
   - o **Positive Indicators:** Positive consumer confidence and favorable perceptions about current income contribute to the outlook.

India's jobs crisis, the macroeconomic reasons
Subject :Economy
Section: Unemployment and inflation
Context:
- The employment challenge can no longer be met only through more rapid GDP growth; a separate policy focus is needed on employment.

Two types of employment
- The first is **wage employment** which is a result of labour demanded by employers in their pursuit of profits.
- The second is **self-employment** where labour supply and labour demand are identical, i.e., the worker employs herself.
- A further useful distinction can also be made between wage labour and jobs. The first includes all forms of labour done for an employer including daily wage work at one extreme and highly paid corporate jobs at the other.
- But jobs generally refer to relatively better paid regular wage or salaried employment.
- In other words, **all jobs are wage labour, but all wage labour cannot be called jobs.** When we speak of a jobs problem, we are speaking of inadequate labour demand particularly for regular wage work.

Characteristics of Indian economy
- The Indian economy has historically been characterised by the **presence of both open unemployment (out of work job-seekers) as well as high levels of informal employment** consisting of the self-employed as well as casual wage workers.
- The last is also called "**disguised unemployment**" because, being similar to open unemployment, it also indicates a lack of adequate employment opportunities in the formal sector.
- This lack of opportunities is reflected by a more or less stagnant employment growth rate of salaried workers in the non-agricultural sector in the last four decades.

Symptoms of low labour demand

- The labour demand in the formal non-agricultural sector is determined by two distinct factors.
- **First, since firms in the formal sector hire workers to produce output for profit, labour demand depends on the amount of output that firms are able to sell.** Under any given level of technological development, labour demand in the formal sector rises when demand for output rises.
- **Second, labour demand depends on the state of technology** that dictates the number of workers that firms need to hire to produce one unit of output. Introduction of labour-saving technologies enables firms to produce the same amount of output by hiring a lower number of workers.

Employment growth rate

- **Employment growth rate is determined by the relative strength of two factors — the output growth rate and the labour productivity growth rate** (growth rate of output per worker). If labour productivity growth rate does not change, higher output growth rate increases employment growth rate.
- In other words, policies that promote higher economic growth would also achieve higher employment growth. On the other hand, if labour productivity growth rate rises, employment growth rate falls for a given output growth rate.
- In India, the employment growth rate of the formal and non-agricultural sector remained unresponsive despite a significant rise in the GDP growth rate and the value-added growth rate during the 2000s as compared to the decade of the 1980s and 1990s.
- The lack of responsiveness of employment growth rate to changes in output growth rate reflects a phenomenon of jobless growth. It indicates a strong connection between labour productivity growth rate and output growth rate.

Jobless growth with Indian characteristics

- As an economy grows, it is generally seen that it also becomes more productive. That is, in the process of producing a greater amount of total output, firms become capable of producing more output per worker.
- This happens because of what economist's call "**economies of scale**". As firms produce more output, they find it easier to adopt labor-saving technologies. But the extent to which labor-saving technologies are introduced depends on the bargaining power of Labour.

Two types of Jobless growth

- In the first case, the **responsiveness of labour productivity growth rate to output growth rate is weak.** The possibility of jobless growth in this case emerges exclusively on account of automation and the **introduction of labour-saving technology.**
- But employment growth rate in such regimes would necessarily increase if output growth rate happened to increase. Under weak responsiveness of labour productivity, the positive effect of GDP growth rate on employment would dominate over the adverse effect of labour-saving technologies. Here, the solution to the jobs crisis is just more rapid economic growth.
- In the second case, which happens to be the Indian one, the **responsiveness of labour productivity growth rate to output growth rate is high.**
- Here, the positive effect of output growth rate on employment fails to counteract the adverse effect of labour-saving technologies. Employment growth rate in such regimes cannot be increased simply by increasing GDP growth rate.

Kaldor-Verdoorn coefficient

- The **extent to which labour productivity growth rate responds to output growth rate is reflected by what is termed as the Kaldor-Verdoorn coefficient.**
- Recent working paper shows that **India's non-agricultural sector is characterised by a higher than average Kaldor-Verdoorn coefficient, as compared to other developing countries.**
- It is this distinct form of jobless growth regime in India that makes India's macroeconomic policy challenge qualitatively different from other countries.

Macroeconomic policy framework

- The central contribution of the **Keynesian revolution in macroeconomics was to highlight the role of aggregate demand as the binding constraint on employment.**
- **Fiscal policy was perceived to increase labour demand by stimulating output.** The developing countries that inherited a dual economy structure during their independence, confronted additional constraints on output.
- The **Mahalanobis strategy identified the availability of capital goods as the binding constraint on output and employment, putting forward the policy for heavy industrialisation.**
- The structuralist theories based on the experiences of developing countries highlighted the **possibility of agrarian constraint and the balance of payment constraints.** Both these constraints led to key policy debates in India, particularly during the decade of the 1970s and early 1990s.

- Nonetheless, what remained common to all these different frameworks was the presumption that increasing the output growth rate in the non-agricultural sector would be a sufficient condition for increasing the employment growth rate in the formal sector.
- But the evidence suggests that the employment challenge can no longer be met only through more rapid GDP growth. Rather, a separate policy focus is needed on employment in addition to the focus on GDP growth.

'Logistics costs drop to 7.8%8.9% of GDP'

Subject :Economy

Section: Infrastructure

Context:

India's logistic costs ranged between 7.8% and 8.9% during 2021-22, down from 8.7-9.9% during 2011-12, **according to a report by economic think tank National Council of Applied Economic Research (NCAER) and the Department for Promotion of Industry and Internal Trade (DPIIT).**

What Aspects Led to India's Improved Logistics Performance?

- **Policy Interventions:**
    - **PM Gati Shakti Initiative:** In October 2021, government announced the PM Gati Shakti initiative, a National Master Plan for multimodal connectivity.
    - This initiative aims to **reduce logistics costs and boost the economy by 2024-25.**
    - **National Logistics Policy (NLP):** The PM launched the National Logistics Policy (NLP) in 2022 **to ensure quick last-mile delivery, end transport-related challenges, save time and money for the manufacturing sector and ensure desired speed in the logistics sector.**
    - These policy interventions are fructifying, which can be seen in India's jump in **Logistic Performance Index(LPI)** and its other parameters.
- **Infrastructure Improvements:**
    - **According to the LPI report, India's rank moved up five places in the infrastructure score from 52nd in 2018 to 47th in 2023.**
    - The government has invested in trade-related soft and **hard infrastructure,** connecting port gateways on both coasts to the major economic centers located in the interior regions of the country.
    - This investment has paid off, with India climbing to the 22nd spot for **international shipments** in 2023 from 44th in 2018.
- **Technology's Role:**
    - Technology has been a **critical component** of India's logistics performance improvement efforts.
    - Under a public-private partnership, the government has implemented a **supply chain visibility platform**, which has contributed to remarkable reductions in delays.
    - **NICDC Logistics Data Services Limited applies radio frequency identification tags** to containers and offers consignees end-to-end tracking of their supply chain.
    - The report also states that emerging economies like **India are leap frogging advanced countries due to modernization and digitalization.**
- **Reduced Dwell Time:**
    - Dwell time is how long a vessel spends at a specific port or terminal. It may also refer to the amount of time that a container or cargo spends at a port or terminal before being loaded onto a vessel or after being unloaded from a vessel.
    - **India's very low dwell time (2.6 days) is one example of how the country has improved its logistics performance.**
    - According to the report, the **average dwell time for containers between May and October 2022 was 3 days for India and Singapore, much better than in some of the industrialized countries.**
    - The **dwell time for the U.S. was 7 days** and for Germany, it was 10 days.
    - With the introduction of **cargo tracking,** dwell time in the eastern port of Visakhapatnam fell from 32.4 days in 2015 to 5.3 days in 2019.

What are the other Initiatives Related to Logistics?

- **Multimodal Transportation of Goods Act, 1993:** The Multimodal Transportation of Goods Act, 1993 (MMTG) **provides for the regulation of Multimodal Transportation of Goods from any place in India to any place outside India involving two or more modes of Transport on the basis of a single Multimodal Transport Contract.**

- **Multi Modal Logistics Parks:** The Multi Modal Logistic Park project is poised to **develop state-of-the-art large scale warehousing facilities** for different types of commodities, to become a **one stop solution for all services** related to cargo movement like **warehousing, custom clearance, parking, maintenance of trucks etc.**
- **LEADS Report:** The LEADS is an indigenous data-driven index **under the Ministry of Commerce and Industry** to assess logistics infrastructure, services, and human resources across all 36 States and UTs.
- **Dedicated Freight Corridor:** It is a **high speed and high capacity railway corridor that is exclusively meant for the transportation of freight,** or in other words, goods and commodities. DFC consists of two arms, **Eastern Dedicated Freight Corridor (EDFC) and Western Dedicated Freight Corridor (WDFC).**
- **Sagarmala Projects:** The **Sagarmala Programme** was **approved by the Union Cabinet in 2015** which aims at holistic port **infrastructure development along the 7,516-km long coastline through modernisation, mechanization and computerisation.**
- **Bharatmala Project:** It focuses on the new initiatives like **development of Border and International connectivity roads, Coastal & port connectivity roads, improving efficiency of National Corridors, Economic corridors** and others.

Govt. allows use of cane juice, B molasses to make ethanol

Subject : Economy

Section: Infrastructure

Context:

- In a U turn, the Centre reversed its decision to ban the use of sugarcane juice for making ethanol as it allowed utilisation of the juice as well as B-heavy molasses to produce the green fuel but capped the diversion of sugar at 17 lakh tonnes.

About Ethanol:

- Ethanol, also known as ethyl alcohol, is a **biofuel produced from various sources such as sugarcane, corn, rice, wheat, and biomass**.
- The production process involves the **fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.**
- **Ethanol is 99.9% pure alcohol** that can be blended with petrol to create a cleaner fuel alternative.
- Apart from being a fuel additive, ethanol production yields **valuable byproducts like Distillers' Dried Grain with Solubles, and Potash from Incineration Boiler Ash that find applications across various industries**.

Ethanol production in India:

- **Ethanol production in India was mainly based on 'C-heavy' molasses, with a sugar content of 40-45%,** yielding 220–225 liters of ethanol per tonne.
- India explored direct sugarcane juice for ethanol production, increasing yield and efficiency.
- The **country diversified its feedstocks by including rice, damaged grains, maize, jowar, bajra, and millets**.
- **Ethanol yields from grains are higher compared to molasses**, with rice producing 450-480 liters and other grains 380-460 liters per tonne.
- Sugar mills diversified to use rice, damaged grains, maize, and millet as feedstocks.
- Leading sugar companies installed distilleries that can operate on multiple feedstocks throughout the year.

Types of Molasses:

- **A Molasses (First Molasses):** An intermediate by-product from initial sugar crystal extraction, containing 80-85% dry matter (DM). Should be inverted to prevent crystallization if stored.
- **B Molasses (Second Molasses):** Similar DM content as A molasses but with less sugar and no spontaneous crystallization.
- **C Molasses (Final Molasses, Blackstrap Molasses, Treacle):** The end by-product of sugar processing, containing significant amounts of **sucrose** (about 32 to 42%). It does not crystallize and is used as a commercial feed ingredient in liquid or dried form.

Government Initiatives to Promote Ethanol Blending in India:

- **National Policy on Biofuels 2018**
- **E100 Pilot project**
- **PradhanMantri JI-VAN Yojana 2019**
- **Repurpose Used Cooking Oil (RUCO)**

A.P., Gujarat, T.N. named 'achievers' in Centre's logistics report

Subject : Economy

Section: Infrastructure

Context:

- As many as 11 States and two Union Territories, including the coastal States of Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu; landlocked States Haryana, Punjab, Telangana, Uttar Pradesh; North Eastern States Assam, Sikkim, Tripura and UTs Chandigarh, Delhi have been named as 'Achievers' in the LEADS [Logistics Ease Across Different States] 2023 report released by Union Minister Piyush Goyal.

About LEADS Report:

- The LEADS is an **indigenous data-driven index** to assess logistics infrastructure, services, and human resources across all 36 States and UTs.
- LEADS continues to act as a **guiding & bridging mechanism for the identification of interventions enhancing logistics efficiency at State/UTs.** It reflects positively on international indices, like **Logistics Performance Index.**
- The **first logistics report was released in 2018**.
- **Three performance categories namely:**
- **Achievers:** States/UTs achieving 90% or more percentage.
- Andhra Pradesh, Gujarat,Karnataka, Tamil Nadu;landlocked States Haryana, Punjab, Telangana,Uttar Pradesh; North EasternStates Assam, Sikkim,Tripura and UTs Chandigarh,Delhi have been named as 'Achievers' in the LEADS.
- **Maharashtra tops amongst the "Achievers" states.**
- **Fast Movers:** States/UTs achieving **percentage scores between 80-90%.**
- **Aspirers:** States/UTs achieving percentage scores below 80% have been made.
- **The LEADS 2023 survey report would assist PM Gati-Shakti National Master Plan (PMGS-NMP) and National Logistics Policy (NLP) to mapping of logistics infrastructure,** services, and regulatory environment enabling State Governments to identify and fill the gaps and achieve data-driven multimodal connectivity.
- PMGS-NMP has potential to save over Rs. 10 Lakh Crore annually by improving logistics efficiency and will bring down the logistic cost to single digits in the coming years.

What is the Logistics Performance Index?

- The Logistics Performance Index **(LPI), developed by the World Bank Group**, **is an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics** and what they can do to improve their performance.
- **LPI is the weighted average of the country's scores on the six key dimensions:**
  - Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs.
  - Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology).
  - Ease of arranging competitively priced shipments.
  - Competence and quality of logistics services (e.g., transport operators, customs brokers).
  - Ability to track and trace consignments.
  - Timeliness of shipments in reaching destinations within the scheduled or expected delivery time.

As per the government's 'ballpark' assessment, the logistics cost stood between **8.7-9.9% of GDP in 2011-12**, which rose to **8.8-10% in 2012-13**, and then fell below the maximum upper bound of **9.4% of GDP between 2014-15 till 2021-22**

Financial Intelligence Unit India (FIU)

Subject : Economy

Section: Monetary Policy

Context: The Ministry of Finance has clarified that offshore cryptocurrency exchanges serving the Indian market have to be registered with the Financial Intelligence Unit India (FIU) as reporting entities

As many as 28 Virtual Digital Assets (VDA) service providers, including **WazirX, Coin DCX and Coinswitch,** have registered themselves with the **Financial Intelligence Unit-India (FIU-IND)**

The Finance Ministry in March had said entities dealing in VDAs, crypto exchanges and intermediaries would be considered "reporting entity" under the Prevention of money laundering Act (PMLA). Accordingly, crypto exchanges and intermediaries dealing with VDAs were required to perform KYC of their clients and users of the platform.

Financial Intelligence Unit – India (FIU-IND)

- It was set by the Government of India on 18th November 2004 as the **central national agency responsible for receiving, processing, analyzing and disseminating information relating to suspect financial transactions.**
- FIU-IND is also responsible for coordinating and strengthening efforts of national and international intelligence, investigation and enforcement agencies in pursuing the global efforts against money laundering and financing of terrorism.
- FIU-IND is an independent body reporting directly to the **Economic Intelligence Council (EIC) headed by the Finance Minister.**
- FIU-IND is a **multi disciplinary body with a sanctioned strength of 75 personnel–from different organizations** namely Central Board of Direct Taxes (CBDT), Central Board of Excise and Customs (CBEC), Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI), Department of Legal Affairs and Intelligence agencies.

Main Functions:

- **Collection of Information:** Act as the central reception point for receiving Cash Transaction reports (CTRs),Non-Profit Organisation Transaction Report(NTRs), Cross Border Wire Transfer Reports (CBWTRs), Reports on Purchase or Sale of Immovable Property (IPRs) and Suspicious Transaction Reports (STRs) from various reporting entities.
- **Analysis of Information:** Analyse received information in order to uncover patterns of transactions suggesting suspicion of money laundering and related crimes.
- **Sharing of Information:** Share information with national intelligence/law enforcement agencies, national regulatory authorities and foreign Financial Intelligence Units.
- **Act as Central Repository:** Establish and maintain national data base on the basis of reports received from reporting entities.
- **Coordination:** Coordinate and strengthen collection and sharing of financial intelligence through an effective national, regional and global network to combat money laundering and related crimes.
- **Research and Analysis:** Monitor and identify strategic key areas on money laundering trends, typologies and developments.

Rs 5 lakh UPI limit for payment to hospital and educational institution

Subject: Economy

Section: Monetary Policy

Context: Rs 5 lakh UPI limit for payment to hospital and educational institution

More about the news:

- The Reserve Bank of India (RBI) has **announced several regulatory measures** in the UPI and **fintech ecosystem,** along with developments in the financial markets:
- The **UPI transaction limit** for **medical and educational services** has been **raised from Rs 1 lakh to Rs 5 lakh.**
- RBI has **exempted e-mandates additional factor authentication (AFA)** for **transactions up to Rs 1 lakh for activities** such as **mutual fund subscriptions, insurance premium payments, and credit card bill payments.**
- Existing requirements like **pre- and post-transaction notifications and opt-out facilities will continue.**
- RBI **plans to establish a Fintech Repository** to **better understand developments in the fintech ecosystem.** It will be **operationalized by the Reserve Bank Innovation Hub by April 2024 or earlier.**
- RBI is **working on setting up a cloud facility** for the **financial sector in India** to **enhance data security, integrity, privacy, scalability, and business continuity**.
- The **rollout will be calibrated** over the medium term.
- A **unified regulatory framework for connected lending for all regulated entities will be introduced, strengthening credit pricing** and management.
- RBI will **establish a regulatory framework for the web-aggregation of loan products,** aiming to **enhance customer centricity and transparency** in digital lending.

What is Unified Payments Interface (UPI):

- The **Unified Payments Interface (UPI)** is a system that **consolidates multiple bank accounts into a single mobile application** provided by any participating bank.

- Developed by the **National Payments Corporation of India (NPCI)**, UPI **serves as a payment system enabling seamless money transfers** between any two bank accounts using a smartphone.
- This **payment interface allows customers to make direct payments from their bank accounts to various merchants,** both online and offline, **eliminating the need to input credit card details, IFSC codes, or net banking/wallet passwords**.
- UPI **integrates numerous banking features**, facilitating effortless fund routing and merchant payments within a unified framework.
- UPI was launched in **April 2016,**and has **gained significant popularity,** becoming a preferred **choice for users engaged** in sending and receiving money.
- Additionally, **the platform addresses "Peer to Peer" collect requests**, which can be **scheduled and paid at the user's** convenience and as **per specific requirements.**

RBI's Agreement with Bank of England for CCIL Matter
Subject : Economy
Section: Monetary Policy

1. **Recognition of RBI's Regulatory Role:**
   o RBI Governor Shaktikanta Das highlighted the **agreement with the Bank of England during the recent monetary policy statement.**
   o The **agreement recognizes the RBI as the principal regulator of Clearing Corporation of India (CCIL).**
   o It affirms mutual respect for each jurisdiction's current regulatory regime and supervisory practices.
2. **Resolution of Regulatory Ambivalence:**
   o The agreement aims to **bring an end to regulatory ambivalence regarding CCIL.**
   o It addresses doubts raised on India's regulatory capabilities by affirming the regulatory role of the RBI.
3. **Assessment of UK Banks' Use of CCIL:**
   o The agreement facilitates the **Bank of England in assessing whether UK-based banks can utilize CCIL for settling transactions in Indian government bonds, foreign exchange, and derivative markets.**
4. **Guidance for Other Regulators:**
   o The agreement sets an example for other regulators, **including the European Securities Markets Association (ESMA), on resolving contentious issues related to the external supervision of Indian clearing corporations.**
5. **Resolution of External Supervision Dispute:**
   o Over the past year, **ESMA and Bank of England had set a deadline for derecognizing Indian clearing corporations regulated by RBI, SEBI, and IFSCA.**
   o The agreement **signifies a resolution to the dispute, emphasizing the regulatory competence of Indian clearing corporations**.
6. **Superiority of Indian Clearing Corporations:**
   o The agreement reinforces that **Indian clearing corporations are superior to their European counterparts in terms of risk management and investor protection**.
   o Indian clearing corporations operate as independent entities with robust settlement guarantee funds.
7. **Concerns About Data Access:**
   o **Indian regulators have expressed concerns about data access provided by external rules, emphasizing the need to safeguard data privacy**.
8. **Global Implications:**
   o The agreement has global implications, **signaling that jurisdictions may not be willing to adhere to external regulatory demands.**
   o European banks facing restrictions may lead to a shift in business to banks in the US or Asia.
9. **RBI's Assertive Response:**
   o The RBI's assertive stance in calling out the aspersions on Indian regulators and **securing the agreement with the Bank of England is commendable**.
   o The agreement serves as a model for similar agreements with other regulators.
10. **Model for Future Agreements:**
    o The agreement with the Bank of England is **expected to serve as a model for future agreements with other regulators, providing a framework for addressing regulatory issues.**

Clearing Corporations (CC):
1. **Definition:**
   o Clearing Corporations (CC) are organizations **associated with financial exchanges that facilitate the confirmation, settlement, and delivery of financial transactions**. They play a crucial role in ensuring the smooth functioning of financial markets.
2. **Functions of Clearing Corporations:**
   o **Confirmation:** Verifying the details of a trade or transaction.
   o **Settlement:** Ensuring the actual exchange of assets and funds between parties.
   o **Delivery:** Facilitating the transfer of financial instruments or commodities.
3. **Examples of Clearing Corporations in India:**
   o In the context of Indian financial markets, some examples of Clearing Corporations include:
      ▪ **The Clearing Corporation of India Limited (CCIL):** Handles clearing and settlement for various financial instruments.
      ▪ **Indian Clearing Corporation Ltd (ICCL):** Associated with the BSE (Bombay Stock Exchange).

RBI's Monetary Policy Review Highlights

Subject : Economy

Section: Monetary Policy
1. **Policy Rate Unchanged:**
   o The Reserve Bank of India (RBI) has **maintained the policy rate at 6.5%, marking the fifth consecutive time without a change.**
   o The decision is driven by the central bank's vigilant stance on inflation.
2. **Liquidity Management Tools Adjusted:**
   o RBI has **tweaked liquidity management tools, specifically the Marginal Standing Facility (MSF) and Standing Deposit Facility (SDF).**
   o Reversal of MSF and SDF facilities will be **allowed on weekends and holidays**, effective from December 30, to enhance liquidity management.
   o The **move aims to address the simultaneous high utilization of both MSF and SDF by banks.**
3. **Rate Details:**
   o The **Standing Deposit Facility rate remains at 6.25%.**
   o **The Marginal Standing Facility (MSF) rate is maintained at 6.75%.**
4. **Deficit Liquidity and Government Spending:**
   o **System liquidity, measured by the net position under the Liquidity Adjustment Facility (LAF), turned into a deficit in September 2023 for the first time since May 2019.**
   o Deficit liquidity was influenced by factors such as **higher currency leakage during the festive season, government cash balances, and RBI's market operations.**
   o RBI expects liquidity conditions to ease as government spending increases.
5. **Additional Spending Proposal:**
   o The Indian government has sought parliamentary approval for additional spending of Rs 1.29 trillion in the current fiscal year.
   o The proposed spending includes higher subsidies for farmers and funding for a rural job employment program.
   o Net additional spending for the fiscal year is Rs 58,378 billion rupees, with the remaining amount accommodated through expense reshuffling.
6. **Future Outlook:**
   o The RBI remains **committed to nimble liquidity management, anticipating that government spending will further alleviate liquidity conditions**.
7. **Review Period for Adjusted Measures:**
   o The newly introduced measure of allowing the reversal of liquidity facilities under SDF and MSF on weekends and holidays will be reviewed after six months or earlier if necessary.

Conclusion:

The RBI's monetary policy review emphasizes maintaining the status quo on the policy rate, introducing measures for effective liquidity management, and addressing deficit liquidity concerns while anticipating the impact of increased government spending. The adjustments in liquidity tools aim to enhance flexibility and responsiveness in the banking system. The central bank remains watchful of inflation and committed to supporting economic stability.

Monetary Policy Instruments of RBI:

Qualitative Instruments:

1. **Moral Suasion:**
    - o Persuasion and communication techniques to influence banks' behavior.
    - o Encourage or discourage certain activities without using direct regulatory measures.
2. **Direct Credit Controls:**
    - o Regulation of credit flow to specific sectors or industries.
    - o Target and control credit allocation to influence economic activities.
3. **Selective Credit Controls:**
    - o Targeting specific types of loans to control demand in specific areas.
    - o Direct control over credit for specific purposes, such as curbing inflation or promoting certain sectors.

Quantitative Instruments:

1. **Cash Reserve Ratio (CRR):**
    - o Reserves that banks must maintain with the central bank against their total deposits.
    - o Regulate the overall money supply in the economy.
2. **Repo Rate:**
    - o The interest rate at which the central bank lends short-term funds to commercial banks.
    - o Influence short-term interest rates and control liquidity in the banking system.
3. **Reverse Repo Rate:**
    - o The interest rate at which banks can park excess funds with the central bank.
    - o Control the money supply by managing the flow of funds in the banking system.
4. **Bank Rate:**
    - o The rate at which the central bank provides long-term funds to commercial banks.
    - o Regulate long-term interest rates and provide a benchmark for other interest rates.
5. **Open Market Operations (OMOs):**
    - o Buying or selling government securities in the open market.
    - o Influence money supply, interest rates, and liquidity conditions.
6. **Liquidity Adjustment Facility (LAF):**
    - o Includes Repo Rate and Reverse Repo Rate.
    - o Provide liquidity or absorb excess liquidity in the banking system.
7. **Marginal Standing Facility (MSF):**
    - o Allows banks to borrow overnight funds against collateral.
    - o Manage short-term liquidity needs of banks.
8. **Statutory Liquidity Ratio (SLR):**
    - o Percentage of Net Demand and Time Liabilities (NDTL) to be maintained in approved securities.
    - o Ensure banks hold a certain proportion of their deposits in liquid assets to meet obligations.

Caution by RBI on Loan Waiver Advertisements

Subject : Economy

Section: Monetary Policy

The Reserve Bank of India (RBI) issues a caution to the public.

- **Misleading Advertisements:**
    - o RBI notices **misleading ads on loan waiver offers in print and on social media**.
    - o Entities actively promoting such campaigns.
- **Service Fee Scam:**
    - o Reports of entities charging service or legal fees for issuing 'debt waiver certificates' without authority.
- **Undermining Banks' Efforts:**
    - o **Individuals running campaigns undermining banks' efforts** to enforce rights over securities.
- **False Representation:**
    - o Entities misrepresenting that dues to financial institutions need not be repaid.
- **Consequences:**

- o Such activities **undermine financial institutions' stability and depositors' interests.**
- o **Associating with such entities can result in direct financial losses**.

Other Laws/Agencies to Curb Unfair Advertisements in India:

Advertising Standards Council of India (ASCI):

- Self-regulatory voluntary organization founded in 1985.
- Objective: Maintain and enhance public confidence in advertising.

Mandate:

- Advertising material must be truthful, legal, and honest.
- Must be decent, not objectify women.
- Should be safe for consumers, especially children.
- Should be fair to competitors.

Composition of ASCI:

- **Board of Governors:**
  - o 12 members representing key sectors (Advertisers, advertising agencies, media, allied professions).
- **Consumer Complaints Council (CCC):**
  - o Currently has about 21 members.
  - o 9 from the industry, 12 from civil society (doctors, lawyers, journalists, consumer activists, etc.).
  - o CCC's decision on complaints is final.
- **Secretariat:**
  - o Independent Secretariat with 5 members.
  - o Headed by the Secretary General.
- **Complaint Process:**
  - o If an ad in India seems objectionable, a person can complain to ASCI.
  - o CCC deliberates on the complaint after due process for the advertiser to defend.
  - o Decision based on ASCI code and the law of the land.
  - o If upheld, the ad is voluntarily withdrawn or modified.
  - o Government amendment in 2007: **Ads violating ASCI code not permitted on TV under Cable TV Network Rules' Advertising Code.**

Central Consumer Protection Authority (CCPA):

- **Establishment:**
  - o **Regulatory body founded in 2020 under the Consumer Protection Act, 2019.**
  - o **Works under the Ministry of Consumer Affairs.**
- **Objectives:**
  - o Promote, protect, and enforce consumer rights.
  - o Conduct investigations into consumer rights violations.
  - o **Order recalls of unsafe goods, stop unfair trade practices, and prevent misleading advertisements.**
  - o **Impose penalties on those responsible for misleading ads.**

Central Consumer Protection Authority Guidelines: Guidelines issued by CCPA in 2022 to prevent false or misleading advertisements.

Guidelines Overview:

- **Non-Misleading Advertisements:** Advertisements must contain true and honest representations without exaggeration. Even unintentional lapses are acceptable if promptly communicated to consumers.
- **Surrogate Advertisements:** Prohibits surrogate or indirect ads for goods or services restricted by law.
- **Advertisements Targeting Children:** Prohibits ads that condone, encourage, or exploit behavior dangerous for children. Aims to prevent influencing children's buying behavior negatively.
- **Disclaimers in Advertisements:** Introduction of disclaimers to clarify claims, make qualifications, or resolve ambiguities. **Advertisers must not hide material information likely to make the ad deceptive.**
- **Duties Imposed:** Manufacturers, service providers, and advertising agencies: **Should not make claims or comparisons related to objectively ascertainable facts and advertisements must gain consumer trust and avoid exploiting their lack of experience or knowledge.**

Cable Television Networks (Regulation) Act: Regulates content on cable TV, prohibiting misleading, indecent, or offensive ads.

Consumer Protection Act: Provides legal recourse for **consumers affected by unfair advertising practices. And Allows consumers to file complaints against companies** and seek compensation.

Drugs and Magic Remedies (Objectionable Advertisements) Act: Prohibits **advertising drugs or remedies claiming miraculous or supernatural properties**.

Food Safety and Standards Act: Regulates **advertising of food products, prohibiting false claims about nutritional value.**

Press Council Act: Regulates ad content in newspapers, prohibiting false, misleading, or offensive advertisements.

Facts for Prelims

What are Dark Patterns?

- **Deceptive design techniques in user interfaces to manipulate or deceive users online.**
- **Unethical designs exploiting cognitive biases and behaviors for the benefit of the platform or business.**
- **Types include urgency, basket sneaking, confirm shaming, forced action, nagging, subscription traps, etc.**

How Companies Use Dark Patterns: Social media and Big Tech firms like Apple, Amazon, Google use dark patterns for their advantage. **Examples include Amazon's confusing cancellation process, YouTube's pop-ups for YouTube Premium, and LinkedIn's unsolicited messages.**

Basket Sneaking –

Sneaking products into users' shopping baskets to trick them into purchasing more than intended. Il-legalized by the European Commission under the consumer rights directive.

Confirm Shaming –

A **manipulative tactic in UI design or online interactions using guilt or social pressure. Occurs when users are presented with a choice**, and emotionally manipulative language induces guilt or embarrassment for declining or opting out.

Surrogate Advertising:

Marketing technique indirectly promoting products or services restricted from direct advertising and common in industries like alcohol, tobacco, and gambling with strict advertising regulations. **Example:** Alcohol brand advertises mineral water with the same logo to create brand awareness without mentioning the alcohol product.

In last 9 years, PSBs have not recovered even ₹1 vs ₹5 written off: FinMin in LS

Subject : Economy

Section: Monetary Policy

- Against an aggregate loan write-off of Rs 10.42 lakh crore, PSBs have recovered just Rs 1.61 lakh crore from written-off loans, since financial year 2014-15
- PSBs could not recover even Re 1 as against Rs 5 written-off during nine fiscal years starting 2014-15.
- The recovered amount is 15.45 per cent of the total written-off amount during the said period.
- Though the government maintains that a write-off does not mean loan waiver, banking industry sources say considering the hair cut ratio after a compromise or long-drawn legal battle, actual recovery from written-off accounts is low and the latest data proves that.
- According to RBI guidelines and the policy approved by bank boards, NPAs, including those in respect of which full provisioning has been made on completion of four years, are removed from the balance-sheet of the bank concerned by way of a write-off.
- Such write-offs do not result in waiver of liabilities of borrowers to repay.
- Further, the process of recovery of dues from the borrower in written-off loan accounts continues, write-off does not benefit the borrower.
- Recovery from written-off accounts are initiated through various mechanisms, including filing of **civil suits** or in the **Debts Recovery Tribunals, action under the Securitisation and Reconstruction of Financial Assets** and **Enforcement of Security Interest Act, 2002**, filing of cases in the **National Company Law Tribunal under the Insolvency and Bankruptcy Code, 2016**, through negotiated settlement/ compromise, and sale of non-performing assets.
- Government does not spend any amount on write-offs of corporate loans,
- The Minister did not name individual borrowers whose accounts have been written off citing the **RBI Act.**
- Banks can also negotiate settlements or compromise or even sell non-performing assets. Further, in line with the **RBI's Framework for Compromise Settlements and Technical Write-offs on June 8, 2023,** compromise settlements are undertaken by lenders in respect of wilful defaulters without prejudice to criminal proceedings underway against such debtors, he said.

RBI Tightens Norms for Lenders Investing in AIFs: Key Points

Subject :Economy

Section: Monetary Policy

1. **Objective:**
   o The Reserve Bank of India (RBI) has **tightened norms for lenders investing in Alternative Investment Funds (AIFs) to address concerns related to evergreening of stressed loans.**
2. **Concerns Addressed:**
   o The central bank **aims to curb transactions involving the substitution of direct exposure of lenders to borrowers with indirect exposure through investments in AIF units, which may conceal the true status of stressed loans.**
3. **Restrictions on Downstream Investments:**
   o **Lenders are prohibited from investing in any scheme of an AIF with downstream investments,** either directly or indirectly, in a company that has borrowed from them in the preceding 12 months. **If lenders have such investments, they must liquidate them within 30 days. Failure to do so requires them to make a 100% provision on such investments.**
4. **Circular Applicability:**
   o The norms are part of the RBI's circular on 'Investments in AIFs,' **applicable to REs (Regulated Entities) i.e. commercial banks, urban cooperative banks, all-India financial institutions, and non-banking finance companies, including housing finance companies.**
5. **Deduction from Capital Funds:**
   o Full deduction from the lender's capital funds is prescribed if they have investments in the subordinated units of any AIF scheme with a 'priority distribution model.'
6. **Priority Distribution Model:**
   o Under this model, **certain AIF schemes have a distribution waterfall where one class of investors has priority in distribution over others, leading to a deduction from the lender's capital funds.**
7. **Background:**
   o The tightening of norms follows RBI Governor Shaktikanta Das's mention of instances where **lenders used innovative methods to conceal the actual status of stressed loans.**
   o Industry participants express concerns that the **circular makes it virtually impossible for RBI-regulated entities, especially banks and NBFCs, to invest in AIFs, reducing the pool of investable assets for AIFs.**
   o Industry participants plan to seek further clarity from the RBI on the circular's implications and requirements.

The RBI's move aims to enhance transparency and **prevent the misuse of AIF investments for concealing the true state of stressed loans by financial institutions.**

Upstream and Downstream Investment in Foreign Direct Investment (FDI):

1. **Upstream Investment in FDI: Upstream FDI involves foreign investments in activities related to the early stages of the production process, such as exploration, extraction, and initial processing of raw materials or resources in a host country. Examples:** A foreign company investing in the exploration and extraction of natural resources (oil, minerals, etc.) in another country. Investment in agricultural activities, including farming or cultivation of raw materials.
2. **Downstream Investment in FDI: Downstream FDI pertains to foreign investments in activities associated with the later stages of the production process, including processing, manufacturing, distribution, and marketing of finished products in a host country**. Foreign investment in manufacturing plants for converting raw materials into finished goods. Investment in retail chains, distribution networks, or marketing activities in a host country.

About AIFs:

As per Securities and Exchange Board of India (Alternative Investment Funds) Regulations, 2012, **AIFs refer to privately pooled investment funds, either from Indian or foreign sources, in the form of a trust, company, body corporate, or Limited Liability Partnership (LLP).**

AIFs do not include funds covered under *SEBI (Mutual Funds) Regulations, 1996, SEBI (Collective Investment Schemes) Regulations, 1999, or any other regulations of the Boar*d regulating fund management activities.

Categories of AIFs:

AIFs are **classified into three categories** based on their investment focus and activities.

Category I:

- Category I AIFs primarily invest in **start-ups, small and medium-sized enterprises (SMEs), or sectors deemed economically and socially viable** by the government.

Category II:

- Category II AIFs include **private equity funds or debt funds that do not receive any specific incentives or concessions from the government** or any other regulator.

Category III:

- Category III AIFs encompass **hedge funds or funds aimed at making short-term returns, along with open-ended funds that do not receive any specific incentives** or concessions from the government or any other regulator.

About Evergreening of Loans:

Evergreening of loans refers to the practice **where banks or lenders provide additional funds or take other measures to artificially sustain a loan that is not being repaid as scheduled.**

The primary objective is to **avoid classifying the loan as a non-performing asset (NPA)** which could necessitate setting aside more provisions for potential losses.

Purpose of Evergreening:

Evergreening is a **temporary measure employed by banks to maintain the appearance of a performing asset, thereby safeguarding their profitability and financial stability.**

Risk Associated:

While **evergreening loans may temporarily alleviate the stress on a bank's balance sheet, it can conceal the true extent of non-performing assets** and potentially lead to a more significant financial crisis if not addressed effectively.

Classic Evergreening

Instances of **non-bank lenders selling stressed loans to AIFs partially set up by the lender itself, with the fresh funds being used to repay the original debt to prevent the loans from turning bad**, is "classic evergreening".

Definition of Non-Performing Asset (NPA):

NPA refers to a **classification for loans or advances that are in default or are in arrears on scheduled payments of principal or interest.**

Categories of Non-Performing Assets:

Sub-standard Assets:

Sub-standard assets are those classified as NPAs for a period less than or equal to 12 months.

Doubtful Assets:

Doubtful assets are those that have been non-performing for a period exceeding 12 months.

Loss Assets:

Loss assets are considered uncollectible, with little or no hope of recovery, and require complete write-off from the bank's books.

Government Issues PMLA Notice to Offshore Crypto Firms

Subject: Economy

Section: Monetary Policy

Show Cause Notices:

- The Financial Intelligence Unit India (FIU-IND) issues **show cause notices to nine offshore cryptocurrency and virtual digital assets service providers (VDA SPs).**

Non-Compliance with PMLA:

- Reason: VDA SPs **found non-compliant with the Prevention of Money Laundering Act (PMLA)**.

Compliance Action:

- The Finance Ministry terms the notices as "compliance action."

Request to Block Web Addresses:

- **FIU-IND requests the Union Information Technology ministry to block the web addresses (URLs) of non-compliant entities.**

Role of FIU-IND:

- FIU-IND is the **national agency responsible for receiving, processing, analyzing, and disseminating information related to suspect financial transactions.**

PMLA Requirements for VDA SPs:

- Registration Requirement: VDA SPs engaged in activities like **exchange between virtual digital assets and fiat currencies, transfer of virtual digital assets, and safekeeping or administration of virtual digital assets must register with FIU-IND.**
- Activity-Based Requirements: **Requirements are "activity-based" and not contingent on physical presence in India.**

AML-CFT Framework:

- VDA SPs were brought **under the ambit of the Anti-Money Laundering (AML) and Counter Financing of Terrorism (CFT) framework under the PMLA in March 2023.**

Regulatory Obligations:

- Reporting entities **must maintain KYC details, records of documents, and file statements of financial transactions with the tax department.**

FIU-IND (Financial Intelligence Unit India):

- FIU-IND is the **national agency responsible for receiving, processing, analyzing, and disseminating information related to suspect financial transactions.**
- It operates under the **Finance Ministry and plays a crucial role in the Anti-Money Laundering (AML) and Counter Financing of Terrorism (CFT) framework.**
- FIU-IND monitors financial transactions to **identify and combat money laundering** and terrorist financing activities.

PMLA (Prevention of Money Laundering Act):

- PMLA is an Act passed by Parliament of India **enacted to prevent money laundering and related offenses.**
- It **provides a legal framework to combat money laundering and applies to financial institutions and intermediaries to ensure they follow measures for customer identification, record-keeping, and reporting of transactions.**
- The Act also designates certain authorities, such as FIU-IND, to oversee and enforce its provisions.

AML-CFT (Anti-Money Laundering and Counter Financing of Terrorism):

- AML-CFT refers to a **set of regulations and practices designed to prevent and combat money laundering and the financing of terrorism.**
- It **involves implementing measures to detect and deter illicit financial activities, ensuring compliance with regulatory requirements, and enhancing transparency in financial transactions.**
- **Financial institutions, including virtual digital assets service providers (VDA SPs), are subject to AML-CFT regulations to prevent their services from being misused for illegal activities.**

Domestic Systemically Important Banks (D-SIBs)

Subject :Economy

Section: Monetary Policy

The Reserve Bank of India (RBI) has **designated State Bank of India (SBI), HDFC Bank, and ICICI Bank as Domestic Systemically Important Banks (D-SIBs) and has placed them in specific buckets based on their Systemic Importance Scores (SISs).**

1. **ICICI Bank:**
   - ICICI Bank continues to be in the same bucketing structure as the previous year.
2. **State Bank of India (SBI):**
   - SBI has moved from bucket 3 to bucket 4.
3. **HDFC Bank:**
   - HDFC Bank has shifted from bucket 1 to bucket 2.

   Effective Date of Higher D-SIB Buffer Requirements:
   - For SBI and HDFC Bank, the higher D-SIB buffer requirements resulting from the bucket increase will be effective from April 1, 2025.
   - The **additional Common Equity Tier 1 (CET1) requirement will be in addition to the capital conservation buffer**.

   D-SIB Framework:
   - The D-SIB framework **requires the RBI to disclose the names of banks designated as D-SIBs and place them in appropriate buckets based on their SISs.**
   - Based on the bucket in which a D-SIB is placed, **an additional common equity requirement is applied.**

   Foreign Banks with Branch Presence in India:
   - In the case of a foreign bank with a branch presence in India that is a **Global Systemically Important Bank (G-SIB), it must maintain an additional CET1 capital surcharge in India, proportionate to its Risk Weighted Assets (RWAs) in India.**

   Historical Designation:
   - The RBI had previously **designated SBI and ICICI Bank as D-SIBs in 2015 and 2016.**
   - Based on data collected as of March 31, 2017, **HDFC Bank was also classified as a D-SIB.**
   - The current update is based on data collected as of March 31, 2023, and **considers the increased systemic importance of HDFC Bank post the merger of erstwhile HDFC Ltd into HDFC Bank on July 1, 2023.**

Domestic Systemically Important Banks (D-SIBs) in India:

The Reserve Bank of India (RBI) has identified State Bank of India (SBI), ICICI Bank, and HDFC Bank as Domestic Systemically Important Banks (D-SIBs). This designation **reflects the significance of these banks in the Indian economy, with considerations for their size, complexity, lack of substitutability, and interconnectedness.**

What are D-SIBs?

D-SIBs are banks that are considered "too big to fail," meaning their failure could have severe implications for the overall economy. The concept of D-SIBs was **introduced globally in the aftermath of the 2008 financial crisis to address the risks posed by large and interconnected banks.**

Determination of D-SIBs:

1. **Factors Considered:** The RBI determines D-SIBs based on factors such as size, complexity, lack of substitutability, and interconnectedness with the financial system.
2. **Classification into Buckets:** D-SIBs are classified into five buckets based on their importance to the national economy.
3. **Asset Threshold:** To be designated as a D-SIB, **a bank must have assets exceeding 2 percent of the national GDP.**
4. **Regulatory Requirements:** D-SIBs are subject to **higher regulatory requirements**. They need to maintain a higher share of risk-weighted assets as tier-I equity.

Regulatory Requirements for D-SIBs:

1. **Additional Capital:** D-SIBs are required to **maintain Additional Common Equity Tier 1 (CET1) capital based on their risk-weighted assets.**
2. **Risk Mitigation:** These requirements aim to mitigate the risks associated with the failure of a D-SIB and ensure their ability to absorb losses.

Significance:

1. **Economic Importance:** D-SIBs play a crucial role in the economy, and their failure could lead to significant disruption in essential banking services and overall economic activities.
2. **Government Support:** The "too big to fail" designation implies that, **in times of distress, the government is expected to provide support to prevent the failure of these banks.**
3. **Advantages and Policy Measures:** D-SIBs may enjoy certain advantages in funding due to the perception of government support. Additionally, they are subject to specific policy measures addressing systemic risks and moral hazard issues.

CET1 and Risk-Weighted Assets (RWA):

- CET1 is high-quality regulatory capital absorbing losses immediately.
- RWA link minimum capital requirements to the risk profile of a bank's lending activities.

Proposal to verify the rumours in the Stock Market - SEBI

Subject :Economy

Section: Monetary Policy

The Industry Standards Forum (ISF), a body established by the Securities and Exchange Board of India (SEBI) under the aegis of stock exchanges, has proposed a change in the criteria for rumour verification for listed firms.

The suggestion is to **make the requirement for rumour verification applicable whenever there is a material "price movement" of the entities' securities**, rather than a material "event."

Key points of the proposal:

1. **Material Price Movement:** Rumour verification would be **triggered by a material price movement in the securities of listed entities.**
2. **Percentage Variation:** To determine material price movement, **a lower percentage variation may be considered for securities falling under a high price range, and a higher percentage variation may be considered for securities falling under a low-price range.**
3. **Indexing to Market Movements:** The price variation in the securities of the listed entity **may be indexed to the movement in Nifty 50 or the Sensex** to factor in market dynamics.
4. **Extension of Timeline:** SEBI has **extended the timeline for rumour verification to February 1 and August 1 for the top 100 and top 250 listed firms** by market capitalization, respectively.
5. **Unaffected Price for Transactions:** The **unaffected price would be considered to determine the pricing of transactions when the listed entity confirms** the market rumour due to material price movement.
6. **Obligation on Promoters and Management:** There is a **proposal to cast an obligation upon promoters, directors, Key Managerial Personnel (KMP), and senior management to provide adequate, accurate, and timely responses to queries raised or explanations sought**.
7. **Use of Classified Information:** If a listed entity has **classified certain information as Unpublished Price Sensitive Information (UPSI) and does not confirm, deny, or clarify a market rumour related to such information, the media reports should not be used later by an insider as a defense that the information was "generally available."**

This proposed change aims to **align rumour verification with market movements and enhance transparency and timely communication** in response to material developments.

About Price Move and Material Movement?

1. **Price Move:**
   - o **Definition:** A price move refers to a **change in the price of a security, such as a stock, bond, or commodity, over a specific period of time.**
   - o **Significance:** Traders and investors closely monitor price moves to make informed decisions about buying or selling securities. **Price moves can be influenced by various factors, including market news, economic indicators, corporate earnings, and geopolitical events.**

2. **Material Movement:**
   - o **Definition:** Material movement, in the context of market regulations, **often refers to a significant change or event related to a company or its securities that could impact the market value of those securities.**
   - o **Significance:** Material movements are typically associated with information that is **considered "material" or important enough to influence an investor's decision. Material information is often non-public and may include details about financial performance, mergers and acquisitions, regulatory approvals, or other events that could affect the company's stock price.**

About SEBI (Prohibition of Insider Trading) Regulations, 2015

The Securities and Exchange Board of India (SEBI) (Prohibition of Insider Trading) Regulations, 2015, **aims to prevent insider trading in securities**.

Insider trading refers to the buying or selling of a company's securities by individuals who have access to non-public, material information about the company. The regulations aim to maintain a level playing field for all market participants and ensure fairness and transparency in the securities market.

The regulations define **insider trading and specify who qualifies as an "insider." Insiders include company officials, connected persons, and those in possession of unpublished price-sensitive information (UPSI).**

The regulations prescribe penalties for insider trading violations, which may include monetary fines, disgorgement of profits, and prohibition from trading in the securities market.

The SEBI (Prohibition of Insider Trading) Regulations, 2015, play a crucial role in fostering investor confidence and ensuring the integrity of the securities market in India by preventing the misuse of confidential information for trading purposes.

Role of DFS in improving bank asset quality in 2023

Subject :Economy

Brief on various schemes under DFS -

1. **Pradhan Mantri Jan Dhan Yojana (PMJDY):**
- **Objective:** PMJDY, launched in August 2014, aims to provide financial inclusion to every household in India.
- **Key Features:**
  - o Opening of basic savings bank accounts with no minimum balance requirement.
  - o **Access to financial services such as insurance, credit, and pension.**
  - o **RuPay debit card for account holders.**
  - o **Direct Benefit Transfer (DBT) and subsidies directly credited to the accounts.**
  - o **Overdraft facility for eligible account holders.**

2. **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):**
   - o **Objective:** PMJJBY, launched in May 2015, provides life insurance coverage at an affordable premium.
   - o **Key Features:**
     - ▪ **Life insurance coverage of ₹2 lakhs** in case of the insured's death due to any reason.
     - ▪ Annual premium is low, making it accessible to the economically weaker sections.
     - ▪ The scheme is available to **individuals aged 18 to 50 years**.

3. **Pradhan Mantri Suraksha Bima Yojana (PMSBY):**
   - o **Objective:** PMSBY, also launched in May 2015, **provides accidental death and disability insurance coverage.**
   - o **Key Features:**
     - ▪ Accidental death and disability coverage of ₹2 lakhs.
     - ▪ Premium is affordable, making it **accessible to a large population.**
     - ▪ **The scheme is available to individuals aged 18 to 70 years.**

4. **MUDRA (Micro Units Development and Refinance Agency) Scheme:**

- o **Objective:** Launched in April 2015, **MUDRA aims to provide financial support to microenterprises and promote entrepreneurship.**
- o **Key Features:**
  - MUDRA provides funding to microenterprises through various loan products.
  - **Three categories of loans: Shishu (up to ₹50,000), Kishor (₹50,000 to ₹5 lakhs), and Tarun (₹5 lakhs to ₹10 lakhs).**
  - **The loans support a variety of income-generating activities.**

5. **Stand Up India:**
   - o **Objective:** Launched in April 2016, **Stand Up India promotes entrepreneurship among women and SC/ST communities.**
   - o **Key Features:**
     - Provides bank loans **between ₹10 lakhs and ₹1 crore to at least one SC/ST borrower and one woman borrower per bank branch.**
     - **Aims to support greenfield enterprises in the non-farm sector.**

6. **Atal Pension Yojana (APY):**
   - o **Objective:** Launched in May 2015, **APY encourages the unorganized sector to save for their retirement.**
   - o **Key Features:**
     - Provides a **fixed pension between ₹1,000 and ₹5,000 per month after the age of 60.**
     - **Contributions based on age and chosen pension amount.**
     - **Accessible to individuals aged 18 to 40 years.**

7. **DIGIDHAN Mission:**
   - o **Objective:** DIGIDHAN Mission focuses on **promoting a robust ecosystem for digital payments in India.**
   - o **Key Features:**
     - Aims to **reduce cash transactions and promote digital financial transactions**.
     - Encourages the use of digital payment methods such as UPI (Unified Payments Interface), mobile wallets, and digital banking.
     - Seeks to **enhance financial inclusion and reduce the reliance on physical currency.**
     - Enhances the **security and efficiency of transactions** in the digital space.

8. **Kisan Credit Card (KCC):**
   - o **Objective:** The Kisan Credit Card scheme was **introduced to provide timely and hassle-free credit to farmers.**
   - o **Key Features:**
     - Offers farmers a **revolving credit facility to meet their agricultural needs**.
     - Enables farmers to access short-term credit for crop cultivation, harvest, and post-harvest expenses.
     - **Simplifies the credit delivery process for farmers**, making it more accessible and farmer-friendly.
     - Promotes financial inclusion and **ensures farmers have timely access to credit**.

9. **Enhanced Access and Service Excellence (EASE) Reform:**
   - o **Objective:** The EASE Reform agenda aims to **bring about positive changes in the functioning of Public Sector Banks (PSBs) in India.**
   - o **Key Features:**
     - Focuses on multiple areas, **including risk assessment, NPA (Non-Performing Asset) management, financial inclusion, customer service, and digital transformation.**
     - Aims to improve the **overall efficiency, transparency, and accountability of PSBs.**
     - Promotes the use of technology and data-driven approaches for better decision-making.
     - Evolved through **multiple versions (EASE 1.0 to EASE 6.0) with a focus on digital customer experience and operational enhancements.**
     - EASE index is prepared by the **Indian Banking Association (IBA) and Boston Consulting Group and commissioned by the Finance Ministry.**

Guidelines for Government Securities Lending Directions, 2023 by RBI

Subject :Economy

Section: Monetary Policy

The Reserve Bank of India (RBI) has **issued guidelines to permit lending and borrowing in government securities (G-Secs), excluding Treasury Bills**.

1. **Objective:**
   o The move aims to **deepen the bond market and enhance liquidity in the Government Securities (G-Sec) market.**
   o A well-functioning securities lending and borrowing market is expected to contribute to efficient price discovery.

2. **Draft and Finalization:**
   o In February, the **RBI released the draft RBI (Government Securities Lending) Directions, 2023.**
   o The guidelines have been finalized based on the comments received on the draft.

3. **Eligibility Criteria:**
   o Government securities issued by the Central Government **excluding Treasury Bills** shall be eligible **for lending/borrowing** under a GSL transaction. Securities obtained under a repo transaction, **including through Reserve Bank's Liquidity Adjustment Facility, or borrowed under another GSL transaction shall also be eligible** to be lent under a GSL transaction.
   o Government securities issued by the Central Government (**including Treasury Bills**) and the State Governments shall be eligible **for placing as collateral** under a GSL transaction. **Securities obtained under a repo transaction, including through Reserve Bank's Liquidity Adjustment Facility, or borrowed under another GSL transaction** shall also be eligible to be placed as collateral under a GSL transaction.

4. **Collateral Eligibility:**
   o **G-Secs, including Treasury Bills and state government bonds, are eligible for placing as collateral under a GSL transaction.**

5. **Maturity Tenor:**
   o The **minimum tenor of a GSL transaction is one day**, and the **maximum tenor is the maximum period prescribed to cover short sales.**

6. **Impact and Purpose:**
   o The **lending and borrowing of G-Secs are expected to augment the existing market for 'special repos.'**
   o The system aims to **facilitate broader participation in the securities lending market, allowing investors to deploy idle securities and enhance portfolio returns**.

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The introduction of these guidelines is part of the RBI's efforts to **create a more robust and liquid securities lending and borrowing market, fostering a healthier bond market ecosystem.**

Government Securities (G-Secs):

Government Securities (G-Secs) are debt instruments issued by the government to raise funds from the market. These securities are considered one of the safest forms of investment because they are backed by the government's credit. **The government pays periodic interest to the bondholders and repays the principal amount at maturity.**

1. **Issued by Government:**
   o G-Secs are **issued by the central government and state governments** to meet their financial needs.

2. **Low Risk:**
   o They are considered low-risk investments as they are backed by the government's commitment to repayment.

3. **Fixed Interest Payments:**
   o G-Secs pay **periodic interest to bondholders, usually semi-annually or annually.**

4. **Fixed Maturity Period:**
   o G-Secs have a predetermined maturity period, ranging from a few years to several decades.

5. **Liquidity:**
   o They can be **traded in the secondary market before maturity, providing liquidity to investors.**

6. **Types of G-Secs:**
   o **G-Secs include Treasury Bills (T-Bills), Government Bonds, and State Development Loans (SDLs).**

7. **Primary Issuance and Secondary Market:**
   o G-Secs are initially issued through auctions in the primary market and later traded in the secondary market.

Treasury Bills (T-Bills):

Treasury Bills, often referred to as T-Bills, are a specific type of short-term government security. They are issued by the government to meet short-term financing needs. T-Bills are typically issued for maturities of 91 days, 182 days, and 364 days.

1. **Short-Term Debt:**
   o T-Bills have **short maturities**, making them suitable for investors looking for short-term investments.
2. **Discounted Purchase:**
   o **T-Bills are issued at a discount to their face value**. The difference between the issue price and face value represents the investor's earnings.
3. **No Interest Payments:**
   o Unlike other bonds, T-Bills do not pay periodic interest. **Instead, investors earn returns by purchasing them at a discount and receiving the face value at maturity.**
4. **High Liquidity:**
   o T-Bills are highly liquid and can be easily traded in the secondary market.
5. **Risk-Free:**
   o T-Bills are **considered risk-free** because they are backed by the government.
6. **Primary Issuance and Auctions:**
   o Like other G-Secs, T-Bills are issued through auctions in the primary market.
7. **Role in Monetary Policy:**
   o T-Bills play a role in the implementation of monetary policy by the central bank.

G-Secs encompass a broader category of government debt, including Treasury Bills, Government Bonds, and State Development Loans. Treasury Bills are a **specific type of short-term G-Sec with unique characteristics suitable for investors with short-term investment horizons.**

Social Stock Exchange (SSE)

Subject : Economy

Section: Capital Market

Unnati, specifically the SGBS Unnati Foundation (SUF), is mentioned as the first entity to list on the SSE.

1. **Listing on NSE Social Stock Exchange (SSE):**
   o Unnati became the first entity to be listed on the NSE Social Stock Exchange.
2. **Nature of the Entity:**
   o SGBS Unnati Foundation (SUF) is **described as a not-for-profit organization (NPO) incorporated in 2011.**
3. **Training and Fundraising:**
   o SUF has a **focus on training youth and had trained over 45,000 youth.**
   o The entity raised ₹1.8 crore from various sources, including Zerodha, Nabard, etc.
4. **Zero Coupon Zero Principal (ZCZP) Instruments:**
   o Upon listing, **Zero Coupon Zero Principal (ZCZP) instruments with a face value of ₹1 each were credited into the demat accounts of the respective donors.**
   o These **instruments are not traded but are held in the donors' accounts, and their value becomes zero at the end of one year when SUF's project is completed.**
5. **Purpose of Fundraise:**
   o The funds raised were intended to train 10,000 youth across states and assist them in finding jobs.
6. **Transparency and Monitoring:**
   o Listing on the stock exchange allows for checks and balances, **including disclosing the purpose for raising funds and providing a timeline for their utilization.**
   o Annual impact reports audited by **social audit firms contribute to transparency**.
7. **Credibility for Investors:**
   o Listing enhances credibility and comfort for investors as they can monitor how the funds are utilized.
8. **SEBI Board Approval:**
   o The SEBI board recently approved changes, **including halving the minimum issue size of ZCZPs by NPOs on SSEs to Rs 50 lakh and reducing the minimum application size to ₹10,000 to enable wider participation.**
9. **Future Listings:**
   o There are 38 more NPOs registered with the NSE SSE, suggesting the potential for more listings in the coming months.
10. **Impact Investing and Social Change:**

- o SSEs are described as representing a unique approach to **impact investing, creating a bridge between donors and NPOs dedicated to driving social change.**
- o SSEs offer advantages such as transparency, trust, efficiency, and cost savings.

It's important to note that the **impact of this development on the Indian economy depends on the scale and success of SSEs in promoting impact investing and supporting social enterprises and voluntary organizations**. The inclusion of more NPOs and changes in regulatory requirements, as approved by the SEBI board, could influence the landscape of impact investing in India.

About SGBS Unnati Foundation: SGBS Unnati Foundation is a not-for-profit organization formed in November 2011. It **focuses on providing vocational training for underprivileged and unemployed youth, particularly in the age group of 18 to 25 years.**

The funds raised through the ZCZP bonds issued by SGBS Unnati Foundation are **aimed at training up to 10,000 graduating youth from government colleges in various states to help them secure employment.**

The training **program includes 165 hours of training for each youth, comprising 90 hours of classroom learning over 30 days and 75 hours of self-learning content on a mobile application**. The cost per head for training is ₹2,000 per youth.

About Social Stock Exchanges (SSEs) –

SSEs are trading platforms **designed to facilitate capital raising for social businesses and non-profits by connecting them with ethical investors interested in organizations with both corporate and social missions**.

The establishment of SSEs aims to provide a unified and coherent framework for **funding, utilization, impact measurement, disclosure, and reporting in the social development sector.**

Purpose of SSEs:
- o SSEs serve as platforms for social enterprises and **voluntary organizations to raise capital through various financial instruments, including debt, equity, mutual funds, and specific instruments like Zero Coupon Zero Principal (ZCZP) bonds.**

Coherence in Funding:
- o SSEs seek to bring coherence to the **diverse funding sources for the social development sector, including corporate social responsibility** (CSR), philanthropy, government funding, and retail charity.

Uniform Frameworks:
- o SSEs aim to establish uniform frameworks for funding, impact creation, measurement, disclosures, and reporting across different social organizations.

Initiative by the Indian Government:
- o The Indian government announced plans to **set up an SSE in 2019 to enhance the ability of social enterprises to raise capital.**

Key Building Blocks:
- o The SSE consists of three key building blocks: **the demand-side ecosystem (social organizations), the supply-side ecosystem (investors), and the infrastructure (the SSE and its intermediaries).**

Government's Role:
- o The government plays a crucial role as the market maker and influencer in the SSE ecosystem.

Regulation by SEBI:
- o The **Securities and Exchange Board of India (SEBI) serves as the SSE regulator, overseeing the functioning of SSEs and providing guidance.**

Approved Financial Instruments:
- o SSEs offer various financial instruments approved by SEBI, **including mutual funds, social impact funds (with grant-in/grant-out models), and ZCZP bonds.**

ZCZP Bonds

A Zero Coupon Zero Principal (ZCZP) bond is a **financial instrument that does not provide any periodic interest payments, and the principal amount is not repaid at maturity**.

These **bonds are issued with a face value, and they mature when a specified project is completed or after a predetermined period, typically 12 months from the date of allotment. They are issued to non-profit organizations (NPOs) for social development projects, promising a social return on investment rather than financial returns.**

Interest Structure:
- o **ZCZP bonds do not provide any interest income to investors.** Instead, they are structured as zero-coupon bonds, meaning that investors do not receive periodic interest payments.

Maturity Conditions:
- o The **bonds mature when the project for which they are raised is completed or after a fixed period, such as 12 months from the date of allotment.**

Listing on Social Stock Exchanges:

- o ZCZP bonds issued by non-profit organizations are listed on social stock exchanges (SSEs). **While they are not available for trading in the secondary market, they can be transferred to legal heirs since they are issued in dematerialized form.**

Progress on Industry Standards Forum proposed by SEBI
Subject : Economy
Section: Capital Market

Forum Composition:
- o Comprising **apex industry chambers of CII, FICCI, and Assocham.**

Chairman's Statement:
- o Chairman KV Kamath announced significant progress in **establishing new standards**.
- o Emphasis on compliance with SEBI regulations.

Deliberations and Consultations:
- o **Extensive deliberations ongoing with industry representatives in consultation with SEBI.**

Upcoming Standards:
- o **ESG Disclosures:**
  - ▪ Precise compliance standards for **SEBI-mandated ESG disclosures under Business Responsibility & Sustainability Reporting (BRSR) Core framework.**
  - ▪ Applicable assurance requirements.
- o **Rumour Verification:**
  - ▪ Developing standards for compliance with the **recently introduced requirement of verification of rumors by listed entities.**

SEBI Regulations:
- o Focus on recently amended provisions of **SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations.**

Future Agenda:
- o Post finalization of the first set of standards, the **Forum plans to address disclosure requirements under Regulations 30 and 30A of the LODR Regulations.**

About Industry Standards Forum:

Objective:
- o **SEBI (Securities and Exchange Board of India) aims to facilitate capital formation and improve the ease of doing business.**

Formation of Industry Standards Forum:
- o SEBI proposes the establishment of an **Industry Standards Forum**.
- o The forum will be formed by **Industry Associations** and chaired by a leader from the industry.
- o It will **operate under the auspices of the stock exchanges.**

Pilot Initiatives:
- o The industry associations express interest in undertaking more than one pilot initiative.

Priority Areas for Initial Focus:
- o The following areas have been identified as priority areas for the initial phase:
  - ▪ (a) **Rumour Verification Requirements**
  - ▪ (b) **Disclosure Requirements under Regulations 30 and 30A of LODR Regulations**
  - ▪ (c) **BRSR Core/ESG Assurance Requirements**
  - ▪ (d) **Structured Digital Database Requirements under PIT Regulations**

Timeline:
- o Industry associations propose a timeline of **three to four months** for designing standards to effectively implement regulations.

6. **Forum's Role:**
- o The **Industry Standards Forum will be responsible for formulating standards to implement specific regulations and circulars.**

7. **Detailed Standards:**

- o Standards will be **designed at a detailed level to demonstrate compliance with the specified regulations and circulars.**
8. **Regulatory Compliance Focus:**
   - o The initiative **aligns with SEBI's commitment to promoting regulatory compliance and streamlining business operations in the financial markets.**
9. **Capital Market Efficiency:**
   - o The **overall objective is to enhance capital market efficiency and foster a conducive environment for businesses in India.**

SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations

- SEBI Listing Obligations and Disclosure Requirement (LODR) Regulations are **guidelines and obligations imposed by the Securities and Exchange Board of India (SEBI) on listed companies.**
- The regulations aim to **ensure transparency, provide material information to investors, and maintain the integrity and efficiency of the securities market.**
- Applicable to all companies **whose securities are listed on recognized stock exchanges.**
- Mandates **specific disclosure requirements related to financial performance, shareholding patterns, corporate governance, and other material events.**

Regulation 30 and 30A:Regulation 30: Deals with disclosure of events or information that may have a bearing on the company's performance or share prices. **Regulation 30A:** Pertains to disclosures of material events by listed entities.

Rumour Verification Requirements: SEBI has **proposed the formation of an Industry Standards Forum to address Rumour Verification requirements under these regulations.**

BRSR Core/ESG Assurance Requirements: BRSR (Business Responsibility and Sustainability Reporting) Core and ESG (Environmental, Social, and Governance) Assurance Requirements are part of the disclosure framework.

Structured Digital Database Requirements under PIT Regulations: Deals with requirements **related to a Structured Digital Database under the Prevention of Insider Trading (PIT) Regulations.**

Securities and Exchange Board of India (SEBI):

SEBI is a statutory body established in 1992 under the Securities and Exchange Board of India Act, 1992. **SEBI's primary functions include protecting the interests of investors in securities and promoting and regulating the securities market. The headquarters of SEBI is located in Mumbai.**

Before SEBI, the **regulatory authority was the Controller of Capital Issues, operating under the Capital Issues (Control) Act, 1947. In 1988, SEBI was formed as the regulatory body for capital markets in India through a government resolution.**

Initially, SEBI was a non-statutory body without statutory powers. **It later gained autonomy and statutory powers with the enactment of the SEBI Act in 1992. The SEBI Board includes a Chairman and several other whole-time and part-time members. SEBI can appoint committees as needed to address specific issues.**

LIC Granted Extension for Minimum Public Shareholding (MPS) Compliance

Subject :Economy

Section: Capital Market

1. **SEBI's MPS Norms:**
   - o SEBI (Securities and Exchange Board of India) has **prescribed Minimum Public Shareholding (MPS) norms for listed companies.**
   - o Rule 19A of the Securities Contract Regulation Rules states that **every listed company, except public sector companies, should maintain a public shareholding of at least 25%.**
2. **LIC's Ownership Structure:**
   - o As of September 30, 2023, the government owns 96.5% of LIC (Life Insurance Corporation of India).
   - o The **government had divested 3.5% of its shareholding in LIC, and the company got listed on stock exchanges.**
3. **Exemption Granted:**
   - o The Department of Economic Affairs, Ministry of Finance, has **granted LIC a one-time exemption to achieve 25% MPS within ten years from the date of listing, i.e., until May 2032.**
   - o This exemption is **in the public interest and aligns with Rule 19A(6) of the Securities Contract (Regulations) Rules 1957.**
4. **SEBI Regulations:**
   - o Rule 19A(6) allows a listed company to have three years from the date of listing to ensure MPS.
   - o The objective is to **encourage broader public shareholding, including individuals and institutions.**
5. **Finance Ministry's Earlier Statement:**

- o Earlier, the Finance Ministry stated that a **listed public sector undertaking (PSU) would continue to be exempt from MPS norms for a specified period.**
- o The **exemption** applies to entities where the Central Government, State Government, or public sector company holds the majority of shares, voting rights, or control.

6. **Exemption Duration:**
- o The **exemption specified by the Economic Affairs Department for LIC will be valid until May 2032.**
- o It continues irrespective of any change in control of LIC after the issuance of the exemption.
- o This exemption **provides LIC with an extended timeline to meet MPS norms, contributing to the government's ongoing disinvestment strategy for the insurance giant.**

Minimum public shareholding requirement

- Securities and Exchange Board of India (SEBI) mandates a minimum public shareholding requirement for listed companies in India. The **minimum public shareholding norms are outlined in the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015.**
- As per these regulations, **a listed company is required to maintain a minimum public shareholding of 25%.** This means that **at least 25% of the total shares of the company should be held by public shareholders, which include individual investors, institutional investors, and other non-promoter entities.**
- Companies are expected to comply with this requirement within a specified timeframe from the date of listing. **In case a company does not meet the minimum public shareholding criteria, it may be required to take necessary steps to achieve compliance. Failure to comply with SEBI's regulations can lead to penalties and other regulatory actions.**

Anarcho-capitalism and libertarian liberalism

Subject :Economy

Section :National Income

Political ideologies such as anarcho-capitalism and libertarian liberalism, which **advocate for limited government involvement in economic and social matters.**

1. **Political Ideologies:**
- o **Libertarianism and Anarcho-Capitalism:** Emphasize limited government involvement in economic and social affairs. **Libertarianism upholds individual liberty and limited government, while anarcho-capitalism advocates for a society without government intervention.**

2. **Advantages Advocated by Proponents:**
- o **Personal Liberty, Innovation, Economic Efficiency:** Advocates argue that these ideologies provide advantages such as **personal liberty, fostering innovation, and promoting economic efficiency**.

3. **Conceptual Differences:**
- o **Libertarianism vs. Conventional Liberalism:** Barry differentiates libertarianism from conventional liberalism, **highlighting the adherence to moral and economic individualism that distinguishes libertarianism**.

4. **Inclusive Development and Economic Growth:**
- o **Structural Basis for Innovation:** Proponents assert that these ideologies establish a structural basis **for innovation and private enterprise, particularly in economic development and urban planning.**
- o **Inclusive Development:** Anarcho-capitalism fosters **inclusive development by providing greater access to resources like water and sanitation**.

5. **Critiques and Concerns:**
- o **Conceptual Flaws:** Critics like Barry and Steinberg et al. argue that these ideologies suffer from conceptual flaws and **may reinforce existing social and economic structures without addressing underlying problems.**

6. **Recent Scholarly Contributions:**
- o **Brennan's Work:** Brennan's work on libertarianism, including anarcho-capitalism, generates considerable discussion in economics, philosophy, and political science.

7. **Social Capital and Economic Growth:**
- o **Social Capital Defined:** The concept of social capital, explored by Adler and Kwon, refers to the **value derived from social networks and their tendencies to favor one another.**
- o **Human Capital and Economic Growth:** Sani et al. argue that **human capital significantly impacts technological advancements and economic growth.**

8. **Ethics and Morality:**
- o **Libertarian Morality:** Lyer et al. discuss the psychological dispositions of self-identified libertarians, **emphasizing their ethical underpinnings related to injury and justice.**

9. **Origins and Historical Context:**
    o **Roots in Classical Liberalism:** The libertarian tradition traces its roots to classical liberals who **emphasized the human desire for liberty, as discussed in Wilkin's work.**
10. **Complex Interconnections:**
    o **Interplay of Concepts:** The text suggests that the interaction of concepts such as **anarcho-capitalism, libertarian liberalism, social and human capital, economic expansion, and moral foundations creates a complex fabric with potential societal ramifications.**

Impact of political ideologies such as anarcho-capitalism and libertarian liberalism on Indian Economy

1. **Limited Government Intervention:**
    o **Potential Positive Impact:** Anarcho-capitalism and libertarian liberalism emphasize limited government involvement. In theory, **this could lead to reduced bureaucracy, lower regulatory burdens, and increased economic freedom, potentially fostering entrepreneurship and innovation.**
2. **Individual Liberty:**
    o **Positive Implications:** Emphasizing individual liberty **could lead to a more open and free society, which might encourage individual initiatives and a dynamic business environment.**
3. **Economic Efficiency:**
    o **Positive Outlook:** Both ideologies advocate for economic efficiency. **A more efficient allocation of resources and reduction in wasteful government spending could contribute to economic growth.**
4. **Innovation and Private Enterprise:**
    o **Positive Influence:** Proponents argue that **these ideologies provide a structural basis for innovation and private enterprise. This could result in a more competitive business environment and technological advancements.**
5. **Inclusive Development:**
    o **Potential Challenges:** While anarcho-capitalism is seen by some as fostering inclusive development, **critics argue that it might not address underlying social and economic issues. In India, with its diverse socio-economic landscape, achieving true inclusivity may require targeted interventions.**
6. **Critiques and Concerns:**
    o **Social Disparities:** Critics argue that these ideologies may inadvertently strengthen existing social and economic structures. **In a country like India with significant socio-economic disparities, the impact on marginalized communities could be a concern.**
7. **Cultural and Social Context:**
    o **Adaptation Challenges:** The implementation of these ideologies might face challenges **due to India's diverse cultural, social, and economic contexts. Cultural factors, historical legacies, and the existing welfare structures might influence the acceptance and effectiveness of such ideologies.**
8. **Government Services and Welfare:**
    o **Potential Impact:** Anarcho-capitalism, which advocates for minimal state intervention, **might have implications for government services and welfare programs. It could impact sectors such as healthcare, education, and social safety nets.**

Reconstitution of National Start-up Advisory Council

Subject :Economy

Section: National Income

1. The National Start-up Advisory Council (NSAC) has been reconstituted by the Indian government.
2. **31 non-official members have been nominated for the NSAC**, representing various stakeholders in the startup ecosystem.
3. Non-official members include **founders of successful start-ups, veterans with experience in scaling companies, individuals representing the interests of startup investors, and representatives from associations**.
4. Notable individuals nominated include **Abhiraj Singh Bhal from Urban Company and Kunal Bahl from Snapdeal.**
5. The term of non-official members is **typically two years**. The reconstitution follows the completion of the initial term.
6. The **NSAC serves as an advisory body to the government, providing guidance on measures to strengthen the innovation and startup ecosystem** in India.
7. The **Department for Promotion of Industry and Internal Trade (DPIIT) had originally constituted the council in January 2020.**
8. The council suggests measures to **foster a culture of innovation, particularly among citizens and students**. It also aims to promote innovation across all sectors of the economy, including semi-urban and rural areas.

9. The eighth meeting of the **NSAC is scheduled to take place under the chairmanship of the Commerce and Industry Minister on December 19.**

10. The council meets regularly to discuss and recommend initiatives that contribute to the growth and development of the startup ecosystem in the country.

11. **Presidents of industry chambers like CII (Confederation of Indian Industry) are also part of the NSAC, providing a holistic perspective.**

12. One of the council's objectives is to **promote innovation not only in urban areas but also in semi-urban and rural regions, ensuring a broader impact**.

In summary, the reconstitution of the NSAC reflects the government's commitment to fostering innovation and supporting the startup ecosystem in India. **The diverse representation of stakeholders contributes to a comprehensive approach in addressing challenges and promoting growth in the startup sector.**

National Startup Advisory Council (NSAC):

1. The NSAC was **constituted by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Union Ministry of Commerce and Industry**.

2. The primary objective of NSAC is to advise the Government on measures **aimed at building a robust ecosystem for nurturing innovation and startups.** The ultimate goal is to drive sustainable economic growth and generate significant employment opportunities.

3. **Composition:**
   o **Chairman:** The council is chaired by the Minister for Commerce & Industry.
   o **Ex-officio Members:** These include nominees from concerned Ministries / Departments / Organizations, not below the rank of Joint Secretary.
   o **Non-official Members:** The council includes non-official members representing **various stakeholders, such as founders of successful startups and veterans who have contributed to the growth and scaling of companies in India.**

4. NSAC plays a crucial role in identifying areas for **intervention to expand the startup ecosystem. It engages in ideation and nurturing national programs under the Startup India initiative**.

In summary, the National Startup Advisory Council is a key mechanism in driving the objectives of the Startup India initiative, aligning with the **government's vision to promote innovation, entrepreneurship, and economic growth in India.**

Start-up India Initiative:

1. **Launch Date:** The Startup India initiative was launched in 2016.

2. **Flagship Initiative: Startup India is a flagship initiative of the Government of India, to catalyze a startup culture and establish a strong, inclusive ecosystem for innovation and entrepreneurship in the country.**

3. Startup India seeks to **provide support and encouragement to startups through various policy measures, incentives, and initiatives.** By nurturing startups, the **initiative aims to contribute to sustainable economic development and job creation on a large scale.**

Startup India Seed Fund Scheme (SISFS):

1. The Startup India Seed Fund Scheme (SISFS) is an initiative by the Government of India **to provide financial assistance to startups in their early stages.**

2. The primary goal of SISFS is to **support startups by providing them with seed funding to help them kickstart their operations and contribute to their growth**.

3. Under the scheme, **eligible startups receive financial assistance to meet their initial funding requirements, fostering a conducive environment** for their development.

4. The government allocates funds to the Startup India Seed Fund Scheme **to facilitate the provision of financial support to qualifying startups.**

5. Startups can utilize the funds for various purposes, **including product development, market entry strategies, proof of concept, prototype development, and other early-stage activities.**

Stagflation Risk Assessment by RBI

Subject : Economy

Section: National Income

- **Stagflation Risk Reduction:** Officials at the Reserve Bank of India (RBI) have revised down the **risk of stagflation, a combination of economic stagnation and high inflation**, from 3% in August to 1% based on recent data.

- **Methodology Used:** The assessment involved two approaches. The first considered phases of **low economic growth coinciding with high inflation**.

The second employed "**Inflation at Risk" (IaR) and "Growth at Risk" (GaR) frameworks,** using quantile regression to gauge the likelihood of stagflation.

- **Determinants of Stagflation Risk:** According to the RBI, empirical findings indicate that **supply-side shocks, such as spikes in commodity prices, along with tighter financial conditions and a relatively higher depreciation of the domestic currency,** are major determinants of stagflation risk in India.
- **Historical Context:** Elevated risks of stagflation were observed during specific episodes, **including the Asian Crisis, the Global Financial Crisis, the taper tantrum, and the COVID-19 pandemic.**
- **Concerns Raised:** Stagflation is viewed as a destabilizing factor with the potential to disrupt the entire macroeconomic framework by creating an environment of uncertainty. The RBI considers it a major concern, given its mandate to maintain price stability while considering the objective of growth.
- **Global Stagflation Concerns: Higher commodity prices and the appreciation of the U.S. dollar post-pandemic have raised concerns about stagflation globally**. Delays in the monetary normalization process after the pandemic also contribute to worries about potential costly stagflation.
- **Weak Passthrough of Crude Oil Prices:** The **weak passthrough of crude oil prices to domestic petrol and diesel prices limits the predictive power for stagflation**, according to the RBI.
- **Central Bank Focus:** The focus of central banks on maintaining price stability and ensuring the financial health of institutions has helped **anchor long-term inflation expectations to the inflation target, unlike the 1970s when expectations were weakly anchored and reached exorbitantly high levels.**

Inflation in India

Inflation: Inflation refers to the **general increase in prices and the fall in the purchasing power of money. It occurs when the demand for goods and services surpasses their supply, leading to an increase in their prices**. High inflation can erode the value of savings and income, leading to reduced consumer spending and economic instability.

Types of inflation include:

- Demand-pull inflation: **Caused by increased consumer demand that outpaces supply.**
- Cost-push inflation: **Caused by an increase in production costs, such as wages or raw materials, leading to higher prices.**

Deflation: Deflation is the **opposite of inflation and refers to a sustained decrease in the general price level of goods and services**. It occurs when the supply of goods exceeds demand, leading to reduced prices. **Deflation can discourage spending, as consumers may delay purchases in anticipation of lower prices, which can further slow down economic growth and potentially lead to recession.**

Stagflation: Stagflation is a situation characterized by **a combination of stagnant economic growth, high unemployment, and high inflation.** It presents a challenge for policymakers, as traditional measures to **stimulate economic growth, such as increasing the money supply, may exacerbate inflation.**

Hyperinflation: Hyperinflation is an **extremely high and typically accelerating inflation**. It occurs when the price levels rise rapidly, eroding the value of the currency. This phenomenon often results from a collapse in the currency **and is detrimental to the economy, leading to a loss of confidence in the currency and undermining economic stability.**

Reflation: Reflation is an **attempt to stimulate an economy that is experiencing deflation**. It involves the implementation of monetary or fiscal policies **to increase the money supply and boost aggregate demand, with the aim of reversing deflation and stabilizing prices.**

Disinflation refers to a **slowdown in the rate of inflation**. While prices may still be rising, they are doing so at a slower pace compared to the previous period. **Disinflation does not imply a decrease in prices, as is the case with deflation, but rather a reduction in the rate of increase of the general price level in an economy.** Disinflation can occur for various reasons, such as **increased productivity, reduced consumer demand, or a drop in the prices of commodities.**

Insights on India's Financial Transformation

Subject: Economy

Section: National Income

1. **Transformation from Savers to Investors:**
   - Uday Kotak observes a **shift in India from a nation of savers to investors**.
   - **Interest in financial markets increased** post the global financial crisis.
2. **Historical Shift in Saver Behaviour:**
   - In the early 80s, **Indian savers lacked confidence in financial assets, favouring gold and land.**
   - Over time, **savers started allocating savings to bank deposits, UTI, and LIC**.
3. **Equity Investment Perception in the 90s:**
   - Investing in equities was considered speculative in the 90s.
   - **Companies sought capital from foreign institutional investors (FIIs).**

4. **Factors Contributing to Investor Transformation:**
    o Growth of mutual fund platforms, cash equities, derivatives markets, insurance funds, and global private equity.
    o **Introduction of AIFs and a lower tax regime for equity**.
5. **Recommendations for Sustaining Growth:**
    o Avoiding bubbles **through effective policy, regulation, education, and quality financial instruments.**
    o Addressing issues like **tax arbitrage in debt, double taxation on dividends, and retrospective tax.**
6. **Financial Sector's Role in India's Aspiration:**
    o Kotak emphasizes the financial sector as a key engine for delivery in India's growth.
    o Coexistence of saver/borrower and issuer/investor models in the financial sector.
7. **Stock Market Optimism:**
    o **Benchmark indices like Sensex and Nifty reaching record highs.**
    o **Analysts foresee robust economic growth in 2024 driven** by domestic consumption, government spending, and private investments.
8. **Influencing Factors in 2024:**
    o Events such as the **2024 Lok Sabha elections, the first Union Budget post-elections, global geopolitical issues, US elections, and global inflation** may impact the domestic stock market.
    o .

Textile sector faces ESG challenges

Subject: Economy

Section: National Income

Context:

- The textile industry is coming under greater Environmental, social and governance (ESG) scrutiny.

Facts about Textile Industry in India:

- The Indian textile and apparel market is currently estimated at over $150 billion, of which, **export constitutes over $40 billion.**
- A recent report pointed out that the global textile and apparel trade is set to reach **$1,000 billion by 2025-26** and that in the same period the Indian textile and apparel market will reach $250 billion.
- **India holds a 4% share of the $840 billion global textile** and apparel market, and is in **fifth position.**
- It contributes 3% to Indian Gross Domestic Product, 7% of Industrial Output, 12% to the export earnings of India and employs more than 21% of total employment.
- **India is also the second largest producer of silk** in the world and 95% of the world's hand woven fabric comes from India.
- **India is the 6th largest producer of Technical Textiles** with 6% Global Share, largest producer of cotton & jute in the world.

About ESG:

- ESG stands for: "**Environmental, Social and Governance".**
- The term ESG was **coined by the Global Compact in 2004.**
- ESG is described as a **set of principles** (policies, processes, metrics, etc.) that organizations apply to limit negative impact or enhance positive impact on the environment, society and governance bodies.
- It refers to a set of **non-financial measures** that reflect a corporation's impact on the environment and society.
- ESG can be considered a **subset of sustainability**, which is defined by the United Nations World Commission on Environment and Development as 'meeting the needs of present generations without compromising the ability of future generations to meet their own needs'.
- Investors and stakeholders look at **three key factors** when evaluating a company's sustainability and social impact under ESG.
- **Environmental Factors:** This relates to the company's impact on the natural environment, including energy use, greenhouse gas emissions, waste management and resource consumption.
- **Social factors**: This refers to the company's impact on society, including relationships with employees, customers, suppliers and communities.
- **Governance Factors**: This focuses on the company's management and decision-making structures, including board composition, executive rules and transparency.

Functioning of ESG:

- ESG serves as an **evaluation technique** that takes into account environmental, social and governance issues. In the private sector there is a set of ESG criteria that are used to evaluate company risks and practices.
- ESG frameworks are important for **sustainable investing** because they can help individuals or other corporations determine whether a company is aligned with their values, as well as analyze the ultimate value of a company for their purposes.

Difference between ESG and CSR:

- India has a strong Corporate Social Responsibility (CSR) policy which obliges corporations to engage in initiatives that contribute to the welfare of society.
- This mandate was codified into law with the passage of the 2014 and 2021 amendments to the **Companies Act of 2013** which **required:**
  - Companies with a net worth of **₹500 crore** or a minimum turnover of **₹1,000 crore** or a net profit of ₹5 crore in any financial year.
  - Companies spend at **least 2% of their net profit** in the last three years on CSR activities.

Environment

The need to transform agri-food systems

Subject : Environment

Section: Agri & SD

Context:

- UN-FAO Report highlighted that the **hidden costs** of our **global agri-food systems**has surpassed an astonishing **$10 trillion**.

Details:

- In **middle-income countries** like **India,** these costs **constitute** nearly **11%** of the **GDP,** which manifests as higher poverty, environmental harm, and health-related impacts, including undernourishment and unhealthy dietary patterns.
- The report blames **"unsustainable business-as-usual activities and practices"** for these escalating costs.
- There is a need to transform agri-food systems via **shift to multi-cropping systems** that have the potential to protect farmers' well-being, **improve nutritional outcomes for our communities,** and **positively impact ecological health**.

What are the impacts of intensive agriculture?

- Technological improvements in agriculture in India has led to mono-cropping and chemical intensive farming systems.
- **HYV seeds** of **wheat and paddy** constitute more than **70%** of India's agricultural production. These seeds and fertilizers undermined seed sovereignty, dismantled Indigenous knowledge systems, compromise the nutritional needs, bring ecological disasters like excessive groundwater extraction, increase the debt burden among agricultural households and fuelled a shift from diverse crop varieties and staples such as pulses and millets to monoculture plantations.

Which are the crops being favoured?

- **Rice** and **wheat** are heavily favoured due to it being included under the **PDS scheme** of central government. The area under **rice** and **wheat increased** by nearly **20%** and **56%** respectively between **1966-67** and **2017-18**.
- **Other crops that are favoured by the government-** Sugarcane (water-intensive), arecanut,
- **Jowar, bajra, ragi, maize,** and **barley** are **not** paid much attention as they constitute **less than 1%** of total foodgrain procurement.

How can crop diversification help?

- It will revitalise degraded land and soil.
- **Millets,** whose yield per hectare is comparable to those of **rice** and **wheat**, are also more **nutritious,** grow in **semi-arid conditions** without burdening groundwater tables, require **minimal input,** and provide a **diversified food basket.**
- **Diversified multi-cropping system-**
  - Known as **'akkadisaalu'** in **Karnataka**, involve **intercropping** with a combination of **legumes, pulses, oilseeds, trees, shrubs,** and

How can farmers transition?

- Gradual shift from chemical-intensive practices to non-pesticide management, then adopting natural farming practices, can reduce input costs.
- Diversification by including livestock and poultry.

Who is responsible for farming's impact on the environment

Subject : Environment

Section: Agri and SD

Introduction:
- The **expansion of international trade** has created **global supply chains,** directly linking consumers to geographically distant impacts, including carbon emissions, biodiversity loss, freshwater depletion, soil degradation and labour-rights issues – all of which have local, regional, and global relevance.
- Due to its **vast size** and **consumer market, India** is a **global anchor** of the **trade in agricultural products**.

Food-based impact accounting:
- **Large land areas in India** are used to service the **international demand** for food products, which puts **pressure on national soil and water resources.**
- Similarly, **India's vast consumer market** means that **large amounts of land**, even outside its borders, are used to satisfy domestic demand, which led to an increase in the **environmental pressure** in the **exporting countries**.
- Measuring impacts and allocating responsibility is based on a **production-based accounting method:** it measures impacts in the place where the products are produced. But, there are concerns about its **limitations** in **managing 'leaks', fixing accountability,** and **ensuring equity and justice** among producers and consumers.
- Another alternative is **consumption-based accounting.**

Consumption-based accounting:
- It accounts for **impact at the point of consumption**, attributing all the social and environmental impacts that occurred during production and trade to the final products and to the eventual consumers.
- This approach calls to adopt **sustainable consumption practices** as a form of environmental action.
- It highlights the **responsibility of industrialised states** to **mitigate the impact of climate change** and the **rights of developing economies to not carry an excessive burden.**
- This is an extension of the principle of **common but differentiated responsibilities** that make up **global climate governance**.

What is the demand perspective?
- Developed countries are the largest consumers so they are responsible for any consequences that occur during the production process.
- It also includes the issue of equity and justice surrounding the issue of historical responsibility.
- Studies suggest that **developing economies** like **India** have contributed **only 23%** of **global cumulative emissions** and are **responsible** for about **20-40%** of the **global average temperature rise** since the preindustrial era.

Benefits of environmental action?
- The **European Commission** recently initiated steps to ensure products consumed in the European Union have not contributed to deforestation in their country of origin.
- **India** has a **unique position** in this regard, as **India is a major consumer** as well as a **major producer** of **agricultural products**.

Ethanol blending policy

Subject: Environment

Section: Agri and SD

In the news:
- While **ethanol blended petrol (EBP)** increased from **1.6%** in **2013-14** to **11.8%** in **2022-23,** the **20%** target by **2025** has run into trouble with low sugar stocks in **2022-23** and impending shortfall in sugarcane production this year.
- **NAFED** and **National Cooperatives Consumers' Federation of India (NCCF)** have authorised to procure **maize (corn)** for supplying **ethanol distilleries**.

Ethanol from maize (corn):
- Only **5-7%** of the **world's corn output** was used for **ethanol production** and **the U.S.** has a **corn based ethanol programme**.
- **Challenge:** Using corn for producing ethanol directly reduces its use as food or livestock feed. It directly links food prices to cruid oil prices through the demand side.
  - High corn prices also increases the price of other soft grains like wheat/barley.

Ethanol from sugarcane:
- **Sugarcane based ethanol production** is preferred in **tropical countries** like **Brazil** and **India.**
  - **Challenge:** More land under **water-intensive sugarcane** production can **displace food production** and also **degrade water table**.
- In case of **sugarcane,** ethanol is produced by processing the **molasses (C-heavy/B-heavy)** and **constitutes minimal trade-off** with **sugar output**.

- The **B-heavy molasses** path produces **less sugar** and **ethanol** simultaneously from sugarcane.
- **Ethanol** can also be produced from **cane juicewithout the extraction of sugar,** but it may lead to conflict between **sugar production** and **ethenol production**. This process gives substantially higher yield of ethanol.

Sugarcane molasses:

- It is a **viscous, dark** and **sugar-rich by-product of sugar extraction** from the **sugarcane (Saccharum officinarum L.).** It is a **major feed ingredient,** used as an **energy source** and as a **binder in compound feeds**.
- Both the **sugar extraction process** and the **sugar refining process** yield molasses, and each step of these processes output **specific types of molasses:**
    o **Integral high-test molasses** is produced from **unclarified sugarcane juice.** Because it is **concentrated** from unclarified sugarcane juice, heavy incrustations and scum deposits lead to frequent mill interruptions and, therefore, to increased factory maintenance costs.
    o **A molasses (first molasses)** is an **intermediate by-product** resulting from **first sugar crystal extraction (A sugar),** from initial processing at the sugar factory. A molasses contains **80-85% DM.** If it has to be stored, it should be inverted in order to prevent crystallization.
    o **B molasses (second molasses):** It has approximately the **same DM content** as **A molasses** but contains **less sugar** and **does not spontaneously crystallize.**
    o **C molasses (final molasses, blackstrap molasses, treacle)** is the **end by-product** of the processing in the sugar factory. It still contains considerable amounts of **sucrose** (approximately 32 to 42%). **C molasses does not crystallize** and can be found in **liquid or dried form** as a **commercial feed ingredient.**
    o **Syrup-off (liquor-off, jett)** is the **end by-product** from the **centrifugation** of the final refined masecuite in a raw sugar refinery. Normally, **syrup-off** is sent to the raw sugar section of the refinery where it is further processed in order to recover more sucrose. Due to its **high content of sucrose (90-92% DM),** it is an **excellent energy source** for **monogastrics** but can be an expensive ingredient.
    o **Refinery final molasses** is the **by-product** of **refined sugar extraction.** It has a very similar composition to that of **C molasses** produced in a raw sugar factory and it is stored in the same tanks.
    o In some countries the juice is extracted in a simple animal or mechanically driven press, then boiled in open vats. In this rudimentary process, **pan (uncrystallized) sugar** is produced and the **by-product molasses** is called **"melote".** It contains only **50% DM.**

Grow local, eat local: Bengal farmers hold a celebration of indigenous seeds

Subject : Environment

Section: Agri & SD

Context:

- **Indigenous seed festival** held in **Contai, West Bengal,** organized by **ActionAid, Kajla Janakalyan Samiti,** and **Purba Medinipur Kisan Swaraj Samity.**

Details:

- Hundreds of farmers from various districts participated, showcasing **native varieties of paddy, pulses,** and **vegetables**.
- **Purpose:** Pledge to conserve diverse native seeds, exchange traditional knowledge, and promote sustainable farming practices.
- The festival is a part of **ActionAid's climate justice campaign,** facilitating discourse between **farmers on climate change, organic farming,** and **indigenous seed access.**
    o **ActionAid's** focus on **climate resilience** and **sustainable farming** across **22 Indian states.**
- The **NGOs aim** to establish **grassroots-level seed banks across West Bengal**.
- **Radha Tilak,** an **aromatic rice variety**, highlights seeds' potential for safe food, biodiversity preservation, and local economic stimulation.

Recent Government Initiatives Related to Sustainable Agriculture:

- Mission Organic Value Chain Development for North Eastern Region (MOVCDNER)
- National Mission on Sustainable Agriculture
- Paramparagat Krishi Vikas Yojana (PKVY)
- Sub-mission on AgroForestry (SMAF)
- Rashtriya Krishi Vikas Yojana

De-extincting the dodo: Why scientists are planning to bring back the bird to Mauritius

Subject: Environment

Section: Biodiversity

Context:

- An ambitious **new project** promises to bring the extinct **dodo** back to life and **re-introduce** it in its once-**native habitat in Mauritius.** It is a collaboration between **genetic engineering** company **Colossal Biosciences** and the **Mauritian Wildlife Foundation**.

About Dodo:

- The dodo (Raphuscucullatus) is an **extinct flightless bird** that was **endemic to the island of Mauritius,** which is **east of Madagascar** in the Indian Ocean.
- The dodo's closest relative was the also-extinct and **flightless Rodrigues solitaire**.
- The two formed the subfamily **Raphinae,** a clade of **extinct flightless birds** that were a part of the family which includes **pigeons** and **doves.**
- The closest living relative of the dodo is the **Nicobar pigeon**.

Why dodos went extinct?

- They became extinct mainly due to humans and animals introduced by them in Dodo's native environment.
- **Dutch colonists** first landed in **Mauritius** in **1598. Dodos** disappeared around **80 years later.** Not only did the Dutch **hunt the meaty bird,** but the animals they brought with them — **dogs, cats, rats, etc.**— wreaked havoc on the defenceless dodos and their eggs.

How geneticists plan to bring the Dodo back:

- **Accurate and complete genetic information** is required to **re-introduce** an **extinct species.** This is known as a **species' genome** — each genome contains all of the information needed to build that organism and allow it to grow and develop.
- Scientists have successfully sequenced the entire genome of the dodo.
- **Primordial germ cells (PGCs)** are basically embryonic precursors of a species' sperm and egg.
- **Why reintroducing Dodo?**
  o Reintroducing the dodo to Mauritius can help **restore its fragile ecosystem.** The **bird's large beak** indicates that it consumed **large-seeded fruits,** and thus played a role in the seeds' dispersal.
  o The technology would also help to **conserve and restore other avian populations.**
- **Challenge in re-introduction-** For dodos to survive, invasive species including rats, feral cats, pigs and dogs, monkeys, mongooses, and crows may need to be "excluded, rehomed or even controlled.

A decade-long initiative in Madhya Pradesh to reclaim land overrun by lantana helps residents restart agriculture and restore native biodiversity

Subject : Environment

Section: Biodiversity

- Lantana is one of the **world's ten worst invasive species** and a species of high concern for India.
- Lantana is **not native to India**.
- It is native to tropical regions of the Americas and Africa but exist as an introduced species in numerous areas, especially in the Australian-Pacific region, South and North-eastern part of India.
- It was introduced in the country as an **ornamental plant by the British in the 1800s**, and has since spread over 574,186 sq km, covering 50 per cent of the country's "natural areas", according to an October 2023 study in the *Journal of Applied Ecology***.**
- A 2020 estimate by researchers, published in the journal *Global Ecology and Conservation*, shows that the plant occupies 40 per cent of forests (over 154,800 sq km), including tiger reserves. A 2019 review paper published in *Botanical Review*states that lantana has also invaded most pasture lands (132,000 sq km) in the country.
- Eradicating lantana is difficult because of its rapid spread, intensity of infestation, allelopathy [chemicals released to discourage growth of native plants], opportunistic growth behaviour, reproductivity biology traits, and tenaious resistance to cutting and burning.
- It competes with native plants for space and resources and also alters the nutrient cycle in the soil.
- This invasion has resulted in the scarcity of native forage plants for wild herbivores. If eaten, the leaves can induce allergies on the muzzles of animals. In some cases, extensive feeding on lantana has led to diarrhoea, liver failure and even the animal's death.

Subject : Environment

Section: Biodiversity

Context:

- New research shows that **India's ambitious Interlinking of Rivers (ILR) programme** can **spread invasive, alien fish** to water bodies that are **home to endangered fish species, posing ecological, economic,** and **livelihood threats**.

Details:

- About **a third (31%)** of the total area in India provides **suitable habitat for invasive alien fish.**
- The **major river basins** of **Pennar, Kaveri, Godavari, Krishna** and **Mahanadi** that spread across central and southern India were found to be highly vulnerable to invasion.
- The **river interlinking** in India would **establish connectivity routes and help expand the range of potentially invasive species,** especially in areas rich in threatened endemic species, such as the **northeast India** the **Western Ghats** and the **Sundarbans**.

Threat to biodiversity:

- **Invasive species** affect **biodiversity** and **ecosystems** by **increasing competition for food** and **taking up space** which, coupled with **changing biotic environments, habitat degradation and pollution,** often **negatively affects native species populations.**
  - In the case of **invasive fish,** which may display **aggressive territorial behaviour,** it can cause a **decline in the number of native fish**, which in turn, affects **fishing livelihoods.**
- Globally, **habitat destruction, increasing aquaculture** and the **introduction of ornamental species** are **altering freshwater ecosystems**.

Some invasive fishes are:

- **Gambusia, native** to the **USA** and **Poecilia** from **South America, are** widely used in **mosquito control**. **Pterygoplichthys** are popular **ornamental fish**. **Tilapia** and **Cyprinus carpio** are invasive species in the **Ganga River system.**
- **Hypophthalmichthys nobilis, native** to **China**, has a suitable habitat in the **Narmada, Mahi, Mahanadi, Kaladan, Irrawaddy, Godavari, Ganges,** and **Damodar** river basins.

River Interlinking Project:

- The **Indian Rivers Inter-link** is a proposed **large-scale civil engineering project** that **aims** to **effectively manage water resources in India** by **linking Indian rivers** by a network of reservoirs and canals to enhance irrigation and groundwater recharge, reduce persistent floods in some parts and water shortages in other parts of India.
- **India** accounts for **18%** of the **world population** and about **4%** of the **world's water resources.** One of the solutions to solve the country's water woes is to link rivers and lakes.
- The **Inter-link project** has been **split into three parts:** a **northern Himalayan rivers** inter-link component, a **southern Peninsular component** and starting 2005, an **intrastate rivers linking component.**
- The project is being managed by **India's National Water Development Agency (NWDA), Ministry of Jal Shakti.**
- **NWDA** has studied and prepared reports on **14 inter-link projects for Himalayan component, 16 inter-link projects** for Peninsular component and **37 intrastate river linking projects**.

The Sahara Desert Used To Be a Green Savannah and New Research Explains Why

Subject : Environment

Section: Biodiversity

Context:

- **Algeria's TassiliN'Ajjer plateau** is **Africa's largest national park**.
- Over **15,000 etchings** and **paintings** are exhibited there, some as much as **11,000 years old** according to scientific dating techniques, representing a **unique ethnological and climatological record of the region.**

The Green Sahara or North African Humid Period:

- It was a period approximately **6,000-11,000** years ago.
- There is widespread **climatological evidence** that during this period the **Sahara supported wooded savannah ecosystems** and **numerous rivers and lakes** in what are now **Libya, Niger, Chad** and **Mali**.
- Using **marine and lake sediments,** scientists have identified over 230 of these greenings occurring about every **21,000 years** over the past eight million years.
- These greening events provided **vegetated corridors** which **influenced species' distribution and evolution,** including the **out-of-Africa migrations of ancient humans**.
- These dramatic greenings would have required a **large-scale reorganisation of the atmospheric system** to **bring rain to this hyper-arid region**.

Why has North Africa greened approximately every 21,000 years over the past eight million years?

- It was caused by **changes in the Earth's orbital precession** – the **slight wobbling of the planet while rotating**. This moves the **Northern Hemisphere** closer to the sun during the summer months.
- This caused **warmer summers in the Northern Hemisphere,** and **warmer air is able to hold more moisture.** This intensified the strength of the **West African Monsoon system** and shifted the **African rain belt** northwards. This increased **Saharan rainfall,** resulting in the **spread of savannah and wooded grassland** across the desert from the tropics to the Mediterranean, providing a vast habitat for plants and animals.

Earth's changing orbit:

- The **Earth's orbit around the sun isn't constant** due to **gravitational effects** from celestial bodies like the **moon and planets,** causing **Milankovitch cycles.**
- These cycles impact the **solar energy** received by the Earth, the **eccentricity** of the Earth's orbit, the **tilt of the Earth's axis** (obliquity), and **ice ages** on Earth.
- The **third Milankovitch cycle,** or **precession,** involves **Earth's wobble** on its axis across **21,000 years.** This cycle significantly correlates with **periods of increased humidity.**
- **Precession** affects seasonal differences, intensifying them in one hemisphere while reducing them in the other.
- This change triggers **more rainfall in North Africa** during **warmer Northern Hemisphere summers,** initiating **humid phases** and promoting vegetation growth across the region.

Eccentricity and the ice sheets:

- The **eccentricity cycle** determines how circular Earth's orbit is around the sun.
- The **eccentricity** indirectly influences the **magnitude of the humid periods** via its influence on the **ice sheets**.

Significance of the Sahara region:

- The Sahara acts as a gate. It controls the **dispersal of species** between north and sub-Saharan Africa, and in and out of the continent.
- The gate was open when the **Sahara was green** and **closed when deserts prevailed**.

Significance of the study findings:

- It shows the sensitivity of this gate to Earth's orbit around the sun.
- **High-latitude ice sheets** may have **restricted the dispersal of species** during the glacial periods of the last 800,000 years.

Countries agree on host for the Santiago Network; divergences on GST

Subject : Environment

Section:Climate change

Context:

- At the ongoing **COP28** of **UNFCCC**, nations are agreed upon to host the **Santiago Network**, but there is a divergence among countries on

About Santiago Network:

- The **Santiago Network** aims to provide **technical knowledge** and resources to developing countries on averting, minimising and addressing loss and damage.

- The **United Nations for Disaster Risk Reduction** and **United Nations Office for Project Services** have been selected as **hosts**.
- The **vision** of the **Santiago Network** is to catalyze the **technical assistance** of relevant organizations, bodies, networks and experts, for the implementation of relevant approaches for averting, minimize and addressing L&D at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change
- **COP 25 in Madrid, Spain:**
    o Parties established the **Santiago network** as part of the **WIM (Warsaw Implementation Mechanism)**, to catalyse technical assistance of relevant organizations for the implementation of relevant approaches in developing countries that are particularly vulnerable to the adverse impacts of climate change.
- **COP 26 in Glasgow, UK:**
    o COP 26/CMA 3 decided on the functions of the Santiago Network and issued a call for submissions.
- **COP 27 in Sharm El-Sheikh, Egypt:**
    o Terms of reference for the Santiago network was adopted and established the Advisory Board of the Santiago network.
- **COP 28 in Dubai, UAE:**
    o Countries agreed upon hosting the **Santiago Network.**

Article 6 of the Paris Agreement:
- **Article 6** of the **Paris Agreement** recognizes that some Parties choose to pursue **voluntary cooperation** in the **implementation of their nationally determined contributions** to allow for **higher ambition in their mitigation and adaptation actions** and to **promote sustainable development and environmental integrity**.

Global Goal on Adoption (GGA):
- It was established under the **Paris Agreement** to enhance **climate change adaptation** by increasing awareness of and funding towards countries' adaptation needs in the context of the **5/2°C goal** of the **Paris Agreement.**
- At **COP26,** Parties established the **2022-2023 Glasgow-Sharm el-Sheikh (GlaSS) Work Programme on the Global Goal on Adaptation** to define the key elements of the goal, including the methodologies, indicators, metrics, and data sources to support the assessment of overall adaptation progress.
- Negotiations around the **GGA** currently focus on what metrics and indicators can be used at both global and local levels to effectively monitor collective progress, while incorporating and addressing outstanding concerns on bridging the gap between the local- and context- specificity of adaptation and the need to track it at a global scale.

Decarbonisation:
- The **decarbonisation** of the **cement sector** through **Carbon, Capture and Storage (CCS)** in **developed** and **developing economies** very slow and will take at least five years to effectively start **capturing carbon dioxide (CO2)**.
- There is the **risks of leakage** — the possibility of **dissolution of heavy metals in drinking water** through **leaked CO2 in storage wells.**

Sovereign debt and climate event:
- Hosted by the **Debt Relief for a Green and Inclusive Recovery project** hosted prominent speakers such as **Colombia** and
- The amount of resources that annually flow from poor countries to developed countries are in trillions and only 7/29 low-income countries have the fiscal space to implement actions in their National Adaptation Plans.
- Developing countries export raw materials and buy industrialised products that keep them in debt.

Coal concern has prohibited India from signing global pledge on renewables and energy at COP28

Subject : Environment

Section:Climate change

Context:
- Concern about mounting pressure to **phase out coal** any time soon has mainly **prevented India from signing the global pledge on renewable energy and energy efficiency** at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change**.

Global Renewables and Energy Efficiency Pledge:
- Some **116 countries** signed the Pledge, agreeing to **triple the worldwide installed renewable energy generation capacity** to at least **11,000 gigawatts** and **double** the **global average annual rate of energy efficiency improvements** to more than **four per cent** by **2030**.
- According to the **IEA** (International Energy Agency) and **IPCC** (Intergovernmental Panel for Climate Change), in order to meet the **Paris Agreement goal,** renewables deployment must be accompanied in this decade by a **rapid increase of**

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energy efficiency improvements and the **phase down of unabated coal power,** in particular ending the continued investment in **unabated new coal-fired power plants,** which is incompatible with efforts to **limit warming to 1.5°C.**

Details:

- Under **Indian presidency, G20** has recently mentioned the need to **triple renewable energy globally.**
- Both **India** and **China**, major emitters, have **not signed the pledge**.
- **India** is planning to **add coal-based power plants** soon to meet its rise in power demand. The country has added an average **five gigawatts of coal-based electricity generation capacity annually** over the last **five years**, apart from aggressively pushing up renewable energy.

Global Decarbonization Accelerator (GDA):

- It is a new mechanism unveiled by **COP28 President Sultan Al Jaber** to **decarbonise** and achieve the target under the **pledge**.
- **GDA** is a set of **initiatives** designed to **speed up the energy transition** and **sharply reduce global emissions.**
- It is focused on **three key pillars:(i)** rapidly scaling the energy system of tomorrow; **(ii)** decarbonising the energy system of today; and **(iii)** targeting methane and other non-CO2 greenhouse gases.
- **Oil and Gas Decarbonization Charter (OGDC):**
    - Under the **GDA**, **50 companies** representing over **40 per cent of global oil production** have signed on to the **(OGDC)**. They have thus committed to **zero methane emissions** and **ending routine flaring by 2030** and to **total net-zero operations** by **2050** at the latest.
    - **Signatories to the Charter** agree to target a number of **key actions,** including investing in the energy system of the future including renewables, low-carbon fuels and negative emissions technologies; increasing transparency, including enhancing measurement, monitoring, reporting and independent verification of GHG emissions and their performance and progress in reducing emissions.
- The **GDA** also proposes to have a **formal mechanism to track mode of decarbonisation across key heavy-emitting sectors**.

Glaciers shrank 1m a year in a decade: WMO

Subject: Environment

Section:Climate Change

Context:

- The **2011-2020** decade, though the **warmest ever recorded in history**, saw the **lowest number of deaths from extreme events,** said a report from the **World Meteorological Organisation**.

Details:

- Report title- **The Global Climate 2011-2020: A Decade of Acceleration**
- Released by- **WMO**
- **Key findings:**
    - **Heatwaves** were responsible for the **highest number of human casualties,** while **tropical cyclones** caused the **most economic damage.**
    - The **2011-2020** decade was the **first** since **1950** when there was **not a single short-term event** with **10,000 deaths or more.**
    - This is due to the **improvement** in the **"early warning system"** driven by improvements in **forecasting** and **better disaster management**.
    - In **India,** improvements in forecasting **cyclone formation** and the time it takes to reach land have led to **greater preparedness** and **evacuation** of those most at risk.
    - This was the **first decade** that the **depleted ozone hole visibly showed recovery.**
    - **Glaciers** that were measured around the world **thinned by approximately 1 metre per year** on average between **2011** and **2020.**
    - **Greenland** and **Antarctica** lost **38%** more ice during the period than during the **2001-2010** period.
    - **Public** and **private climate finance** almost **doubled** during the period. However, it needed to **increase at least seven times** by the end of this decade to achieve climate objectives.

Decade of extremes

The decade from 2011 to 2020 witnessed a rise in economic losses due to extreme weather, but also saw a drop in deaths

- The drop in deaths was due to advancements in early warning systems and disaster management

- This was also the first decade that the depleted ozone hole visibly showed recovery

- Heatwaves caused the highest human casualties and tropical cyclones inflicted the most economic damage

- While climate finance nearly doubled, it needs to increase sevenfold by the decade's end

SOURCE: WORLD METEOROLOGICAL ORGANIZATION

Secure Himalaya Project

Subject: Environment

Section: Climate change

Context: UNDP India climate chief

- The 'Secure Himalaya' project is funded by the **Global Environment Facility** launched in 2017.
- It supports the government's efforts for conservation of **snow leopard** and its habitat by developing and implementing a landscape-based approach for Himalayan ecosystems, and addresses key issues of habitat degradation, threatened livelihoods and illegal trade in wildlife.

Components:

- Conservation of key biodiversity areas and their effective management to secure long-term ecosystem resilience, habitat connectivity and conservation of snow leopard and other endangered species.
- Securing sustainable community livelihoods and natural resource management in high range Himalayan ecosystems.
- Enhancing enforcement, monitoring and cooperation to reduce wildlife crime and related threats.
- Gender Mainstreaming, Monitoring, evaluation and knowledge management.

Project Landscapes:

- **Changthang**, Ladakh Landscape, Jammu & Kashmir
- **Lahaul-Pangi** and **Kinnaur Landscapes**
- **Khangchendzonga-upper Teesta Valley.**
- **Gangotri-Govind and Darma-Byans Landscapes**

Climate change is making the world sick

Subject :Environment

Section:Climate change

Context:

- The **public health** has been compromised by **climate change** in the form of **heat stress, Lung damage** from wildfire smoke, and the **spread of disease-carrying mosquitoes into new regions** as temperatures rise.

Details:

- From **2030malnutrition, malaria and dengue, diarrhoea,** and **heat stress** will push **global death tolls** up by **250,000 per year,** according to the **World Health Organisation (WHO)**.
- The **warmer temperatures** and **heavy rains** create more hospitable conditions for **disease-carrying mosquitoes** to breed and spread to new regions.
    - **Malaria** (a mosquito-born disease) spread into the **highlands of Africa** that previously had been **too cold for mosquitoes**.
- Diseases that are spreading fast due to warming and heavy rain are- **Diarrhoea, Cholera, Malaria, dengue, Zika,** and **West Nile** among others.
- The world is already about **1.1 degrees C warmer** than the **average pre-industrial temperature** and people in **2022** experienced about **86 days on average** of dangerously **high temperatures** that resulted in **drier forests** and **extreme wildfires.**

Climate change having devastating impact on migratory species

Subject : Environment

Section:Climate change

Context:

- A report on migratory species has been published by the Convention on the **Conservation of Migratory Species of Wild Animals (CMS)**, on the sidelines of COP28.

Impact of climate change and biodiversity loss on Migratory species:

- Impacting the **habitats, food availability** and **reproduction cycles** of the migratory species, **poleward range shifts** of **terrestrial animals**, changes in the **timing of migration,** increases in parasite loads in African Elephants and Lions, and **increased probability of deaths** and **survival** due to **extreme weather conditions** such as heatwaves, and torrential rains among others.

- Effects on **breeding success**, especially with temperature-sensitive animals such as **penguin, turtles,** and **crocodiles**etc and their survival.

- Warmer temperatures are affecting the **timing** and **abundance of food availability** such as **plankton blooms**.

- Some vulnerable migratory species to climate change are- Cold-water copepods, Little penguins, Shag, Migratory albatrosses (Laysan and black-footed albatross), Greater Flamingos, Bitterns, Redshank, Afro-Palearctic migratory passerines (Barn Swallow chick), krill and Northern Lapwing.

- **Higher temperatures** resulted in **decreased hunting frequency** among **birds** and a **reduction** in **food consumption**.
  - **High temperatures** are linked to **increased mortality** in **Great Reed Warblers**, though their reproduction has been benefiting from improved rearing conditions.

- The climate change tends to affect **terrestrial mammals** such as **ungulates, herbivores** and others as a decline in rainfall resists their food availability.

Role of various species in mitigating impacts of climate change:

- **Whales** that have long life spans play a **crucial role** in **carbon capture.** Each whale has an estimated potential to sequester 0.062 megatonnes of carbon annually.

- Mammals like **bats** help to maintain biodiversity through **seed dispersal,saiga antelopes** help **improve the resilience of grasslands** by **preventing wildfires** and **vultures** help **reduce disease transmission** and risk of spread of **zoonotic disease spillover** to **humans**.

Conservation of Migratory Species of Wild Animals (CMS) or Bonn convention:

- It is an **environmental treaty** of the **United Nations**.

- **129 countries** plus the **European Union** are the members. **Maldives** is the latest country to join it.

- **CMS** provides a global platform for the **conservation** and **sustainable use** of **migratory animals** and their **habitats**. **CMS** brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range.

- As the **only global convention specializing in the conservation of migratory species, their habitats and migration routes,** CMS complements and co-operates with a number of other international organizations, NGOs and partners in the media as well as in the corporate sector.

- Migratory species threatened with extinction are listed in **Appendix I** of the Convention.

- Migratory species that need or would significantly benefit from international cooperation are listed in **Appendix II** of the Convention.

The limitations of CCS and CDR and their grip on future climate

Subject : Environment

Section: Climate change

What are Carbon Capture and storage (CCS) and Carbon Dioxide Removal (CDR)?

- **CCS** refers to technologies that can **capture carbon dioxide (CO_2)** at a **source** of emissions before it is released into the atmosphere. These sources include the fossil fuel industry (where coal, oil and gas are combusted to generate power) and industrial processes like steel and cement production.

- **CDR** takes the forms of **both natural means** like **afforestation or reforestation** and **technologies** like **direct air capture,** where machines mimic trees by absorbing CO_2 from their surroundings and storing it underground.

- **CDR technologies: Enhanced rock weathering,** where rocks are broken down chemically; the resulting rock particles can remove CO_2 from the atmosphere. **Bioenergy with carbon capture and storage (BECCS)** captures and stores CO_2 from burning biomass, like wood.

How much CCS and CDR?

- According to the **IPCC Sixth Assessment Report (AR6)**, to have more than a **50% chance of limiting warming to 1.5 degrees C** (with no or limited overshoot) assume the world can **sequester 5 billion tonnes of CO_2 by 2040.** This is more than India emits currently every year.

- There is no pathway to **1.5 degrees C** in **AR6** that doesn't use **CDR**.
- CDR ought to be used to counterbalance hard-to-abate residual emissions.
- the **2023 'Land Gap' report** estimated that various governments have proposed to **remove CO₂** using around **one billion hectares of land**.
- Challenges:
    - CDR projects can adversely affect land rights of indigenous communities and biodiversity and compete with other forms of land-use, like agriculture that is crucial for ensuring food security.

Deep Decarbonization Pathways:

- Launched in **October 2013** as a joint collaboration between **(Institute for Sustainable Development and International Relations)IDDRI** and **(Sustainable Development Solutions Network) SDSN.**
- Its **primary objective** was to **support a positive outcome at COP21,** by demonstrating that country-driven deep decarbonization pathways to 2050 can be a relevant instrument to guide national ambition and actions.
- To do so, a group of domestic research teams from 16 countries – all large emitting G20 countries, both developed and emerging – was gathered to elaborate country-driven pathways consistent with the global goal of stabilizing global warming to 2°C.

A quarter of freshwater fish species risk extinction by climate change: IUCN

Subject : Environment

Section:Climate change

Context:

- The **IUCN Red List assessment** highlights the peril facing about a quarter of the **world's freshwater fish species** due to **climate change**.

Details:

- Out of nearly **15,000 species assessed**, over **3,000** are at **risk of extinction.**
- **Factors** like **decreasing water levels, shifting seasons,** and **rising sea levels** are impacting these **fish,** compounded by **pollution, dams, overfishing, disease,** and **invasive species.**
- **Examples include** the **decline of the Atlantic salmon population** by **23%**, moving it from **least concern** to **near threatened,** and **large-toothed Lake Turkana robber (Brycinus ferox).**
    - **Climate change** disrupts their **life cycles,affecting development, prey availability,** and **habitats.**
    - Additionally, threats to species like the **green turtle, big-leaf mahogany,** and **Saiga antelope** were noted, largely attributed to **climate-related issues,Illegal logging and trade, habitat loss, incidental bycatch in industrial and artisanal fishing,** and **human activities**.
- **Conservation efforts:**
    - The **scimitar-horned oryx** and **Saiga antelope** (found in **Kazakhstan, Uzbekistan, Russia and Mongolia**) are showing **population recoveries** due to **conservation efforts.**

COP28 text silent on carbon markets

Subject : Environment

Section: Climate change

System of Carbon Credits:

- An entity that does an activity that reduces emissions of greenhouse gases (or removals from the atmosphere) is given a **'credit'** that can be bought by another entity that must reduce emissions — either by law or voluntarily. This way, money flows into climate action.
- **COP28** climate talks is **silent on carbon credits** because the parties could not come to an agreement on **Article 6.2 (bilateral trading)** and **Article 6.4 (carbon markets)** of the **Paris Agreement.**
    - There is a reference to **Article 6 .1 (voluntary cooperation)** and **Article 6.8 (non market approaches, such as technology transfer),** but nothing on **Articles 6.2** and **6.4,** which are the operative provisions of the Article.
- A vibrant system for trading in **carbon credits** (or carbon offsets) is a key mechanism for **financing climate action projects.**
- The **World Bank** has estimated that **carbon credits** could **reduce the cost of countries' climate action commitments** (Nationally Determined Contributions or NDCs) by about **$250 billion by 2030.**

Internationally Transferred Mitigation Outcome (ITMO):

- **Article 6.2** of the **Paris Agreement** allows countries to **trade in carbon credits** with one another through bilateral or multilateral deals. These **traded credits** are called **Internationally Transferred Mitigation (ITMO).**
- The **issue** is whether **nongovernment entities,** including the **private sector,** can buy offsets from a country or not.

o   For example, can the **Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)**, or **Google,** buy carbon credits from, say, the Indian government, to offset its own obligations? Such a deal comes under the head **Other International Mitigation Purposes (OIMP).ITMOs** can be transferred for **NDC compliance** or for **OIMP**.

- There are some technical issues such as **authorisation of credits** and **interoperability of registries.**

- **Article 6.4 of Paris Agreement** is even more complicated, it deals with a **market mechanism for trading in carbon credits**. Rules need to be set up for measuring baselines and recognising additionality.

CORSIA:

- CORSIA is the **first global market-based measure** for any sector and represents a cooperative approach that moves away from a "patchwork" of national or regional regulatory initiatives. It offers a harmonized way to reduce emissions from international aviation, minimizing market distortion, while respecting the special circumstances and respective capabilities of ICAO Member States.

- CORSIA complements the other elements of the basket of measures by offsetting the amount of CO_2 emissions that cannot be reduced through the use of technological improvements, operational improvements, and sustainable aviation fuels with emissions units from the carbon market.

- CORSIA is **applicable only to flights originating from one country to another.**

LTAG:

- 41st ICAO Assembly **adopted LTAG for international aviation of net-zero carbon emissions by 2050** in support of the **UNFCCC Paris Agreement's** temperature goal.

- The LTAG does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States. Instead, it recognizes each State's special circumstances and respective capabilities e.g., the level of development, maturity of aviation markets.

'India's fastest' solar-electric boat Barracuda launched

Subject : Environment

Section: Climate Change

Solar-electric boat Barracuda:

- **India** has launched its **fastest solar-electric boat** named **Barracuda** (Named after the **swift, long fish, Barracuda**)**.**

- It **aims** to advance **India's eco-friendly maritime transportation.**

- Launched at- **Navalt Solar and Electric Boats,** located off Aroor in **Alappuzha** in **Kerala.**

- **Mazagon Dock** will introduce the **eco-friendly vessel** at its **Mumbai dock**.

- **Other specifications of the boat:**
  o   The **14-metre-long,4.4-metre-wide** vessel can attain a **top speed of 12.5 knots (23 kmph)** and has a range of **seven hours** on a single charge.
  o   It has **twin 50 kW electric motors,** a **marine-grade LFP battery,** and **6 kW solar power,** epitomising efficient and clean energy usage.
  o   It is engineered to navigate through waves as tall as four metres and operates without noise, vibration and air pollution.

Barracuda fish:

- It is a **large, predatory, ray-finned fish** known for its **fearsome appearance** and **ferocious behaviour.**

- It is a **saltwater fish.**

- It is found in **tropical** and **subtropical oceans worldwide** ranging from the **eastern border of the Atlantic Ocean** to the **Red Sea**, on its **western border the Caribbean Sea,** and in **tropical areas of the Pacific Ocean.**

- Barracudas reside near the **top of the water** and **near coral reefs and sea grasses.**

- Barracudas are targeted by **sport-fishing enthusiasts**.

Is India doing enough to tackle climate change?

Subject : Environment

Section: Climate Change

In the news:

- In a historic first, **all 198 signatories** to the **28th United Nations' Conference of the Parties (COP28)** adopted an agreement to **"transition away"** from **"all fossil fuels"** as opposed to **only coal,** as was agreed upon at **COP26, in Glasgow**.

- Although **India** is the **third largest emitter of GHGs,** it has one of the **lowest per capita emissions** in the world.

COP28 outcomes:

- Operationalisation of **Loss and Damage Fund**
- For the **first time,** it talks about **'transitioning away from fossil fuels'** in energy systems in a **'just, orderly and equitable manner'** so as to achieve net zero by 2050.
- Accelerating and substantially **reducing non-cabon-dioxide emissions** globally, including in particular **methane emissions** by **2030.**
- **Tripling of Renewable Energy:**
  - The COP28 agreement calls upon countries to contribute to **tripling of global installed capacity of renewable energy,** and **doubling of annual improvements in energy efficiency.**
- **Global Goal on Adaptation:**
  - The framework for GGA has been adopted but it lacks financial provisions.
  - The work programme resulted in the **identification of some common adaptation goals,** important for the entire world. These **included** reduction in climate-induced water scarcity, attaining climate-resilience in food and agricultural production, supplies and distribution, and resilience against climate-induced health impacts.

Global Stocktake:
- It is a comprehensive assessment of where the world was in its fight against climate change and what more needed to be done to meet the climate objectives.
- The GST is **mandated** by the **Paris Agreement** to be a **periodic exercise,** the first one in **2023** and **every five years** thereafter.

Arctic Report Card 2023: Wildfires to melting sea ice, warmest summer on record had cascading impacts across Arctic

Subject : Environment

Section:Climate Change

Context:
- The **2023 Arctic Report Card** brought together 82 Arctic scientists from around the world to assess the Arctic's vital signs, the changes underway and their effects on lives across the region and around the world.

Global warming impact on the Arctic:
- Temperatures in the Arctic have been rising **more than three times faster** than the global average. **2023** was the **warmest summer** in the **Arctic.**
- **Wildfires** forced evacuations across **Canada. Greenland** was so warm that a research station at the ice sheet summit recorded melting in late June, only its fifth melting event on record.
- **Sea surface temperatures** in the **Barents, Kara, Laptev** and **Beaufort seas** were **9 to 12 degrees Fahrenheit (5 to 7 degrees Celsius) above normal** in August.
- The **winter snow cover** melted early across large parts of **northern Canada,** providing an extra month for the Sun to heat up the exposed ground.
  - The **heat and lack of moisture** dried out **organic matter** on and just below the surface; by November, **70,000 square miles** (180,000 square kilometers) had **burned across Canada,** about a **fifth of it in the Northwest Territories**.
- **Dark open water** absorbs the **sun's rays** during the summer and, in the autumn, acts as a heating pad, releasing heat back into the atmosphere.
- There is a shifts in wind patterns and increasingly intense ocean storms.
- **Climate change led alterations** are damaging the **cultural practices and food security** of **indigenous communities** of the **Arctic region.**
  - **Yukon River Chinook** have **decreased in size** by about **6%** since the 1970s, and they're producing fewer offspring. This is impacting the **food security** of the region.
- **Finland** is putting an effort to restore damaged **reindeer** habitat.
  - **Degraded peatlands** also release **greenhouse gases,** contributing to **climate change.** Keeping them healthy helps **capture and store carbon** away from the atmosphere.

Subsea permafrost:

- It is frozen soil in the ocean floor that is rich in organic matter. It has been gradually thawing since it was submerged after Northern Hemisphere ice sheets retreated thousands of years ago. Today, warmer ocean temperatures are likely accelerating the thawing of this hidden permafrost.
- Just as with permafrost on land, when subsea permafrost thaws, the organic matter it contains decays and releases methane and carbon dioxide – greenhouse gases that contribute to global warming and worsen ocean acidification.

Mackenzie River:

- It is a river in the **Canadian boreal forest.**
- Source - **Great Slave Lake**
- **Drains** into the **Beaufort sea** in the **Arctic Ocean.**
- It forms **Mackenzie delta** near the **beaufort sea.**
- It forms, along with the **Slave, Peace, and Finlay,** the **longest river system in Canada,** and includes the **second largest drainage basin** of **any North American river** after the **Mississippi.**
- Due to **rising sea surface temperature**, this river is supplying **warm water** into the **Beaufort Sea** to the north, thus resulting in **more melting of ice**.

El Nino-fuelled Northeast monsoon caused the deluge in south Tamil Nadu

Subject: Environment

Section:Climate change

Context

- Many parts of **southern Tamil Nadu** got flooded due to **Cyclone Michaung** in early December. The cause for this is an **active Northeast monsoon (NEM)**fuelled by the **El Nino phenomenon,** which is peaking right now.

Details:

- The **El Nino** is the **warmer-than-normal phase** of the **El Nino Southern Oscillation Phenomenon (ENSO)** in the **central** and **eastern Pacific Ocean** and generally **enhances rainfall extremes** during the **NEM**.
- **El Nino** provides the **intensity** while **low-pressure systems** or **cyclonic circulations** around the region provide the **required moisture convergence** for rainfall events to the **NEM.**
    - **Cyclonic circulations** are whirls of winds in the **upper layers of the atmosphere**. They usually **induce low-pressure areas** in the **atmosphere's lower layers,** which eventually **cause rainfall.** Sometimes, the **cyclonic circulations** can cause rainfall all by themselves by bringing **moisture-laden winds** into the region.
    - **Upper-level divergence** is the **spreading out of air** in the **upper layers** of the **atmosphere,** which **causes air from below to rise.** This leads to other winds taking their place. This process is known as **'low-level convergence'.**

What are North-East Monsoons (NEM)?

- Also known as the **"retreat of monsoon",** NEM enters India from the **northeast.** The wind blows from the **sea** to the **land** in this type of monsoon.

- The **monsoon trough weakens** and **shifts southward** as the **monsoons retreat**. As a result, the **pressure gradient is minimal.**
- The **moisture from the Indian Ocean (Bay of Bengal region)** is carried by the monsoon winds.
- It is **limited to south India**, bringing **rain** to **Tamil Nadu, Puducherry, Karaikal, Yanam, Andhra Pradesh, Kerala, Mahe,** and **south interior Karnataka** from **October to December.**
- **Low-pressure systems, depressions,** and **cyclones** cause the associated rainfall, also known as the **winter monsoon.**
- This is **Tamil Nadu's main rainy season,** with the state receiving **48%** (447.4mm) of its annual rainfall during these three months.

Section:Climate change

Context:
- The **28th Conference of Parties (COP)** to the **UNFCCC** happened in **Dubai, UAE** this year.

Loss and Damage Fund:
- The agreement was reached at **COP-27** to create a **'Loss and Damage' (L&D) fund** and the fund was **operationalised at COP-28**.
- **World Bank** was designated to **oversee and administer** the fund.
- Only a meagre **$790 million** has been pledged so far, by a few nations, despite the corpus **requiring $100 billion** to more than **$400 billion a year**.

Global stocktake:
- The **COP28 summit** saw the first **global stocktake (GST)**.
- According to the **UNFCCC**, the **GST** enables countries and other stakeholders to see where they are collectively making progress towards meeting the goals of the Paris Agreement — and where they are not.
- Countries at COP-28 decided to **transition away** from fossil fuels and also pledged to **triple renewable energy capacity by 2030**. More than **20 countries** also **pledged to triple their nuclear energy capacity**.
- However, the **transition from fossil fuels** is **restricted to energy systems alone;** they can continue to be used in the **plastics, transport,** and **agriculture sectors.**
- The declaration also refers to **'transitional fuels',** such as **natural gas,** for ensuring energy security.
- The declaration called for accelerated climate mitigation using **carbon capture and storage (CCS)** and **carbon removal(CDR)** technologies.

Green Finance:
- **Developed nations** and **private sectors** are asked to take the lead in **grant-oriented, concessional finance** to **enable equitable transition** in **developing countries**.
- **COP28** saw the establishment of **innovative global green finance mechanisms** to support **developing nations** in their **transition to sustainable practices.** The **Green Climate Fund** received fresh support of **$3.5 billion**, allowing it to finance adaptation and mitigation projects in **vulnerable regions**.
- An additional **$188 million** was pledged to the **Adaptation Fund**.

ALTERRA:
- The **COP-28 Presidency** introduced **ALTÉRRA,** an **investment initiative** with an ambitious goal to **globally mobilise an unprecedented sum of $250 billion** by **2030**.

How did India fare at COP-28?
- **UAE Declaration on Climate and Health:**
  - Partnership between **COP-28 Presidency** and **WHO,** recognizing **health impacts of climate change.**
  - Acknowledges benefits of climate action, like **reduced air pollution** and **healthcare costs.**
  - Signed by **123 countries** committing **$1 billion,** but **India didn't sign it.**
  - **Reason:** Reducing **GHG emissions in health sector** could affect gases used for cooling, potentially compromising healthcare needs, especially in rural areas due to ongoing healthcare infrastructure growth.

- **Global Methane Pledge:**
  - GMP received attention at **COP-28,** with **Climate and Clean Air Coalition** as the **new secretariat.**
  - Partners announced over **$1 billion** in new grants to **reduce methane emissions in agriculture, waste,** and **gas sectors**.

- o **150+ countries** signed the pledge, but **India didn't.**
- o **Reason:** It may shift focus from carbon dioxide to methane, a GHG with a shorter lifetime.
  - **India's methane emissions** are **primarily** from **rice cultivation** and **livestock rearing,** crucial for **small and marginal farmers' livelihoods**.
- **India** abstained from both declarations due to **concerns** about **compromising healthcare infrastructure growth** and the f**ocus shift to methane**, which doesn't align with its emissions profile dominated by **agriculture** and **livestock-related methane emissions**.

Key takeaways:
- Acknowledgement of the role of nature-based solutions for biodiversity conservation and climate.
- Some 134 countries also agreed to a landmark declaration to transition to sustainable and resilient food systems.

Challenges:
- Dispute between developed and developing nations over fossil-fuel subsidies.
- Increasing the flow of climate finance and technologies to facilitate just job transitions and inclusive development.
- Market mechanisms, financial resource allocation, the role of the World Bank as the agency for managing the L&D fund, and private sector engagement in climate action.

Why the UK banned Air France, Lufthansa, and Etihad ads over 'greenwashing' claims

Subject: Environment

Section: Climate change

In the news:
- **UK's ad regulator** banned **Air France, Lufthansa,** and **Etihad ads** for allegedly **misleading consumers** on air travel's **environmental impact.**
- The **Advertising Standards Authority (ASA)** found ads claiming sustainability **lacked evidence,** violating **UK ad code** and accused of **greenwashing**.

Greenwashing:
- Greenwashing is when firms or governments give **a false impression** that all of their products or activities are climate-friendly or help in reducing emissions. Moreover, greenwashing may also occur when a company highlights sustainable aspects of a product to overshadow its environmentally damaging activities.
- It can be performed through the use of environmental imagery, misleading labels, and hiding tradeoffs.
- Examples like the **Volkswagen emissions scandal** illustrate this tactic, where a company falsely portrayed its products as environmentally friendly.

Aviation Industry Emissions:
- **Aviation** contributes **2.5% of human-produced CO2 emissions,** as per the **IPCC 2022** estimates, with predictions of **increasing to 5%** by **2050**.
- Consideration of **non-CO2 emissions** like **water vapor** would attribute nearly **5%** of **historical global warming** to the **airline industry.**
- **Domestic flight emissions** are attributed to a **country's accounts,** but **international flight emissions** (counted as **bunker fuels)** have **no assigned responsibility to any country.**
- This lack of accountability raises concerns about controlling these emissions on a global scale.

Amendments to Carbon Credits Trading Scheme (CCTS) in India

Subject : Environment

Section:Climate change

Introduction:
- The **Ministry of Power in India has introduced amendments to the Carbon Credits Trading Scheme (CCTS).**
- These amendments pave the way for India to establish its own standards for carbon trading.

Role of Bureau of Energy Efficiency (BEE):
- The amendments instruct the carbon credits administrator, the **Bureau of Energy Efficiency (BEE),** to develop standards and register projects under the offset mechanism.
- **BEE is tasked with both "validation" and "verification" of carbon credits**, as opposed to only "verification" in the original scheme.

Deepening Indian Carbon Credit Market:
- The amendments aim to **deepen the Indian carbon credit market by allowing 'non-obligated entities' to register decarbonization projects and generate carbon credits.**

- Non-obligated entities, which were initially limited to purchasing credits, can now register projects and seek the issuance of Carbon Credit Certificates.

Offset Mechanism for Non-Obligated Entities:

- The introduction of an "**offset mechanism**" **allows non-obligated entities to register projects for accounting greenhouse gas emission reduction or removal, leading to the issuance of Carbon Credit Certificates.**

Prescribing Limits for Non-Obligated Entities:

- Non-obligated entities, unlike obligated entities, do not have a prescribed limit for their greenhouse gas emissions.
- The **Bureau of Energy Efficiency (BEE) is tasked with identifying sectoral scope and methodologies for the offset mechanism with the support of technical committees.**

Elimination of Overseas Certification Dependency:

- Once BEE establishes standards, **Indian entities will no longer have to rely on overseas standards agencies for validating their carbon credits.**
- The move is **expected to reduce costs and time associated with overseas certification, making it more convenient for Indian carbon credit generators.**

These amendments reflect **efforts to enhance and streamline the carbon credits trading scheme in India, providing a regulatory framework that encourages participation from a broader range of entities in decarbonization projects.**

About Carbon Credit

The term "Carbon Credit" refers to a **tradable permit that represents the right to emit a specific amount of carbon dioxide or an equivalent amount of another greenhouse gas**.

Essentially, a carbon credit is a unit of measurement that **equals one tonne of carbon dioxide that has been removed, reduced, or sequestered from the atmosphere. It is a market-based approach to incentivize businesses and countries to reduce their greenhouse gas emissions.**

Carbon Credit Trading Scheme (CCTS)

1. The 'CCTS' stands for the Carbon Credits Trading Scheme, and **it is a scheme for the reduction or removal of greenhouse gas (GHG) emissions. The central government notifies and governs this scheme.**
2. **Background:** The **Energy Conservation (Amendment) Bill, 2022, empowered the central government to specify the carbon trading scheme in consultation with the Bureau of Energy Efficiency (BEE).**
3. **Features of CCTS:**
   o **Accredited Carbon Verifier:** An accredited agency, recognized by the BEE, is responsible for validation or verification activities under the CCTS.
   o **Indian Carbon Market Governing Board (ICMGB):**
     ▪ Established for **oversight, rule-making for the Indian carbon market, and guidelines for selling carbon credit certificates abroad**.
     ▪ Environment secretaries serve as ex-officio co-chairmen.
     ▪ Meets at least once a quarter.
   o **Bureau of Energy Efficiency (BEE):**
     ▪ Administers the Indian carbon market and acts as the secretariat for ICMGB.
   o **Grid Controller of India Ltd:** Serves as the registry for the Indian Carbon Market.
   o **Central Electricity Regulatory Commission (CERC):** Regulator for trading activities under the Indian carbon market.
4. **Types of Carbon Markets:**
   o **Compliance Markets:** Created to comply with laws and regulations.
   o **Voluntary Markets:** Involves the voluntary issuance, buying, and selling of carbon credits.
5. **Features of The Energy Conservation (Amendment) Act 2022:**
   o Establishes provisions for carbon markets to encourage carbon trading and reduce emissions.
   o Mandates the use of non-fossil sources for energy and feedstock.
   o Establishes a domestic carbon market in India.
   o Brings large residential buildings under the Energy Conservation regime.
   o Enhances the scope of the Energy Conservation Building Code.
   o Amends penalty provisions for stricter enforcement.
   o Expands the governing council of the Bureau of Energy Efficiency.
   o Empowers State Electricity Regulatory Commissions for energy conservation functions.
   o Mandates the use of clean energy, including green hydrogen.

BEE Star Rating

The BEE Star Rating, implemented through the **Standards and Labelling Program introduced in 2006, is a labeling system that provides consumers with information about the energy efficiency** of various appliances.

Bureau of Energy Efficiency (BEE):

- BEE is a **statutory body established under the Energy Conservation Act, 2001**.
- BEE **assists the government in developing policies and strategies focused on self-regulation and market principles**. The primary objective is to **reduce the energy intensity of the Indian economy**.

State Energy Efficiency Index (SEEI) 2021-22

The State Energy Efficiency Index (SEEI) 2021-22 is an **assessment framework developed by the Bureau of Energy Efficiency (BEE) in collaboration with the Alliance for an Energy-Efficient Economy (AEEE). The index aims to track the progress of states and union territories (UTs) in implementing energy efficiency initiatives**.

Framework and Indicators:

- SEEI 2021-22 employs an **updated framework with 50 indicators aligned with national priorities.**
- These indicators are designed to monitor the outcomes and impacts of state-level energy efficiency initiatives.

Objective:

- The primary objective of SEEI is to **drive decarbonization efforts** in states.
- It provides a basis for outlining recommendations to assist states in promoting energy efficiency.
- The ultimate goal is to **contribute to the fulfillment of Sustainable Development Goals (SDGs) and Nationally Determined Contributions (NDC).**

UNNATEE (UNlockingNATional Energy Efficiency Potential)

Subject : Environment

Section: Climate change

Context: The Bureau of Energy Efficiency (BEE) has formulated a national strategy document called UNNATEE (Unlocking NATional Energy Efficiency potential) to accelerate energy efficiency in India.

Significance:

- **Framework and Implementation Strategy:** UNNATEE provides a clear framework and implementation strategy to establish a connection between energy supply-demand scenarios and energy efficiency opportunities in the country.
- **Linkage to Environmental and Climate Change Goals:** The document outlines a comprehensive roadmap to address India's environmental and climate change mitigation goals through targeted energy efficiency measures.
- **UNNATEE, as a strategic document, aims to guide and enhance India's efforts in meeting its energy efficiency targets and contributing to broader sustainability and climate change mitigation objectives.**

UTPRERAK (Unnat TaknikiPradarshan Kendra)

The Ministry of Power in India has established a Centre of Excellence named UTPRERAK (Unnat TaknikiPradarshan Kendra) with the aim of accelerating the adoption of energy-efficient technologies in the Indian industry.

Objectives:

Reference Institution and Technology Showcase:

- UTPRERAK will function as a **reference institution, showcasing energy-efficient technologies across various industry sectors.**

Training and Education:

- The centre is tasked with **providing training and education in energy efficiency** to more than 10,000 energy professionals over the next five years.

Emission Reduction and Technology Adoption:

- UTPRERAK will play a pivotal role in assisting industries in meeting emission reduction targets.
- It aims to **promote the widespread adoption of new and energy-efficient technologies within industries.**

Policy Inputs:

- The centre will provide valuable inputs for the formulation of national energy policies, contributing to the development of effective strategies.

Research Facilitation:

- **UTPRERAK will facilitate and support research initiatives** focused on energy-efficient solutions.
- **Implementing Authority:** UTPRERAK has been established by the Bureau of Energy Efficiency (BEE).

Environment Organisations

Subject :Environment

Section:Climate Change

Friday for Future (FFF):

- FFF is a **youth-led** and **-organised global climate strike movement** that started in **August 2018,** when **Greta Thunberg** began a school strike for climate.
- **Goals:**
    - o The goal of the movement is to **put moral pressure on policymakers,** to make them listen to the scientists, and then to take forceful action to limit global warming.
    - o This movement is **independent of commercial interests and political parties** and knows no borders.

Extinction Rebellion (XR):

- It is a **UK-founded global environmental movement,** with the stated **aim** of using **nonviolent civil disobedience** to compel government action to avoid **tipping points** in the climate system, biodiversity loss, and the risk of social and ecological collapse.
- It was **established** in **Stroud (the U.K.)** in **May 2018** by **Gail Bradbrook,**[**Simon Bramwell, and Roger Hallam,** along with eight other co-founders from the campaign group **Rising Up!**

Just Stop Oil:

- It is a **British environmental activist group**.
- Using **civil resistance, direct action, vandalism** and **traffic obstruction,** the group **aims** for the British government to **commit to ending new fossil fuel licensing and production.**
- **Founded in February 2022** and began protesting at **English oil terminals** in April 2022.
- The group has received particular attention, positive and negative, for its methods of activism.

Last Generation:

- The Last Generation is a **group of climate change activists** mostly active in **Germany, Italy,** and **Austria.**
- It describes itself as an **"alliance"** and was **formed in 2021** from participants in the **Hungerstreik der letzten Generation ("last generation hunger strike").**
- The term was chosen because they considered themselves to be the **last generation before tipping points in the earth's climate system would be reached.**
- **Goal:** To promote a generational collective initiative to protect our earth, and to build a more substantial future, through popularizing reaching out to policy makers, maintaining an open forum to discuss issues pertinent to marginalized communities, and by enforcing these ideals through motivating students to delegitimize the stereotype that they are too young to make a tangible change to our society.
- They have **staged direct non-violent actions** including numerous road blockades and using paint to vandalise yachts, notorious paintings, buildings, restaurants and private jets.

Significant climate milestones of 2023

Subject : Environment

Section: Climate change

Hottest Year in History:

- **2023** is likely to be **declared the hottest year**, exceeding the previous record of **2016** by **0.1°C** and **surpassing pre-industrial levels** by **1.43°C.**
- **Copernicus Climate Change Service (C3S)** data highlights the sustained high temperatures throughout the year.

Unprecedented Sea Surface Temperatures:

- **Marine heat waves,** occurring when **ocean temperatures** exceed **90%** of past observations, were widespread in **2023**, affecting **48%** of **global oceans**.
- **Global sea surface temperatures** remained **exceptionally high**.

Antarctic Sea Ice Extent at Record Low:

- **Antarctic sea ice** experienced **historically low growth** in **2023**, with an annual maximum extent of **16.96 million sq. km** in September, the **lowest since 1979.**

Record Carbon Dioxide Levels:

- **Global carbon dioxide emissions** hit a **new high in 2023,** albeit with a slight plateau due to **decreased deforestation, increasing by 1.1%** from the previous year.

Creation of Loss and Damage Fund:

- **COP28** initiated the **first loss and damage fund** for climate change impacts, established at the start of the conference in December.

- The fund, housed at the **World Bank** but **managed independently**, received **$792 million in pledges** from governments, falling short of the needed billions.

Climate Impact of Food Systems Addressed:

- At **COP28,134 countries** pledged to tackle the **climate impact of the food industry**, representing over **70%** of **global food consumption** and **76%** of **related emissions.**
- However, critics noted the absence of specific quantitative targets in this historic declaration.
- Countries also signed the **Declaration on Climate and Health. (India** didn't sign it).
    - The **COP28 Declaration on Climate and Health** is a **non-binding, non-negotiated call to action** and **collective commitment** that reflects the concerns and common position of countries on the importance of health within climate discourse and in the COP process.

The study looks at ways to manage grass dominance in savannahs

Subject: Environment

Section: Ecosystem

Context:

- A study from the **Eastern Ghats** highlights the **dominance of native Cymbopogon grass (lemongrass)** in a mesic **savannah ecosystem** and probes the causes and control measures to take it back to the **desired or historical state to preserve biodiversity and ecosystem services**.

Cymbopogon grass (lemongrass):

- **Cymbopogon** is a **C4 grass** or a **warm-season grass** that needs **plenty of sunlight** and is **heat** and **fire-tolerant**.
- It is a genus of **Asian, African, Australian**, and **tropical island plants** in the **grass family**.
- Some species (particularly **Cymbopogon citratus**) are commonly cultivated as **culinary and medicinal herbs** because of their scent, resembling that of **lemons (Citrus limon)**.
- In **India,C. citratus** is used as a **medical herb** and in **perfumes**. It is consumed as a **tea for anxiety** in Brazilian folk medicine.
- The grass contains **oil** and the **dominance of such inflammable grass** can result in more **frequent, large fires** that do not favour the biodiversity and the ecosystem.
- **Savannah ecosystems** have existed in **India** for over a million years.
- **Fire** is an integral part of the management of savannahs. Dry ecosystems like savannahs depend on fire to recycle biomass.

Loss and Damage Fund cleared on Day One of COP-28 summit

Subject: Environment

Section: International Conventions

Context:

- On the first day of COP 28, member countries agreed to make operational a **Loss and Damage (L&D) fund** that is meant to compensate countries already dealing with climate change.

Loss & Damage (L&D):

- **IPCC defines L&D** - The term 'losses and damages' refers to the economic and non-economic impacts of climate change, including extreme and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change. It's destructive, irreversible, and cannot be addressed by mitigation and adaptation measures.
- **CoP19 of UNFCCC- 2013: held at Warsaw, Poland.**
    - Countries agreed to formally establish the L&D fund.
    - **Warsaw mechanism-** It was being created to provide financial and technical assistance to economically developing nations that were incurring L&D due to climate change.
- **CoP25 of UNFCCC: held at Madriad, Spain in 2019**
    - The **Santiago Network for L&D** was set up, but countries didn't commit any funds.
    - The **vision** of the **Santiago Network** is to **catalyze the technical assistance** of relevant organizations, bodies, networks and experts, for the **implementation** of relevant approaches for averting, minimize and addressing L&D at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

Loss & Damage (L&D) Fund:

- First announced in **2022** at the conclusion of **COP-27** in **Sharm El-Sheikh, Egypt.**

- A **'transitional committee'** was setup to decide the working conditions of the fund.
- It will be based at the **World Bank** but **managed by an independent secretariat.** The World Bank will be the **"interim host"** of the fund for a period of **four years**.
- **Payments are voluntary** and a certain percentage has been set apart for a category of countries called **Least Developed Countries** and **Small island developing states**.
- Commitments worth atleast $450 million have already been made by countries.
- **Contributors include:** European Union, United Arab Emirates, Germany, the United States, the United Kingdom, and Japan.

Cost of L&D due to Climate Change:

- Reports suggest a **Loss and damage** from **climate change** cost about **$1.5 trillion** ($1,500 billion) in **2022**.
- Several developing countries and some of the poorest lost an average of about **8.3% of GDP** due to climate change.

What is cooking at COP28?

Section: International conventions

Climatefinance:

- **'Market Mechanism'** or **'Carbon Market'** is a way of making finance available to fight climate change.
- **Article 6 of the Paris Agreement**, which deals with **bilateral (6.2)** and **global carbon markets (6.4)**, is said to be the most complex part of the agreement.

About Carbon Market:

- Carbon markets are a **tool** for putting a **price on carbon emissions.** It allows the **trade of carbon credits** with the overall objective of **bringing down emissions**.
- These markets **create incentives to reduce emissions** or **improve energy efficiency**.
- It establishes **trading systems** where **carbon credits or allowances** can be **bought and sold**.
  - A **carbon credit** is a kind of **tradable permit** that, per **United Nations standards,equals one tonne of carbon dioxide removed, reduced, or sequestered** from the atmosphere.
  - **Carbon allowances or caps,** meanwhile, are determined by countries or governments according to their emission reduction targets.
- **Article 6** of the **Paris Agreement** provides for the use of **international carbon markets** by countries to **fulfill their NDCs** (Nationally Determined Contributions).
  - **NDCs** are climate commitments by countries setting targets to achieve net-zero emissions.

Types of Carbon Markets:

1. **Compliance Markets:**
   - Set up by **policies at the national, regional, and/or international level** and are **officially regulated.**
   - Compliance markets mostly operate under a principle called **'cap-and-trade",** most popular in the **European Union (EU).**
   - Under the **EU's emissions trading system (ETS)** launched in **2005,** member countries set a **cap or limit for emissions** in different sectors, such as power, oil, manufacturing, agriculture, and waste management. This cap is determined as per the climate targets of countries and is lowered successively to reduce emissions.
   - Entities in this sector are issued **annual allowances or permits** by governments equal to the emissions they can generate.
   - If companies produce emissions beyond the capped amount, they have to purchase additional permits. This makes up the **'trade'** part of **cap-and-trade.**
   - The **market price of carbon** is determined by **market forces** when purchasers and sellers trade in emissions allowances.

2. **Voluntary Markets:**
   - Voluntary markets are those in which **emitters**— corporations, private individuals, and others— **buy carbon credits to offset the emission of one tonne of CO2 or equivalent greenhouse gases.**
   - Such carbon credits are created by activities which **reduceCO2 from the air, such as afforestation**.
   - In this market, a corporation looking to compensate for its **unavoidable GHG emissions** purchases **carbon credits** from an entity engaged in projects that reduce, remove, capture, or avoid emissions.
   - In voluntary markets, **credits are verified by private firms** as per popular standards. There are also traders and online registries where climate projects are listed and certified credits can be bought.

India at the Climate Summit

Subject : Environment

Section: International conventions

BASIC Group:

- The **BASIC group** was **formed** as the result of an agreement signed by the **four countries (Brazil, South Africa, India and China)** on **28th November, 2009.**
- All members of **BRICS nations** except **Russia,** are part of the **BASIC group.**
- It was initiated and led by **China**.
- The signatory nations committed to acting together at the upcoming **United Nations Climate Change Conference,** commonly known as the **Copenhagen Summit,** scheduled in **Copenhagen, Denmark** from **December 7-18, 2009.**
- **BASIC** is one of several groups of nations working together to fight climate change and carry out **negotiations** within the **UNFCCC.**
- Other than **BASIC,** there are the **Organisation of Petroleum Exporting Countries (OPEC),** the group of countries of **Central Asia, Caucasus, Albania and Moldova (CACAM),** etc.
- **Brazil, South Africa, India** and **China** put together has **one-third of the world's geographical area** and nearly **40% of the world's population.**

Like-Minded Developing Countries (LMDC):

- **LMDC** comprises around **25 developing countries** from **Asia** and **other regions.**
- It organises themselves as a **block of negotiators** in **international organizations** such as the **United Nations** and **WTO.**
- They represent m**ore than 50% of the world's population**.
- **Member countries:** Algeria, Bangladesh, Belarus, Bhutan, China, Cuba, Egypt, India, Indonesia, Iran, Malaysia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Sudan, Syria, Vietnam, and Zimbabwe.

India offers to host 2028 climate meet

Subject: Environment

Section: International Conventions

In the news:

- Prime Minister of India in his address at **COP-28**, offered to host the **33rd edition** of the annual summit due in **2028** in **India**.
- **India** had previously hosted the summit in **2002**.
- He also pitched for countries to join India in its **"Green Credit initiative"** which was a "non-commercial" effort to create a carbon sink.

Conference of Parties (COP) of UNFCCC:

- The **COP is the supreme decision-making body of the Convention.**
- All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.
- The **first COP** meeting was held in **Berlin, Germany** in March, **1995**.
- The **last COP** in **2022** was held in **Sharm Al-Sheikh, Egypt.**
- **COP28** in **2023** is being held at **Dubai, UAE**.
- **From Asia region**- **Kyoto, Japan** (COP3- 1997), **New Delhi, India** (COP8- 2002), **Bali, Indonesia** (COP13- 2007), **Doha, Qatar** (COP18- 2012) and **Dubai, UAE** (COP28- 2023) have held the summit.

How is the host country of the conference selected?

- Regional group members hold consultations to determine which country from their region will make an offer to host a conference.
- The **host country of the COP** normally rotates among the **five United Nations regional groups** (The African Group, the Asia-Pacific Group, the Eastern Europe Group, the Latin American and Caribbean Group (GRULAC) and the **Western European and Others Group (WEOG)**).
- Once agreed, the country selected by the regional group to host the conference sends its offer formally to the **UNFCCC secretariat.**
- The COP considers the offers and adopts a decision, usually titled **"Dates and Venues of Future Sessions"**, accepting the offer, subject to confirmation by the **Bureau of the COP.**

- The **secretariat** then undertakes a fact-finding mission to the prospective host country to determine that all "logistical, technical and financial elements for hosting the sessions are available" and reports back to the Bureau, early at the start of the year.
- A proposal to host the Conference of the Parties (COP) must be **approved by other signatories to the United Nations Framework Convention on Climate Change (UNFCCC)**.

What is the role of the COP host government?

- The **host government** provides **premises and facilities, equipment, utilities and services for the COP**.
- This includes **translation services** for **all six working languages of the UN** and making sure that facilities for media representatives are available.
- It also includes **security for the COP** outside of the core **"blue zone"** of the meeting, which is secured by UN staff.
- The host government also provides leadership on engaging governments and non-Party stakeholders to ensure a smooth preparation and delivery of successful COPs.

Green Credit Program (GCP): Incentivizing Environmental Actions

- GCP was notified on **13th October, 2023** is an **innovative market-based mechanism** designed to **incentivize voluntary environmental actions** across diverse sectors, by various stakeholders like **individuals, communities, private sector industries,** and **companies**.
- The **GCP's governance framework** is supported by an **inter-ministerial Steering Committee** and **The Indian Council of Forestry Research and Education (ICFRE)** serves as the **GCP Administrator,** responsible for **program implementation,management, monitoring,** and **operation.**
- In its initial phase, the **GCP** focuses on **two key activities:water conservation** and **afforestation**.
- Draft methodologies for awarding **Green Credits** have been developed and will be notified for stakeholder consultation.
  - These methodologies set benchmarks for each activity/process, to ensure environmental impact and fungibility across sectors.
- The **Green Credit Registry and trading platform,** being developed by **ICFRE** along with experts, would facilitate the registration and thereafter, the buying and selling of Green Credits.

UAE announces $30-bn fund to boost climate investments

Subject: Environment

Section: International Conventions

Investment Fund ALTERRA:

- The **UAE**, host of the **28th Conference of Parties (COP-28)**, announced a **$30-billion commitment** to an investment fund called **ALTÉRRA**.
- **ALTERRA** is a **privately managed fund** that **aims** to mobilise**$250 billion globally** by **2030** and be the **largest of its kind,** geared towards **climate investments** and **transforming emerging markets** and **developing economies**.
- **ALTÉRRA** has been established by **Lunate,** an **independent global investment manager,** and is **domiciled** in the **Abu Dhabi Global Market.**
- **Other partners include:** BlackRock, Brookfield and TPG.
- The fund will be **chaired** by the **COP28 President** Sultan Ahmed Al Jaber.
- **ALTÉRRA** will have **four key verticals namely:Energy Transition, Industrial Decarbonisation, Sustainable Living** and **Climate Technologies.**
- An unspecified amount has been earmarked for development of over **6 GW (1 GW is 1,000 MW)** of **new clean energy capacity** in **India**.

Agriculture- an easy target to meet climate goals

Subject: Environment

Section: International Conventions

In the news:

- A media report revealed that the government was deliberating plans to **cull some 200,000 cows** over the course of **three years,** at an**yearly cost of €200 million** (around US $211.5 million) to be paid to **farmers as compensation,** for meeting the **country's climate emission goals.** The news triggered large-scale farmer protests.
- **High-income nations** across the world seem to have chosen **agriculture as a priority sector to enforce emissions cut** for meeting their **national climate targets.**

Announcements or plans declared by countries since 2022 to curb greenhouse gas emissions from livestock and agriculture-

Country	Announcement

Denmark	Danish government is considering **taxing beef products** to cut CO2 emissions
Canada	In August 2022, Canada announced a **voluntary plan for farmers to reduce use of nitrogen fertiliser** to cut the country's nitrogen emissions by **30 per cent** below 2020 levels by 2030
Ireland	Ireland government was deliberating plans to cull some 200,000 cows over three years, at an yearly cost of €200 million to be paid to farmers as compensation
Netherlands	In June 2022, the Netherlands announced a plan to **cut nitrogen emissions 50% by 2030.** Since then, farmers have held protests by blocking roads and supermarket distribution centres with tractors and trucks, dumping manure on highways and setting hay bales on fire
New Zealand	In June 2022, the government announced a **tax on cow emissions** (based on factors like the number of animals kept, the size of the farm and the type of fertiliser used) from 2025
Belgium	Since February 2022, the country is **implementing a €200 million-scheme for pig farms** to reduce or entirely close their production capacity to cut nitrogen emissions in the agricultural sector

Emissions from the agriculture sector:
- **Methane** (from livestock belching, flatulence and dung) and **nitrous oxide** (from nitrogen fertilisers) are the **two main greenhouse gases (GHGs)** from the **agriculture sector.Methane** and **nitrous oxide** account for **16 per cent** and **6 per cent** of **global GHGS**.
  - **Emissions and storage from soil carbon** (which is counted in land use) and **farm energy use** are **not counted as part of agricultural emissions**.

Methane emissions:
- **Methane** is the **second most abundant greenhouse gas (GHG)** after **carbon dioxide (CO_2),** accounting for **20 per cent** of **global emissions**.
- It is **25 times** potent than **CO_2**, but **short-lived** and is **responsible for about half of the net rise** in **global average temperature** since the **pre-industrial era**.
- **Methane** from **livestock** originates as **carbon dioxide** in the **atmosphere** that is taken up by **grass** and other plants during **photosynthesis**.
- These plants are eaten by animals, who then burp **methane** during digestion, or release it as flatulence. The gas is also released through **decaying manure**.
- About **32 per cent** of **global anthropogenic methane** come from **microbial processes** that occur during the **enteric fermentation of ruminant livestock** and **manure management systems**, while **oil and gas operations** contribute about **63 per cent**.
- **Methane is of two main types** — **biogenic** (produced from plants and animals) and **fossil** (which has been locked up underground for millions of years).
  - **Biogenic methane** has an **atmospheric life** of about a **decade**, before it becomes **carbon dioxide (CO_2)** and is taken up by **plants** again, followed by the same cycle of plants being eaten by animals.
  - **Methane from fossil fuels** adds **CO_2** to the **atmosphere**. It is linked with leaks from **coal mining** and **flaring from oil and gas drilling**, **transport of fossil fuels**, and **natural sources** like **onshore seeps**.

Two main multilateral treaties to deal with agricultural emissions:
1. **Global Methane Pledge (GMP)**, which has been signed by **149 countries** since its launch in **2021** at the **Conference of the Parties (COP)** to **UNFCCC** held at **Glasgow, Ireland.**
   - The signatory nations have **pledged to cut methane emissions** by **25 per cent** by **2030** compared to **2020 levels**.
2. The **European Green Deal,** a **Europe-specific treaty** announced in **2020** and signed by **27 countries**, which are required to **reduce their GHG emissions** by **at least 55 per cent by 2030** compared to **1990 levels**.
   - A **Nature Restoration Law,** passed in **July 2023** under the deal, **aims to restore and recover nature on at least 20 per cent of EU land and sea area by 2030**, through binding targets relating to habitat and species restoration.

Animal product and food security:
- Animal products make a substantial contribution to food security, providing protein and micro-nutrients.
- The global demand for animal products will increase by 60 to 70 per cent by 2050.
- Measures under the **Green Deal of EU** will **decrease meat supply** by **14 per cent** and **raw milk supply** by **10 per cent**.

Drought emergency declared by 23 countries in 2022-23, shows global drought map

Subject : Environment

Section: International Conventions

Context:

- At least **23 countries,** including **India**, declared **drought emergencies** at a **national or sub-national level** during **2022-23,** showed new data from a **global drought map** compiled by the **United Nations,** pointing to unprecedented urgency on a planetary scale.

About the Report:

- Title: **Global Drought Snapshot 2023**
- Released by: **United Nations Convention to Combat Desertification (UNCCD)**
- Report is based on reporting by **101 Parties** to the **UN Convention to Combat Desertification (UNCCD).**

Key findings:

- **1.84 billion people** were **drought-stricken**, out of which **4.7 per cent** were exposed to **severe or extreme drought.**
- An emergency was declared in **23 countries** due to the **impact of drought**.
  - Of these, **Europe** had the **highest number (8)** — **Spain, Italy** and **United Kingdom** declaring it in April, May and July 2023, respectively, while **Greece, Portugal, Romania** and **Serbia** in July 2022.
- In **2022,** the **continent** recorded its **largest overall drought impacted area** — over **630,000 square kilometres,** as opposed to the **167,000 square kilometres** annual average between 2000 and 2022.
- In **Asia**, **five countries** declared drought — **India**, **Sri Lanka**, **Indonesia**, **Kazakhstan** and **China**.
- **Countries that have declared drought-** the USA, Canada, **Uruguay** and the **African countries** of **Ethio[ia, Kenya, Somalia, Niger, Djibouti, Cabo Verde** and **Mauritania,Kiribati, the Marshal Islands,** and **Tuvalu**.
- On **November 17, 2023**, the **world breached 2 degrees Celsius of warming**, a number the world was constantly warned of not crossing.
- **85 per cent** of people affected by droughts live in **low-or middle-income countries.** Moreover, **98 per cent** of the **32.6 million new disaster displacements** in **2022** were the result of **weather-related hazards** such as **storms, floods** and **droughts**.

Impact of these droughts:

- Decreased reservoir levels, declining crop yields, loss of biological diversity, famines and serious economic consequences, especially in agriculture-dependent regions where drought-related crop failures lead to food shortages and often skyrocketing prices, potentially disrupting global food supply chains.

International Drought Resilience Alliance (IDRA):

- First announced by **Spain** at the **77th session** of the **UN General Assembly** in September **2022** to be **officially launched** at the **UNFCCC COP27** in **November 2022.**
- The alliance is **jointly convened** by the **Governments of Senegal** and **Spain.**
- Interested members of the Alliance see the urgent need to pivot from emergency response to increasing drought resilience through a more coordinated and effective response.

COP28: New report finds agriculture most climate-affected sector; calls for urgent food systems focus in L&D fund

Subject : Environment

Section: International Conventions

Context:

- **Agriculture** is the **climate-affected sector globally,** with **40 per cent of countries** reporting **economic losses explicitly** linked to it, according to a new **United Nations (UN) analysis**.

Details:

- Some **134 countries** — representing over **5.7 billion people,70 per cent** of the food we eat, nearly **500 million farmers** and **76 per cent** of **total emissions** from the **global food system** — signed the **Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action.**
- The **agrifood sector** employed over **866 million people globally** in **2020** and represented a turnover of **$3.6 trillion**.

Analysis findings:

- Analysis was done by the **UN Food and Agriculture Organisation (FAO).**
- It is an analysis of **Nationally Determined Contributions (NDCs)** of **168 countries** as part of their **climate commitments** under the **2015 Paris Agreement**.
- About **one-third (or 35 per cent)** of current **climate action** plans explicitly refer to **L&D**, highlighting the growing relevance of the issue on the global stage, with agriculture being identified as the single most impacted area.

- About **three-fourths of countries** explicitly **mentioning loss and damage** are **middle-income nations.** The mentions are concentrated in **Latin America and the Caribbean,** followed by **East Asia** and the **Pacific**, and **Europe** and **Central Asia**.
- Among countries reporting on L&D, **33 per cent** of **non-economic losses** related to the **agricultural sector**.

Emirates Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action:

- Announced at a special session of the **World Climate Action Summit** led by Joko Widodo, President of **Indonesia;** Giorgia Meloni, Prime Minister of **Italy;** Fiamē Naomi Mataʻafa, Prime Minister of **Samoa** and Anthony J Blinken, Secretary of State for the **United States of America**.
- This Declaration commits **134 countries** to **integrating food into their climate plans** — or **NDCs** — by **2025,** marking the **first time in UN climate talks** that countries have made a clear commitment to **take action on the global food system**.
- The countries also included those with **highest food systems-related greenhouse gas emissions** like **Brazil, China** and the **European Union**.
- **Food loss** and **waste** is responsible for **8 to 10 per cent of global emissions.**
- **Food banks** around the world are a **time-tested solution** by **collecting surplus food** and **delivering** it to those who need it.

Global Agrifood System:

- **Agrifood systems** refer to the **journey of food from farm to table** – including when it is grown, fished, harvested, processed, packaged, transported, distributed, traded, bought, prepared, eaten and disposed of.
- It has the benefit of nutrition and livelihood.

Hidden costs of Global Agrifood System:

- The **global agrifood system** has **hidden costs,** such as those related to **health** and the **environment**. These add up when estimating the value of the agricultural process of production, distribution and consumption, to society.
- The **hidden costs** – a cost that is not reflected in the market price of a product or service – is **12.7 trillion** at **2020 Purchasing Power Parity (PPP) dollars**. The **total hidden cost** is equivalent to the **10% of th global GDP**.
- These **hidden costs** come from **greenhouse gas** and **nitrogen emissions, water use, land-use change, unhealthy dietary patterns, undernourishment** and **poverty.**
- The **majority of the hidden costs** (over **$9 trillion** or **73%** of the total **$12.7 trillion** hidden costs in **2020**) are **health-related costs** resulting from **productivity loss** because of **unhealthy dietary patterns**.
- Most of these costs come from **upper-middle-income countries** (39% of the total hidden costs) and **high-income countries (36%).Lower-middle-income countries** contribute **22%** of the **hidden costs,** while **low-income countries** make up **3%**.
  - In **lower-middle-income countries,** the **social costs** from **poverty** and **undernourishment** are more significant contributors to **hidden costs**.

Country-wise estimate of the hidden cost:

- The countries with the **highest net hidden costs** are the **world's largest food producers and consumers,** with the **United States of America** accounting for **13%** of total quantified hidden costs, the **European Union 14%**, and the bloc of **Brazil,** the **Russian Federation, India** and **China (the BRIC countries)** accounting for **39%.**
- In **India** the **total hidden costs** of the agrifood systems amount to **$1.12 trillion**.
- Under the **total hidden costs,social costs** includes the **cost of poverty** among agrifood workers, **cost of dieseases** related to undernourishment and dietry patterns.

The State of Food and Agriculture 2023 report- released by the UN FAO.

- The report introduces **True Cost Accounting (TCA)** as an approach to estimate **hidden costs** and to unveil the **hidden impacts of agrifood systems on environment, health** and **livelihoods.**
- **TCA** goes beyond market exchanges to account for all flows to and from agrifood systems, including those not captured by market transactions.
- **Database used are-** FAO's Corporate Database for Substantive Statistical Data (FAOSTAT), the World Bank's World Development Indicators, the Global Burden of Disease database, and the Ecosystem Services Valuation Database.

India not among 118 nations that pledged to push green energy

Subject: Environment

Section: International Conventions

Context:

- As many as 118 countries DUBAI signed a pledge to triple installed renewable energy capacity by 2030 during the ongoing COP28 climate summit here on Saturday and India is among those countries whose name is not on the list.

Objectives of Global Renewables and Energy Efficiency Pledge

- The pledge **committed to tripling worldwide installed renewable energy generation capacity to at least 11,000 gigawatts (GW) and to double the global average annual rate of energy efficiency improvements to more than 4% by 2030.**

Why didn't India sign?

- As per some apprehensions some of the language in the text was "problematic".

What are the Initiatives taken by India to Promote Renewable Energy?

- **National Solar Mission (NSM):** The 100 GW solar ambition at the heart of the world's largest renewable energy expansion programme.
- **The Wind Energy Revolution:** Leveraging India's robust wind energy sector to boost clean energy manufacturing and the rural economy
- **National Biofuels Policy and SATAT:** Building value chains to reduce fuel imports, increase clean energy, manage waste, and create jobs
- **International Solar Alliance (ISA):** Harnessing the infinite power for the Sun for sustainable human development.
- **Small Hydro Power (SHP):** Harnessing the power of water to integrate remote communities into the economic mainstream.
- **National Hydrogen Energy Mission (NHEM):** Exploring the commercial viability of a versatile clean fuel.
- **Production-Linked Incentive (PLI) Scheme:** Integrating India into the global clean energy value chains.

What are the themes of COP28 Climate Summit?

- **Emissions Mitigation Targets:** Countries will engage in negotiations to set ambitious emissions reduction targets, aligning with the broader goal of limiting global temperature rise set in the Paris Conference (2015).
- **Phase Down vs Phase-Out:** Developed nations may push for an accelerated phase-out, but developing countries, including India, face challenges in balancing energy security needs with emission reduction goals.
- **Climate Finance:** The provision of financial support from developed to developing nations for climate mitigation and adaptation efforts will be a contentious issue.
- **For Example:** Developing countries will need at least $200 billion every year by 2030 to adapt to worsening climate impacts like coastal sea rise or storms, according to the U.N.
- **Industry-led solutions:** COP28 climate summit will likely witness discussions on harnessing industry-led innovations to drive sustainable development and reduce carbon footprints.
- **Low-carbon Innovation:** Emphasis on fostering low-carbon innovations and technologies will be a key aspect of the conference, with a focus on creating a pathway for a sustainable future.
- **Progress on operationalizing the Paris Agreement article:** COP28 climate summit will assess progress on operationalizing the various aspects of the Paris Agreement, including mechanisms for reporting and transparency.
- **Reforming the role of private sector investment:** The role of private sector investment in climate actions will be under scrutiny, with discussions on how private capital can be effectively mobilized to address climate challenges.

Countries committed in making their own food system: COP28

Subject :Environment

Section: Int Conventions

Context:

- World leaders have convened at the 28th Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC COP28) in the United Arab Emirates (UAE) from November 30 to December 12.

More in News:

- Notably, this COP marks a significant departure by placing a major focus on food systems and their sustainability, acknowledging their pivotal role in achieving the Paris Agreement Goals.
- The UAE has dedicated a day, December 10, to discussions on food, agriculture, and water, and has called for world leaders to endorse the COP28 Declaration on Resilient Food Systems, Sustainable Agriculture, and Climate Action.

Key Highlights:

Historic Emphasis on Food Systems:

- COP28 prioritizes food systems, previously overlooked in climate negotiations.
- Dedicated day and COP28 Declaration stress urgency in addressing the link between food systems and climate change.

Alignment with Paris Agreement Goals:

- COP28 Declaration urges national governments to align food systems and agriculture strategies with Nationally Determined Contributions (NDC) under the Paris Agreement.
- Underscores interconnectedness of climate action and sustainable food practices.

Fossil Fuels and Food Systems Link:
- Acknowledgment of intricate link between food systems and fossil fuels.
- Pressure on COP28 to prioritize phasing out fossil fuels due to the significant reliance of the food industry on high-carbon energy.
- Emphasis on comprehensive transformation in food production, processing, packaging, consumption, and waste management.

Caution Against Greenwashing:
- Concerns raised about the influence of fossil fuel and Big Agriculture lobbyists at COP28.
- Criticism of potentially pushing unproven technological solutions.
- "Climate-smart" approaches like "efficient" use of fertilizers and pesticides are criticized for reinforcing harmful industrial food and agriculture systems.

Global Initiatives and Local Actions:
- The Agriculture Innovation Mission for Climate Initiative faces criticism for controversial solutions.
- Coalition of 70 organizations advocates for holistic food systems approach within UNFCCC.
- Emphasis on local governments spearheading actions promoting sustainable diets, reducing food waste, and supporting organic farming.

Climate Finance and Agriculture:
- Agriculture, often overlooked in climate financing, receives minimal attention.
- Smallholder farmers receive only 0.3% of climate finance.
- Urgent calls to channel funds to smallholder farmers on the frontlines of the climate crisis.

Upcoming Reports and Expectations:
- IPES-Food report emphasizes the urgency of a just transition toward resilient, diverse food systems.
- Food and Agriculture Organization to release a report during COP28, highlighting the impact of loss and damage on agrifood systems.

India will not be bound by curbs on energy use: Environment Secretary

Subject : Environment

Section: Int Conventions

Context:
- At **COP28, India** was conspicuously absent from a list of **118 countries** signed on to a **pledge to triple installed renewable energy capacity** by **2030**.
- **India** has also reiterated its **right to use coal** on the grounds that its historical contribution to the **carbon crisis** has been negligible, as **below-global-average per-capita emissions of 4%**.

India's GHG emission:
- According to India's latest communications to the United Nations, its greenhouse gas emissions **increased 4%** from **2016-2019** to **2.6 billion tonnes of CO_2**. The **energy sector** contributed the most to the **overall anthropogenic emissions (75.81%)**, followed by the **agriculture sector (13.44%), Industrial Process and Product Use (IPPU) sector (8.41%),** and **Waste (2.34%)**.

'COP28 UAE Declaration on Climate and Health':
- The **COP28** Presidency, in partnership with the **World Health Organization** and **UAE Ministry of Health and Prevention,** unveiled the **'COP28 UAE Declaration on Climate and Health'** to place **health at the heart of climate action** and accelerate the development of climate-resilient, sustainable and equitable health systems.
- A set of new **finance commitments on climate and health** was announced to back up these political commitments, including a **USD 300 million commitment** by the **Global Fund to prepare health systems, USD 100 million** by the **Rockefeller Foundation** to scale up climate and health solutions, and an announcement by the **UK Government** of up to **GBP 54 million.** The Declaration is announced ahead of the first ever **Health Day** at a COP and joins a series of announcements made during the **World Climate Action Summit** to keep **1.5C** within reach.
- Endorsed by **123 countries,** the Declaration marks a world first in governments acknowledging the growing health impacts of climate change on communities and countries. It also acknowledges the large benefits to people's health from stronger climate action, including by reducing air pollution and lowering health care costs.

- **India** has **not signed** this pledge as well.

Global Renewables and Energy Efficiency Pledge:

- The pledge says that renewables deployment must be accompanied in this decade by a rapid increase of energy efficiency improvements and the phase down of unabated coal power, in particular ending the continued investment in unabated new coal-fired power plants.

COP28 president urges nations to update NDCs to cover methane, other non-CO2 greenhouse gases

Subject : Environment

Section: Int Conventions

Context:

The recent summit on methane and other non-CO2 greenhouse gases held on December 2nd, 2023, marked a critical juncture in the fight against climate change. It highlighted the growing recognition that tackling methane, responsible for 50% of global warming, is indispensable for keeping the 1.5°C goal within reach

While carbon dioxide (CO2) gets all the attention, there are several other sneaky players in the greenhouse gas game. These non-CO2 gases, though less abundant, pack a powerful punch when it comes to trapping heat and warming the planet.

Here are some of the key culprits:

- **Methane (CH4):** This potent gas, over **80 times more effective than CO2** at trapping heat, comes from a surprising variety of sources. From leaky gas pipelines and burping cows to decomposing landfills and even rice paddies, methane's reach is far and wide.

- **Nitrous oxide (N2O):** This invisible troublemaker, **300 times more potent than CO2,** has a more specific origin story. Think fertilizers applied to fields, the burning of fossil fuels, and even the treatment of wastewater. Every time these activities take place, a bit more N2O sneaks into the atmosphere.

- **Fluorinated gases (F-gases):** This diverse group of human-made chemicals, including refrigerants, foam-blowing agents, and even some medical inhalers, are all masters of heat absorption. Though individually not as potent as methane or N2O, their sheer number and long atmospheric lifespan make them a force to be reckoned with.

- **Ozone (O3):** This blue beauty shields us from harmful UV rays but also absorbs infrared radiation, warming the planet. While stratospheric ozone is our friend, the pollutant ozone closer to the ground is not.

- **Black Carbon (BC):** This sooty char, emitted from burning fuels and deforestation, hangs out in the atmosphere, absorbing sunlight and warming the planet directly. It also darkens snow and ice, reducing their ability to reflect heat, creating a vicious cycle.

- **Water Vapor (H2O):** The most abundant greenhouse gas, water vapor, is a double-edged sword. It amplifies the warming caused by other gases but also forms clouds that reflect sunlight, cooling the planet. Its complex role makes it a climate wild card.

- **Sulfur Hexafluoride (SF6):** This electrical insulator may be invisible, but its heat-trapping power is monstrous.

Methane: More Potent, Less Persistent

Subject : Environment

Section: Int Conventions

Context:

- It is a **potent climate pollutant**. At the ongoing COP-28 climate summit in the United Arab Emirates, a group of well-endowed philanthropic bodies, including the Sequoia Climate Foundation and the Bezos Earth Fund, announced that they would collectively invest $450 million in solutions to tackle methane emissions.

Methane:

- **Methane** is an organic compound. Its molecule consists of **carbon** and **four hydrogen atoms (CH4).**

- **Methane is the second-biggest cause of global warming caused by anthropogenic activity after carbon dioxide and is 80 times more powerful.**

- The **GWP** is a measure of the warming caused by a substance relative to that due to the same mass of carbon dioxide; the **GWP100** measures this over a century at a time.

- If **carbon dioxide** has a **GWP100** of **1,**methane is **28**, nitrous oxide is **265,** and **sulphur hexafluoride** is **23,500**.

- However, while **carbon dioxide** lasts for several decades at a time in the atmosphere before breaking down, **methane** breaks down in a matter of years. That is, it's a **short-lived climate pollutant.**

- Its sources include **cattle-farming, landfills, wastewater treatment facilities, rice cultivation**, and some **industrial processes**.
  - **Energy, agriculture** and **waste sectors** are the **primary emitters of methane,** responsible for **30 per cent** of the earth's warning.

Methane emission alert:

- The **Methane Alert and Response System (MARS)** notified governments of 1**27 plumes** spanning four continents and identified **1,500 plumes** in its pilot stage, according to the new report by UNEP.

Methane Alert anf Response System (MARS):

- Launched by the **UNEP's International Methane Emissions Observatory (IMEO)** at **COP27, Egypt.**
- It is the **first-ever global system** that uses **satellite data to monitor major emission events** and notify governments and companies who can address them.
    - **IMEO**, launched at the **G20 Leaders Summit** in **2021,** gathers methane emissions-related from satellites through MARS and from industries through the **Oil and Gas Methane Partnership 2.0.** It also relies on scientific measurement studies.
- The **Oil & Gas Methane Partnership 2.0 (OGMP 2.0)** is **UNEP's** flagship programme that includes a partnership of companies to improve the accuracy and transparency of methane emissions data from the oil and gas sector through a committed framework.
- Under the **OGMP,** a **"Gold Standard"** reporting is achieved once companies empirically reconcile measurements at source (Level 4) and site (Level 5) levels for the vast majority of their assets. 84 companies met the Gold Standard pathway criteria.

Global Methane Pledge

- The Global Methane Pledge was launched at the ongoing UN COP26 climate conference in Glasgow.
    - So far, over 90 countries have signed this pledge, which is an effort led jointly by the United States and the European Union.
- Methane is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide, and, therefore, pledges related to cutting down its emissions are significant.
- The pledge was first announced in September by the US and EU, and is essentially an agreement to reduce global methane emissions. One of the central aims of this agreement is to cut down methane emissions by up to 30 per cent from 2020 levels by the year 2030.
- Among the signatories is **Brazil** — one of the **five biggest emitters of methane**, which is generated in cows' digestive systems, in landfill waste and in oil and gas production.
    - Three others —**China, Russia and India** — have not signed up.
    - **Australia** has said it will not back the pledge.
- According to the latest Intergovernmental Panel on Climate Change report, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.

Can Africa Green Industrialisation Initiative be the Continent's Holy Grail?

Subject : Environment

Section: Int Conventions

Africa Green Industrialisation Initiative (AGII):

- Launched on December 2 at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change** at **Dubai, UAE**.
- It **aims** to **upscale and accelerate green industries** and **businesses across Africa** was launched by presidents and representatives from Kenya, Angola, Burundi, Djibouti, Ghana, Ivory Coast, Mauritania, Nigeria, Senegal and Zambia.
- The **initiative** underscores the importance of **green industrialisation to harness Africa's vast and quality resources** to **secure prosperity for all**.
- It incorporates elements of the **Sustainable Development Goals (SDGs)** and the **Paris Agreement**, discourages **fossil fuel production** and use that immensely contributes to global warming.

Approach of AGII:

- The initiative will bring together African Governments, initiative's partners and other supporting institutions to offer accelerated end-to-end green growth solutions for committed government.
- The work will be organized in two parallel and mutually enforcing work streams:
    - Delivering transformational projects
    - Effecting Systemic change

Why AFRICA?

- Africa has 40 per cent of the world's critical minerals necessary for energy transition such as bauxite, chromium, cobalt, copper, gold, iron, etc.for instance it contains the world's largest reserves of manganese needed for making solar panels etc.
- The continent's potential of exporting green steel through reserves of iron ore and production of green hydrogen.

- There are huge bauxite reserves for green aluminium and renewables assets in the Sahel region.
- It has the world's largest natural carbon sink.

Other Important topics from the topic:

Green Ammonia:

- Ammonia (NH_3) is a colorless gas made of hydrogen and nitrogen. It's widely used in fertilizer production, household cleaners, and industrial applications. It's also a byproduct of biological processes and can be found in nature, like in soil, water, and the atmosphere.
- Green ammonia refers to ammonia that's produced using renewable energy sources for its synthesis. (The term "green" signifies its environmentally friendly production process, as it avoids fossil fuels and reduces carbon emissions compared to traditional methods.)

Some important Methods of producing green ammonia are:

- **Haber-Bosch synthesis**: It involves the use of renewable electricity, like solar or wind power, to produce hydrogen through water electrolysis. This hydrogen is then combined with nitrogen (usually obtained from the air) to create ammonia through a process called Haber-Bosch synthesis.
- **Biomass Conversion**: Processes such as gasification or pyrolysis can transform biomass into hydrogen-rich gas. This hydrogen can subsequently be employed in ammonia production together with nitrogen.
- **Solid Oxide Electrolysis Cells (SOEC):** SOECs have the capability to directly convert steam into hydrogen using renewable electricity. This resultant hydrogen can be incorporated into ammonia synthesis.
- **Green Hydrogen:** Green hydrogen refers to hydrogen produced through a process called electrolysis, where renewable energy sources like solar, wind, or hydroelectric power are used to split water into hydrogen and oxygen. This method generates hydrogen without emitting greenhouse gases, making it environmentally friendly.

Some method of producing it are:

- **Electrolysis using Renewable Energy:** This method involves using renewable energy sources like solar, wind, or hydroelectric power to perform electrolysis on water, splitting it into hydrogen and oxygen. Proton Exchange Membrane (PEM) electrolysis and Alkaline Electrolysis are two prevalent techniques used for this purpose.
- **Biological Production:** Certain microorganisms or algae have the capability to produce hydrogen through biological processes like photosynthesis or fermentation.

Germany unveils Climate Club to tackle industrial emissions

Subject : Environment

Section: Int Conventions

Climate club:

- Launched at the **28th Conference of Parties (COP28)** to the **United Nations Framework Convention on Climate Change,** at **Dubai, UAE.**
- Led by **Germany** and **Chile**.
- **Chaired by-** Germany's Chancellor Olaf Scholz.
- **Aim-** cooperation between countries in decarbonising the industrial sector.
- The Club is claimed to currently represent **55 per cent** of the **global economy**.
- The Club has garnered support from **36 member countries** including **Kenya, the European Union, Switzerland** and others.

What is the climate club work programme 2024?

- The Club's core idea is based on the fact that the hard-to-abate sectors, including steel, cement, and chemicals, are responsible for about 70 per cent of global CO_2 emissions from industry, and developed countries account for a significant share of these emissions.
- The activities are divided into **three key pillars:-**
1. Advancing ambitious and transparent climate change mitigation policies.
2. Transforming industries
3. Boosting international cooperation and partnership
- These three pillars are further divided into **nine interconnected Modules**, setting the pathway for initial work of the club.

Governance framework;

- The **two co-chairs** will be elected for **two-year terms** for the Club.
  - Currently, **Germany** and **Chile** are the co-chair.
- A body of members will determine the scope and approve the work programme, budget and amendments.
- A steering group will be formed to support the body of members when the Club reaches 40 members.
- A **secretariat** will be formed to implement the work program. Currently, **OECD** and **IEA** are the joint interim heads of secretariat.
- The **work programme for 2024** will focus on the **steel** and **cement sectors**.
- The UK pledged support through financial assistance, contributions to the Green Climate Fund and collaboration with the Breakthrough Agenda to make clean technologies more affordable.
- The **United Kingdom** highlighted **three key areas of focus** within the **Climate Club.**
1. The importance of creating baselines for sustainable standards in industrial products.
2. Understanding and addressing the carbon leakage risk.
3. Support for workers and industries.

EU's Deforestation-Free Products Regulation (EU-DR)

Subject : Environment

Section: Int Conventions

Context: India has raised concerns about the EU's Deforestation-Free Products Regulation (EU-DR), which will be implemented in December 2024, possibly leading to discrimination against some countries and acting as a disguised restriction on international trade. However, the bloc has said the proposed rules were based on objective, scientific, non-discriminatory and proportionate criteria.

EU's Deforestation-Free Products Regulation (EU-DR)

- It is a European Union regulation that aims to counter deforestation by requiring companies registered in the EU that import or export specific items (list of 479 for India) have not been produced on land that was deforested after December 31, 2020.
- The EU-DR covers seven primary commodities and a variety of products derived from these. While the main commodities are **cattle, cocoa, coffee, oil palm, rubber, soya, and wood, the derived commodities are several such as meat products, leather, chocolate, coffee, palm nuts, palm oil derivatives, glycerol, natural rubber products, soybeans, soy-bean flour** and oil, fuel wood, wood products, pulp and paper and printed books.

Why India opposing EU-DR?

- There is criticism that this is just a form of **non-tariff barrier** to trade, as EU itself has reduced its primary forest cover to increase agricultural output before the said date, and now is not allowing other countries to do the same as they struggle with population pressure on resources.

- India's stand is that it violates **Most Favored Nation (MFN)** and **National Treatment principles**. This is the second such measure by the EU after its **Cross Border Adjustment Mechanism**. It is estimated that both together are likely to adversely affect exports from India to EU worth $9.5 billion.
- In its reply to India's queries, the EU said that no commodities or countries will be subject to discrimination, and the regulation will apply equally to commodities and products produced inside and outside the EU.

Indian companies should invest in 'climate vulnerable' nations: Nasheed

Subject : Environment

Section: Int Conventions

Context:
- The former President of Maldives, Mohamed Nasheed, emphasized the need for Indian companies to invest in clean energy projects in Maldives and other climate-vulnerable countries.
- Nasheed suggested that such investments would be more beneficial than putting money into traditional sectors like "iron and steel."

Key Highlights:
- **Climate Vulnerable Forum (CVF):**
  - International partnership of 58 countries highly vulnerable to climate change.
  - Represents regions including Africa, Asia, the Caribbean, Latin America, and the Pacific.
  - A platform for South-South cooperation to address global climate change challenges.
  - Rotating chairmanship with Ghana currently holding the position for 2022-2024, following Ethiopia's leadership.
- **CVF's Objectives:**
  - Formation in November 2009 near Male', Maldives.
  - Adoption of the Manila-Paris Declaration and the 2016-2018 Roadmap during the CVF High-Level Meeting at UNFCCC COP21.
  - Commitment at COP22 to ambitious climate action, including achieving maximal resilience and 100% domestic renewable energy production.
- **India's Commitments:**
  - India committed to installing 500 GW of electricity from non-fossil fuel sources.
  - Pledged to reduce emissions by 45%, aligning with the Paris Agreement's goals of limiting global temperature rise below 2°C and ideally below 1.5°C.
- **Mohamed Nasheed's Recommendations:**
  - Nasheed encourages Indian companies to invest in renewable energy projects in climate-vulnerable countries.
  - Highlights the importance of development banks and richer countries in "de-risking investments" for climate-vulnerable nations.
  - Nasheed notes interest from several Indian investors in renewable energy projects within the CVF, particularly in solar and wind.
- **Role of Development Banks:**
  - Nasheed underscores the significant role development banks can play in de-risking investments in climate-vulnerable nations.
  - The focus is on attracting real investments rather than relying solely on grants.

Global forest facility

Subject: Environment

Section: Int Conventions

Context:
- **Brazil** has proposed the **Global Forest Facility** to mobilise billions from existing funds at **COP28** of **UNFCCC**.

Tropical Forest Forever Facility (TFFF):
- Launched by- **Brazil**
- It **aims** at **mobilizing $250 bn** to **protect standing tropical forests** in up to **80 countries**.
- The scheme would provide a guaranteed, long-term flow of resources for tropical forest conservation.
  - The **U.K.** has committed **£35 million** to protect **Amazon forests** in **Brazil**.

- To be **eligible,** the **deforestation rate of a country must remain below** a certain percentage and **deforestation must be decreasing or less than a percentage**.
- **Tropical forests** provide an array of ecosystem services beyond carbon. The proposal recognizes the **role of tropical rainforest** conservation for biodiversity, carbon capture, and cooling effects, as well as its importance for social and economic development.
- The Facility can be fully operational by **COP30,** which is to be held in **Belém, State of Pará, Brazil**.

Funding Mechanism:

- Funds will come from **sovereign wealth funds,** and **institutional investors** among others.

Global Stocktake draft calls for phasing out fossil fuels

Subject: Environment

Section: Int Conventions

Context:

- The latest version of the **Global Stocktake (GST)** includes a clause committing all signatories to **"an orderly and just phase out of fossil fuels"**.

Details:

- For the **first time,** a key document being negotiated at the **UN's annual climate summit** has underlined the need for the world to do away with **all fossil fuels,** in its draft text.

Global Stocktake (GST):

- GST will be a **Party-driven process** conducted transparently and with the participation of **non-party stakeholders**.
- It will be done every **five years,** starting from **2023.**
- It enables countries and other stakeholders to see **where they're collectively making progress** toward meeting the goals of the **Paris Agreement** – and where they're not.
- It's like taking **inventory**. It means looking at everything related to where the world stands on climate action and support, identifying the gaps, and working together to agree on solutions pathways (to 2030 and beyond).
- GST also points to a **growing gap** between the **needs of developing countries** and the **support provided and mobilized for them**, and calls for the unlocking and redeployment of trillions of dollars towards climate action and climate-resilient development.

The journey towards a plastic-free world

Subject: Environment

Sec: Int Conventions

Context:

- Under the **UN Environment Assembly** Resolution 5/14, the **Intergovernmental Negotiating Committee (INC)** is responsible for delivering a global plastics treaty by 2025.

Details:

- It would be an **international legally binding instrument** to end plastic pollution worldwide.
- The **INC-3,** held at **Nairobi** in November 2023, was a **make-or-break opportunity** as countries came together to negotiate the **'zero draft'** text developed by the committee's secretariat.

What does the 'Zero Draft' say?

- It contains a strong option for an international legally binding treaty to end plastic pollution. But leave some high-impact elements like primary polymer production, chemicals of concern, problematic and short-lived plastics, trade, and financial mechanisms, among others.
- A group of **like-minded countries** — including **Saudi Arabia, Russia, China, Iran,** and some members of the **Gulf Cooperation Council** — argued to include the clause "while contributing to the achievement of sustainable development", to ensure their economic interests and investments.

Does the treaty discuss finance?

- The **zero draft** contains options such as **imposing a plastic-pollution fee** to be paid by plastic polymer producers, and another on **reducing the financial flow into projects** with a **high carbon footprint**.

Are there limits on plastic trade?

- The draft tries to fill the gap in the plastic trade that was not included in the **Basel convention,** but any restrictions on trade is considered to be impinging on the freedom and sovereignty of nations.
- The **Centre for International Environmental Law (CIEL),** a non-profit in **Washington, D.C.**, has found that the **bloc (of like-minded countries)** misconstrued the **World Trade Organisation (WTO)** rules to their advantage.

- o The **WTO rules** provide for sufficient scope for **trade restrictions** when they are **"necessary to protect human, animal or plant life or health"** and nothing prohibits states under international law to **regulate or restrict the trade of certain products and materials**.

What is the issue with the rules of procedure?

- A handful of countries, including **India,** continued to demand **consensus-based decision-making** instead of a **two-thirds vote majority**.
- Now, the **INC-4** meeting will decide the rules of procedure.
- The **African Group of Countries** and **Small-Island Developing States (SIDS)** advocated for **strong binding provisions** for the **high-impact elements** in the treaty. They championed the voices of **waste-pickers** and **indigenous peoples** and approached the treaty from a **human rights** and **public health perspective**.

Developing countries reject GGA draft, vote of support for rechanneling Special Drawing Rights

Subject: Environment

Sec: Int Conventions

Global Goal on Adaptation (GGA):

- A draft text on the GGA was made available at the COP28 meeting.
- The text around the principle of **common but differentiated responsibilities and respective capabilities,** means of implementation, particularly finance, financial targets, accountability mechanisms and closing of the adaptation finance gap were either missing from the text or were bracketed.
- **About GGA:**
  - o It was established under the **Paris Agreement** to enhance **climate change adaptation** by increasing awareness of and funding towards countries' adaptation needs in the context of the 5/2°C goal of the Paris Agreement.
  - o At **COP26,** Parties established the **2022-2023 Glasgow-Sharm el-Sheikh (GlaSS) Work Programme on the Global Goal on Adaptation** to define the key elements of the goal, including the methodologies, indicators, metrics, and data sources to support the assessment of overall adaptation progress.
  - o Negotiations around the **GGA** currently focus on what metrics and indicators can be used at both global and local levels to effectively monitor collective progress, while incorporating and addressing outstanding concerns on bridging the gap between the local- and context- specificity of adaptation and the need to track it at a global scale.

Finance:

- A roundtable on Leveraging **Special Drawing Rights** for climate was organised at COP28.
- **Developed countries** like **Spain** supported the **rechanneling of SDRs** from **developed to developing countries**.
- **IMF** has exceeded the target for the **Resilience and Sustainability Trust** to **$41 billion**, accessible to the poorest countries.
- **World Bank** has started the five new initiatives such as **targeting 45 per cent of their financing for climate by 2025**, and **tackling methane from rice, livestock** and **waste management**.
- **Special Drawing Rights (SDR):**
  - o The **SDR** is an **international reserve asset** created by the **IMF** to supplement the official reserves of its member countries.
  - o The **SDR** is **not a currency.** It is a potential claim on the **freely usable currencies of IMF members.** As such, **SDRs** can provide a country with liquidity.
  - o A basket of currencies defines the SDR: **the US dollar, Euro, Chinese Yuan (Renminbi), Japanese Yen,** and the **British Pound**.

Equitable fossil fuel phaseout:

- The **Civil Society Equity Review Report** released at **COP28** noted that **Canada, the United States, Norway, Australia** and the **United Kingdom** must end fossil fuel extraction by the very early **2030s**.

Mitigation Work Programme (MWP):

- First introduced by **UNFCCC** at **COP26 in Glasgow.**
- Launched at- **COP27 Sharm Al-Sheikh, Egypt**
- It aims to **"urgently scale up mitigation ambition and implementation"** to help reach the 1.5DC goal.
- At **COP27,** Parties further fleshed out the programme to be operationalised each between **2023-2026** via at least two annual global dialogues and investment-focused events.

Global Cooling Pledge at COP28: How refrigerators and ACs contribute to global warming

Subject: Environment

Section: Int Convention

Context:

- **Sixty-three countries,** including **the US, Canada, and Kenya,** signed up to the **world's first-ever pledge to drastically cut cooling emissions** at the ongoing COP28 climate summit.

Global Cooling Pledge:

- It commits the countries to reduce their cooling emissions by at least 68% by 2050 and outlines several strategies to tackle them.

- These kinds of **emissions** now account for **7% of global greenhouse gas emissions** and are expected to **triple by 2050**.

Cooling emission and global warming:

- Generated from refrigerants, used in appliances like ACs and refrigerators, and the energy used for cooling.
    - **Electricity,** used for refrigerators, is generated from fossil fuels, that contribute to global warming.
    - The energy consumption for space cooling (the process of cooling indoors) has more than tripled.

- Earlier, most of the cooling appliances used **chlorofluorocarbons (CFCs)** as refrigerants.

- But since the **1987 Montreal Protocol**- an agreement signed by nearly 200 countries to freeze the production and consumption of ozone-depleting substances, including CFCs- **CFCs** were largely **replaced** by **two groups of chemicals, hydrofluorocarbons (HFCs)** and **hydrochlorofluorocarbons (HCFCs).**

- **HFCs** and **HCFCs** don't damage the ozone layer but they are **powerful greenhouse gasses,** and **hundreds to thousands of times** more potent than **carbon dioxide (CO2)** per unit of mass.
    - **HFC-134a,** a form of **HFC** and most commonly used in **domestic fridges,** has a global warming potential of 3,400 times that of CO2.

Sources of HFC

- Stationary ACs & fridges — 55.0%
- Mobile air-conditioning — 24.0%
- Foam agents — 11.0%
- Aerosols — 5.0%
- Fire extinguishers & solvents — 5.0%

Steps taken to reduce HFCs:

- In 2016, over **150 countries** signed the **Kigali Amendment** to the **Montreal Protocol,** agreeing to r**educe HFC consumption** by **80%** by **2047.**

- If achieved, this could avoid more than **0.4 degrees Celsius** of **global warming** by **2100**.

- **Natural refrigerants,** such as **ammonia, certain hydrocarbons,** and **CO2** can be used in **cooling devices.** These chemicals have **lower or zero global warming potential**.

- Proper management and reuse of potent refrigerant gases could slash 100 billion gigatons of global CO2 emissions between 2020 and 2050.

Climate and Clean Air Coalition (CCAC):

- It is an international body working to reduce powerful but short-lived climate pollutants (SLCPs), including methane, black carbon, HFCs, and tropospheric ozone.

- Launched in **2012**, by the governments of **Bangladesh, Canada, Ghana, Mexico, Sweden** and the **United States**, along with the **United Nations Environment Programme (UNEP).**

Azerbaijan all set to host COP 29

Subject: Environment

Section: Int Conventions

Context: Azerbaijan is all set to host COP 29

More about the news:

- **Armenia has agreed** to withdraw its **candidacy for hosting COP29,** allowing **Azerbaijan to host the conference in 2024**.
- This decision comes as a sign of goodwill and aims to build confidence between the two nations that have been in conflict over the Nagorno-Karabakh region.
- Bulgaria, another candidate, is also reported to have withdrawn its bid.
- The **host for COP29 will need approval from COP28**, currently taking place in Dubai. This development reflects a **diplomatic effort to resolve differences and ensure the rotation of COP hosts among UN regional groupings.**

How a host city of COP selected:
- The **venue for the COP** meeting rotates **among the five UN-identified regions:**
- **Africa, Asia-Pacific, Eastern Europe, Latin America and Caribbean, and Western Europe and Others.**
- The **countries in the region propose a candidate,** and a host is **usually decided at least two years in advance.**
- **If no country agrees** to be the host, **Bonn, where the UNFCCC secretariat is headquartered, steps in as host.**
- The **rotation cycle has not been followed very strictly.**
- The f**irst and second COPs** were held in **western Europe (Berlin and Geneva), and so were the fifth and sixth (Bonn and the Hague).**

Some facts about UN Framework Convention on Climate Change (UNFCCC):
- UNFCCC is an **intergovernmental treaty developed** to address the problem of climate change.
- The Convention has **near universal membership** (197 Parties).
- The Convention was **opened for signature** at the **June 1992 UN Conference on Environment and Development (UNCED)** also known as the **Rio Earth Summit.**
- The UNFCCC e**ntered into force on 21 March 1994.**
- The **original secretariat of UNFCCC was in Geneva.** Since **1995, the secretariat has been located in Bonn, Germany.**

India led Global River City alliance launched at COP28

Subject : Environment

Section: Int Conventions

Context: India led Global River City alliance launched at COP28

More about the news:
- The **National Mission for Clean Ganga** (NMCG) launched the **Global River Cities Alliance (GRCA)** at the **United Nations Climate Change Conferenc**e COP28 in **Dubai.**
- The **GRCA expands the River Cities Alliance,** originally **formed by NMCG with 142 Indian river cities**, by adding **river cities from Den Haag (Netherlands), Adelaide (Australia), and Szolnok (Hungary).**
- The **alliance aims to foster global** collaboration for **river conservation and sustainable water management**.
- Earlier, the **RCA had signed a Memorandum of Common Purpose with the Mississippi River Towns and Cities Initiative of the US**.
- The NMCG Director General emphasized the importance of mainstreaming rivers in urban planning.

Some facts about River Cities Alliance:
- The River Cities Alliance was **launched in 2021**, to **represent a pioneering collaboration between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs.**
- It is the **first-of-its-kind global initiative,** symbolizing the successful partnership between the two ministries.
- The **primary objective is to provide member cities** with a platform for discussing and exchanging **vital information related to sustainable urban river management,** sharing best practices, and promoting innovation.
- The alliance is **open to all river cities in India**, the Alliance **allows cities to join at any time.**
- The alliance has been **launched initially with 30 cities namely Dehradun, Rishikesh, Haridwar, Srinagar, Varanasi, Kanpur, Prayagraj, Farrukhabad, Mirzapur, Mathura, Bijnor, Ayodhya, Patna, Bhagalpur, Begusarai, Munger, Sahibganj, Rajmahal, Howrah, Jangipur, Hugli-Chinsurah, Berhampore, Maheshtala, Aurangabad, Chennai, Bhubaneshwar, Hyderabad, Pune, Udaipur and Vijayawada.**
- **The Alliance focuses on three broad themes: Networking, Capacity Building, and Technical Support.**
- The **Secretariat of the Alliance is established at the National Institute for Urban Affairs (NIUA).**

Some facts about The National Mission for Clean Ganga (NMCG):
- It was **registered as a society in 2011 under the Societies Registration Act 1860.**

- It acted as the **implementation arm of National Ganga River Basin Authority (NGRBA)** which was constituted under the **provisions of the Environment (Protection) Act (EPA),1986.**
- **NGRBA has since been dissolved** with effect **from 2016 conseque**nt to the constitution of **National Council for Rejuvenation, Protection and Management of River Ganga** which is **referred as National Ganga Council.**

What is the Aim & Objective of NMCG

- To ensure **effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin** approach to promote inter-sectoral coordination for comprehensive planning and management.
- To **maintain minimum ecological flows** in the river Ganga with the **aim of ensuring water quality and environmentally** sustainable development.
- The **Act envisages five tier structure** at **national, state and district level** to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water to rejuvenate the river Ganga as below:
- **National Ganga Council** under the **chairmanship of Prime Minister of India.**
- **Empowered Task Force (ETF)** on river Ganga under chairmanship of Union Minister of Jal Shakti (Department of Water Resources, River Development and Ganga Rejuvenation).
- **National Mission for Clean Ganga (NMCG).**
- **State Ganga Committees.**
- **District Ganga Committees in every specified district abutting river Ganga and its tributaries in the states.**

Draft climate deal fails to 'phase out' fossil fuel

Subject: Environment

Section: Int Conventions

Context:

- At the ongoing **COP28** in **Dubai, UAE**, the draft climate deal did not ask countries for **'phasing out'** coal but recommended to **"rapidly phase down unabated coal,"** that countries such as **India, Indonesia** and **China** — **major consumers of coal power** — could find objectionable.

Details:

- There is a need to bring parity between **coal, oil** and **gas,** and the need to do away with them to keep temperature increase below 1.5°C by the end of the century.
- It called for "reduce both consumption and production of fossil fuels, in a just, orderly and equitable manner so as to achieve net zero by, before, or around 2050 in keeping with the science."
- **Burning fossil fuels** (coal, oil, and natural gas) releases **carbon dioxide (CO2)** into the atmosphere, and CO2 is a GHG.
- Industrial activities, transportation, and deforestation contribute to GHG emissions.
- **Burning of fossil fuel** contributes nearly **80%** of the **greenhouse gas emissions** of which **coal** makes up about **40%** and **oil and gas** collectively constitute the rest.

New Initiative to tackle debt & climate change launched by Kenya, Colombia, France

Subject :Environment

Section: Int conventions

Context:

- At the **COP28** in **Dubai, UAE,** leaders from **Kenya, Colombia** and **France** launched the **Global Expert Review on Debt, Nature and Climate**.

Global Expert Review on Debt, Nature and Climate:

- **First proposed** at the **Summit for a New Global Financing Pact** in **Paris** in June 2023.
- **Launched by-Kenya, Colombia** and **France.**
- Under this, a **coalition of experts** from **countries across the world** is going to **independently review** the **relationship between sovereign debt and its impacts on hindering climate ambition**.

Initiatives launched at COP28, Dubai, UAE:

1. **The UAE Leader's Declaration on a Global Climate Finance Framework**
   - The declaration includes elements on, inter alia, delivering on commitments and achieving ambitious outcomes and widening the sources of concessional finance for climate action.
2. **International taxation taskforce** was launched by **France** with partners including **Kenya, Barbados** and **Spain** to push for **new levies** to **raise further money for climate action,** especially from **rich countries**.
3. Top multilateral development banks and international institutions announced a new **global taskforce for scaling debt-for-nature swaps**.

- o **Debt swaps** are one way to change the terms of a **country's borrowing** – with bilateral government lenders, development finance institutions or private banks – either by giving states more time to repay loans or reducing interest rates and the amounts they must pay back.
- o With the **agreement of creditors, debt swaps** can help the **world's low-income countries avoid default** and **enable them to redeploy** part of their debt repayments to **invest in measures to tackle climate change, nature protection, health** or
4. Multilateral Development Banks also released a common set of principles to track **'nature-positive finance.'**
   - o **Nature-positive finance** aims to **mobilise financial institutions** to ensure a **nature-positive world**.
   - o Members of the **financial sector** can **contribute to curbing nature loss** and **aligning their financial flow**s to **nature-positive outcomes**.

Debt burden among developing countries:

- African nations are burdened with debt acquired during the pandemic. They need to develop resilience but access to capital is hindering climate action.
- Out of **52** of the **most indebted countries,23**are in **Africa**.
- **Ethiopia** is on the verge of joining **Zambia** and **Ghana** on the list of nations that have **defaulted on sovereign debt**.

COP28 summit calls for 'transition away' from fossil fuels

Subject : Environment

Section: Int Conventions

Context:

- COP28 in Dubai UAE adopted the 'Dubai Consensus' to transition away from fossil fuels.

Dubai Consensus:

- It calls on Parties [to be] ...**Transitioning away from fossil fuels** in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, to achieve **net zero by 2050** in keeping with the science.
- This implies cutting emissions to **43%** of **2019 levels** by **2030** and **60%** by **2035.**
- It for the **first time** mentions **methane emission**, a **non-carbon dioxide greenhouse gas that is more potent**, in its **heat-trapping effect,** than **carbon dioxide.**
- It does not talk about curbing **Natural Gas**, designating it as a **"transition gas"** that could be relied on during countries' transition to renewable energy.

Carbon Space:

- It refers to the **atmosphere's capacity to hold carbon** that will **not result in temperatures increasing by 1.5 to 2 degrees C** by the end of the century.
- The globe is already **1.1 C hotter** than it was in the pre-industrialised level.
- Most of this carbon space has already been taken over by the **developed nations** in over a century of fossil fuel and greenhouse gas emissions, and **developing nations** have insisted that what space remains ought to be left for them, while the industrialised western nations must cede space by taking on far more stringent reductions than they have committed to so far.

India's stand:

- Developing countries accounted for **3% of greenhouse gases** emitted historically (1850-2019) compared to the **United States (25%)** and the **European Union (17%).**
- **India** is the **third-largest greenhouse gas emitter**.
- India at the **Glasgow COP in 2021,** agreed to a **'phase-down'** of coal use.
- Nearly **75%** of **India's methane emissions** are from the **agricultural sector**.

What does COP-28 mean for cities?

Subject: Environment

Section: Int convention

Context:

- The 28th Conference of Parties **(COP-28) in Dubai** has also discussed cities and their future.

COP-28 : Linkage With Cities

- When the United Nations Framework Convention on Climate Change (UNFCC) initiated the COP in 1995, 44% of people lived in cities.
- **Currently, 55% of the global population is urban and this is expected to reach 68% by 2050.**

- The urban world today **consumes nearly 75% of primary energy** and is responsible for **roughly 70% of CO2 (76% of total GHG) emissions.**
- Hence, the desired results of the Paris commitments are not possible without addressing urban issues.
- City representatives have been arguing for multi-level green deal governance and for revising the governance and regulation of energy and climate action.
- Some European city groups have been staunchly advocating for direct actions in cities.
- Various groups argued for formally recognising the role of subnational governments in global climate change negotiations, accelerating and scaling up climate action by working across all levels of governance and sectors, and providing direct financing and technical assistance to cities and regions.
- This will require an 'out of the box' imagination as it would mean transgressing the authorities of federal governments.
- The efforts of city governments should be formally recognised in COP decision documents.

Role Of Global South?

- The cities of the Global South are **far more vulnerable** than their western counterparts.

Issues:

- The **city leaders are hardly empowered**.
- The **major employment is in the informal sector.**
- Adaptation is key as most cities are **vulnerable to climate induced disasters.**
- The pent up drive to attract investments to cities has further widened the gap between the rich and the poor.
- In most countries, and in India particularly, **40% of the urban population live in slums.**
- Pollution is a major contributor in reducing life expectancies and social and economic inequities are quite inherent in their systems.
- So, to ensure fair participation in climate action plans and to claim loss and damage compensation, etc., there has to be a radical shift in the processes governing the cities.
- One of the ways of achieving progress can be through:
  o creating a climate atlas of these cities, mapping them and identifying hotspots.

Exclusion in NDCs:

- **During the preparation of Nationally Determined Contributions (NDCs) and National Adaptation Plans**, cities find themselves **excluded** from the process of climate action plans.
- There is hardly any representation of city leaders and civil society groups in this process.

India's 1st Arctic Winter Expedition

Subject: Environment

Section: Int. Conventions

Context:

- **India** will script history by commencing year-round observations in **Svalbard,** the **world's northernmost inhabited place, in the Arctic**.

The Himadri station and India's facilities in the Arctic:

- It is situated in the **Ny-Alesund region** of **Svalbard, Norway**.
- It is **India's first permanent Arctic research station**.
- It is located at a distance of 1,200 kilometres (750 mi) from the **North Pole.**
- **India** has an **atmospheric science facility** called **Gruvebadet Observatory** that houses various **atmospheric observation networks.**
- The country has initiated **new scientific projects** in the **Canadian High Arctic (Nunavut region)** and plans to initiate studies in **Greenland** soon.

Why has India taken fewer studies in the Arctic?

- Unlike **Antarctica**, which is **governed** by the **Antarctic Treaty,** the **Arctic region** belongs to various national jurisdictions. Various **geopolitical complications,** such as the current war between Ukraine and Russia, have made **half of the Arctic region (the Russian Arctic) inaccessible** to the world.

Why is it significant for India?

- Studying the **Polar-tropical climate teleconnections** will help us to better predict the monsoon vagaries on a decadal scale.
- Several evidences show that many of the extreme precipitation events happening in India have their origins in the loss of Arctic sea ice.

- The increased intensification of Arabian Sea cyclones is associated with a warmer Arctic.

National Centre for Polar and Ocean Research, (NCPOR):
- The NCPOR, formerly known as the **National Centre for Antarctic and Ocean Research (NCAOR)** is an I**ndian research and development institution,** situated in **Vasco da Gama, Goa.**
- It is the **nodal agency for India's polar expeditions.**
- It is an **autonomous institution** of the **Department of Ocean Development (DOD), Ministry of Earth Sciences,** Government of India which is responsible for administering the **Indian Antarctic Programme** and maintains the **Indian government's Antarctic research stations, Bharati** and **Maitri.**

Afghanistan left out of COP-28 and hopes for inclusion in COP-29

Subject: Environment

Section: Int Conventions

Context:
- Humanitarian concerns have been raised over **Afghanistan being left out of United Nations climate negotiations for a third year in a row**, as the country grapples with worsening drought and floods.

More about News:
- Afghanistan is one of the **countries most vulnerable to climate change**, but the country was **absent from the COP28 climate summit in Dubai. It has been left out of U.N. talks since the Taliban took over Kabul in 2021.**
- **No foreign government has formally recognised Taliban leadership and it doesn't have a seat at the U.N. General Assembly.**
- Foreign officials have cited the Taliban's restrictions on women as the reason for current isolationist policies, particularly its barring of girls and women from high school and universities.
- The U.N. Framework Convention on Climate Change (**UNFCCC)'s COP Bureau, which is responsible for accrediting parties to the annual summits, decided at a November 2022 meeting to defer a decision on future Afghanistan representation.**
- The Taliban's takeover of government institutions has **also meant that Afghanistan is unable to access key U.N. climate funds, including the Green Climate Fund (GCF).**

About GCF:
- The **GCF was set up in 2010 under the UNFCCC's financial mechanism to channel funding from developed countries to developing countries to allow them to mitigate climate change and also adapt to disruptions arising from a changing climate.**

How it helps?
- The Green Climate Fund will support projects, programmes, policies and other activities in developing country Parties using thematic funding windows.
- It was intended to be the **centerpiece of efforts to raise Climate Finance of $100 billion a year by 2020.**
- The **Fund will promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change**, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.
- The Fund will strive to maximize the impact of its funding for adaptation and mitigation, and seek a balance between the two, while promoting environmental, social, economic and development co-benefits and taking a gender-sensitive approach.

Who will govern the Fund?
- The Fund is governed and **supervised by a Board that will have full responsibility for funding decisions and that receives the guidance of the Conference of Parties (COP).** The Fund is accountable to, and functions under the guidance of, the COP.

Unpacking the first ever COP 'Health Day'

Subject :Environment

Section: International Convention

COP28:
- Hosted by the **UAE,** focused on the **link between climate change and public health crises.**
- Emphasized the **severe health threats** posed by **climate change,** particularly impacting **marginalized communities** and **low- to middle-income countries.**

- Highlighted the need for an **accelerated phase-out of fossil fuels for global health.**

Climate Change and Health:

- **Heat-Related Illnesses:** Rising global temperatures cause severe and frequent heatwaves, leading to conditions like heatstroke, dehydration, and heat exhaustion, resulting in higher illness and death rates.
- **Vector-Borne Diseases:** Climate changes affect disease carriers like mosquitoes and ticks, expanding diseases such as malaria, dengue fever, and Lyme disease due to warmer temperatures and altered precipitation patterns.
- **Waterborne Diseases:** Altered rain patterns and flooding impact water quality, spreading diseases like cholera and dysentery.
- **Air Quality and Respiratory Issues:** Intensified wildfires due to climate change release harmful pollutants, worsening respiratory conditions and increasing respiratory illnesses.
- **Extreme Weather Events:** Hurricanes, floods, and storms become more frequent and intense, causing injuries, displacements, and disruptions to healthcare, making it challenging to respond to health crises.
- **Food Security and Nutrition:** Changing weather patterns affect crop yields, leading to food shortages, malnutrition, and insecurity.
- **Psychological Stress:** Natural disasters and extreme weather events contribute to anxiety and depression due to displacement, property loss, and uncertainty about the future.
- **Reduced Access to Clean Water:** Shifts in precipitation and increased evaporation cause water scarcity, leading to waterborne diseases and hygiene-related health problems.
- **Disproportionate Impact on Vulnerable Groups:** Vulnerable communities like the elderly, children and low-income groups suffer more due to limited resources, inadequate healthcare, and exacerbated health disparities.
- **Displacement and Conflict:** Climate-induced events force people to relocate, exposing them to health risks due to poor living conditions, lack of healthcare, and potential conflicts over resources.

Health Day and Initiatives:

- **Inaugural Health Day** underscored the **importance of health in climate decisions.**
- Leaders urged for **prioritizing health in climate talks**, leading to the **COP28 UAE Declaration on Climate and Health** supported by **143 countries**, **not signed** by **India.**
- A **key pillar** of the declaration is the commitment to partner with **women, girls, children,** and **youth.**
- A **climate-health ministerial** brought together global ministers to discuss a roadmap for addressing climate-related health impacts.

India's Climate Challenges:

- India has experienced a **surge** in **extreme weather events** impacting **lives, crops, homes,** and **livestock.**
- **Rising air pollution,** and **health challenges** like **malaria** and **malnutrition,** pose threats to **India's public health infrastructure.**
- The **Reserve Bank of India** highlighted **potential economic risks linked to heat-related challenges.**

Need for Health Integration in India's Climate Planning:

- **Over 700 million people** reliant on climate-sensitive sectors for **livelihoods.**
- **Integrating health into climate planning** is crucial for immediate threat mitigation, resilience building, and sustainable development.
- **Economic benefits** include reduced healthcare costs, increased productivity, and effective climate actions.

Powering Past Coal Alliance (PPCA)

Subject: Environment

Section: Int conventions

- It is a **coalition** of **national** and **subnational governments, businesses** and **organisations** working to advance the **transition from unabated coal power generation to clean energy.**
- By launching the **PPCA** at **COP23** in **2017,** the **UK** and **Canada** brought the leaders together, turning their **individual commitments** into a **diplomatic offensive** to advance the **transition from coal power** across the world.
- 27 national, provincial, state, and city governments joined initially, endorsing the **PPCA Declaration.**
- The Alliance was hailed as a **'political watershed'** and a new **'anti-fossil fuel norm'**.
- Through the **PPCA Finance Taskforce** launched in **June 2020,** underpinned by the **PPCA Finance Principles, finance** and **government members** and **partners** of the **PPCA** are working together to cease **new investments in coal-fired power,** phase out existing **coal capacity** and **boost investments in clean energy**.

Fossil Fuel Non-Proliferation Treaty

Subject: Environment

Section: Int conventions

In the news:

- A growing bloc of nation-states is joining forces at **COP28** to begin to seek a negotiating mandate for a **Fossil Fuel Non-Proliferation Treaty**.

The treaty is endorsed by:

- **The 12 endorsing states are:** Vanuatu, Tuvalu, Tonga, Fiji, the Solomon Islands, Niue, Antigua and Barbuda, Timor-Leste, Palau, Colombia, Samoa, and Nauru
- They have been supported by the **World Health Organization,** the **European Parliament** and thousands of others.

Aim of the treaty:

- This **treaty aims** to complement the **Paris Agreement** by **halting fossil fuel expansion,** ensuring an **equitable phase-out**, and **fostering a just energy transition globally**.

Pillars of the treaty:

1. **NON-PROLIFERATION**
   o Stop building out the problem by ending the expansion of coal, oil and gas production
2. **A FAIR PHASE-OUT**
   o An equitable plan for the wind down of existing fossil fuel production, where nations with the capacity and historical responsibility for emissions transition fastest, providing support to others around the world
3. **JUST TRANSITION**
   o Fast-track the adoption of clean energy and economic diversification away from fossil fuels so that no worker, community or country is left behind

Need for this treaty:

- The urgency to address **fossil fuel impacts on climate change** has led to calls for a binding plan to halt **new coal, oil, and gas projects.COP28** sees a **coalition** forming to **propose a Fossil Fuel Treaty.**

Air pollution causes over 2 million deaths annually in India: BMJ study

Subject: Environment

Section: Pollution

About the study:

- The study was conducted by the **Max Planck Institute for Chemistry,** Germany.
- Data has been taken from the **Global Burden of Disease 2019** study, **NASA satellite**-based **fine particulate matter** and **population data,** and **atmospheric chemistry, aerosol,** and **relative risk modelling** for **2019.**

Death due to Air Pollution in India:

- **Outdoor air pollution** from **all sources** accounts for **2.18 million deaths per year** in **India**, second only to **China**.
- **Air pollution** from using **fossil fuels** in industry, power generation, and transportation accounts for **5.1 million extra deaths a year** worldwide.
- This equates to **61% of a total estimated 8.3 million deaths worldwide** due to **ambient (outdoor) air pollution from all sources** in **2019**, which could potentially be avoided by replacing fossil fuels with clean, renewable energy.
- Most (52%) of deaths were related to common conditions such as **ischemic heart disease** (30%), **stroke** (16%), **chronic obstructive lung disease** (16%) and **diabetes** (6%). Deaths were partly linked to **high blood pressure** and **neurodegenerative disorders** such as **Alzheimer's** and **Parkinson's disease.**

India had fourth best ranking in climate performance among countries during 2022, says report

Subject : Environment

Section :Pollution

Context:

- **India** has been **ranked seventh** in **climate performance** during **2022**. But the country is effectively **fourth** as **no one has occupied the first three ranks** in the **'very high'** performance category.
- Last year **India (67.35 per cent)** was in the eighth spot.

About the Climate Change Performance Index (CCPI) 2024:

- Published annually since 2005

- **CCPI** is an instrument to enable **transparency** in **national and international climate politics**. It uses a standardized framework to compare the climate performance of 63 countries and the EU, which together account for over **90% of global greenhouse gas emissions**.
- **The climate protection performance is assessed in four categories:** GHG Emissions (40%), Renewable Energy (20%), Energy Use (20%) and Climate Policy (20%).
- **Top countries-Denmark** (75.59 per cent), **Estonia** (72.07), the **Philippines** (70.70), and **India** (70.25 per cent).
- **Bottom countries:Saudi Arabia, Iran, UAE** and **Korea.**
- **India** was ranked **9th** in **GHG Emissions**, **10th** in **Energy Use, 10th** in **Renewable energy,** and **37th** in **Climate policy.**
- Most developed countries like the USA, the U.K. and Italy fared poorly compared to last year.
- **China** retained the same position — **51st** — compared to a year back. **Brazil improved 15 positions** and **South Africaslipped one position** on the same benchmark.
- Among **developed countries,Italy** slipped **15 positions** in ranking, the **United Kingdom** and **France nine positions,Japan eight positions** and the **United States** has been pushed back **five positions.Germany** and the **European Union improved** marginally.

Clean Ganga mission sign pact with Mississippi river initiative

Subject: Environment

Section: Pollution

Context: Clean Ganga mission sign pact with Mississippi river initiative

More about the news:
- The **National Mission for Clean Ganga (NMCG)**, responsible for **implementing India's Namami Gange scheme**, has **entered into a Memorandum of Common Purpose (MoCP) with the Mississippi River Cities and Towns Initiative (MRCTI),** representing **124 cities and towns along the Mississippi River i**n the United States.
- The MoCP was s**igned by G. Asok Kumar, DG, NMCG, and representatives from various US cities, including La Crosse, Greenville, and New Orleans**.
- The signing ceremony, conducted at the Rotary Hall **as part of COP28 in Dubai, involved senior officials from the US State Department**, UNEP, National Institute of Urban Affairs (NIUA), and Rotary International. NMCG signed the MoCP on behalf of the River Cities Alliance (RCA).

Some facts about River Cities Alliance:
- The River Cities Alliance was **launched in 2021**, to **represent a pioneering collaboration between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs.**
- It is the **first-of-its-kind global initiative,** symbolizing the successful partnership between the two ministries.
- The **primary objective is to provide member cities** with a platform for discussing and exchanging **vital information related to sustainable urban river management,** sharing best practices, and promoting innovation.
- The alliance is **open to all river cities in India**, the Alliance **allows cities to join at any time.**
- The alliance has been **launched initially with 30 cities namely Dehradun, Rishikesh, Haridwar, Srinagar, Varanasi, Kanpur, Prayagraj, Farrukhabad, Mirzapur, Mathura, Bijnor, Ayodhya, Patna, Bhagalpur, Begusarai, Munger, Sahibganj, Rajmahal, Howrah, Jangipur, Hugli-Chinsurah, Berhampore, Maheshtala, Aurangabad, Chennai, Bhubaneshwar, Hyderabad, Pune, Udaipur and Vijayawada.**
- **The Alliance focuses on three broad themes: Networking, Capacity Building, and Technical Support.**
- The **Secretariat of the Alliance is established at the National Institute for Urban Affairs (NIUA).**

Some facts about The National Mission for Clean Ganga (NMCG):
- It was **registered as a society in 2011 under the Societies Registration Act 1860.**
- It acted as the **implementation arm of National Ganga River Basin Authority (NGRBA)** which was constituted under the **provisions of the Environment (Protection) Act (EPA),1986.**
- **NGRBA has since been dissolved** with effect **from 2016 consequen**t to the constitution of **National Council for Rejuvenation, Protection and Management of River Ganga** which is **referred as National Ganga Council.**

What is the Aim & Objective of NMCG
- To ensure **effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin** approach to promote inter-sectoral coordination for comprehensive planning and management.
- To **maintain minimum ecological flows** in the river Ganga with the **aim of ensuring water quality and environmentally** sustainable development.

- The **Act envisages five tier structure** at **national, state and district level** to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water to rejuvenate the river Ganga as below:
- **National Ganga Council** under the **chairmanship of Prime Minister of India.**
- **Empowered Task Force (ETF) on river Ganga under chairmanship of Union Minister of Jal Shakti (Department of Water Resources, River Development and Ganga Rejuvenation).**
- **National Mission for Clean Ganga (NMCG).**
- **State Ganga Committees.**
- **District Ganga Committees in every specified district abutting river Ganga and its tributaries in the states.**

An oil spill in an ignored wetland in Tamil Nadu

Subject :Environment

Section: Pollution

Context:

- **Cyclone Michaung** brought heavy rainfall to the city which also turned its attention to the wetlands of the heavily industrialised**Ennore-Manali region** in the northern part of the city where **oil had spilled over** from the premises of a public sector refinery.

Details:

- Oil spills polluted the **Buckingham Canal** and the **Kosasthalaiyar River,** both empties into the **Bay of Bengal**, at **Ennore, Tamil Nadu**.

Impact of oil spills on the environment:

- Organisms such as **plankton, plants, invertebrates, fish, birds,** and **mammals** live in habitats that include **water, sediments, beaches, wetlands,** and **forests.**
- Oil can kill **surface-dwelling animals and birds** by poisoning or suffocation, as well as affecting **buoyancy** and **natural waterproofing**.
- **Contaminated food supplies** mean animals may become **malnourished or poisoned over time.**
- **Toxic chemicals** remain in the **ocean for years**, often **sinking down to the seafloor** and **poisoning the sediment.**

NATIONAL OIL SPILL DISASTER CONTINGENCY PLAN (NOS-DCP):

- The Plan came in **1993.**
- **Indian Coast Guard** has been **designated** as the **Central Coordinating Authority** for **combating oil spills in Indian waters** and undertaking oil spill prevention and control.
- **The objectives of the plan are:-**
    - to establish an **effective system for the detection and reporting of spills**;
    - to establish adequate measures for preparedness for oil and chemical pollution;
    - to establish appropriate response techniques to prevent, control, and combat oil and chemical pollution, and dispose-off recovered material in an environmentally sound manner; and
    - to establish record-keeping procedures to facilitate recovery of costs.

Oil Zapper:

- An **oil zapper** is used to **remove the oil** by using a **bio-remediation method**. Oilzapping is a method for **cleaning up significant oil spills from a surface.** This method **involves releasing bacteria** that **consume hydrocarbon compounds** found in **waste hydrocarbon and crude oil.**
- It is a **patented light brown powder** made of **four different bacteria** to **break down these hydrocarbons.** The powder may be **applied to both land and water.**

Uses of Oilzapper:

- Five distinct bacterial strains are immobilized and then released onto the **oil spill in an oil zapper** along with a carrier substance. **An oil zapper can be used for the following purposes:**
    - To clear up shorelines after major oil spills.
    - To clear out the hydrocarbon waste generated by oil refineries.
    - To reduce the impact of harmful oil spills on the environment by converting the harmful compounds into simple carbon dioxide and water.

Ennore Creek:

- It is a **backwater** located in **Ennore, Chennai** along the **Coromandel Coast** of the **Bay of Bengal.**

- It is located in the zone comprising lagoons with salt marshes and backwaters, submerged under water during high tide and forming an arm of the sea with the opening to the Bay of Bengal at the creek.
- Once a flourishing **mangrove swamp,** the creek has been **degraded to patches in the fringes** mainly due to **human activities** in the region.
- The depth of the creek varies from **1 to 2 m** and is **shallow** near the mouth.
- The north–south trending channels of the creek connect it with the **Pulicat Lake** to the north and to the distributaries of the **Kosasthalaiyar River** in the south.

Kosasthalaiyar river:
- It **originates** near **Pallipattu** in **Thiruvallur district** and drains into the **Bay of Bengal.**
- Its **northern tributaryNagari River** originates in the **Chitoor district of Andhra Pradesh** and joins the **main river** in the **backwaters of Poondi reservoir**.
- Its catchment area is spread over **Vellore, Chitoor, North Arcot, Thiruvallur** and **Chennai districts**.
- It branches near **Kesavaram Anicut** and this tributary flows to the Chennai city as **Cooum River,** while the main river flows to the **Poondi reservoir.**
- From **Poondi reservoir** it joins the sea at **Ennore Creek**.

Kamaraj Port in Ennore:
- Earlier known as the **Ennore Port,** is the **12th major port of India.**
- It is located on the **Coromandel Coast** about 24 km north of **Chennai, Tamil Nadu.**
- It is the **only corporatized major port in India** and is registered as a company.
- The port was declared as a major port under the Indian Ports Act, 1908 in March 1999.

NGT questions Tamil Nadu government on how oil spill reached Pulicat

Subject: Environment

Section: Pollution

Context:
- The southern Bench of the National Green Tribunal (NGT) on Monday questioned the State government and the Chennai Petroleum Corporation Limited (CPCL) on how the oil spill reached Pulicat backwaters if, as per reports submitted by the government, the slick was stopped from entering the sea.

About National Green Tribunal:
- The National Green Tribunal has been established under the **National Green Tribunal Act 2010.**
- **New Delhi is the Principal Place** of Sitting of the Tribunal and **Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.**
- NGT is mandated to make disposal of applications or appeals finally within 6 months of the filing of the same.

What is the composition of NGT?
- The Tribunal comprises the **Chairperson, the Judicial Members, and Expert Members.**
- They shall **hold office for a term of 5 years and are not eligible for reappointment.**
- The **Chairperson is appointed by the Central Government in consultation with the Chief Justice of India (CJI).**
- A Selection Committee shall be formed by the central government to appoint the Judicial Members and Expert Members.
- **There are to be at least 10 and a maximum of 20 full-time Judicial members and Expert Members in the tribunal.**

Powers & Jurisdiction
- Established for effective and expeditious **disposal of cases relating to environmental protection and conservation of forests and other natural resources.**
- It has appellate jurisdiction to hear appeals as a Court.
- The Tribunal is not bound by the procedure laid down under the **Code of Civil Procedure, 1908,** but shall be guided by principles of natural justice.

Basics of Pulcat Lake
- **Pulicat Lake is the second largest brackish water lagoon in India, after Chilika Lake.** It is present in the Coromondal Region i.e. Andhra Pradesh–Tamil Nadu Border.
- The barrier island of Sriharikota separates the lake from the Bay of Bengal and is **home to the Satish Dhawan Space Centre.**
- The lake encompasses the **Pulicat Lake Bird Sanctuary.**

- **Flamingo Festival** is held every year to promote tourism in Pulicat Lake and Nellapattu. It has been organized for the past 12 years.
- The primary inflows to Pulicat Lake are **Arani, Kalangi and Swarnamukhi.**
- About **96% of the Pulicat Lake is present in Andhra Pradesh** while only 3% is present in Tamil Nadu.
- The **Buckingham Canal, a navigation channel, is part of the lagoon on its western side.**

Researchers patenting new treatment for nicotine addiction

Subject : Environment

Section: Pollution

Context:

- Researchers have demonstrated a practical approach for treating nicotine dependence. Currently, **Nicotine Replacement Therapy (NRT)** is used which relies on providing additional nicotine to the body. Researchers have now turned to nicotine's oxidative metabolite, **cotinine.**

Key Facts:

- Tobacco use is a global pandemic, affecting an **estimated 1.2 billion people,** which poses substantial health burden and costs.
- With approximately **5 million tobacco-related deaths annually**, cigarette smoking is the leading cause of preventable premature mortality in the world.
- Death is mainly caused by **lung cancer, coronary heart disease, chronic obstructive pulmonary disease, and stroke.**
- The risk of serious disease diminishes rapidly after quitting and permanent abstinence is known to reduce the risk of lung cancer, heart disease, chronic lung disease, stroke, and other cancers.

About Nicotine replacement therapy

- **NRT is the most common medication used to assist in quit attempts**. Its main mechanism of action is to partially replace the nicotine formerly obtained from tobacco smoking, which aids smoking cessation by reducing the severity of withdrawal symptoms and cravings and also reduces the reinforcing effects of nicotine delivered via tobacco while providing an alternative source of some reinforcing and cognitive effects.
- **NRT does not completely eliminate all symptoms of withdrawal because the available delivery systems do not reproduce the rapid and high levels of nicotine achieved through inhalation of cigarette smoke**.
- Differences in formulations may have an impact on the efficacy for some of these effects, but there is little direct evidence that one nicotine product is more effective than another.

How Cotinine can be an alternative approach

- **Using ascorbic acid as a potential reducing agent, researchers converted cotinine in smokers' plasma back to nicotine, targeting both nicotine addiction and detoxification simultaneously.**
- **Ascorbic acid in a specified dose (Vitamin C)** converts cotinine back to nicotine within the smokers' plasma. Individuals find it difficult to quit smoking because of nicotine withdrawal.
- **Current NRT products provide additional nicotine to the body. This turned researchers to cotinine.**
- Generally, 80% of nicotine accumulates as cotinine in the body, while the remaining 20% is eliminated in urine.
- Cotinine can cause cancer. So, for the first time, instead of adding on to the nicotine content in the body, researchers have showcased that vitamin C can be utilised to recirculate cotinine.
- **Side effects are negligible, the person does not receive additional nicotine and detoxification occurs at the end of the cycle**.

Coming soon, a 'Cafeteria' for oil spill-hit birds at Ennore Creek

Subject : Environment

Section: Pollution

In the news:

- **Wildlife Trust of India (WTI)** and **Besant Memorial Animal Dispensary (BMAD)** plan to establish **feeding stations for birds** at **Ennore creek**. They **aim** to catch the birds to rehabilitate and care for them.

Details:

- The **Department of Environment, Climate Change, and Forests,** along with **WTI, local volunteers,** and the **Wildlife Warden of Chennai,** are working together to assess and rescue affected birds. While many have flown away, some, like **pelicans** and **painted storks,** have been severely impacted.
- To capture sick birds, the team plans to create **feeding stations** with **nets.**

- **Trapping birds in nets** is being considered in **Ennore Creek** as a **conservation measure** due to a drastic decline in the bird population caused by contamination from an oil spill.
- The oil spill has affected not only the birds but also the fish.

Ennore Creek:

- It is a **backwater** located in **Ennore, Chennai** along the **Coromandel Coast** of the **Bay of Bengal**.
- It is located in the zone comprising **lagoons** with **salt marshes** and **backwaters,** submerged under water during **high tide** and forming an arm of the sea with an opening to the **Bay of Bengal** at the creek.
- Once a flourishing **mangrove swamp,** the creek has been degraded to patches in the fringes mainly due to human activities in the region.
- The depth of the creek varies from **1 to 2 m** and is shallow near the mouth.
- The **north–south trending channels** of the creek connect it with the **Pulicat Lake** to the **north** and to the distributaries of the **Kosasthalaiyar River** in the **south**.

Wildlife Trust of India (WTI):

- WTI is an **Indian nature conservation organisation.**
- It was formed in **November 1998** in **New Delhi, India,** as a response to the rapidly deteriorating condition of wildlife in India.
- WTI is a **registered charity in India** (under Section 12A of the Income Tax Act, 1961).

About 240 mn PCs can end up in landfill on MS move

Subject :Environment

Section: Pollution

Context:

- **Microsoft** Corp's plan to **end support for Windows 10 operating system** could result in about **240 million** personal computers (PCs) being disposed, potentially adding to landfill waste.
- The electronic waste from the PCs could weigh about 480 million kg, equivalent to 3.2 lakh cars.

What is E-Waste?

- E-Waste is short for **Electronic-Waste** and the term is used to describe **old, end-of-life or discarded electronic appliances**. It includes their components, consumables, parts and spares.
- **Laws** to manage **e-waste** have been in place in **India** since **2011**, mandating that **only authorized dismantlers and recyclers collect e-waste.E-waste (Management) Rules, 2016** was enacted in **2017**.
- **India's first e-waste clinic** for segregating, processing and disposal of waste from household and commercial units has been set-up in **Bhopal, Madhya Pradesh.**
- Originally, the **Basel Convention (1992)** did not mention **e-waste** but later it addressed the issues of **e-waste in 2006 (COP8)**.
  - The **Nairobi Declaration** was adopted at **COP9** of the **Basel Convention on the Control of the Trans-boundary Movement of Hazardous Waste**. It aimed at creating innovative solutions for the environmentally sound management of electronic wastes.

What are the Provisions regarding E-waste in India?

- **India** has a formal set of rules for electronic waste management, first announced these rules in **2016** and amended it in 2018.
- The **Ministry of Environment, Forest and Climate Change** notified the **E-Waste Management Rules, 2016** in supersession of the **E-waste (Management & Handling) Rules, 2011.**
- Over 21 products (Schedule-I) were included under the purview of the rule. It included **Compact Fluorescent Lamp (CFL) and other mercury containing lamps,** as well as other such equipment.
- For the first time, the rules brought the producers under **Extended Producer Responsibility (EPR)**, along with targets. Producers have been made responsible for the collection of E-waste and for its exchange.
- Various producers can have a separate **Producer Responsibility Organisation (PRO)** and ensure collection of **E-waste,** as well as its disposal in an environmentally sound manner.
- **Deposit Refund Scheme** has been introduced as an additional economic instrument wherein the producer charges an additional amount as a deposit at the time of sale of the electrical and electronic equipment and returns it to the consumer along with interest when the end-of-life electrical and electronic equipment is returned.
- The **role of State Governments** has been also introduced to ensure safety, health and skill development of the workers involved in dismantling and recycling operations.
- A provision of penalty for violation of rules has also been introduced.

- **Urban Local Bodies (Municipal Committee/Council/Corporation)** have been assigned the duty to collect and channelize the orphan products to authorized dismantlers or recyclers.
- Allocation of proper space to existing and upcoming industrial units for e-waste dismantling and recycling.

The pesticide hazard: eating away the lives of farmers in Maharashtra
Subject :Environment

Section: Pollution

In the news:
- **Borisinh village,** amidst **agricultural fields,** reflects the continuous plight of farmers suffering from **pesticide poisoning** in **Maharashtra.**

Details:
- **Certain insecticides** were **temporarily banned** in **2017** and **2018** in several districts due to poisoning cases.
- **Committees and Pesticide Bans:**
- **Anupam Verma Committee (2015):** Reviewed 66 pesticides, and recommended banning 27.
- **SK Malhotra Committee (2017):** Sought a review on banning the same 27 pesticides.
- **Registration Committee (2018)andS K Khurana Committee (2020):** Both recommended banning the same 27 pesticides.
- **Rajindran Committee (2022):** Recommended banning three pesticides.
- **Highly hazardous pesticides**, like**Monocrotophos** and **Polo,** are still used extensively in **Maharashtra**, causing health issues.

Pesticides:
- Substances intended for pest control in agriculture, food production, and animal care. Examples: fungicides, herbicides, insecticides.
- **Examples of Synthetic Chemical Pesticides:** Glyphosate, Acephate, Deet, Propoxur, Metaldehyde, Boric Acid, Diazinon, Dursban, DDT, Malathion, etc.

Pesticide 'Polo' and its health Impact:
- Manufactured by **Syngenta,Polo** contains **diafenthiuron,banned in the EU** and **Switzerland** due to health and environmental risks.
- Health impacts include **nausea, vision impairment, photo-sensitivity, loss of stamina,** and **even death** with severe exposure.

Status of pesticides in India:
- India ranks **2nd** in pesticide production and is the **5th largest exporter globally.**
- **Maharashtra**, especially **Vidarbha,** utilizes **50% of India's pesticides**, notably in **cotton farming.**
- Pesticides are a **leading cause of poisoning;** intentional or unintentional consumption causes two-thirds of poisoning cases in India.

Regulation of Pesticides:
- **Insecticides Act, 1968:** Governs import, manufacture, sale, transport, and use of insecticides and pesticides to prevent risks to humans and animals.
- **Pesticide Registration:** Handled by the **Directorate of Plant Protection, Quarantine & Storage (DPPQS),** an office under the **Ministry of Agriculture and Farmers Welfare.**
- **DPPQS:** Advises governments on plant protection, and oversees pest management, plant quarantine, pesticide regulation, locust control, and training.

Issues in pesticide regulation:
- **The Pesticides Management Bill** seeks to replace the **Insecticides Act of 1968,** aiming for effective regulation, minimizing risks, and promoting bio-based and traditional pesticides.
- Despite **international bans, India permits at least 116 hazardous pesticides,** posing health risks.
- Attempts to ban certain pesticides resulted in reversals, with limited bans enforced in 2023 on hazardous pesticides.

Central Insecticides Board & Registration Committee (CIBRC):
- Established under the **Ministry of Agriculture** to regulate insecticide usage, manufacturing, import, and sale.
- **Responsibilities include** advising on insecticide manufacturing, classification, residue tolerance, shelf-life, and registration.

Alternatives for Farmers:

- **Integrated Pest Management (IPM) techniques:** Cost-effective mechanical methods.
- **Bio-pesticides:** Environment-friendly alternatives.
- **Molecular target-specific low-toxicity pesticides:** Pricier but safer alternatives.
- **Pheromone traps and neem-based biopesticides:** Economical and effective methods.

Biomagnification:

- Defined as **the rise or increase in the contaminated substances caused by the intoxicating environment.** The contaminants might be **heavy metals** such as **mercury, arsenic,** and **pesticides** such as **polychlorinated biphenyls** and **DDT**.
- These substances are taken up by the organisms through the food they consume. When the organisms in the **higher food chain feed on the organisms in the lower food chain containing these toxins,** these **toxins accumulate in the higher organisms.**

A dive into sanitation solutions: processing, managing and treating used water

Subject :Environment

Section: Pollution

Urban Sewer Systems:

- **Sewers:** Underground pipe networks in densely populated urban areas transporting waste to treatment facilities.
- **Sewage Treatment:** Conveys waste to sewage treatment plants (STPs) for purification and pollutant removal.

Sanitation System Types:

- **On-Site Sanitation Systems (OSS):** Used in **rural** or **spacious urban areas,** including **twin pits, septic tanks, bio-digester toilets, bio-tanks,** and **urine diversion dry toilets.**
  - o **The functionality of OSS:** Collection and storage structures that passively treat used water, disposing of liquid waste into the surrounding soil. Faecal sludge or septage, mainly solids from human excreta, accumulates within pits and tanks.
- **Twin Pits and Septic Tanks:**
  - o **Twin Pits:** Two pits are used alternately; liquid waste soaks into the ground while solids degrade at the pit's bottom. Unused pit left for two years for safe, natural waste disposal.
  - o **Septic Tanks:** Separate solids and scum from liquid waste; require periodic removal of accumulated faecal sludge.
- **Other OSS Systems:**
  - o Bio-digester Toilets, Bio-tanks, Urine Diversion Dry Toilets: Additional OSS types serving as collection and storage structures for waste treatment.

Treatment Facilities (FSTPs & STPs):

- **Faecal Sludge Treatment Plants (FSTPs):** Use **mechanical or gravity-based methods** to treat faecal sludge; reuse treated solids and water for various purposes.
- **Sewage Treatment Plants (STPs):** Employ **physical, biological, and chemical processes** to purify used water before discharge or reuse.
- **STP Variations and Functions:**
  - o **STPs** can be mechanised or non-mechanised, chosen based on a city's resources. **FSTPs are smaller**, often decentralised and colocated with waste management sites.
  - o **Purpose:** Removal of impurities from used water to prevent pollution and public health issues; historical shift from odour/aesthetics focus to public and environmental health.

Significance:

- Effective waste management is crucial to protect water bodies and groundwater from pollution, emphasizing the importance of these sanitation systems.
- These sanitation systems are essential in containing, treating, and managing used water to ensure public health safety and environmental protection from potential pollution.

Challenges:

- Universal access to safe sanitation remains challenging due to poorly designed systems and inadequate operational practices.

Water crisis: Atishi writes to Chief Secy. over delay in ammonia treatment plant

Subject: Environment

Section: Pollution

Context:

- Water Minister said the delay in setting up a plant to treat high ammonia content present in the Yamuna has impacted the drinking water supply in the capital.

About Ammonia Gas

- Ammonia Gas or NH3 is a **compound of Nitrogen and Hydrogen**. It is a **colourless gas with a pungent and penetrating odour**. It is highly reactive and is a soluble alkaline gas.
- **Mode of Production:** It can be produced both through natural means as well as anthropogenically.
  - **Natural:** Produced in soil from bacterial processes. It is also produced naturally from **decomposition of organic matter,** including plants, animals and animal wastes. **Bacteria found in the intestines** can produce ammonia, also, a small amount of ammonia is generated when lightning strikes.
  - **Commercial:** Through steam reforming of natural gas and coal gasification.

Uses:

- It serves as a starting material for the production of many commercially important **nitrogen compounds such as:**
- **Fertilizers:** Urea, (H2N)2C=O, is the most commonly used source of nitrogen for fertilisers worldwide. It can be applied directly into soil on farm fields for crops, lawns, and plants.
- As household and industrial cleaners
- In the form of ammonium salts, such as ammonium nitrate, ammonium sulfate, and various ammonium phosphates.
- In manufacturing commercial explosives
- As a refrigerant and coolant

Ammonia Gas as a Pollutant:

- **Emission source: Agriculture**, including **animal husbandry** because of NH3-based fertilizer applications. Other sources include industrial processes, vehicular emissions and volatilization from soils and oceans.

Effects:

- It **Increases the Biological Oxygen Demand of water by reducing oxygen availability for its aquatic life.**
- Source of nutrient pollution in water bodies leading to **eutrophication** due to excessive agricultural field runoff.
- Excessive urea usage leads to **soil acidification.**
- Prolonged exposure of containers to fire or heat may result in violent rupturing and rocketing.

Ammonia Gas as a Toxic Gas:

- Direct toxic damage to leaves and alters the susceptibility of plants to frost, drought and pathogens (including insect pests and invasive species).
- Long-term exposure to low concentrations or short-term exposure to high concentrations may result in adverse health conditions from inhalation, which manifest as burning nose, throat and respiratory tract irritation.

Cauvery basin lost nearly 12850 sq. km of green cover

Subject : Environment

Section: Protected Areas

Context:

- A paper on the **Cauvery Basin** is published by scientists and researchers at the Indian Institute of Science (IISc), Bengaluru.

Study findings:

- **Natural vegetation** on nearly **12,850 sq. km** of land (46%) in the **Cauvery basin** was lost in the 50 years from 1965 to 2016.
- The quantum of reduction of **dense vegetation** was **35%** (6,123 sq. km) and that of **degraded vegetation**, **63%** (6,727 sq. km).
- **Karnataka** has lost much more than any other State in the basin.
- It accounts for **three-fourths** of the lost cover, while **Tamil Nadu's** share is around **one-fifth**.
- Areas that suffered adverse changes in the extent of forest cover include the **Brahmagiri Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park** and the **Cauvery Wildlife Sanctuary.**
- In respect of the **Bannerghatta National Park,** the **moist deciduous forest area,** which was about **50%** in **1973,** stood at **28.5%** in **2015** due to **"anthropogenic pressure"** on the National Park and its environs.

Protected areas	Description
Brahmagiri	It is located in **Kodagu District, Karnataka** State, **India**, within the **Western Ghats** and about **250 km** from

Wildlife Sanctuary	Bangalore. **Flora: Evergreen** and **semi-evergreen forests,** and in the **higher altitudes** are **grasslands** with **shola.Bamboo plants** are widespread. **Fauna:** Mammals in the sanctuary include lion-tailed macaques, Indian elephants, gaurs, and tigers.
Bandipur National Park	It is a **national park** covering 868.63 km2 (335.38 sq mi) in **Chamarajnagar district** in the Indian state of **Karnataka**. It was established as a tiger reserve under **Project Tiger** in 1973. It is part of the **Nilgiri Biosphere Reserve** since **1986**.
Nagarhole National Park	It is a national park located in **Kodagu district** and Mysore district in **Karnataka, India**. It is part of the Nilgiri Biosphere Reserve. The park has rich forest cover, small streams, hills, valleys and waterfalls, and populations of Bengal tiger, gaur, Indian elephant, Indian leopard, chital and Sambar deer.
Cauvery Wildlife Sanctuary	It is a protected area located in the **Mandya, Chamarajanagar** and **Ramanagar** districts of **Karnataka, India.** The Cauvery River passes through its midst. It is established to provide protection, conservation and development of Wildlife and its environment. On its east, it adjoins Dharmapuri forest division of Tamil Nadu state. The sanctuary mainly consists of **dry deciduous forests, southern tropical dry thorns** and **riverine forests**. **Flora:**Terminaliaarjuna, jambul (Syzygiumcumini), Albizia amara, Feroniasp., Tamarindus indica, Mangifera indica, Hardwickiabinata, and Acacia armata. **Fauna:** Bengal tiger, Indian elephant, wild boar, Indian leopard, dhole, spotted deer, barking deer, sambarped hare (Lepus nigricollis), chevrotain, common langur, bonnet macaque, honey badger, Malabar giant squirrel, grizzled giant squirrel, and smooth-coated otter.

Cauvery basin:

- The Cauvery basin extends over the states of **Tamil Nadu, Karnataka, Kerala and the Union Territory of Puducherry.**
- It spans nearly 2.7% of the total geographical area of the country.
- It is bounded by the **Western Ghats** on the west, by the **Eastern Ghats** on the east and south and by the ridges separating it from the **Krishna Basi**n and **Pennar Basin on the north.**
- The three main physiographic divisions of the basin are the **Western Ghats, the plateau of Mysore and the Delta**. The Western Ghat region is mountainous and covered with thick vegetation.
- The major reservoirs in the Cauvery basin **are Krishnaraja Sagar, Mettur (Stanley), Hemavathy, Kabini, Harasngi, Lower Bhavani and Grand Anicut.**
- The Cauvery River is one of the major rivers of the peninsular India.
- It rises at an elevation of 1,341 m at **Talakaveri on the Brahmagiri** range near Cherangala village of Kodagu district of Karnataka and drains into the Bay of Bengal.
- In size, it is smaller than the Godavari, the Mahanadi and the Krishna.
- Major left bank tributaries: **Harangi, the Hemavati, the Shimsha and the Arkavati.**
- **Major Right bank tributaries: the Lakshmantirtha, the Kabbani, the Suvarnavati, the Bhavani, the Noyil and the Amaravati.**

Heat waves to intensify in Madagascar, one of Earth's richest biodiversity hotspots: WWA study

Subject: Environment

Section: Protected Areas

Context:

- **Madagascar** has experienced a heat wave at least two months early this year.

Details:

- **Madagascar's population**, heavily affected by poverty and lacking access to basic amenities, faces **increased health risks** due to extreme heat. **Malaria** cases in **Antananarivo** are **rising** as **warmer temperatures expand the mosquito range**.
- Madagascar ranks **124th** out of **125 countries** in the **2023 Global Hunger Index**, highlighting alarming levels of hunger with a score of 41.0.

Geography of Madagascar:

- **Madagascar** is the **world's fourth-largest island** and is **second-largest island country**, located just off the **western coast** of the **African mainland** in the **Indian Ocean.**
- **Antananarivo** is the capital city.
- Madagascar is a **global hotspot,** home to a vast array of unique plant and animal species found nowhere else on Earth.
- **Mangoky River:** One of **Madagascar's major rivers,** flowing from the central highlands to the **Mozambique Channel,** impacting local ecosystems and communities.
- Around **90%** of **Madagascar's wildlife is endemic,** featuring iconic species like **lemurs, fossas, chameleons,** and **unique flora** such as **baobab trees** and **orchids**.
    - **Lemurs:** This primate group is **endemic of Madagascar, and** are wet-nosed primates of the superfamily Lemuroidea.
    - With over **100 species of lemurs,** showcasing a range of sizes, behaviors, and habitats.
- **Tsingy de Bemaraha:** A unique **limestone formation** in **western Madagascar,** characterized by sharp, needle-like limestone formations.
- **Threats to Biodiversity:** Deforestation, habitat loss due to agriculture, logging, and illegal wildlife trade pose significant threats to Madagascar's unique flora and fauna.

World Weather Attribution (WWA):

- Established in **2014.**
- It operates globally, with collaborations and contributions from climate scientists and institutions worldwide.
- **Aim and Objective:** World Weather Attribution aims to rapidly assess and attribute extreme weather events to climate change.
    - Its objective is to provide quick, scientifically grounded analyses to determine the influence of human-induced climate change on specific weather events, thereby enhancing public understanding and awareness of the connections between climate change and extreme weather occurrences.

Green turtles nesting range expands under warming climate

Subject: Environment

Section: Species in news

Context:

- **Rising global temperatures** could lead to an **increase in the nesting range** of **green turtles** in the **Mediterranean Sea**, as per the study.

Details:

- Under the **worst-case climate scenario,** the **nesting range** could **increase** by over **60% points,** spreading **west** from the current area to include much of the **North African, Italian,Greek coastlines** and **Adriatic sea.**
- **Climate change led rising sea surface temperatures** is impacting marine life including sea turtles as the sex of their offspring is dependent on **incubation temperature**.
- **Sea surface temperature, sea salinity,** and **human population density** most affected the suitability of a specific location as a nesting site.

Green turtle (Chelonia mydas):

- Also known as the **black (sea) turtle** or **Pacific green turtle**.
- It is a **species** of **large sea turtle** of the family **Cheloniidae.**
- It is the **only species** in the genus **Chelonia**.
- Its range extends throughout **tropical** and **subtropical seas** around the world, with two distinct populations in the **Atlantic** and **Pacific Oceans,** but it is also found in the **Indian Ocean.**
- They migrate long distances between feeding grounds and hatching beaches.
- Listed as **endangered** by the **IUCN Red List** and **CITES**.

Unnatural causes claim more than 490 wild elephant lives in five years

Subject : Environment

Section: Species in news

Context:

- A **capacity-building workshop** on **'Minimising elephant mortalities on railway track'** for the officials of **Indian Railways** is being organised at the **Dehradun**-based **Wildlife Institute of India (WII).**

Elephant population in India:

- India has nearly **30,000 wild elephants**.
    - **Karnataka** had the **highest number of wild elephants** at **6,049,** followed by **Assam** at **5,719,Kerala** at **5,706,** and **Tamil Nadu** at **2,761.32** elephant reserves cover around **76,508-sq-km area** in **14 States.**
- **Elephant in captivity:**
    - India had 2,589 elephants in private custody, excluding the zoological parks.
    - **902 captive elephants** are in **Assam**, followed by **Kerala -518, Karnataka - 146, TamilNadu - 135, Rajasthan- 113,Arunachal Pradesh - 109, West Bengal- 100, Tripura - 64, Nagaland - 15** and **Meghalaya - eight**.
- **Elephant death:**
    - **India** has lost **494 elephants** to **train-hit incidents, electrocution, poaching,** and **poisoning** over the past **five years.**
    - **India** lost more than **57 elephants per year** due to **electrocution** and more than **12** elephants per year due to **collisions** with trains over the past five years.
    - **Assam** had the **highest number of elephant deaths** due to **train hits** with **62 deaths**, followed by **West Bengal at 57**, and **Odisha at 27**.

Loss of herd dynamics:

- **Loss of older elephants** disrupts **herd dynamics** and **increases the risk of human-elephant conflict,** as younger elephants are more likely to stray into human-dominated areas.

Measures taken:

- 150 elephant corridors across 15 elephant ranges in the country have been ground-validated.
- Mitigate the impact of power transmission lines and other power infrastructure on elephants and other wildlife.
- Permanent and temporary speed restrictions have been imposed in identified elephant corridors and habitats.

Mapping illegal pangolin poaching from Africa to Asia

Subject :Environment

Section: Species in news

Context:

- Based on genomic analyses, researchers reveal illegal pangolin trafficking routes from origins in Africa to markets in Asia.
- The approach offers new opportunities to monitor pangolin poaching in near realtime, allowing for targeted and more effective anti-trafficking measures.

About Pangolins:

- Pangolins are **nocturnal mammals** that dig burrows and feed on ants and termites, and play a vital role in ecosystem management, mostly in aerating and adding moisture to the soil.
- Pangolins are known for their unique appearance. **They have scales made of keratin that cover their entire body.**
- **When threatened, they can roll into a ball to protect themselves.**
- **Pangolin Species: There are eight species of pangolin:**
- **4 Species in Africa:** Black-bellied pangolin, White-bellied pangolin, Giant Ground pangolin and Temminck's Ground pangolin.
- **4 Species in Asia:** Indian pangolin, Philippine pangolin, Sunda pangolin and the Chinese pangolin.

Habitat:

- It is adaptable to a wide range of habitats including primary and secondary tropical forests, limestone and bamboo forests, grasslands and agricultural fields.
- The **Indian Pangolin** is found across the Indian subcontinent; Bihar, West Bengal, and Assam also have the presence of Chinese pangolin.

Threats:

- Once known to be found in large numbers, its population is rapidly declining in its range due to **habitat loss and rampant poaching for its skin, scales, and meat.**
- Pangolins are among the **most trafficked wild mammals**, globally, traded mostly in Asia, where their scales are considered to be **medicinal and their meat a delicacy.**

Protection Status:

- In the red list of animals published by the International Union for Conservation of Nature (IUCN), **Indian Pangolin is listed in the Endangered (EN) category.**
- The **Chinese pangolin** has been listed as "**critically endangered".**
- **In India, pangolins, both Indian and Chinese, are protected under Schedule 1 of the Wildlife (Protection) Act 1972** that prohibits its hunting, trade or any other form of utilisation.
- All pangolin species are listed in Convention on International Trade in Endangered Species **(CITES) Appendix I.**

How do animals see in the dark?

Photoreception:

- **Photoreception** is the **activation of a biological process by light**.
- Most organisms, including humans, respond to light. Some animals react to light waves not perceived by humans.
- **Vertebrates** have **two types of photosensitive cells, rods** and **cones,** so called because of their shape.
    - The **rods,** which are **long** and **fat**, contain **large amounts of visual pigment** and they **mediate vision** under **dim illumination (scotopic vision).**
    - The **cone cells,** which are **relatively small**, mediate **daylight vision (photopic vision)** and **colour sensation**.

Vision of Human Eyes:

- The **retinas of animals active** both **day** and **night,** as are those of **humans,** contain both **rods** and **cones.**
- In parts of the **human retina**, the **rods** and **cones** are **intermingled** and the **nervous system provides a switching mechanism** that permits adjustment for light conditions.

Vision in nocturnal and diurnal animals:

- In **diurnal animals,** the **lens is smaller** and the **front surface is flatter.**Thus the **focal length is longer** and so the image on the retina is **larger and dimmer** than in the **nocturnal eye**. As a result, the **resolution is higher.**
- The **retinas of diurnal animals** have **localised areas** with a **high density of cone cells.** (The eyes of most birds have two such areas.)
- In **nocturnal animals,** the **optical arrangement of the eyes** suggests that resolution is sacrificed for **high light-gathering power**.
- In **nocturnal animals**, the **retina is mainly made up of rod cells.Rhodopsin**, a **photosensitive pigment present in rods,** is **decolourised by photons** (light particles) and slowly regenerated in the dark. This ensures **better vision for them in dim light**.

Missing for 42 years, flying squirrel resurfaces in Arunachal

Context:

- A **nocturnal flying squirrel** has resurfaced in **Arunachal Pradesh** after going missing for **42 years**. It was last recorded in the **Namdapha Tiger Reserve** in **Arunachal Pradesh's Changlang district**.
- The **Aaranyak study** was supported by **Re:Wild,** a global wildlife conservation organisation, and the **Small Mammal Specialist Group** of the **International Union for Conservation of Nature's Species Survival Commission**.

Namdapha flying squirrel (Biswamoyopterusbiswasi):

- They are an **arboreal, nocturnal flying squirrelendemic to Arunachal Pradesh** in **northeast India,** where it is known from a single specimen collected in **Namdapha National Park** in **1981.**
- It was the **sole member** in the genus **Biswamoyopterus** until the description of the **Laotian giant flying squirrel (Biswamoyopteruslaoensis)** in **2013.**
- What sets the **Namdapha flying squirrel** apart from the **red giant flying squirrel** is the **prominent tuft of hair** on the **ears** of the former.

Red giant flying squirrel (Petauristapetaurista):

- It is a species of **rodent** in the family **Sciuridae (squirrels).**
- It is found in a wide variety of **forest–types, plantations** and more open habitats with scattered trees in **Southeast Asia,** ranging north to the **Himalayas** and **southern** and **central China.**
- **One of the largest arboreal squirrels,** all populations have at least some reddish-brown above and pale underparts, but otherwise, there are significant geographic variations in the colours.

- **Mostly nocturnal** and **able to glide** (not actually fly like a bat) **long distances** between trees by spreading out its **patagium,** skin between its limbs.
- It is a**herbivore** and the female has one, infrequently two, young per litter.
- It is **not a threatened species**.

Nematocyst: a cellular weapon

Subject: Environment

Section: Species in news

Nematocysts' Role in Defense and Hunting:

- **Nematocysts** are **specialized cells** found in **jellyfish, corals, sea anemones,** and **hydras,** andact as **potent weapons** for defence and hunting.
- **Composed of capsules** containing **coiled tubules** and **toxins, nematocysts** rapidly eject these tubules with extreme acceleration when triggered.
- **Nematocysts** play a **crucial role** in the **feeding and defence strategies** of **cnidarians** in particular. **Cnidarians** are **animals that contain cells** called **cnidocytes.**
- When potential prey comes into contact with a **cnidocyte,**specialised sensory structures on the cell's surface trigger the release of the nematocyst. The tubule then unfurls, piercing the prey's outer layer or injecting toxins into its body.

Variety of Toxins:

- Toxins within nematocysts have diverse effects: some **paralyze prey,** while others **break down cells.**
- **Cnidarians** employ a combination of toxins for effective predation or defence.

Adaptation for Survival:

- Nematocysts' complexity contributes to cnidarians' success in diverse aquatic environments.
- This adaptation makes cnidarians formidable creatures, aiding in their survival and dominance in various ecosystems.

Flowering plant undoes 100 million years of evolution, shows signs of self-pollination

Subject :Environment

Section: Species in news

In the news:

- Scientists found a **field pansy flower (native** to **Europe, western Asia,** and **North Africa)** in **Paris, France, producing less nectar** and **smaller flowers** to **attract fewer pollinators, indicating rapid evolution.**

Details:

- Researchers planted **older seeds** from the **1990s** and **2000s** against **contemporary descendants,** witnessing the **rapid evolution of plant behaviour within 50 years.**
- A **documented 27% increase** in **self-pollination rates** and **trait evolution** towards **smaller, less conspicuous flowers** with **reduced nectar production** was observed across four populations.

Significant outcome:

- The **field pansy (Viola arvensis)** has **evolved self-pollination behaviour,** posing a **threat to the plant-pollinator relationship.**
- **Flowers** in Paris exhibited a **20% decrease in nectar production** and a **10% reduction in size,** observed by comparing contemporary and older flower varieties.
- The **plant evolved to self-pollinate** due to **declining insect availability, disrupting the conventional reliance on insects for pollination.**
- Plants typically produce **nectar to attract insects for pollination,** a mutually beneficial relationship established over millions of years.

Concerns:

- While the **short-term benefit of self-pollination helps plants,** it poses **threats** due to **environmental changes,** potentially impacting plant population survival.
- **Decreased nectar production** may lead to **food scarcity**, contributing to **further declines in pollinators, and** forming a cycle detrimental to both plants and pollinators.

Birders' network finds rare pelagic birds on Karnataka's coast

Subject: Environment

Section: Species in news

Context:

- Some 180 birdwatchers from across India were able to document rare **'pelagic'birds** throughout 2023 just off the **Karnataka coast**.

About Pelagic Birds:

- These are seabirds that **live on open seas and oceans** rather than inland or around more restricted waters such as **lakes** and **rivers.**
- They can be found thousands of miles offshore but can get blown onto land during high winds and storms.
- The only other time they come inland is to breed.
- The most familiar types of pelagic birds include **albatrosses, frigatebirds, fulmars, petrels, shearwaters,** and **tropicbirds.**
- **Example:** Sooty Shearwater, Brown Skua, Brown Booby, Streaked Shearwater and Masked Booby.
- **Features:**
  o They **feed on planktonic crustaceans** and **squid** and **hunt fish** far from the land.
  o Generally, they have **dense, waterproof feathers** and **layers of fat** to keep them warm.
  o They have **exceptionally long and thin wings** that allow them to fly effortlessly for long periods without rest.
  o Many **pelagic birds** have **special salt glands**. This allows them to **drink seawater** and **discard extra salt** accidentally ingested by their oceanic prey.
  o Some have **webbed or partially webbed feet** for **swimming, plucking fish** from the shallows, or executing precise, plunging dives.
  o In general, **seabirdslive longer than other wild birds;** most have an average lifespan of **50 years**.
  o Almost **all seabirds live in colonies, migrate annually**, and **mate for life.**

Free-ranging cats may be catastrophic for wild species

Subject: Environment

Section: Species in news

In the news:

- **Free-ranging domestic cats** around the world are found to **eat more than 2,000 other animal species** such as **birds, mammals, insects,** and **reptiles** — including 350 species of conservation concern.
- The researchers found records of 2,083 distinct species consumed, including 981 birds, 463 reptiles, 431 mammals, 119 insects, 57 amphibian species, as well as 33 species from across other groups of animals.
- At least 347 of these species are of conservation concern.

Free Ranging Cat (Felis catus):

- Commonly referred to as the **domestic cat** or **house cat,** is the **only domesticated species** in the **family Felidae**.
- Recent advances in archaeology and genetics have shown that the **domestication of the cat** occurred in the Near East around **7500 BC.**
- It is commonly kept as a house pet and farm cat, but also ranges freely as a feral cat avoiding human contact.
- It can **kill vermin.**
- It has a strong flexible body, quick reflexes, and sharp teeth, and its **night vision** and **sense of smell** are well developed.
- It also secretes and perceives **pheromones**.

Where fossils meet faith in a Madhya Pradesh district

Subject: Environment

Section: Species in news

In the news:

- In **Madhya Pradesh's Dhar district,** scientists recently confirmed that a **revered Bhil deity, Kakad Bhairav,** worshipped as a **sun-baked stone,** is actually a **66-million-year-old fossilized egg of a titanosaur,**a**herbivorous dinosaur.** The discovery challenges **long-standing local beliefs.**

Details:

- The region has been **rich in prehistoric discoveries** since the **1980s,** with fossils of **sauropods, dinosaur eggs,** and **extinct marine creatures** indicating an ancient past.
- **Eminent palaeontologist Ashok Sahni** describes this area as hosting the **largest dinosaur hatchery on Earth,** spreading across **Gujarat, Madhya Pradesh, Maharashtra,** and **Andhra Pradesh.**

- Over **256 fossilised dinosaur eggs,** including recent discoveries of **20 nests,** have been found in **Madhya Pradesh's Bagh region.**
- There's hope that this latest **confirmation** could aid in obtaining **UNESCO's Global Geopark status** for the **Bagh site,** further enhancing its scientific significance.
- **Vishal Verma**, a physics teacher, has played a pivotal role in safeguarding over **100 fossilized dinosaur eggs** and various other ancient treasures in the region.
- The scientists and local community are acknowledging the vital role of the **Bhil community** in **protecting this significant heritage site.**

Fossils and firsts

Captain William Sleeman of the East India Company discovered the first dinosaur bones in India — a titanosaur — in 1828 at the foot of the Bara Simla Hill in Jabalpur cantonment.

The biggest dinosaur species to have existed in India so far is the *Barapasaurus tagorei*, a sauropod that was 4 metres tall. Its bones were unearthed between 1958 and 1961.

The fiercest dinosaur to have existed in India is the *Rajasaurus narmadensis*, a carnivorous dinosaur from the Cretaceous Period. Its fossils were found in the 1980s. Similarities between Rajasaurus and Majungatholus, a dinosaur from Madagascar, suggest a terrestrial connection between the two nations around 67 million years ago.

In 1982, palaeontologist Ashok Sahni stumbled upon fossilised titanosaur eggs from the Cretaceous Period at an excavation site in Jabalpur.

Titanosaurs in India

Titanosaur fossils are common in India because they inhabited the Gondwanaland — a supercontinent that consisted of India, South America, Madagascar, Australia and Antarctica.

In January 2023, researchers discovered 92 nests sites and 256 fossilised eggs in Madhya Pradesh's Dhar. Earlier, researchers had found the world's largest dinosaur hatcheries, including fossilised eggs of the titanosaur, in eastern MP's Jabalpur and Gujarat's Balasinor.

Inspections of eggs and nests have revealed details about the different species, reproductive systems, parental behaviour, colonial nesting behaviour, diet, and the environment and climate in which nests were deposited.

According to a recent study, the discovery of a pathologic ovum-in-ovo egg (egg in egg), a first in the nests of a titanosaur and common in the case of birds, hints at similarities between the reproductive systems of reptiles and birds.

Historical aspect:
- Research indicates that **dinosaurs existed in India** from the **Late Triassic** (200 Mn years) to the **Cretaceous Period** (65 Mn years ago).
- Historical discoveries of dinosaur remains in **India** date back to the **19th century,** with the country witnessing significant **fossil excavations,** including the **identification of a new species of carnivorous dinosaur** named **Rajasaurusnarmadensis.**
- **Captain William Sleeman,** posted in the **Narmada Valley,** discovered the **skeletal remains** in **Jabalpur** cantonment's **Bara Simla Hill** in **1828.** As a tribute, a town in **MP**, 40 km away from **Bagh**, was rechristened as **Sleemanabad**.
- The **region's fossilized treasures,** including **ammonites, shark teeth,** and **titanosaurs' eggs,** provide **crucial insights into ancient marine life** and **geological evolution,** shedding light on the **cataclysmic forces** that shaped the **planet millions of years ago.**

Geography

El Nino effect: Cases of dengue have increased globally

Subject : Geography

Section: Climatology

In the news:

- The **World Health Organization (WHO)** reported a staggering **ten-fold increase** in **dengue cases globally** between **2000** and **2019,** rising from **500,000** to **5.2 million** reported cases. However, this count likely underestimates the actual prevalence due to many cases being asymptomatic and the disease not being notifiable in numerous countries.

Details:
- Following a **decline** during the **pandemic years (2020-2022),** there was a **sharp resurgence in global dengue cases in 2023.** Over **5 million cases** and more than **5,000 deaths** were reported across **80 countries.** The **North** and **SouthAmerica** bore the brunt, with **4.1 million suspected cases,** notably impacting **Brazil, Peru,** and **Mexico.**
- In **2023,** the **upsurge** can be **linked to** the **changing distribution of the vectors** (chiefly **Aedes aegypti** and **Aedes albopictus**); **increase in temperature** and **changes in rainfall patterns** due to the **El Nino climate phenomenon;** fragile health systems after the pandemic, political and financial instabilities in countries; and high population movements.

Global spread:
- **Southeast Asia** witnessed a notable surge, particularly in **Bangladesh** and **Thailand.** In **Africa,** 171,991 cases were reported, with **Burkina Faso** facing the most severe impact.
- The **Eastern Mediterranean** saw **dengue spreading to nine countries,** notably affecting **Pakistan, Saudi Arabia**, and **Oman.** In the **European Region, dengue,** once mainly travel-related, has established itself since **2010,** with cases reported in **Italy, France,** and **Spain.**
- The **Western Pacific Region** reported over **500,000 cases** and **750 deaths,** primarily affecting the **Philippines, Vietnam,** and **Fiji.**
- To address outbreaks, a **Global Joint Incident Management Support Team** was established, combining **WHO Health Emergencies Programme departments** and expertise from the **neglected tropical disease department.**
- **Dengue transmission** involves **four serotypes of the virus (DENV-1, DENV-2, DENV-3, DENV-4),** contributing to cyclic outbreaks occurring every 3-4 years.

About Dengue:
- It is caused by the **dengue virus (DENV)**.
- It is **transmitted to humans** through the **bites of infected female mosquitoes,** primarily the **Aedes aegypti mosquito.**
- The severe form of **dengue fever,** also called **dengue hemorrhagic fever,** can cause **serious bleeding**, a **sudden drop in blood pressure (shock)** and **death.**
- It is more **common** in **tropical** and **subtropical climates.**
- **Symptoms:** The most common symptoms are high fever, headache, body aches, nausea and rash.
- Most will also get better in 1–2 weeks but in severe cases it can be fatal.
- **Treatment:**
  - There is no specific treatment for dengue.
  - Early detection of disease progression associated with severe dengue, and access to proper medical care lowers fatality rates of severe dengue to below 1%.
  - The dengue vaccine CYD-TDV or Dengvaxia was approved by the US Food & Drug Administration in 2019, the first dengue vaccine to get the regulatory nod in the US.

Global 2024 staple food supplies to be strained by dry weather, export curbs

Subject: Geography

Section: Climatology

Context:
- High food prices in recent years have prompted farmers worldwide to plant more **cereals and oilseeds,** but consumers are set to face **tighter supplies well into 2024,** amid adverse **El Nino weather, export restrictions** and **higher biofuel mandates**.

Price Trends:
- **Wheat, corn,** and **soybean prices** are predicted to **decline in 2023** after several years of growth.
- Factors include **eased Black Sea bottlenecks** and concerns about a potential **global recession.**
- **El Nino forecasts** and **unexpected large purchases by China** contribute to ongoing concerns.

El Nino Impact on Food Production:
- **El Nino's dryness** affects **rice, wheat,** and **palm oil supplies.**
- **Reduced reservoir levels** and **dry planting conditions** may decrease **Asian rice production** in **2024**.
- **India's Wheat Situation:**

- o **Insufficient moisture** threatens **India's next wheat crop,** potentially leading to its **first wheat imports** in **six years.**
        - o India has already imposed restrictions due to decreased rice production.
    - **Australian Crop Challenges:**
        - o **Dry soil conditions in Australia** might impact **upcoming wheat planting** due to previous intense **heat affecting crop yields.**
    - **South American Crop Outlook:**
        - o **Argentina** expects favourable conditions for **soybeans, corn, and wheat** due to abundant rainfall.
        - o **Brazil** anticipates **near-record farm output** but faces uncertainties in **soybean** and **corn production** due to recent **dry weather**.
    - **Global Palm Oil Production:**
        - o **El Nino** is expected to **decrease global palm oil production,** impacting **cooking oil prices** that dropped significantly in **2023**.

History of Metrological Services in India

Subject: Geography

Section: Climatology

Historical perspective:

- **Meteorology in India** dates back to ancient times with discussions on **cloud formation, rain processes,** and **seasonal cycles** found in **philosophical writings** like the **Upanishadas. Varahamihira'sBrihatsamhita**and **Kautilya's Arthashastra** show early scientific knowledge about **atmospheric processes** and **rainfall measurement's relevance to agriculture.**
- **Kalidasa** in his epic, **'Meghdoot',** written around the seventh century, even mentions the date of onset of the monsoon over central India and traces the path of the monsoon clouds.
- The **17th century** marked meteorology's scientific foundation with inventions like the **thermometer** and **barometer.Halley's treatise (a British scientist)** in **1636** attributed the **Indian summer monsoon** to **seasonal wind reversals.**

Modern meteorology in India:

- **India** boasts some of the **world's oldest meteorological observatories,** established by the **British East India Company** in **Calcutta** and **Madras** in the **late 18th century.**
- The **Asiatic Society of Bengal (1784)** and **Bombay (1804)** encouraged **meteorological studies.**
- **Captain Harry Piddington**'s work introduced the term **"cyclone"** and detailed **tropical storms** in the **19th century.** In **1842** he published his monumental work on the **"Laws of the Storms".**

Indian Meterological Department (IMD):

- The IMD was **established** in **1875** after calamitous events like **cyclones** and **monsoon failures,** appointing **H. F. Blanford** as the **first Meteorological Reporter.**
- The **first Director General of Observatories** was **Sir John Eliot** who was appointed in May 1889 at **Calcutta headquarters**.
- The headquarters of IMD were later shifted to **Shimla,** then to **Poona** (now Pune) and finally to **New Delhi.**
- The **IMD** has expanded its **infrastructure** and scientific growth since its modest beginnings, embracing contemporary technology like telegraphs, computers, and geostationary satellites (INSAT). It's been a pioneer in meteorology and atmospheric science, fostering growth for 140 years, and stands at the cusp of an exciting future.

IMD is the **National Meteorological Service of the country** and the **principal government agency in all matters relating to meteorology and allied subjects**. **Its mandate:**

- To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like **agriculture, irrigation, shipping, aviation, offshore oil explorations, etc.**
- To warn against severe weather phenomena **like tropical cyclones, norwesters, dust storms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property.**
- To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities.
- To conduct and promote research in meteorology and allied disciplines.

India closes to securing lithium reserves overseas

Subject: Geography

Section: Economic Geography

Context:

- The **Geological Survey of India (GSI)** has taken up **125 exploration projects** this year which is the highest ever.

Details:

- In **2023,** a list of **30 critical minerals** was announced by the **Ministry of Mines.**
- The list included lithium, cobalt, copper, graphite, molybdenum, nickel, platinum of elements, phosphorus, potash, Rare Earth Elements, silicon, tin, titanium, and tungsten.
- **Active lithium blocks in India-Salal-Haimna** in **Jammu & Kashmir,** and **Katghora** in **Chhattisgarh**.

Global lithium reserves:

- **Chile, Australia, Argentina, China, US** are a few of the countries in the world with the **largest overall lithium reserves,** regardless of their stage of development.
- **Argentina, Bolivia,** and **Chile** make up the **"lithium triangle."** The **three countries,** along with **Peru**, contain about **67% of proven lithium reserves** and produce about **half of the global supply**, according to the U.S. Geological Survey.
  - o **Bolivia** is home to the **world's biggest lithium reserves**. With estimates of **21 million tonnes,Bolivia** holds about **one-quarter** of the entire global resource – including the **world's single-biggest lithium deposit,** the **Salar de Uyuni salt flat,** which is visible from space.
  - o **Argentina** has the **world's second-largest lithium reserves,**totalling around **17 million tonnes.** Like neighboringgg**Bolivia** and **Chile,** these reserves are contained in vast **salt flats,** where the **solar evaporation of brine pools** is the technique used to extract it.
  - o The **Salar del Hombre Muerto salt flat** is a notable **lithium resource** in **Argentina.**
  - o **Chile** accounts for around **nine million tonnes of lithium reserves.** In **2021** by far **Chile** has the **world's largest mine reserves, totaling 8.6 million tonnes.**
  - o Although the **US** has the **world's fourth-largest lithium reserves,** measured at **6.8 million tonnes**, production activity in the country is minimal.
  - o **Australia** may only rank **fifth** on the list of largest overall reserves with **6.3 million tonnes**, but it was by far the **world's biggest lithium producer in 2019**.
  - o **China** is **sixth-placed** on the list, with overall **lithium reserves** estimated at **4.5 million tonnes**.

India will be largest cotton producer

Subject: Geography

Section: Economic geography

Context:

- Indian textile industry working towards achieving $250 billion by 2030, including $100 billion in exports, says Textiles and Commerce Minister Piyush Goyal.
- India also inaugurates global cotton producing nations' meet; also introduces **'Kasturi Cotton Bharat', a 'blockchain traceable' textile brand .**

Key Facts:

- Cotton is one of the most important commercial crops cultivated in India and **accounts for around 25% of the total global cotton production.**
- India has the **largest area under cotton cultivation and is the second largest producer (after China).**
- It plays a major role in sustaining the livelihood of an estimated **6 million cotton farmers and 40-50 million people engaged in related activities such as cotton processing and trade.**
- The Indian Textile Industry consumes a diverse range of fibres and yarns and the ratio of use of cotton to non - cotton fibres in India are around 60:40 whereas it is 30:70 in the rest of the world.
- Apart from being the provider of a basic necessity of life i.e., clothing which is next only to food, cotton is also one of the largest contributors to India's net foreign exchange by way of exports.
- The Indian textile industry is **working towards achieving $250 billion by 2030, including $ 100 billion export.**
- Due to its economic importance in India, it is also termed as "**White-Gold**".
- Also, India will provide leadership in cotton textiles and technical textiles. Technical textiles are man-made fabric meant for a specific function and are not generally used for apparel or aesthetic appeal.

What is the International Cotton Advisory Committee (ICAC)?

- It is an **association of governments of cotton producing, consuming and trading countries** which acts as the international commodity body for cotton and cotton textiles.

- Founded at the International Cotton Meeting in Washington, DC in 1939, the ICAC advocates for cotton producing nations, publishes studies and technical information on the cotton industry.
- While most of the world's cotton producing nations are members, **two of the ten largest producers (China and Turkmenistan) are not members of the ICAC.**
- The ICAC along with private sector cotton organisations initiated the International Forum for Cotton Promotion (IFCP) in 2000.
- The IFCP serves as a forum and clearinghouse for the exchange of proven cotton promotion techniques.
- The IFCP facilitates domestically focused and domestically funded cotton promotion programs.

India's Efforts Towards Improving Cotton Productivity:
- **PM MITRA:** India has also launched PM MITRA- a Central government scheme to set up mega textile parks and promote the entire value chain.
- **The National Technical Textiles Mission:** It promotes research and development in technical textiles.
- **The "Kasturi Cotton Bharat" brand:** Which is claimed could be traceable using blockchain technology, and that it would be "carbon positive".
- **State-of-the-art testing laboratories:** The Textile Ministry and the Department of Consumer Affairs would open these labs nationwide to ensure that high quality textile products are manufactured and exported from India.
- **Drone-based pesticide spraying:** Indian cotton farmers will benefit from the technology, adding that the use of innovation and Internet of Things will benefit Indian cotton farmers.

Electric- vehicle boom drives miner's $100-m hunt for new palladium uses
Subject : Geography

Section: Economic geography

Context:
- Russia's MMC Norilsk Nickel is spending $100 Mn to find new uses for palladium as the electric-vehicle boom threatens the metal's crucial catalytic converter market.

Palladium:
- It is a **rare** and **lustrous silvery-white metal**.
  - **Nornickel** mines about **40%** of the world's palladium.
  - **Nornickel** is researching **new uses of palladium** in the **hydrogen, solar power** and **chemical sectors.**
- **South Africa** is the **leading producer** of palladium followed by **Russia, Canada, the USA** and **Zimbabwe**, while **Russia** is the leading exporter.
- **Deposits:**
  - **Ore deposits** of **palladium** are rare. It is mainly found in the **norite belt** of the **Bushveld Igneous Complex** covering the **Transvaal Basin** in **South Africa**, the **Stillwater Complex** in **Montana, United States;** the **Sudbury Basin** and **Thunder Bay** District of **Ontario, Canada,** and the **Norilsk Complex** in **Russia**.
  - Recycling is also a source, mostly from **scrapped catalytic converters**.
- **Application:**
  - **80% of all palladium** ends up in **autocatalysts** that **curb emissions** in **automobiles,** but **electric vehiclesdo not** need a **pollution-controlling device**.
    - As a **catalytic converter,** Palladium converts as much as **90%** of the **harmful gases** in **automobile exhaust** (hydrocarbons, carbon monoxide, and nitrogen dioxide) into **nontoxic substances** (nitrogen, carbon dioxide and water vapour).
  - Palladium is also used in **electronics, dentistry, medicine, hydrogen purification, chemical applications, groundwater treatment,** and **jewellery.**
  - Palladium is a **key component** of **fuel cells,** in which **hydrogen** and **oxygen** react to produce **electricity, heat,** and **water.**
  - **New products:**
    - Palladium can be used as a catalyst in **hydrogen power systems,** and **solar power cells**, as a catalyst for the **synthesis of acids for biodegradable packaging,** as an **electrode for disinfecting water,** and in the **cosmetics industry**.

Government directs sugar mills to not use sugarcane juice for ethanol production to keep prices in check
Subject : Geography

Section: Economic geography

Context:

- The Centre banned the use of '**sugarcane juice and sugar syrup**' for **ethanol production** in the **2023-24** supply year, in order to **maintain adequate sugar availability** for **domestic consumption** and to **keep prices under check**. But, the government has allowed use of 'B-molasses' for ethanol production in 2023-24.

Details:

- The directive was issued as per the **clause 4** and **5** of the **Sugar (Control) Order 1966**.
- The decision comes in the backdrop of **estimated fall in sugar production** in **2023-24** marketing year.
  - o **Indian Sugar Mills Association (ISMA)** has projected a **9 per cent** fall in **gross sugar production** at **337 lakh tonnes** for the **2023-24** marketing year.
  - o India exported **61 lakh tonnes** of sugar during the **2022-23** marketing year, as against a record **112 lakh tonnes** in the previous year.
- To contain **food inflation,** the Central government has also **banned exports of wheat** and **broken rice**. It has also **fixed minimum export price (MEP)** for **basmati rice**.

Ethanol:

- **Ethanol,** also known as **ethyl alcohol**, is a **biofuel** produced from various sources such as **sugarcane, corn, rice, wheat,** and **biomass.**
- The production process involves the **fermentation of sugars by yeasts** or via **petrochemical processes** such as **ethylene hydration.**
- **Ethanol** is **99.9% pure alcohol** that can be **blended with petrol** to create a **cleaner fuel alternative**.
- Apart from being a **fuel additive,** ethanol production yields valuable **byproducts** like **Distillers' Dried Grain with Solubles**, and **Potash from Incineration Boiler Ash** that find applications across various industries.

Ethanol production in India:

- **Ethanol production in India** was mainly based on **'C-heavy' molasses**, with a **sugar content** of **40-45%,** yielding **220–225 liters** of ethanol per tonne.
- **India** explored **direct sugarcane juice** for ethanol production, **increasing yield** and **efficiency**.
- The country **diversified its feedstocks** by including **rice, damaged grains, maize, jowar, bajra,** and **millets**.
- Ethanol yields from **grains** are **higher** compared to **molasses,** with **rice** producing **450-480 liters** and other grains **380-460** liters per tonne.
- Sugar mills diversified to use rice, damaged grains, maize, and millet as feedstocks.
- Leading sugar companies installed distilleries that can operate on multiple feedstocks throughout the year.

Types of Molasses:

- **A Molasses (First Molasses):** An intermediate by-product from initial sugar crystal extraction, containing **80-85% dry matter (DM)**. Should be inverted to prevent crystallization if stored.
- **B Molasses (Second Molasses):** Similar DM content as A molasses but with **less sugar** and **no spontaneous crystallization.**
- **C Molasses (Final Molasses, Blackstrap Molasses, Treacle):** The end by-product of sugar processing, containing significant amounts of **sucrose** (about 32 to 42%). It does **not crystallize** and is used as a commercial feed ingredient in liquid or dried form.

Government Initiatives to Promote Ethanol Blending in India:

- National Policy on Biofuels 2018
- E100 Pilot project
- PradhanMantri JI-VAN Yojana 2019
- Repurpose Used Cooking Oil (RUCO)

At 2826 kg, drug seizure at ports, in coastal waters at a new high

Subject : Geography

Section: Economic geography

Context:

- At least **2826 kg** of banned substances have been busted across **Indian ports and coastal waters,** so far in **2023**, according to the **Ministry of Ports, Shipping and Water ways.**

Details:

- **Methamphetamine (crystal meth)** accounted for **99%** of these seizures.

- o **Methamphetamine (or crystal meth)** is a **man-made psychotropic substance** and comes in **blue crystal.** It affects the **central nervous system.**
  - o The manufacture, possession, transport, import, export, sale, purchase and use of crystal meth is **illegal** in India.
  - o Maximum seizures were from **Gujarat, Kerala** and **Andaman**, with the source nation being **Pakistan.**
  - o Highest single seizure was made from **Kochi,** followed by **Pagla Mundi** in **Little Andaman** and **Okha** in **Gujarat.**
- **Cocaine** was seized from **Kachchh port** in **Gujarat** which was sourced from **Ecuador.**
- **Heroine** was seized from **Kuchchh, Porbandar** and **Jakhau**in **Gujarat**, **Ernakulam** and **Thiruvananthpuram** in **Kerala,Tuticorin** in **Tamil Nadu**, **JNPT** in **Mumbai, Maharashtra** and **Adani Port** at **Mundra** in **Gujarat** and sourced from **Afghanistan, Pakistan, Iran** and **Panama.**

G7 move on Russian roughs rattles India's diamond sector

Subject: Geography

Section: Economic geography

Rough diamond:

- It is a diamond that has **not been cut or processed.** They come in a **variety of naturally occurring shapes,** including **octahedral** (eight-sided bipyramid), **cubic,** and **triangular** (most commonly macles).
- A **raw diamond** or **rough diamond** can also be a **type of diamond** that is **not fully developed** or can **have less brilliance**. **Extreme heat and pressure** beneath the ground make the **carbon atoms fuse in a specific structure**.

Diamond production:

- **Russia** is the **largest producer (42 million carats in 2022)** and **exporter** of **rough diamonds** in the world followed by Botswana, Canada, DR Congo, South Africa, Angola, Zimbabwe, Namibia, Sierra Leone, Lesotho and Australia.
- **African continent** contributes to 50% of **global production.**

Diamond Exporter:

- In **2022**, **India** was the **largest exporter of polished diamonds worldwide,** amounting to a total value of **23.9 billion U.S. dollars** compared to the nearly **18 billion U.S. dollars** of **diamonds exported by the United States** that year, ranked second, followed by the UAE, Hong Kong, Belgium, Israel, Botswana, Russia, South Africa, China and Angola.
- **India imported** a provisional **$8.48 billion** worth of **rough diamonds** and **exportedpolished diamonds** worth **$9.96 billion** from April through October 2023.
- **India** cuts **14** out of **15** of the **world's rough diamonds.**
- **India exports** diamond to the **USA (36%),Hong Kong** and **Japan** among others.

Big buyers

India's exports of cut and polished diamonds, by destination, FY23 ($ billion)
Export (in $ billion)

US   Hong Kong   UAE   Belgium   Israel   Others

Total: 22

798
554
214
203
119
312

Gem and Jewellary Export Promotion Council (GJEPC):

- Established in **1966** by the **Ministry of Commerce and Industry (India)**
- **Aim-** to promote the Indian gem and jewellery industry and its products.
- **Headquarters** in **Mumbai** and **Regional Offices** in **New Delhi, Kolkata, Chennai, Surat** and **Jaipur**.
- It is the **apex body** for the **gems and jewellery industry of India** and represents almost 7,000 exporters.

Ambitious coal transport plans may test Railways

Subject: Geography

Section: Economic geography

Context:

- **Indian Railways'** plan to raise the quantum of **coal** to be transported by rail by at least **400 million tonne (mt)** in the next **eight years** face **congestion** and **logistical challenges,** the **Institute for Energy Economics and Financial Analysis (IEEFA)** said in a report.

Eastern Dedicated Freight Corridor (EDFC):

- **EDFC** with a **route length of 1856 km** consists of **two distinct segments:** an **electrified double-track segment** of **1409 km** between **Dankuni in West Bengal** &**Khurja in Uttar Pradesh** & an **electrified single-track segment** of **447 km** between **Ludhiana (Dhandarikalan) - Khurja - Dadri** in the state of **Punjab, Haryana** and **Uttar Pradesh.**

- It traverses through **6 states** viz**. Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand** and **West Bengal.**

- Eastern Corridor is projected to cater to a number of **traffic streams-coal for the power plants** in the **northern region** of **U.P., Delhi, Haryana, Punjab** and parts of **Rajasthan** from the **Eastern coal fields, finished steel, food grains, cement, fertilizers, limestone** from **Rajasthan** to **steel plants** in the **east** and **general goods.**

Western Dedicated Freight Corridor (WDFC):

- It is a broad gauge corridor that extends for 1,504 kilometers, starting at Dadri in Uttar Pradesh and concluding at Jawaharlal Nehru Port Trust near Mumbai.

- The project is being funded through a soft loan of $4 billion from the Japan International Cooperation Agency (JICA) under special terms for economic partnership (STEP).

- **Key Locations:** The corridor passes through **Vadodara, Ahmedabad, Palanpur, Phulera, and Rewari,** traversing through the states of **Punjab, Haryana, Rajasthan, Gujarat, and Maharashtra.**

Dedicated Freight Corridor Corporation of India Ltd. (DFCCIL):

- DFCCIL under the **Ministry of Railways** is a **special purpose vehicle** tasked with planning and completion of **3,306 kms** of **Dedicated Freight Corridors (DFCs),** consisting of **western freight corridor** and **eastern freight corridor (1,856 kms).** The total project cost is estimated at over **₹81,000 crore.**

- The construction of **DFCs** project would enable the decongestion of existing over-saturated paths which, thereby, will effectively improve punctuality of passenger trains.

It's time to banish fears around 'Khesari Dal' and relish the nutritious legume

Subject :Geography

Section: Eco geography

About Khesari Dal or Grass Pea (Lathyrus sativus):

- The **legume (Lathyrus sativus)** is also known as **khesari dal** in **Hindi, lang** in **Marathi** and **laag** in **Gujarati**.

- It is also known as **cicerchia, blue sweet pea, chickling pea, chickling vetch, Indian pea, white pea** and **white vetch.**

- It resembles **toor dal (pigeon pea)**.

- It is commonly grown for human consumption and livestock feed in **Asia and East Africa.**

- It is **one of the cheapest legumes** and **grows easily in fallow fields,** can be **rotated with any crop** and needs **little to no investment.**

- It is also **tolerant to drought, salinity** and **water logging** and **resistant to pests and biotic stress.**

- In terms of **nutrition, grass pea** has **high levels of proteins,** second only to **soybean**, and even has the **compound L-homoarginine** that is **beneficial to heart health**.

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Why was it banned in India:

- It has been infamous for **causing lathyrism,** an **irreversible neurological disease** that **leads to paralysis** of lower limbs.
- Researchers identified the culprit as a **chemical** in the **seed, ß-N-oxalyl-L-a, ß-diaminopropionic acid (ß-ODAP)**.
- In **1961**, **India** banned the sale and storage of **grass peas** under the **Prevention of Food Adulteration Act, of 1954**.
- The ban was followed by **all states** except **Madhya Pradesh, Bihar** and **West Bengal.**
- However, the government **did not ban cultivation** as farmers said it was used as **animal feed**.

New varieties:

- **FSSAI** allowed **incidental presence (2%)** in other grains in **2021**.
- In **1966,** the **first variety** with **low ß-ODAP, Pusa 24,** was released for cultivation.
- In 1995, the government launched an **All India Coordinated Research Project on MULLaRP (Mungbean, Urd-bean, Lentil, Lathyrus, Rajmash and Pea),** under which the crops are promoted and **high-yielding varieties** are developed.

China bans export of rare earth technologies

Subject : Geography

Section: Economic Geography

Context:

- **China, the world's top processor of rare earths,** banned the export of **technology to extract and separate the strategic metals**, as it overhauled a list of technologies deemed **key to national security**.

Details:

- It also banned the **export of production technology** for **rare earth metals** and alloy materials as well as **technology to prepare some rare earth magnets**.
- The move comes as **Europe** and **the U.S.** scramble to wean themselves off rare earths from **China**, which **accounts for 90% of global refined output**.
- **Top 5 REE producing countries:** China, the USA, Australia, Myanmar and Thailand.

Rare Earth Elements (REE):

- These are a set of **17** chemical elements in the periodic table, specifically the **15 lanthanides plus scandium (Atomic Number 21)** and **Yttrium (Atomic Number 39).**
- The **Lanthanide series** comprises the 15 metallic chemical elements with atomic numbers 57 through 71, from lanthanum through lutetium.
- Scandium and yttrium are considered rare-earth elements because they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties, but have different electronic and magnetic properties.
- **Cerium (AN 58)** is the most abundant rare earth metal.
- Their colour ranges from Shiny Silver to Iron Gray. They are soft, malleable, ductile and usually reactive, especially at elevated temperatures or when finely divided.
- Its **application** ranges from Civilian (smartphones, laptops, petroleum refining catalysts) to military including nuclear applications. Rare minerals that are essential to electric vehicles, wind turbines and drones.
- **China** has the **largest reserve (37 percent),** followed by **Brazil** and **Vietnam** (18 percent each), **Russia** (15 percent), and the remaining countries (12 percent). **Deng Xiaoping** once said, The Middle East has oil and China has rare earth.
- **Why are these elements called RARE?**
  - There is no shortage of rare earths. But their extraction is difficult (Requires high skill, Capital intensive, Environmental issues).

India eyes $1 billion in banana exports in next five years

Subject : Geography

Section: Economic geography

Context:

- With the successfully export of a trial shipment of fresh bananas to the **Netherlands through sea route**, India is now aiming at increasing the exports of this fruit to $1 billion in the next five years.

Key Facts:

- **India is world's largest banana producer**. Despite it, **India's global export share is just 1%,** though the **country accounts for 26.5% of the world's production.**

About Banana

- **Agro-climatic requirements:**

- o Banana, basically a **tropical crop,** grows well in a temperature range of 15ºC – 35ºC with relative humidity of 75-85%.
  - o Deep, rich loamy soil with **pH between 6.5 – 7.5** is most preferred for banana cultivation.
  - o Saline solid, **calcareous soils** are not suitable for banana cultivation.
  - o There are some **12-15 varieties of bananas** in India.
  - o Largely in the peninsular southern coastal region, namely in parts of Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, Telangana, Andhra Pradesh, Odisha, and Bengal, and in the Northeastern areas of the country such as Assam and Arunachal Pradesh.
  - o The central and northern regions – Madhya Pradesh, Uttar Pradesh, Haryana, and Punjab also grow the plant but neither in such variety nor in numbers.
  - o **India produces about 29 million tonne of banana every year, and next is China with 11 million.**
- **Nutritive value**
  - o Bananas have 10-20 mg of calcium, 36 mg of sodium, 34 mg of magnesium and 30-50 mg of phosphorous per 100 g of edible material.
  - o All these make **bananas highly nutritious**.
- Its peel is of use as a **'biochar,'** which is used both as a fertilizer and to generate electricity.
  - o **Biochar is a charcoal-like substance that's made by burning organic material** from agricultural and forestry wastes (also called biomass) in a controlled process called **pyrolysis**.
  - o **Pyrolysis is the heating of an organic material**, such as biomass, **in the absence of oxygen.**

Heavy rainfall in Thoothukudi causes severe damage to salt stock worth ₹100 crore

Subject: Geography

Section: Eco geography

Context:

- Nearly 6 lakh tonnes of **salt ₹100 crore** worth has been washed away in the **coastal district of Thoothukudi** due to the unprecedent rainfall witnessed on December 17 and 18. The **salt** were ready to be despatched to various clients in India and abroad.

Salt Industry in India:

- **India** is the **third largest Salt producing Country** in the World after **China** and **USA** with **Global annual production** being about **230 million tonnes**.
- When **India** attained Independence in **1947,** salt was being **imported** from the **United Kingdom & Adens** to meet its domestic requirement.

The main sources of salt in India are:

- Sea brine
- Lake brine
- Sub-soil brine and
- Rock salt deposits

MAJOR SALT PRODUCING CENTERS:

- **Sea water** is an **inexhaustible source** of **salt.**
- The **major salt producing Centres** are **Marine Salt works** along the coast of **Gujarat (Jamnagar, Mithapur,Jhakhar, Chira, Bhavnagar, Rajula, Dahej, Gandhidham, Kandla,Maliya, Lavanpur**), **Tamil Nadu** (Tuticorin, Vedaranyam, Covelong), **Andhra Pradesh** (Chinnaganjam, Iskapalli, Krishnapatnam, Kakinada &Naupada), **Maharashtra** (Bhandup, Bhayandar, Palghar), **Orissa** (Ganjam, Sumadi) and **West Bengal** (Contai).
- **Inland Salt Works** in **Rajasthan** using **lake brine** and **sub-soil brine** viz. **Sambhar Lake, Nawa, Rajas, Kuchhaman, Sujangarh** and **Phalodi Rock Salt Deposits** at **Mandi** in the **State of Himachal Pradesh**.

Top 5 Largest Salt Production States of India:

- Major salt producing states of India are **Gujarat, Rajasthan, Tamil Nadu, Maharashtra, Andhra Pradesh, Karnataka** and **Odisha**.

GOVERNMENT OF INDIAS ROLE IN DEVELOPMENT OF SALT INDUSTRY:

- **Salt** is a **Central subject** in the **Constitution of India** and appears as item **No.58** of the **Union List** of the **7th Schedule**, which reads:
  - o Manufacture, Supply and Distribution of Salt by Union Agencies; and
  - o Regulation and control of manufacture, supply and distribution of salt by other agencies.

- **Central Government** is responsible for controlling all aspects of the Salt Industry. **Salt Commissioners Organisation,** an attached Office under the **Ministry of Commerce & Industry** (Department of Industrial Policy & Promotion), Government of India, is entrusted with the above task.
- **Government of India** has **delicensed Salt Industry** in 1996-97.

India closing in on lithium deal with Argentina, tapping Australia and Chile too

Subject: Geography

Section: Economic Geography

Context:

- The **Mines Ministry,** through the **state-ownedKhanij Bidesh India Ltd (KABIL),** has entered into a draft **exploration and development agreement** with **Argentinan** miner **CAMYEN** for possible acquisition and development of five-odd **lithium blocks**.
- It has also entered into a **non-disclosure agreement** with **Australia** and **Chile** for **lithium** exploration.

Details:

- **Chile** and **Argentina** account for **30–35 per cent** of the **world's supplies of lithium.**
- **Chile,** which has **11 per cent** of the **world's lithium reserves,** supplies **26 per cent** of the requirements; while **Argentina** with nearly **one-fifth of the global resources** supplies about **6 per cent**.

Lithium Triangle:

- The **Lithium Triangle** is a **region** of the **Andes** that is **rich in lithium reserves,** encompassed by the borders of **Argentina, Bolivia,** and **Chile.**
- The **lithium** in the triangle is concentrated in various **salt pans** that exist along the **Atacama Desert** and neighbouring arid areas, the largest areas of three main salt pants that define its vertex (**Salar de Uyuni** in **Bolivia, Salar de Atacama** in **Chile,** and **Salar del Hombre Muerto** in **Argentina**).
- **Salar de Atacama** in **Chile** has the **highest concentration** of **lithium** (0.15% by weight) among all the **world's brine sources**.

KABIL (KHANIJ BIDESH INDIA LIMITED):

- A **Joint Venture Company** among **NALCO, HCL** and **MECL** named **Khanij Bidesh India Limited (KABIL)** was formed in **August 2019.**
- The target of this company is to **identify, acquire, develop, process** and **make commercial use of strategic minerals** in **overseas locations** for supply in **India**.
- **KABIL** is focusing on **identifying and sourcing battery minerals** like **Lithium** and **Cobalt.**

Volcano erupts in southwest Iceland after weeks of earthquakes

Subject: Geography

Section: Geomorphology

Context:

- A volcano erupted close to an **Iceland power plant** after weeks of intense seismic activity southwest of **Reykjavik.** The eruption was only **3-km** from the evacuated **fishing port of Grindavik** on the **Reykjanes peninsula**.

Geography of Iceland:

- **Iceland**, situated just **south of the Arctic Circle** in the **North Atlantic Ocean,** is profoundly shaped by its geography and location on the **Mid-Atlantic Ridge**—a boundary between the **North American** and **Eurasian tectonic plates**. While mostly submerged, this ridge emerges above the ocean surface in the form of **Iceland** itself.
- **Iceland's geological features** include **geysers, glaciers, mountains, volcanoes,** and **vast lava fields.** It hosts **33 active volcanoes**, the highest count in **Europe**.
- **Human settlement in Iceland** dates back to **874** when **Norsemen,** primarily from **Scandinavia,** established **Reykjavik, the capital.**
- The **Reykjanes Peninsula,** had not seen any volcanic activity for the past 800 years, has experienced f**our eruptions in less than three years**, indicating a potential new phase of volcanic activity.
- **Eyjafjallajokull Eruption (2010): Eyjafjallajokull** is a volcano on **Iceland's south coast**. Its two eruptions in 2010 led to an **ash cloud** spreading from **western Siberia** to **North America's eastern seaboard**.

Why is the Iceland so volcanically active

Subject :Geography

Section: Geomorphology

Context: A volcano erupted close to an Iceland power plant after weeks of intense seismic activity southwest of **Reykjavik**

What are volcanoes:

- Volcanoes are **openings or vents** where **lava, tephra (small rocks), and steam erupt onto the Earth's surface**, according to the US Geological Survey.
- They **can be on land or in the ocean** and form when **material significantly hotter than its surroundings, such as magma** (underground) **or lava (on the surface), ash, and/or gases, erupts onto the Earth's surface.**
- The **rise of magma can occur when tectonic plates move away from** each other, **move towards each other, or at hotspots inside the Earth,** where magma is heated up, becoming less dense and rising.

What are the different kinds of volcanoes:

- The **type of volcano is determined by factors such as the viscosity of the magma, the amount of gas in the magma, the composition of the magma**, and the **way the magma reaches the surface**, according to the British Geological Survey.
- There are **two main types of volcanoes**: **stratovolcanoes and shield volcanoes.**
- **Stratovolcanoes** have **steep sides** and a **more cone-shaped structure,** while **shield volcanoes have a low profile** resembling a **shield lying on the ground**.
- Additionally, **various volcanic features** can **form from erupted magma,** such as **cinder cones or lava domes,** along with processes that shape volcanoes.

Why is Iceland so volcanically active:

- Iceland **experiences frequent volcanic activity** due to its **location on the Mid-Atlantic Ridge in the North Atlantic Ocean,** where the **Eurasian and North American plates are moving apart.**
- This movement causes **volcanic rift zones,** where the **Earth's crust is pulled apart and fractured**, allowing **molten rock or magma to rise** and sometimes erupt as lava and/or ash.
- Additionally, **Iceland is situated over a hot zone or hotspot,** contributing to **increased volcanic activity in the region.**

How many active volcanos does Iceland currently have:

- **Iceland** has **33 active volcanoes** which have **erupted over 180 times in the past 1,000 years.**
- Iceland experiences **frequent seismic activity due to its location on the Mid-Atlantic Ridge.**
- One of Iceland's mo**st famous volcanoes is Eyjafjallajökull**. In 2010, this **volcano erupted** and caused a **massive ash cloud** to spread across Europe
- Other famous volcanoes include **Hekla, Grímsvötn, Hóluhraun, and Litli-Hrútur (part of the Fagradalsfjall system).**

Mocha among 'most impactful' global cyclones in 2023: WMO report at COP28

Subject : Geography

Section: Physical geography

Context:

- **Cyclone Mocha** in the **Bay of Bengal** was **one of the most severe cyclones** in **2023 globally**, the **World Meteorological Organization (WMO)** has noted in its report released on the first day of the **CoP28 summit**.

Details:

- Report title- **Provisional State of the Global Climate 2023**
- Published by**- World Meteorological Organisation (WMO)**

Key findings of the report:

- **Tropical Cyclone Mocha**, in May 2023, was **one of the most intense cyclones ever** observed in the **Bay of Bengal,** reaching peak **10-minute sustained winds** of **115 kilometres per hour.**
- It triggered **1.7 million displacements** across the sub-region from **Sri Lanka** to **Myanmar** and through **India** and **Bangladesh**.
- **2023** is going to be the **"warmest year" ever recorded** surpassing the **previous joint warmest years**, **2016** at **1.29 ± 0.12 °C** above the **1850–1900** average and **2020** at **1.27±0.13 °C**.
- The **global mean near-surface temperature** in **2023** was around **1.40 ± 0.12 °C** above the **1850-1900** average.
- Observed concentrations of the **three main greenhouse gases** (warming gases) — **carbon dioxide, methane,** and **nitrous oxide** — reached record-high levels in 2022.

A.P. Braces for heavy rainfall as Michaung intensifies

Subject: Geography

Section: Physical Geography

Context:

- **Cyclone Michaung** is expected to cause heavy rains accompanied by winds clocking 90-100 kilometres per hour (kmph) at Andhra and Chennai coasts.

Cyclone Michaung:

- Cyclonic Storm **"MICHAUNG"** (pronounced as **MIGJAUM**) hs formed over the southwest Bay of Bengal. It is expected to pass through **Chennai** and make landfall on somewhere between **Machilipatnam** and **Nellore** (both in south Andhra Pradesh).
- **Areas impacted**- Chennai, Nellore, Machilipatnam, Vijayawada, Hyderabad and Warrangal.
    - **Three rivers** (Cooum, Adyar and Kosasthalaiyar), **two major water courses** (Buckingham Canal and Otteri Nullah) and several **waterbodies** ('tanks') lie within or the vicinity of Chennai.
- It will become a **Severe Cyclonic Storm** with a **maximum sustained wind speed** of **90-100 kmph,** gusting to **110 kmph**.

Why cyclone Michaung headed to Andhra coast

Subject : Geography

Section: Physical geography

Context: Cyclone Michaung, headed to the Andhra coast

More about the news

- **Tropical Cyclone Michaung** is anticipated to **make landfall on the Andhra Pradesh coast in Bapatla district,between Nellore and Machilipatnam**, on Tuesday morning (December 5), as confirmed by the I**ndia Meteorological Department** .
- The storm, **located approximately 80 km southeast of Nellore and 120 km north-northeast of Chennai** as of 5:30 pm on Monday, is **moving northward along the Andhra Pradesh coast**.
- Michaung has **already brought heavy rainfall to various regions in Tamil Nadu,** parts of Andhra Pradesh, and southern Odisha.
- The **occurrence of such a high-intensity cyclone in December is unusual,** as storms in the **North Indian Ocean during this period typically don't reach such destructive** intensities.
- Initially classified as a '**tropical cyclone,' Michaung was upgraded to the status of a 'severe' storm** on Sunday, featuring wind speeds ranging from 8**8 kph to 166 kph**—an uncommon intensification for December cyclones, **attributed to above-normal heat index values off** the southern Andhra Pradesh coast.

Some facts about Indian tropical storms:

- Climatologically, the **North Indian Ocean basin, encompassing the Bay of Bengal and the Arabian Sea,** experiences the development of **approximately five cyclones each year. Of these, an average of four cyclones develop over the Bay of Benga**l, while one typically forms over the Arabian Sea.
- **Cyclones occurring in the Arabian Sea often achieve higher intensities**, posing an increased **risk of causing widespread damage.**
- The **North Indian Ocean basin is most susceptible to cyclone** development during the **pre-monsoon months (April-June) and post-monsoon months (October-December).**
- **Cyclones formed in May and November tend to reach higher intensities** compared to storms **originating at other times due to favorable ocean conditions.**

How are Cyclones Classified

- Cyclones are **classified on the basis of wind speed** by the Indian Meteorological Department
    - **Depression:** Wind speeds of between **31–49 km/h**
    - **Deep Depression**: Between **50-61 km/h**
    - **Cyclonic Storm**: Between **62–88 km/h**
    - **Severe Cyclonic Storm:** Between **89-117 Km/h**
    - **Very Severe Cyclonic Storm:** Between **118-166 Km/h**
    - **Extremely Severe Cyclonic Storm:** Between **167-221 Km/h**
    - **Super Cyclonic Storm**: **Above 222 Km/h**

How Storm intensification happen:

- Tropical cyclones are **fueled by ocean heat** in addition to other factors.

- **Ocean temperatures of 26 degrees Celsius** or more, prevailing at **depths between 50 metres and 100 metres,** are **conducive for cyclogenesis**, which refers to the processes that **lead to the development and strengthening of a cyclone.**
- **Warm oceans contribute to a cyclone's rapid intensification** while at sea.
- An **oceanographic parameter called the Tropical Cyclone Heat Potential (TCHP) is considered an important factor** in cyclone genesis, intensification, and propagation.
- The i**ntensification process of tropical cyclones** is a **complex phenomenon** influenced by **various favorable atmospheric conditions.**
- These **include boundary layers (the fluid layer adjacent to a bounding surface), wind shear (changes in wind direction and/or speed over a vertical or horizontal distance), convection (the transfer of heat within a fluid), Rossby waves (which occur in rotating fluids), upper ocean circulation, and air-sea interaction**.
- The **interaction of these factors contributes to the development and strengthening of tropical cyclones.**

What is landfall of a cyclone:

- Landfall **occurs when a tropical cyclone moves** from a **position over water to coming onto land.**
- **According to the IMD , a tropical cyclone** is considered to **have made landfall when its center, or eye, crosses the coast.**
- The **"eye"** of a cyclone is a zone of relatively calm weather situated at the center of the storm, c**haracterized by light winds, clear or partly cloudy skies, and reduced precipitation.**
- **Within the eye, winds are gentle and variable,** often **accompanied by clear or partially cloudy skies**.
- The **size of the eye can vary widely, ranging** from a **few kilometers to over 50 kilometers in diameter** in larger cyclones.
- **During landfall,** the **outer bands of the storm may have already reached the coast, bringing strong winds, heavy rain, and storm surge.**
- Landfall **signifies the official moment when the cyclone reaches the land**.
- It's important to note that **landfall is distinct from a 'direct hit,' which occurs when the core of high winds (or eyewall) comes onshore** while the **center of the storm may remain offshore.**
- Cyclones **lose their intensity** once t**hey move over land** because of **sharp reduction of moisture supply and increase in surface friction.**

Mount Merapi eruption

Subject: Geography

Section: Physical geography

Context:

Some facts about Mount Merapi:

- Mount Merapi is a **volcanic mountain peak located near the centre** of the **island of Java, Indonesia.**
- It is **located on Sumatra**, the westernmost and **third largest of Indonesia's 18,000 islands.**
- It stands **2,891m high.**
- Mount Marapi, which means **"Mountain of Fire"**, is among the **most active of Indonesia's 127 volcanoes** and is also popular among hikers.
- The **Indonesian archipelago sits on the so-called Pacific Ring of Fire**, where the **meeting of continental plates** causes high volcanic and seismic activity.

Why do more volcanoes occur in Indonesia:

- **Indonesia is situated** within the **expansive Ring of Fire** encircling the **Pacific Ocean, comprising more than 17,000 islands** and islets, along with **nearly 130 active volcanoes**.
- Also known as the **Circum-Pacific Belt, the Ring of Fire** denotes a **pathway around the Pacific Ocean** marked by **active volcanoes and frequent seismic activity**.
- The **prevalence of volcanoes** and **earthquakes along** this belt is a consequence of intense tectonic plate movements in the region.
- At **many points along the Ring of Fire, tectonic plates** intersect at **convergent boundaries known as subduction zones**.
- In these zones, the **lower plate is forced downward**, or **subducted, by the upper plate.**
- As the **rock undergoes subduction,** it **melts and transforms into magma**.

- The **abundance of magma** in **close proximity to the Earth's surface** creates **favorable conditions for volcanic activity.**
- A **noteworthy exception** occurs at the **boundary between the Pacific and North American Plates.**
- This **segment of the Ring of Fire functions as a transform boundary,** where plates **slide horizontally** past one another.
- Such **boundaries give rise to a substantial number of earthquakes** as tension in the Earth's crust accumulates and is subsequently released.

Some facts about volcanoes:
- Volcanoes are **openings, or vents where lava, tephra (small rocks)**, and **steam erupt onto the Earth's surface.**
- Volcanoes **can be on land and in the ocean.**
- They are, in part, a **result of their own eruptions** but also the general formation of our planet, as tectonic plates move.
- Volcanoes can be **classified as**:
    o **Active:** Have a **recent history** of eruptions
    o **Dormant:** Have **not erupted for a long** time but may erupt in the future
    o **Extinct:** Are **not expected to erupt in the future**
- There are **four main types of volcanoes: cinder cones, composite or stratovolcanoes, shield volcanoes and lava domes.**
- Their type is **determined by how the lava from an eruption flows** and how that flow affects the volcano, and, as a result, how it affects its surrounding environment.

India's extreme rainfall 'corridor'

Subject :Geography

Section: Physical geography

Context:
- The **Indian monsoon** has well-known features, such as the **onset of the monsoon, the withdrawal, the active and break periods,** and **the low-pressure systems (or monsoon depressions).**
- Every aspect of the monsoon has been affected by **global warming**.

Where does extreme rain occur?
- **India's monsoon forecasts** rely heavily on its relation to the **El Niño** and the **La Niña** phenomena, although this relation holds only about **60%** of the time.
- A new study has found that a remarkable **stationary element exists in terms of where synchronised extreme rainfall events occur**.
- The **large-scale extreme rainfall events** are actually **simultaneous** or **near-simultaneous heavy rain episodes** that are strewn across a 'highway' that extends from parts of **West Bengal** and **Odisha** to parts of **Gujarat** and **Rajasthan**.
- This corridor has **remained unchanged** from **1901** to **2019**.

What does this mean for the monsoon's stability?
- Traditional statistical methods tend to miss the complex relations between multiple nodes of rainfall centres.
- This study shows that the most active nodes have followed this 'highway' for more than a century.
- The link lengths between nodes, or the scales of synchronicity, have remained nearly constant, at an average value of about 200 km.

What do the findings mean for forecasts?
- Researchers had earlier considered that stationary elements no longer exist in climate systems because of global warming. But the **Indian monsoon** is able to **synchronise heavy rain events** as well as **stick to the 'highway'** for such a long time.
- One of the main factors for this synchronised and stable heavy rainfalls is the **range of mountains running along the west coast and across Central India**.
- This finding will help in better predictions and forecasts of heavy rainfall.
- It will also help in **reducing risk** in the fields of agriculture, water, energy, transportation, health, etc.

Have earthquakes really increased in India due to activation of Almora Fault?

Subject :Geography

Section: Physical geography

Context:

- There has been an increase in the number of earthquakes in January to November, 2023 compared to the last three years and it was mainly attributed to the **activation of the Almora fault** in **Western Nepal**.

Details:
- However, various geologists reject the theory that Almora fault is active.
- None of the faults in the **Himalayas** — Main Boundary Thrust, North Almora Thrust or South Almora Thrust — are **active.**

Thrust fault:
- A thrust fault is a **break in the Earth's crust.** There are **two thrusts** in **Kumaon, Uttarakhand:** One is the **South Almora Thrust** and the other is the **North Almora Thrust.**

Almora fault:
- The **Almora fault** is a **high angle west-northwest-east-souteast** to **northwest-southeast** trending **tectonic plane** that separates the **Garhwal group of inner lesser Himalayas** in the **north** from **Jaunsar**and**Dudatoli Groups of outer lesser Himalayas** in the **south.**
- This **Almora Fault** extends to **western Nepal.**
- The Almora Thrust is not deep and does not reach the mantle.

Main Himalayan Thrust:
- The **Main Himalayan Thrust (MHT)** is a décollement under the **Himalaya Range.** This thrust fault follows a **NW-SE strike,** reminiscent of an **arc,** and **gently dips** about **10 degrees** towards the **north**, beneath the region.
- It is the **largest active continental megathrust** fault in the world.

Peninsular river basins in India more likely to face widespread flooding than transboundary rivers: Study

Subject : Geography

Section: Indian geography

Context:
- Past focus primarily on **localized flooding**, prompting researchers from **IIT Gandhinagar** to study and highlight **widespread floods** in **major Indian river basins.**

Analysis Findings:
- **Mahanadi** and **Narmada basins** had the **most frequent widespread floods** (40 events), tied to seasonal trends influenced by **monsoon patterns** and **heavy rainfall**.
- **River basins in peninsular India** (Narmada, Mahanadi, Godavari, Krishna, Cauvery) show **higher probabilities** of widespread flooding compared to **Ganga** and **Brahmaputra**.
  - Narmada (59%), Mahanadi (50%), Godavari (42%), Krishna (38%), Cauvery (19%), Ganga (21%), and Brahmaputra (18%) indicate varying probabilities of widespread flooding.
- Basins experience widespread floods during **monsoon months,** except **Cauvery,** with specific months linked to **heavy rainfall periods** (**July-September** for **Godavari, Mahanadi,** and **Narmada**).
- **Impact of Widespread Flooding:** Widespread flooding, covering large basin areas, causes **significant losses** compared to **localized flooding**.
- **Climatic Factors:** Rainfall patterns, monsoon intensity, and atmospheric circulations significantly influence flood occurrences.
- **Climate Change Impact:** With a **warming climate**, the drivers of widespread floods are expected to change in **timing, occurrence,** and **probability,**signalling**potential alterations in flood patterns. Atmospheric rivers** play a **significant role** in these flood events.

Atmospheric River:
- Atmospheric rivers are **long, narrow bands of moisture** in the atmosphere that **extend from the tropics to higher latitudes.** These rivers in the sky can **transport 15 times the volume of the Mississippi River**.
- When that **moisture** reaches the **coast and moves inland,** it **rises over the mountains,** generating **rain and snowfall.** Many fire-weary westerners welcome these deluges, but atmospheric rivers can trigger other disasters, such as extreme flooding and debris flows.
  - Also called **"Pineapple Express"** storms that carry moisture from **Hawaii** to the **United States West Coast** are just one of their many flavors.
- The **2018 Kerala floods, 2022 Pakistan floods** and **lower Mississippi River floods** in **2008, 2011** and **2015–19** have been linked with **atmospheric rivers.**

Madhya Pradesh CM's Assertion on Ujjain and the Prime Meridian: A Brief History of Time Measurement

Subject :Geography

Section: Indian Physical geography

Context:

- Madhya Pradesh Chief Minister Mohan Yadav recently claimed in the state Assembly that **"Ujjain is the global Prime Meridian,"** asserting that India, specifically Ujjain, determined the world's time approximately **300 years ago**, predating the shift of the **Prime Meridian to Paris and later to Greenwich.**

A Glimpse into the History of Time Measurement:

- Humans have always had a sense of time, recording dates using units such as the **lunar day (tithi) in ancient India.**
- **The Industrial Revolution in the 18th century** marked a significant shift, necessitating more accurate timekeeping with the advent of better clocks and the rise of modern factories.

Nationalization of Time:

- In the early stages of the **Industrial Age**, time remained local, with each factory and town setting its own time.
- The need for standardization emerged in the **19th century as technological advancements** interconnected the world through railways, steamships, and telegraphs.

Transition to Global Time:

- The move from local to global time began in the **1870s,** driven by the need to standardize international schedules for transportation.
- **The International Meridian Conference in 1884** established the Greenwich Mean Time as the global Prime Meridian, reflecting the geopolitical dominance of Britain at the time.

Ujjain's Historical Connection:

- The Madhya Pradesh Chief Minister's claim about Ujjain as the Prime Meridian 300 years ago is rooted in ancient Indian astronomy. The Sanskrit treatise **Surya Siddhanta** from the **4th century CE** described a Prime Meridian passing through **Rohitaka (modern-day Rohtak) and Avanti (modern-day Ujjain).** The city's astronomical significance continued with the observatory built by **Sawai Raja Jai Singh of Jaipur in 1719.**

Revanth govt. plans an onsite 'expose' into Telangana's Kaleshwaram project

Subject :Geography

Section: Indian Physical geography

Concept:

- The Kaleshwaram Lift Irrigation Scheme of Telangana is a multi-purpose irrigation project on **the Godavari River** in Kaleshwaram, Bhupalpally in Telangana.
- The project starts at the **confluence point of Pranahita River and Godavari River**.
- Originally called Pranahita-Chevella project in erstwhile Andhra Pradesh, it was redesigned, extended and renamed as Kaleshwaram project in Telangana in 2014.
- The project will also support Mission Kakatiya and Mission Bhagiratha schemes of telangana designed to provide drinking water to many villages and improve the capacities of tanks.

Additional Information:

Godavari River

- The Godavari is India's second longest river after the Ganga.
- Source: Trimbakeshwar, Maharashtra.
- Areas drained: It flows east for 1,465 kilometres, draining the states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, Odisha, and Karnataka, ultimately emptying into the Bay of Bengal through its extensive network of tributaries.
- Tributaries: The major tributaries of the river are classified as the left bank tributaries which include the Purna, Pranhita, Indravati and Sabari River and the right bank tributaries are Pravara, Manjira, Manair.
- Kumbh Mela is held at Nasik (on the Godavari), Prayagraj (at the confluence of Ganga, Yamuna, and the mythical Saraswati), Haridwar (on the Ganges), and Ujjain (on the Shipra) every four years by rotation.
- Sadarmatt Anicut across river Godavari is one among the two irrigation projects in the International Commission on Irrigation and Drainage (ICID) Register of Heritage Irrigation Structures.

Pranahita River

- Pranahita River is the largest tributary of the Godavari river covering about 34% of its drainage basin.

- It is a confluence of various other smaller tributaries like Wardha, Penganga and Wainganga Rivers

Mapping the socio-economic changes in the lower Cauvery delta
Subject :Geography

Section: Mapping

Context:
- In **2018,** the **Foundation for Agrarian Studies** launched a project to study agrarian relations in the **lower Cauvery delta** with a special focus on **two villages**- **Palakurichi** and **Venmani.**

Details:
- Both the villages are at the "tail-end" of the **Cauvery irrigation system,** and thus are deeply affected when there is a f**all in Cauvery water supply.**
- The **lower Cauvery delta** was known for its **cultivation of rice** and **agricultural surplus**.

Key changes:
- During **Green Revolution**, the region changed from **single crop region** to a **double cropped region,** but again in **2018,** the region has changed into **single rice crop region.**
- The delta has **declined** as a **hub of rice cultivation** in the State, coinciding with the **fall in the availability of water,** caused mainly by changes in **water-sharing arrangements** for **cauvery river** between **Karnataka,** and **Tamil Nadu.**
- **Reasons for decline in crop production-**Uneven supply of water from the Cauvery, Agriculture and irrigation policy failure, crop unsuitablity, lack of modernisation of micro-irrigation system, events of drought and flood (due to cyclone Gaja).
- **Acute inequality persists** among the agricultural workers and landlords.
- The **largest class** in the villages is a **class of wage labour,** engaged in multiple agricultural and non-agricultural jobs.

Crumbling hills
Subject: Geography

Section: Places in news

Mineral resources in Meghalaya:
- **Meghalaya,** a state in the northeast region of India, is **bound** to the **south** by the **Bangladeshi** divisions of **Mymensingh** and **Sylhet,** to the **west** by the **Bangladeshi** division of **Rangpur,** and to the **north** and **east** by **India's State of Assam**.
- **Meghalaya** has an abundance of **coal** and **limestone.**
- **Other minerals found in Meghalaya-** uranium, granite, kaolin, clay and glass sand.
- About **9%** of the **country's total limestone reserves** are distributed across the State.
- **Limestone mining** is carried out by **open cast method** both at **large**- and **small-scale**
- Used chiefly for manufacturing products such as **cement, lime** and **edible lime** and exported to **Bangladesh.**

Mineral distribution across Meghalaya:
- **Coal-** East and South Garo Hills, East and West Khasi Hills and Jaintia Hills district.
- **Limestone-**Jaintia Hills in the East, Garo Hills in the West, Cherrapunjee, Mawlong, Ichamati, Shella, and Komorrah in the **East Khasi Hills district.**
- **Uranium:**Domiasiat and Porkut-Nongjri around Wahkynshi area in the West Khasi Hills District
- **Granite:** East Khasi Hills, West Khasi hills and East Garo hill district.

- **Kaolin (China clay):** Mawphlang, Smit and Laitlyngkot in the East Khasi Hills District; Thandlaskein, Shangpung, Mulieh and Mynsngat in the Jaintia Hills District; and Darugiri in the East Garo Hills District.
- **Glass sand:** Laitryngew, Umstew and Kreit in the **East Khasi Hills** and Tura in the **West Garo Hills**
- **Other minerals:**
    - Quartz occurs almost in all districts in the Northern part of the State.
    - Feldspar and iron ore are reported in the Ri-Bhoi and West Khasi Hills Districts; and
    - Bauxite and rock phosphate are found in the Jaintia Hills District.

Challenges in mining in Meghalaya:

- Uncontrolled coal mining and illegal limestone mining
- Roadside dumping of coal is a major source of pollution
- Rat hole mining (banned by **NGT** in **2014**)
- **Environmental implications-** loss of forest cover, pollution of water, soil and air, depletion of flora and fauna, reduction in biodiversity, erosion of soil and instability of rock masses, changes in landscape and degradation of arable land.

Dangerous road to the American Dream, via South America and Mexico

Subject : Geography

Section: Places in news

Context:

- People from **India** (Punjab, Haryana and now Gujarat) and **Pakistan** take an **illegal route** to enter **the USA** and **Canada,** that passes through the **jungles of Panama,** risking their lives. The route is called the **'Donkey route'**.

First stop: Latin America:

- Countries like **Ecuador, Bolivia,** and **Guyana** have **visas on arrival** for **Indian citizens.** Some other countries, including **Brazil** and **Venezuela,** give **tourist visas** to **Indians** easily.
- A **migrant's route** also depends on which countries his agent has **'links'** in — links to **human trafficking networks**.
- The nearer a country is to the US border, the more difficult it is to get a visa from India.

Crossing a dangerous forest- Darién Gap:

- From **Colombia** (or any other **Latin American country**), the migrants enter **Panama**. This involves crossing the **Darién Gap**.
    - The **Darién Gap** is a geographic region in the **Isthmus of Darién** or **Isthmus of Panama** connecting the **American continents** within **Central America,** consisting of a **large watershed, forest,** and **mountains** in **Panama's Darién Province** and the **northern portion of Colombia's Chocó Department**.
- Risks here include a **lack of clean water, wild animals,** and **criminal gangs.** Migrants can face **robbery** and even **rape** in this region — crimes committed here go unreported and unpunished.
- **Guatemala** is a big coordination centre on this route. **Migrants** are handed over to new **traffickers** here.
- **Alternate route:**
    - There is one more route from **Colombia** that starts from **San Andrés,** to avoid the **forest in Panama.** But it is not much safer.
    - From **San Andrés,** migrants take boats to **Nicaragua**, a country in **Central America.** Fishing boats with illegal migrants go to **Fisherman's Cay**, around 150 kilometres from **San Andrés.** From there, migrants are transferred onto another boat to move forward to **Mexico**.

At the US border:

- The **3,140-km border** separating the **United States** and **Mexico** has **fencing,** which the migrants have to jump across. Many choose to cross the dangerous **Rio Grande River.**
- **A new, safer route:**
    - There is another easier donkey route- migrants first go to **Europe,** and from there, directly to **Mexico**.
- An **average donkey trip** may cost between **Rs 15 lakh** and **Rs 40 lakh.** But sometimes, the **cost is as high as Rs 70 lakh**.

Assam-Meghalaya panels on boundary dispute to submit reports by Dec. 31

Subject :Geography

Section: Places in news

Context:

- The regional committees on the boundary dispute between Assam and Meghalaya have been asked to submit their reports by December 31, a Meghalaya government official said.

What is Assam-Meghalaya Border Dispute?

- Assam and Meghalaya have a longstanding dispute in 12 stretches of their 884-km shared border.
- The Assam-Meghalaya border **dispute are the areas of Upper Tarabari, Gazang reserve forest, Hahim, Langpih, Borduar, Boklapara, Nongwah, Matamur, Khanapara-Pilangkata, Deshdemoreah Block I and Block II, Khanduli and Retacherra.**

History:

- During **British rule,** undivided Assam included present-day Nagaland, Arunachal Pradesh, Meghalaya and Mizoram.
- **Meghalaya was carved out in 1972,** its boundaries demarcated as per the Assam Reorganisation (Meghalaya) Act of 1969, but has held a different interpretation of the border since.
- In 2011, the Meghalaya government had identified 12 areas of difference with Assam, spread over approximately 2,700 sq km.

Major Point of Concern:

- A major point of contention between Assam and Meghalaya is the **district of Langpih in West Garo Hills** bordering the Kamrup district of Assam.
- Langpih was part of the Kamrup district during the British colonial period but post-Independence, it became part of the Garo Hills and Meghalaya.
- Assam considers it to be part of the Mikir Hills in Assam.
- Meghalaya has questioned Blocks I and II of the Mikir Hills -now Karbi Anglong region - being part of Assam.
- Meghalaya says these were parts of erstwhile United Khasi and Jaintia Hills districts.

Attempts to Resolve Dispute:

- In **1985**, under the Assam chief minister and Meghalaya chief minister, an **official committee was constituted under the former Chief Justice of India Y V Chandrachud.**
- However, a solution was not found.
- Both state governments identified six out of 12 disputed areas for resolution in the first phase.
- Out of 36.79 sq km of disputed area taken up for settlement in the first phase, Assam would get full control of 18.46 sq km and Meghalaya of 18.33 sq km.
- In March 2022, a Memorandum of Understanding was signed based on these recommendations.
- The **second round of discussions for the remaining six areas commenced** from the end of November 2022.

What Additional Can be done to Resolve the Dispute?

- Boundary disputes between the states can be **settled by using satellite mapping** of the actual border locations.
- Under **Article 263 of the Constitution, the Inter-state council is expected to inquire and advise on disputes,** discuss subjects common to all states and make recommendations for better policy coordination.
- Similarly, **Zonal councils** need to be revived to discuss the matters of common concern to states in each zone—matters relating to social and economic planning, border disputes, inter-state transport, etc.
- India is the epitome of **unity in diversity.** However, in order to strengthen this unity furthermore, both the centre and state governments, need to imbibe the ethos of cooperative federalism.

Bulk carrier hits mine in Black Sea, two persons injured

Subject : Geography

Section: Places in news

In the news:

- A **Panama**-flagged bulk carrier, headed to a **River Danube port** to load grain, has hit a mine in the **Black Sea** injuring two persons.
- It was the latest incident of a civilian vessel hitting an explosive in the **Black Sea**.

Black Sea:

- It is a **marginal sea** of the **Atlantic Ocean** lying between **Europe** and **Asia.** It is bordered by **Bulgaria, Georgia, Romania, Russia, Turkey,** and **Ukraine.**
- It is supplied by **major rivers,** principally the **Danube, Dnieper,** and **Don**.
- The Black Sea ultimately drains into the **Mediterranean Sea**, via the **Turkish Straits** and the **Aegean Sea.**
- The **Bosporus Strait** connects it to the small **Sea of Marmara** which in turn is connected to the **Aegean Sea** via the **Strait of the Dardanelles.**
- To the **north,** the **Black Sea** is connected to the **Sea of Azov** by the **Kerch Strait.**

- The **Black Sea** covers 436,400 km2 (not including the Sea of Azov), making it the **world's largest inland body of water**.

Panama:

- It is a **transcontinental country** in **Central America**, spanning the **southern tip of North America** into the **northern part of South America.**
- It is bordered by **Costa Rica** to the **west, Colombia** to the **southeast, the Caribbean Sea** to the **north**, and the **Pacific Ocean** to the **south**.
- **Isthmus of Panama:** Also called the **Isthmus of Darien,** is the narrow strip of land that lies between the **Caribbean Sea** and the **Pacific Ocean**, linking **North** and **South America.**
- **The Panama Canal** is an **artificial 82-kilometre (51-mile) waterway** in **Panama** that connects the **Atlantic Ocean** with the **Pacific Ocean,** cutting across the **Isthmus of Panama,** and is a conduit for maritime trade.

Placing stone crushers in the 'green' category will create a huge environmental mess

Store Crusher Units:

- A **stone crushing plant** typically works by **crushing large stones into smaller pieces.** The crushed stones are then transported through a conveyor belt to a storage area, where they are screened, separated, and sorted according to size and other criteria.
- In **July 2023**, the **Central Pollution Control Board (CPCB)** proposed a new draft of classification criteria for industries into the **red, orange, green** and **white categories**.
- The **stone crusher units** are currently categorised into the **'orange category'.**
- Stone crusher units are **source** of **fugitive emissions, total suspended particles (TSP) and fine particulate matter (PM) 10,** and **ultrafine PM2.5.**
- **Health impact:** Environmental pollution by stone crushing units affected **36 per cent workers with diseases** like eye irritation, asthma, chest pain, tuberculosis, etc.
- **Noise pollution** from the operation of the crusher units is another cause for concern.

fugitive emissions:

- Fugitive emissions are **leaks and other irregular releases of gasses or vapours** from a **pressurized containment** – such as **appliances, storage tanks, pipelines, wells,** or **other pieces of equipment** – mostly from **industrial activities.**
- In addition to the economic cost of lost commodities, fugitive emissions contribute to **local air pollution** and may cause further environmental harm. Common industrial gases include refrigerants and natural gas, while less common examples are **perfluorocarbons, sulfur hexafluoride,** and **nitrogen trifluoride**.
- Most occurrences of fugitive emissions are **small,** of **no immediate impact**, and **difficult to detect.**

History

Dhanwantri image in IMC logo

Subject: History

Section: Ancient India

Context: Dhanwantri image in IMC logo. Why doctor protesting

More about the news:

- The **logo of the National Medical Commission**, featuring a **colorful depiction of the physician god Dhanvantri,** has faced criticism **from doctors, prompting the Indian Medical Association** to **call for "corrective steps."**
- The IMA **expressed concerns** about the **neutrality of the logo**, emphasizing that s**ymbols of national institutions** should be inclusive and avoid causing grievances among different sections of society.
- NMC officials **defended the logo, noting that the image of Dhanvantri** had always been part of it, albeit in a dark silhouette. The new logo **adds color to the image and replaces 'India' with 'Bharat'.**
- The officials pointed out that the **use of mythological symbols, such as the Caduceus in Greek mythology,** is not uncommon in medical logos. Officials clarified that **Dhanvantri had always been part of the logo, even though the logo was officially adopted in 2022 when the NMC took over from the Medical Council of India in 2020**.

Who was Dhanvantari

- **Lord Dhanvantari** holds a significant role in Ayurveda's history, revered as the **physician of the Gods** and a skilled surgeon.
- In Hinduism, **worshipers seek his blessings for effective healing**.
- Legend has it that, **as the king of Kashi i.eDivodasa,, Dhanvantari taught the science of Ayurveda to sages**, including the r**enowned surgeon Susruta.**

- Dhanvantari recasted **Brahma's Ayurveda into 8 divisions** i.e **shalya, shalakya, kayachikitsa, bhutavidya, kaumarabhrtya, agadatantra, rasayanatantra, vajikaranatantra** and began teaching within the **framework of pratyaksa (perception), agama (authoritative scripture), anumana (inference) and upamana (analogy).**
- He is also considered an **avatar of Vishnu**, and a well-known tale depicts him **emerging from the churning ocean with a bowl of nectar** during the quest for the elixir of life.
- In the context of Ayurveda, **physicians of the School of Atreya** were known to **refer surgical cases to practitioners from the School of Dhanvantari.**

What is the meaning of the name:

- The **term "dhanus"** is a **symbolic representation** indicating the **science of surgery, and Dhanvantari,** having **mastered it, is associated** with this knowledge.
- The word "**dhanvan**" is **linked to the concept of a desert,** as seen in **RigVeda [V.36.1], where "dhanvachara"** signifies **someone moving in a desert.**
- This aligns with a **Vedic mantra expressing Lord Vishnu** as akin to a **place in the desert where water is provided to travelers** (**dhanvanivaprapaasi**).
- Therefore, **Dhanvantari, as the incarnation of Lord Vishnu** holding a **pot of nectar, symbolizes a nourishing oasis in the desert of worldly existence.**

What is the story of Dhanvantari:

- **Lord Dhanvantari** is prominently **featured in the Bhagavata Purana**, **emerging** from the **Ocean of Milk** during the **churning episode** known as **Samudra Mathana**.
- As the Devas and Asuras churned the ocean using the **Mandara mountain and Vasuki, Dhanvantari appeared holding the pot of amrita (nectar)**.
- This nectar was eventually **seized by the Asuras**, leading to the intervention of another avatar, Mohini, who reclaimed it.
- **Dhanvantari is revered** as the **father of Ayurveda,** and according to the **Charaka Samhita,** Ayurvedic knowledge is eternal, revealed in each cycle of the universe's creation. **Lord Vishnu, when required, incarnates as Dhanvantari to reintroduce Ayurveda and alleviate human suffering.**
- The **churning of the ocean of milk**, a significant episode **symbolizing spiritual endeavor for Self-realization**, involves various divine interventions.
- Lord Dhanvantari **emerged during this process,** personifying the d**ivine source of Ayurvedic wisdom.**
- The subsequent events included the appearance of the **deadly poison (halahala), consumed by Lord Shiva**, and the **ultimate manifestation of Lord Dhanvantari holding the coveted pot of ambrosia.**
- The **demons, driven** by **greed, engaged in quarrels** over the **nectar pot, leading to Lord Vishnu's trickery**.
- He assumed the **form of Mohini,** a captivating woman who successfully recovered the nectar from the demons and **distributed it exclusively to the demigods**. This revitalized the demigods, enabling them to triumph over the demons.
- **Lord Vishnu had prophesied Dhanvantari's reappearance** to teach the science of Ayurveda.
- True to the prophecy, **Dhanvantari descended at the plea of Lord Indra,** who **witnessed the afflictions of humanity.**
- The scriptures **emphasize that remembering Dhanvantari's** name can provide relief from all diseases.
- **King Dirghatamas of Kashi** earnestly **performed austerities** to please **Lord Dhanvantari**, seeking the boon of a son.
- Pleased with the king's devotion, **Dhanvantari was born in the royal household of Kashi.**
- He **orally imparted the wisdom of Ayurveda** to sages and rishis, whose disciples later recorded these teachings in the **Agni Purana.**
- Dhanvantari's legacy **endured through disciples** like **Susruta, Pauskalavata, Aurabha, and Vaitarana.**

Garba dance of Gujarat makes it to UNESCO list

Subject: History

Section: Art and culture

Context:

- Gujarat's traditional dance form, "Garba," has been added to the UNESCO Intangible Cultural Heritage list, becoming the **15th cultural element from India** to receive this recognition.

More about Garba

- Garba is a **traditional dance form from Gujarat,** India, primarily performed during the Navratri festival to **worship the Hindu goddess Durga.**
- **Origins:** The term "Garba" comes from "Garbha" (womb) and "Deep" (lamp).The dance is performed around a central lamp or a representation of the Goddess, symbolizing life, death, and rebirth.

- **Nature of Dance:** Garba is characterized by energetic, circular movements, clapping hands, and intricate footwork, reflecting the cyclical nature of life.
- **Music and Instruments:** The dance is accompanied by rhythmic music, traditionally using instruments like the dhol (drum), harmonium, and flute, with modern adaptations including electronic instruments.
- **Traditional Attire:** Women wear a chaniya choli (a colorful, embroidered skirt set) and men don a kediyu and dhoti or pajama, often embellished with mirrors and embroidery.
- **Inclusivity and Community Aspect:** The dance is inclusive, attracting people of all ages and backgrounds, and emphasizing community participation.
- **Dandiya Raas Association:** Garba is often followed by Dandiya Raas, another dance form using sticks (dandiyas), especially after the Aarti (worship ritual).

India's ICH on the UNESCO list

- **Sangeet Natak Akademi is the nodal organisation** which looks after this function, and files nominations of intangible cultural entities from India, for evaluation by the international body.
- ICG from India include **Kolkata's Durga Puja (2021), Kumbh Mela** (2017), **Navroz** (2016), **Yoga** (2016), **traditional brass and copper craft of utensil-making** among coppersmiths of Punjab (2014), **Sankirtana**, a ritual musical performance of Manipur (2013), and the **Buddhist chanting of Ladakh** (2012).
- Before 2011, the list included **Chhau dance, Kalbelia folk songs and dance of Rajasthan, and Mudiyettu,** a dance drama from Kerala (2010), **Ramman**, a religious festival and theatre performance of Garhwal in the Himalayas (2009), and **Kutiyattam or Sanskrittheatre, and Vedic chanting (2008).**
- **Ramlila, a traditional performance of Ramayana, was also included in 2008**.

What is UNESCO Intangible Cultural Heritage (ICH) ?

- ICH means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artifacts and cultural spaces associated with them that communities, groups and, in some cases, individuals recognize as a part of their cultural heritage.
- Furthermore, its importance is not in the **cultural manifestation itself**, but in the wealth of knowledge, know-how and skills that are transmitted from one generation to the next.
- The **adoption of the Convention for the Safeguarding of the ICH by the General Conference of UNESCO in 2003** was a crucial step towards preserving intangible heritage.
- UNESCO's list of Intangible Cultural Heritage of Humanity was established in the year 2008.

Criteria for the selection

- There are three criteria for an intangible cultural heritage to be inscribed in the United Nations list.
- **The entity must-**
  - be **recognized by communities**, groups and, in some cases, individuals as part of their cultural heritage,
  - be **transmitted from generation to generation** and be constantly recreated by communities and groups in response to their environment, their interaction with nature and their history and
  - **provide them with a sense of identity and continuity**, thus promoting respect for cultural diversity and human creativity

House Panel recommend Prayer at protected site of religious significance

Subject: History

Section: Art and Culture

Context: House Panel recommend Prayer at protected site of religious significance

More about the news:

- A **parliamentary panel** in India has **recommended exploring** the **possibility of allowing puja (worship) and religious activities** at Archaeological Survey of India (ASI) protected monuments that have religious significance.
- This **could open the door** for rituals **at dilapidated temples**, dargahs, churches, and other religious sites.
- The **ASI currently permits worship** at monuments **where traditions were ongoing at the time of custody.**
- The **Ministry of Culture** will explore the **feasibility, but the policy generally prohibits reviving worship** if it wasn't present during ASI protection or has been abandoned for a long time.

Why prayers are held at some protected sites:

- According to **Archaeological Survey of India** rules, **prayers are allowed at protected sites only if they were "functioning places of worship"** at the time the ASI took charge of them.

- **Some well-known examples** include the **Taj Mahal, where namaz is held every Friday**, and other living monuments such as **three mosques in Kannauj, the Roman Catholic Church in Meerut, Nila Mosque in Delhi's Hauz Khas Village,** and various **Buddhist monasteries in Ladakh.**
- However, **many protected monuments** also witness **"unauthorized worship," as per ASI records**, including **Lal Gumbad, Sultan Ghari's tomb, and Ferozeshah Kotla, all in Delhi.**

Some facts about the Archaeological Survey of India (ASI):

- **ASI** is the **premier organization** for archaeological **research, scientific analysis, excavation of archaeological sites**, and conservation and preservation of protected monuments.
- It is an **attached office under the Department of Culture (Ministry of Culture).**
- ASI was **founded in 1861** by **Alexander Cunningham who became its first Director-General.**

What are the Regulation and protection of monuments:

- The ASI **regulates construction around the protected monuments** through the **Ancient Monuments and Archaeological Sites and Remains (Amendment) Act, 2010.**
- The Act **prohibits the construction of 100 metres** around a protected monument. The **next 300-metre radius is regulated too.**
- Further amendments have been **proposed which seek to do away with the ban on construction within 100 metres** of a ASI-protected monument and regulate **construction within 100-200 metres,** under the Act that protects monuments and sites over 100 years old.
- This is expected to **give more powers to the ASI on the encroachments.**

What is a National Monument

- 'Ancient Monument' is **defined under the Ancient Monument and Archaeological Sites and Remains Act,1958**
- The Act **defines Ancient Monument as any structure or monument or any cave, rock sculpture, an inscription that is of historical,** or archaeological interest.
- Further, **Ancient Monument** has to be in **existence for not less than 100 years**
- **Maintained by**: The **Central Government is authorised** to maintain, **protect and promote Monuments of National Importance.**
- **Nodal Authority:** Monuments of National Importance are **designated by the Archaeological Survey of India (ASI).**

In Greater Noida, a Shah Jahan-era tomb with Red Fort link

Subject : History

Section: Art and Culture

Context: Shah Jahan-era tomb with Red Fort link

More about the news:

- Greater Noida, known for modern infrastructure, **houses a historical gem—the tomb of Ikram Khan,** a key figure in the c**onstruction of Delhi's Red Fort** during Shah Jahan's era.
- **Located in Kasna Park**, the **tomb, built with red sandstone**, remains in a state of decay.
- Historians c**onnect the structure with the Nihalde Sati Temple,** linked to the Rajasthani epic of Nihalde and Narsultan.
- Despite its **historical significance,** the **tomb has suffered neglect**, and there are calls for its restoration to preserve this unique monument dedicated to a craftsman.
- The **story of Nihalde and Narsultan adds a layer of folklore** to the site, emphasizing its cultural importance.

What is the story of Nihalde and Narsultan:

- The tomb of **Ikram Khan** in Greater Noida has **historical ties to the Rajasthani epic of Nihalde and Narsultan.**
- Legend has it that **Nihalde, spotted by Rajasthani prince Narsultan,** moved to his **kingdom at Keshavgarh** after their marriage.
- Following **Narsultan's exile due to court scheming**, **Nihalde pledged Sati, promising to jump on a funeral pyre if he didn't return by Teej.**
- Unfortunately, **Narsultan arrived late**, and in her memory, **he built the Nihalde Sati Temple,** adding **cultural significance** to the historical site.

From Gupta to Mughal history of Krishna Janam Sthan

Subject :History

Section: Art and Culture

Context: The Allahabad High Court has ordered a survey of the Shai Idgah mosque

Some facts about the Krishna Janam Sthan:

- The Krishna Janmasthan, the **birthplace of Lord Krishna,** has a rich history dating back **2,000 years**.

- The site, l**ocated in Mathura along the Yamuna river**, gained significance during the **Mauryan era.**

- The **first Vaishnava temple** was likely built in the 1**st century CE**, with a grander temple constructed during the **reign of Chandragupta II** around 400 CE.

- **Mahmud of Ghazni's** plundering raids in the **11th century impacted Buddhist and Jain centers** but **did not destroy Krishna worship**.

- The **decline of temples during the Delhi Sultanate** gave rise to a **new form of Vaishnavism,** propagated by saints **like Nimbarka, Vallabha, and Chaitanya.**

- Under the **early Mughals, religious activity in Braj flourished,** and **Akbar made land and revenue grants to various Vaishnavite sects.**

- In **1618, Raja Veer Singh Deo** built a **grand temple at the Katra site**.

- In **1650**, the grand temple at Mathura, as **described by French traveler Jean-Baptiste** Tavernier, exhibited a unique octagonal shape and was constructed with red sandstone.

- **Venetian travelerNiccolao Manucci**, visiting in the late 1650s, noted its i**mpressive height, with a gilded pinnacle** visible from Agra.

- In **1660, Aurangzeb appointed Abdul Nabi Khan** as the **governor of Mathura**, a figure disliked by the Hindu population.

- Subsequently, in 1**661-62, Khan constructed the Jama Masjid** at the site where **Sikandar Lodhi had previously destroyed** a temple.

- In **1666, Abdul Nabi Khan dismantled the protective railing** erected by Dara Shikoh**around the Keshavdev temple.**

- In **1669, Aurangzeb issued a royal farmaan** ordering the **destruction of all Hindu schools and temples,** across the Mughal Empire.

- The **Kashi Vishwanath temple in Kashi** was **destroyed after the farmaan** was issued.

- In **1670, he specifically ordered the destruction of Mathura's Keshavdev temple**, and sponsored the construction of the **Shahi Idgah in its place**

- In **1803, Mathura** came under the **control of the British East India Company.**

- In **1815, the Company auctioned 13.37 acres of land** at the **Katra Keshavdev site to Raja Patnimal,** a wealthy banker from Varanasi.

- The ownership of this land is currently subject to ongoing litigation, with the **Hindu side claiming it included the Shahi Idgah mosque**, while the Muslim side disputes this.

- Despite Raja Patnimal's desire to construct a temple on the site, financial constraints prevented its realization. Facing lawsuits related to the land, his **descendants sold it in 1944 to industrialist Jugal Kishore Birla**.

- In **1951, the Shri Krishna Janmabhoomi Trust** was established **by Birla** to facilitate the construction of a temple at the site.

- **Construction commenced in 1953 and was completed in 1983**, shaping the temple's current form, situated adjacent to the Shahi Idgah mosque.

Bihar to develop Sita birthplace

Subject :History

Section: Art and culture

Context: Bihar to develop Sita birthplace

More about the news:

- Bihar Chief Minister Nitish Kumar has **launched a Rs 72-crore development plan for Goddess Sita's birthplace at Punaura Dham in Sitamarhi**.

What are the mentions of present-day Bihar in the Ramayana:

- The **Valmiki Ramayana**, the primary source book for many subsequent versions, including **Tulsidas's Ramcharitmanas,** refers to Sita using four words — **Vaidehi, Janaki, Sita, and Mithilapuri. Mithilapuri,** an apparent **reference to Mithila,** connects to **Sita's birth story,** where she was **found in a ploughed field by King Janak** in Ramayana.

- According to Valmiki, Ram and Laxman **visited various sites in Bihar during their travels with Maharishi Vishwamitra**, including **Chitrakoot, Saran district, Siddhashram in Buxar, the confluence of Ganga and Sone near Patna, and Ahalya's ashram (Ahirouri in Mithilapuri).**

- Mithila plays a **significant role during Ram and Sita's wedding in the Ramayana**.

- Valmiki mentions Ram visiting Mithilapuri once, while some later versions claim a visit after his coronation.

Which is the birthplace of Sita in Sitamarhi, the Janaki temple or the Punaura Dham

- Contrary to the **belief that Janaki Sthan in Sitamarhi** was Sita's birthplace, recent research spanning nearly a decade indicated that the **Janaki temple was constructed around 200 years ago based** on a sage's dream.
- The research, relying on Valmiki Ramayan and travelers' accounts, **identified Punaura Dham as Sita's birthplace.**
- The site, comprising a **100-year-old temple, Sitakund, Sita Vatika, and Luv Kush Vatika,** was recommended to the Bihar government and subsequently accepted by the state and central governments for development in the Ramayana Circuit.
- The decision **to develop Punaura Dham** followed conclusive research, refuting the previous **belief in Janaki Sthan**.
- Statistician and historian **Sir William Wilson Hunter's** account in 1877 also acknowledged **Punaura as a contender for Sita's birthplace**, three miles southwest of Sitamarhi.

What is the history of Janakpuri in Nepal

- The **modern name Janakpuri is attributed to Mithilapuri**, a location **mentioned in Valmiki Ramayan**.
- The Indian government, in collaboration with the Nepal government, has incorporated **Janakpuri into the Ramayana Circuit**.
- Historically, **Janakpur became part of Nepal through the 1816 Indo-Nepal treaty.**
- Notably, **Francis Buchanan Hamilton, a prominent historian on Nepal**, does not document 'Janakpuri,' but references Mithilapuri.

What are some historical references of the present-day Sitamarhi

- According to the **account of the renowned archaeologist Alexander Cunningham, Sita-Marhi** is located slightly more than 40 miles northwest of Darbhanga, around 14 miles from the nearest point of the Nepal frontier.
- The area is **bounded on the east by a branch of the Sowrun Nala**, and parts of the village are affected by numerous small streams that converge and flood the region.
- While Sita-Marhi has **some temples dedicated to Sita**, Cunningham notes that the place lacks significant archaeological interest beyond these structures.

What are the Bihar government's plans for Punaura

- The **Punaura Development** plan, based on **information from the board of religious** trust, encompasses the **renovation of the temple, creation of a roofed pradakshina path** around it, and the development of Luv Kush Vatika, Sita Vatika, and Sita Kund.
- Additionally, a **meditation mandap** will be **established, and a 3-D film will be screened to depict Sita's life journey**.
- The **Mahavir Temple Trust** is set to **construct a Sita temple within Sitakund** with a **budget of Rs 100 crore,** and the project will commence after the inauguration of the Ram temple in Ayodhya in January 2024.

The Sahitya Akademi must do more to promote Indian literature

Subject :History

Section: Art and culture

Context:

- Sahitya Akademi has recently announced its annual Sahitya Akademi Award 2023 in **24 languages.**

Sahitya Akademi Award 2023

- **Awards:** 9 books of poetry, 6 novels, 5 short story collections, 3 essays and 1 literary study have won the Sahitya Akademi Awards this year.
- **Process:** The awards recommended by distinguished jury members were approved by the **Executive Board of the Sahitya Akademi under the Chairmanship of the President of the Akademi.**

About Sahitya Akademi

- It was founded in **1954 as an autonomous body under the Union Culture Ministry** and is dedicated to **promoting literature in Indian languages.**
- It is the central institution for literary dialogue, publication and promotion in the country and the only institution that **undertakes literary activities in 24 Indian languages.**
- It was registered as a society in 1956 under the **Societies Registration Act of 1860.**

Functions:

- It works actively to **develop Indian literature.**
- Set high literary standards to foster and coordinate literary activities in all the **Indian languages.**
- **Promote the cultural unity** of the country through literary activities.

- **Awards:** The first Awards were given in 1955. The award is in the form of a casket containing an **engraved copper plaque, a shawl, and ₹1,00,000**.
- **Literary Works: Akademi gives 24 awards annually to literary works in the languages it has recognized.**
- **Literary Translation:** 24 awards are given annually to literary translations from and into the languages of India.
- **Bhasha Samman: It also gives special awards for significant contributions to the languages** not formally recognized by the Akademi and for contributions to classical and medieval literature.
- **Languages Recognised: Besides the 22 languages enumerated in the Constitution of India, the Akademi has recognised English and Rajasthani** as languages in which its programme may be implemented.

Life through geometry in Warli
Subject: History

Section: Art and Culture

Context:
- Warli Whisperers by the Inherited Arts Forum traces the artistic journey of the Mashe family from Maharashtra.

About Warli Paintings
- Warli is a traditional art form of **Maharashtra**. Its roots can be traced to as early as the 10th century A.D.
- These paintings are distinctive with their **vivid contrast expressions.**
- These paintings are mainly dominated by **basic geometric shapes like circles, triangles and squares.**
- These geometric shapes stand as a symbol of **natural elements in our environment.**
- For example, the circles represent the sun and moon, the triangles represent the mountains and the squares are considered as the central motifs of the painting.
- **People and animals are represented by two inverted triangles joined together**, where the upper triangle is the torso and the lower triangle is the pelvis.
- The **central theme of the paintings are scenes portraying hunting, fishing, farming, festival and dances, trees and animals are used to surround the central theme.**
- Warli art form is being used by many artists to beautify cities and spread **awareness through wall paintings.**
- It is also being used to beautify bags, bed sheets and many other items.
- **Warli is the vivid expression of daily and social events of the Warli tribe of Maharashtra, used by them to embellish the walls of village houses.**

Warli Tribe
- They are an indigenous tribe or Adivasis, **living in the Mountainous as well as coastal areas of Maharashtra-Gujarat border and surrounding areas.**
- They speak an **unwritten Varli language** which belongs to the southern zone of the Indo-Aryan languages.

Navy Rank to be renamed in line with Indian tradition
Subject : History

Section: Medieval India

Context: Navy Day function at Sindhudurg Fort

More about the news:
- Prime Minister Narendra **Modi announced the decision to rename ranks in the Indian Navy to reflect Indian culture**, erasing colonial military lineage.
- During the **Navy Day function at Sindhudurg Fort** in Maharashtra, PM Modi stated that the **epaulettes worn by Naval officers would now carry the symbol of Shivaji Maharaj's army**.
- He congratulated the **Navy for appointing the country's first woman commanding officer on a naval ship**.
- The PM **emphasized the nation's move towards self-reliance** and praised Chhatrapati **Shivaji Maharaj's legacy,** stating that the new epaulettes would carry the symbol of Shivaji Maharaj's army.
- Defence Minister **Rajnath Singh called the unveiling of Shivaji Maharaj's statue a moment of privilege**, highlighting Shivaji's recognition of the relevance of the Navy.
- Indian Navy Chief Admiral R Hari Kumar **acknowledged Shivaji's foresight** in investing in **sea power and mentioned the new insignia** inspired by Shivaji Maharaj's royal seal.

Some facts about Chola Navy

- The Chola navy was **known for its innovative shipbuilding techniques and advancements in naval warfare.**
- They developed **specialized warships with multiple decks, powerful catapults, and effective incendiary weapons.**
- **Several Chola kings** emerged as **skilled naval commanders,** including:
  - **Aditya Chola I (871-907 CE):** Expanded the Chola navy and **initiated naval raids against neighboring kingdoms.**
  - **Rajaraja Chola I (985-1014 CE):** Established **Chola dominance over the seas**, **defeating the Sri Lankan navy** and launching expeditions to Southeast Asia.
  - **Rajendra Chola I (1014-1044 CE)**: Conquered the **kingdom of Srivijaya in present-day Indonesia**, marking the **Chola navy's peak power.**
- Some of famous Chola Ports are:
  - **Poompuhar:** Situated on the **Kaveri River Delta,** Poompuhar was the **oldest and most prominent Chola port**. It served as a **major trading hub, connecting India with Southeast Asia and the Mediterranean.**
  - **Nagapattinam:** Located on the **Bay of Bengal**, Nagapattinam was another major port and a strategic location for Chola naval operations. It provided **access to maritime routes and facilitated trade** with neighboring kingdoms.
  - **Kulachal**: Situated on the **Malabar Coast**, Kulachal was a significant trading hub and a **gateway to the Indian Ocean**. It was particularly important for **spice trade with Southeast Asia.**
  - **Korkai:** Located on the **Vaigai River**, Korkai was an early and important Chola port. It served as a **center for maritime trade and cultural exchange** with the Roman Empire.
  - **Kadalur**: Situated on the **Pennar River**, Kadalur was a **strategic port and a base for Chola naval operations** in the lower reaches of the river. It played a role in controlling the trade routes in the region.
  - **Thoothukudi:** Located on the **shores of the Palk Strait,** Thoothukudi was a **bustling port and a major center for trade** and shipbuilding. It facilitated **maritime connections with the Sri Lankan subcontinent.**

Some facts about Maratha Navy

- **Chhatrapati Shivaji Maharaj** put great **emphasis on sea-faring prowess**, and laid the foundations of a modern naval force in the **17th century.**
- Shivaji's strategic thought ensured that a **strong naval presence was established along the Konkan coast** to protect the **sea trade of the Maratha empire.** As per an Indian Navy document,
- Shivaji **built ships in towns such as Kalyan, Bhivandi, and Goa,** both for trade and to establish a fighting navy. "He also **built a number of sea forts** and **bases for repair,** storage and shelter.
- Shivaji f**ought many lengthy battles with Siddis of Janjira on coastline**. The fleet grew to reportedly 160 to 700 merchant, support and fighting vessels. He **started trading with foreigners on his own after possession of eight or nine ports in the Deccan,**
- His fleet was **equipped with ghurabs (gunboats) and gallivats (row boats).**
- The Maratha Navy was **primarily a coastal "green water" navy**, compared to an ocean-going or "blue water" navy.
- Their **ships were dependent on land/sea breezes.** The Maratha did not build ships large enough to engage the British out at sea far from the coastal waters
- **Some of Notable Commanders and Victories of Marathas:**
  - **KanhojiAngre**, the renowned **Maratha admiral,** played a crucial role in expanding the navy's power and establishing its supremacy in the Konkan region.
  - The Maratha Navy **inflicted significant defeats on the Portuguese, Siddis of Janjira,** and the **English East India Company**, challenging their dominance in the region.
  - Their v**ictories, such as the Battle of Colaba (1662) and the Battle of Vishakhapatnam (1719),** demonstrated their prowess and established their reputation as a formidable naval force.
- **Some of the famous ports** were:
  - **Kalyan, Ratnagiri, Khanderi, Colaba** along the Konkan coast and **Golrah, Harishpur, Bishenpur, and Manikpatna**: along the Odisha coast

What was Karan Singh proclamation of 1949

Subject : History

Section: Modern India

Context: SC to uphold abrogation of Article 370 citing Karan Singh proclamation of 1949

What was the proclamation by Karan Singh:

- Karan Singh's **proclamation declared the repeal** of the **Government of India Act, 1935,** which previously **governed Jammu and Kashmir's** constitutional relationship with the D**ominion of India**.

- It stated that the **upcoming Constitution of India**, as **applicable to J&K**, would govern the **state's constitutional relationship** with the **Union of India**.
- The proclamation **emphasized the enforcement of the Indian Constitution in J&K** by Karan Singh, **his heirs, and successors,** superseding **all inconsistent constitutional provisions currently in force in the state.**

Why did Karan Singh make the proclamation:
- **Karan Singh**, responding to the **Supreme Court's judgment, mentioned that the proclamation in 1949** was necessary to **eliminate ambiguity surrounding Jammu and Kashmir's status.**
- He explained that **despite Hari Singh signing the Instrument of Accession (IoA), the state retained a level of autonomy,** distinct from the full integration seen in other princely states.
- The court's **decision aligns with the government's stance** that the **1949 proclamation acknowledged the supremacy** of the Indian Constitution and surrendered sovereignty to "We the people of India."

What did the Supreme Court say:
- The **Supreme Court** clarified that **Jammu and Kashmir did not retain an element of sovereignty** upon **joining the Union of India.**
- The court **pointed to a proclamation** issued by **Yuvraj Karan Singh on November 25, 1949,** stating that the **Constitution of India** would s**upersede and abrogate all other inconsistent constitutional provisions** in the state.
- This proclamation was **viewed as a full and final surrender** of **sovereignty by Jammu and Kashmir** to India and **its people, rendering paragraph 8** of the **Instrument of Accession legally inconsequential.**

Indian Navy unveils new epaulettes for admirals

Subject: History

Section: Modern India

Context:
- The introduction of **new designs for Admirals' epaulettes and renaming of ranks within the Indian Navy** symbolizes India's devotion to its nautical legacy and a **break from colonial legacies.**
- This declaration came after December 4, Navy Day celebrations in **Sindhudurg**. It stressed a change toward **embracing Bharatiyata** and emancipating oneself from the slave mentality, or "**Ghulami ki Maansikta**," as the Navy put it.

A Symbolic Change
- The redesigned Admirals' epaulettes mark a symbolic **departure from the past, with the octagon taking center stage**. Inspired by the naval ensign and drawing from the **rajmudra (royal seal) of Chhatrapati Shivaji,** the new design aims to encapsulate **India's rich maritime heritage.**
- The **octagon, golden navy button top, and symbols of an Indian sword and telescope crossed, along with stars indicating ranks**, contribute to a visual representation of the Navy's commitment to national pride and heritage.

A Shift in Nomenclature
- In addition to the redesigned epaulettes, the Indian Navy is set to undergo a change in nomenclature, aligning ranks with Indian traditions.
- The decision to rename ranks from their British counterparts further emphasizes a commitment to assert India's identity and move away from colonial influences.
- This aligns with the broader vision of fostering a sense of pride, encapsulated in the principles of "**Virasat Par Garv**" and liberation from the mentality of servitude.

Embracing Bharatiyata
- The Navy's adoption of the new designs and nomenclature is framed within the larger context of **embracing Bharatiyata** – an ethos that reflects a sense of Indian identity and values.
- The move is not merely symbolic but reflects a deeper commitment to instill **national pride** and independence within the armed forces, resonating with the Prime Minister's vision of a self-reliant and culturally rooted India.

A Maulana who opposed Article 370, loved Krishna and wrote a famous ghazal

Subject : History

Section: Personality

Context: Maulana Hasrat Mohani

More about the news:
- During a **Constituent Assembly debate on October 17, 1949, Urdu scholar Maulana Hasrat Mohani** voiced his **opposition to the special privileges** granted to **Jammu and Kashmir under Article 370**.

- Mohani, **a Congress leader and freedom fighter,** questioned the discrimination involved in **giving concessions to his friend Sheikh Abdullah,** even though he had expressed his love for Kashmir in verses.
- **N GopalaswamiAyyangar, a Constituent Assembly member**, defended the provision, stating that **it was due to the special conditions of Kashmir**, which was **"not yet ripe for this kind of integration."**
- Mohani **objected to the arbitrary nature of such concessions**.

Some facts about Mohani:

- **Syed Fazal-ul-Hassan Takhallus Hasrat was the full name of Hasrat Mohani.**
- Born on **January 1, 1875**, in **Unnao,** Mohani was **not only a nationalist but also an advocate** for Hindu-Muslim unity.
- His **diverse personality** included **visits to Mathura to celebrate Janmashtami and expressions of love for Krishna** in his poetry, such as the **immortalized ghazal "ChupkeChupke Raat Din."**
- Mohani **passed away in 1951 at the age of 76**.
- He is best known for coining the i**conic slogan "Inquilab Zindabad!"**
- The government came out with a **postage stamp on Mohani in 2014** as a mark of respect for his contribution to the nation building

Anti-Nixon demonstration at 'Boston Tea Party'

Subject: History

Section: World history

Context:

- **The "Boston tea party," which triggered off the American Revolution 200 years ago** and subsequently led to the country's independence   from England was   reenacted on December   17,2023 at Boston Harbour and   India was the only foreign country which was invited to participate in the bicentennial because of " our common colonial past (The East India Company held both countries in virtual thralldom then) and revolutionary heritage."

About Boston Tea Party, 1773

- The Boston Tea Party was an **iconic event of the American history.** In this incident entire shipment of tea belonging to the British East India Company were thrown into Boston Harbor by American patriots disguised as Native Indians.
- It was a **political protest against both: a tax on tea (taxation without representation) and the perceived monopoly of the East India Company.**
- Angry mobs and the Sons of Liberty forced ships carrying company's tea to return to England without unloading.
- In Massachusetts, however, the Royal Governor was determined to let the ships deposit their cargoes and appropriate duties to be honored.
- **On the night of December 16, 1773, Samuel Adams and the Sons of Liberty boarded these ships in the Boston harbor and threw the chests of tea overboard.**
- The British government reacted harshly to the incident of Boston Tea Party. **The British government decided to punish Boston and the people of Massachusetts with a series of acts which came to be known as the Intolerable Acts or the Coercive Acts of 1774.**

What was American Revolution

- The **American Revolution (1775-83)** was also known as the **United States War of Independence or American Revolutionary War**.
- This watershed event was an outcome of the repressive and tyrannous policies (like Mercantilism, excessive taxation, etc.) of Britain in its North American colonies mainly after the second half of 18th century.
- **Thirteen of Great Britain's colonies** (along the eastern seaboard of North America) rebelled in the American Revolutionary War, primarily over representation, local laws and tax issues.
- These Thirteen colonies (New Hampshire, Massachusetts , Connecticut , Rhode Island, New York , New Jersey, Pennsylvania, Delaware, Maryland , Virginia, North Carolina, South Carolina and Georgia) **came together to establish the United States of America, which was recognized internationally with the signing of the Treaty of Paris on September 03, 1783.**

IR

Navy gets ready for its biggest naval exercise amid ocean engagements

Subject :IR

Section: International Events

ExerciseMILAN:

- **Exercise Milan** is a **biennial multilateral naval exercise** which began in **1995**. It is the **largest naval exercise** conducted by India.
- The next edition of **Exercise MILAN** is scheduled to be held in February 2024 and is expected to see the participation of over 50 countries.
- The last edition was held at **Vishakhapatnam, Andhra Pradesh.**

Navy Day:
- **Navy Day** is celebrated on **December 4**. This year, it will be celebrated at **Sindhudurg Fort** on the **western seaboard,** built in **1660** by **Chhatrapati Shivaji.** It is located **550 km** from **Mumbai** and about **135 km** from **naval station** at **Goa.**
- **December 4** is observed as **Navy Day** to commemorate the **Navy's daring attack on Karachi harbour** during the **1971 War** under **'Operation Trident'.**

Indian Naval Exercise and cooperation with other nation:
- Since **July 2022**, the **Indian Navy** has joined the **Bahrain-based Combined Maritime Force (CMF), a US-led multi-national naval partnership** that **aims** to promote security, stability, and prosperity across international waters in IOR.
- There are **17 multilateral** and **20 bilateral exercises** that the **Navy conducts annually** which exemplifies **India's commitment to maintaining strong defence ties.**
- These exercises are crucial for honing operational capabilities, sharing best practices, building mutual trust, fostering interoperability, strengthening diplomatic ties, and enhancing maritime security.
- **Indian-built Off-shore Patrol Vessels (OPV)** and **Fast Attack Craft (FAC)** are in service in **Mauritius, Seychelles** and **Sri Lanka,** facilitated th**rough defence Lines of Credit**.
  o A fast **attack craft (FAC)** is a **small, fast, agile, offensive, often affordable warship** armed with **anti-ship missiles, gun** or **torpedoes**.
  o **FACs** are usually **operated in close proximity to land** as they lack both the seakeeping and all-round defensive capabilities to survive in blue water.
- In **October 2020,India** gifted a **kilo-class Submarine INS Sindhuvir** which was extensively refitted and upgraded prior handing over, to **Myanmar (**renamed as **UMS MinyeTheinkhathu)**.
- **India** also gifted **Maldives** an **FAC** and a **landing craft**.
- **India** gifted an **operational Khukri-class corvette, INS Kirpan** to **Vietnam**.

Henry Kissinger

Context: Henry Kissinger, dominant US diplomat of Cold War era, dies aged 100

More about the news:
- Henry Kissinger, the **influential U.S. diplomat** known for his pivotal role in **Cold War-era diplomacy**, has **died at the age of 100**.
- **Born in Germany**, **Kissinger played a key part in opening diplomatic relations** between the **U.S. and China**, negotiating **arms control agreements with the Soviet Union,** and concluding the Vietnam War.
- Despite **being celebrated for his strategic brilliance**, Kissinger **faced criticism for supporting anti-communist** regimes, particularly in Latin America.
- He **served as national security adviser** and **secretary of state under Presidents Nixon and Ford,**

Some more facts about Henry Kissinger:
- **Heinz Alfred Kissinger,** born in **Germany in 1923** and later known as **Henry Kissinger, moved to the United States in 1938** to escape the **Nazi regime's persecution of Jews**.
- After **serving in the U.S. Army during World War II,** he **attended Harvard University** on a scholarship, eventually **earning a doctorate and staying on as a faculty member for 17 years.**
- Kissinger, an **influential figure in U.S. diplomacy**, worked as a **consultant to government agencies**, acting as an **intermediary for the State Department with North Vietnam in 1967**.
- With connections to **President Lyndon Johnson's administration,** he facilitated communication **about peace negotiations to the Nixon camp.**
- Nixon appointed him **national security adviser in 1968.**
- In **1973, Kissinger,** serving as **both national security adviser and secretary of state,** engaged in s**huttle diplomacy** to ease tensions in the **Arab-Israeli conflict,** leading to a **disengagement agreement between Israel and Syria in the Golan Heights**.

- In an effort to **counter Soviet influence**, **Kissinger initiated diplomatic relations** with China, c**ulminating in President Nixon's historic summit** with **Chairman Mao Zedong in 1972.**

He was **awarded the Nobel Peace Prize** in **1973** for his efforts to **bring peace to Vietnam.**

What is the controversy over Germany's debt brake rule?

Section: Int events

Context:

- Germany's constitutional court on November 15 ruled unlawful a government move to reallocate €60 billion, unused from the sums initially earmarked for the pandemic emergency, to a "climate and transformation fund" (KTF).

What is the Debt Brake Rule?

- The **debt brake rule caps government borrowing and restricts the federal government's fiscal deficit to 0.35% of GDP, while prohibiting deficit spending by Germany's 16 regions.**
- This rule was incorporated into German law in 2009 by a coalition, mirroring the EU's Stability and Growth Pact and the 2012 Fiscal Compact Treaty.

Challenge and Its Legal Implications

- **Opposition's Argument:** It argued that climate change and energy transition investments, being long-term, shouldn't be funded by the debt brake's emergency exemption, which was specific to COVID-19 relief.
- **Government's Defense:** The government contended that the reallocated funds addressed economic consequences of the pandemic by linking investment shortfalls to COVID-19's economic impact.

Economic Performance Of Germany Since 2009

- **Pandemic Response:** In 2020, the debt brake rule was suspended for pandemic-related borrowing, with plans for reinstatement.
- **Mixed Outcomes:** Germany experienced growth and budget surpluses in the last decade, benefiting from low-interest policies of the ECB.
- **Zero-Deficit Budget:** The government achieved a zero-deficit budget, promoting it as an ideal approach for the EU during a sovereign debt crisis.

Criticisms:

- A cooling economy highlighted under-investment in infrastructure. Critics urged for expansionary fiscal measures, while others favored higher taxation.
- Chancellor Angela Merkel emphasized the need to avoid burdening the younger generation with debt.

U.S., U.K., Australia defense chiefs tout deep space radar and AI in joint deal

Section: International Groupings

Context: US, UK, Australia defense chiefs tout deep space radar, AI in joint deal

More about the news:

- The **defense chiefs of the United States, Australia, and UK** convened in California to strengthen **their collaboration on deep space radar, AI, and quantum computing, focusing on enhancing their armed forces** against global threats, particularly from China.
- The **meeting in Silicon Valley** aimed to **build on the AUKUS partnership**, established in **September 2021**, to counter **assertiveness from Beijing and Moscow**.
- The discussions **included plans for a "Deep Space Advanced Radar Capability"** program, quantum technologies for **navigation and weapons direction, and resilient artificial intelligence for precision targeting**.
- The **collaboration underscores** a shared commitment to peace and security in the Indo-Pacific region.

What is AUKUS:

- AUKUS is a **trilateral security partnership** for the **Indo-Pacific**, between **Australia, the UK and the US (AUKUS) which was signed in 2021** that aims for **deeper cooperation in the IndoPacific**and **greater sharing of defence capabilities** within the alliance.
- Under the pact, **the US and the UK will help Australia to acquire nuclear-powered submarines,** though **not equipped with nuclear weapon**s. It also allows for **greater sharing of intelligence.**
- It **involves a new architecture of engagements** across e**merging technologies such as artificial intelligence, quantum technologies, cyber capabilities** and **additional undersea capabilities.**

1M1B Activate Impact Summit

Subject: IR

Section: International groupings

More about it:

- The **1M1B Activate Impact Summit**, organized by the **Department of Global Communications** in collaboration with the **NGO 1M1B** and supported by the **Civil Society Unit, DGC,** is an annual event **highlighting young changemakers driving impactful initiatives aligned with the UN Sustainable Development Goals** (SDGs).
- In its **7th edition, the Summit features 45 young SDG champions** presenting **Rocket Pitches, engaging in Slam Poetry, and participating in discussions covering Technology for Social Impact**, **Community and Inclusivity, and Sustainability & Climate Action.**
- The **event aims to inspire global youth to actively contribute to the SDGs**.
- Additionally, the summit **gathers insights for the Summit of the Future 2024, focusing on AI, cyber safety, climate action,** and inclusive technologies.

Italy leaves China BRI

Subject : IR

Section: Groupings

Context: Italy leaves China BRI

More about the news:

- Italy has **officially withdrawn from China's Belt and Road infrastructure** initiative, becoming the **first G7 nation to do so more** than four years after initially joining.
- The decision, **communicated to Beijing three days prior,** was confirmed by an Italian government source, although no official communication has been released by either side.
- **Prime Minister Giorgia Meloni,** who has been **critical of the initiative**, expressed the **decision was made to "keep channels of political dialogue open."**
- Italy's **participation in the project, seen by many as a means for Beijing to exert political influence,** was set to automatically renew in March 2024 **unless Italy opted out by the end of the year**.
- The move **is in line with Meloni's stance** against the **project, citing limited benefits to Rome and concerns about provoking Beijing.**

What is China's Belt and Road Initiative

- The B**elt and Road Initiative (BRI), also known as the One Belt, One Road** (OBOR) Initiative, is a **massive infrastructure and economic development** project launched by the **People's Republic of China in 2013.**
- The initiative **aims to promote economic cooperation** and connectivity **among countries primarily in Asia, Europe, and Africa**, through the construction of infrastructure networks, **including roads, railways, ports**, and pipelines, **as well as the development of trade and investment corridors.**

What are the Components of BRI

- The Belt and Road Initiative **consists of two main components:**
  - **The Silk Road Economic Belt:** This land-based component **seeks to connect China to Europe through a network of roads and railways** that traverse Central Asia and the Middle East.
  - **The 21st Century Maritime Silk Road:** This **sea-based component aims to link China to Southeast Asia, South Asia, Africa, and Europe** through a **network of ports and shipping routes.**

Global Partnership on Artificial Intelligence (GPAI) Summit

Subject :IR

Section: Groupings

Context Modi inaugurated the GPAI summit

More about the news:

- **India is hosting the Global Partnership on Artificial Intelligence** (GPAI) Summit in New Delhi, where Prime Minister Narendra Modi inaugurated the event.
- The **summit aims to reach** a **consensus among the 29 member countries** on a **declaration document** outlining the **proper use of AI,** establishing guardrails for the technology, and **promoting its democratization**.
- Prime Minister Narendra Modi, **addressing the summit, emphasized the dual potential of AI as a significant development tool** for the 21st century but also as a potential factor in its destruction.

- He called for a **global framework to establish guardrails** for responsible AI use and **stressed the need for extreme caution** in deploying AI, citing its impact on current and future generations.
- PM Modi **raised concerns about deep fakes, cybersecurity, and cyber-terrorism** resulting from **unchecked AI development,** proposing an audit mechanism to categorize AI tools based on their capabilities.
- He highlighted the **importance of ethical AI use and mentioned India's negotiations with GPAI member countries** to achieve consensus on a declaration document outlining proper AI use, technology guardrails, and democratization.
- PM Modi **announced India's upcoming AI mission** to provide AI compute power for startups and innovators, promoting **AI applications in sectors like agriculture, health, and education**.
- The mission **aims to extend AI skills to Tier 2 and Tier 3 cities**, with ethical AI use as the guiding principle for the global framework.
- PM Modi emphasized that **AI's power lies in connecting people, and its responsible use can drive economic growth, equality, and social justice.**
- The Theme of GPAI is **Advancing Responsible AI in Public-Sector Applications**

What is Global Partnership on AI summit:
- The Global Partnership on Artificial Intelligence (GPAI) is a **multi-stakeholder initiative** which **aims to bridge the gap** between **theory and practice on AI by supporting cutting-edge research** and applied activities on AI-related priorities.
- Its **establishment was announced** during the **2018 G7 Summi**t by Canadian PM Justin Trudeau and French President Emmanuel Macron.
- GPAI was **officially launched** on **June 15, 2020**
- The Global Partnership in Artificial Intelligence is **described as the 'fruition of an idea developed within the G7.'**
- At present, GPAI has t**wenty-nine member** states i.e**Australia, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea (South Korea), Singapore, Slovenia, Spain, Sweden, the United Kingdom, the United States, and the European Union (EU).**
- **India joined the GPAI** in **2020 as a founding member.**
- Its **Secretariat** is **hosted at the OECD.**
- Currently,India has assumed the presidency **Global Partnership on Artificial Intelligence (GPAI) for 2022-23**
- The **2022 GPAI Summit took place in Tokyo, Japan**

What is the composition and structure of GPAI
- GPAI has a **Council and a Steering Committee,** supported by a **Secretariat hosted by the OECD,** and **two Centers of Expertise**: one in **Montreal (CEIMIA, the International Centre of Expertise in Montreal for the Advancement of Artificial Intelligence)** and one in **Paris (at INRIA, the French National Institute for Research in Digital Science and Technology)**.
- These Centers of Expertise will facilitate **GPAI's four working groups** and their research and practical projects, across various sectors and disciplines. The working groups will **initially focus on four themes**:
  - **Working Group on Responsible AI (Montreal)**
  - **Working Group on Data Governance (Montreal)**
  - **Working Group on the Future of Work (Paris)**
  - **Working Group on Innovation and Commercialization (Paris)**

What is the Legal Framework Related to AI in India:
- In **India**, there are **currently no specific legal regulations** governing the **use of deepfake technology.** However, **existing laws can be applied to address the misuse of this technology,** covering aspects such as **Copyright Violation, Defamation, and cybercrimes.**
- For instance, the **Indian Penal Code,** which **addresses defamation, and the Information Technology Act of 2000,** which pertains to **sexually explicit material**, could **potentially be used** to combat malicious deepfake usage.
- **The Representation of the People Act of 1951** contains **provisions that prohibit the creation or dissemination of false or deceptive information** about candidates or political parties during election periods.
- Additionally, **the Election Commission of India has established regulations requiring registered political parties and candidates** to **obtain prior approval for all political advertisements on electronic media.**
- Despite these measures, **they may still be inadequate in fully addressing** the multifaceted challenges arising **from AI algorithms, including the potential risks associated with deepfake content.**

What are the Recent Global Efforts to Regulate AI:

- The **world's inaugural AI Safety Summit**, hosted at **Bletchley Park** in the UK, saw **28 major nations, including the US, China, Japan, the UK, France, India, and the European Union, unite in signing a declaration** emphasizing the necessity for **global action to address the potential perils of AI.**
- The declaration **underscores the recognition of significant risks** stemming from potential deliberate **misuse and unintended control challenges** in advanced AI, particularly in **domains such as cybersecurity, biotechnology, and the spread of disinformation.**
- In response to these concerns, the **US President issued an executive order** aiming to **fortify defenses against AI-related threats and exercise regulatory oversight** over safety standards applied by companies in the assessment of **generative AI systems like ChatGPT and Google Bard.**
- During the **G20 Leaders' Summit held in New Delhi,** the **Indian Prime Minister advocated for the creation of a global framework governing the development of "ethical" AI tools**.
- This **shift in New Delhi's stance signifies a transition** from a position of **non-interference in AI regulation to a proactive approach, involving the formulation of regulations** grounded in a "risk-based, user-harm" perspective.

New Delhi Declaration' on artificial intelligence adopted

Subject : IR

Section: Int Groupings

Context: Representatives from 28 countries and the European Union convened to adopt the 'New Delhi Declaration' at the Global Partnership on Artificial Intelligence (GPAI) summit.

Hosting the summit, **India is set to chair the GPAI grouping in 2024.**

Key points of 'New Delhi Declaration'

The **New Delhi declaration** has attempted to find a **balance betweeninnovation** and the **risks associated with AI systems**. While it is largely upbeat about the economic benefits that AI can bring, it also flags issues around fairness, privacy, and intellectual property rights that will have to be taken into consideration.

The declaration said that a global framework for use of AI should be rooted in democratic values and human rights; safeguarding dignity and well-being; ensuring personal data protection; the protection of applicable intellectual property rights, privacy, and security; fostering innovation; and promoting trustworthy, responsible, sustainable, and human-centred use of AI.

Commitment to AI Principles: The declaration reaffirms the commitment to responsible stewardship of trustworthy AI, emphasizing democratic values, human rights, and a human-centered approach.

Focus on Trustworthy AI: GPAI aims to promote the trustworthy development, deployment, and use of AI across member countries.

GPAI's Inclusive Approach and Global Impact

Inclusivity and Global South Participation: The declaration emphasizes the inclusion of countries in the Global South, aiming to make AI benefits universally accessible.

GPAI members also promoted equitable access to critical resources for AI innovation including computing, high-quality diverse datasets, algorithms, software, testbeds, and other AI-relevant resources.

It said that the GPAI will pursue a diverse membership, with a particular focus on low- and middle-income countries to ensure a broad range of expertise, national and regional views, and experiences based on shared values.

Japan's Role as Outgoing Chair: The previous summit, chaired by Japan, set the stage for expanding the GPAI's reach and inclusivity.

Addressing Modern Challenges: The declaration acknowledges the need to address issues like misinformation, unemployment, and threats to human rights in the AI context.

Collaborative Efforts and Future Goals

Pooling Resources for AI Solutions: Jean-Noël Barrot, France's Minister for Digital Transition and Telecommunications, highlighted the importance of leveraging OECD resources for AI development and governance.

Encouraging Broader Participation: Japan and India emphasized the importance of including more developing countries in GPAI.

Senegal's Involvement: Senegal has joined the GPAI steering committee, marking a significant step towards greater inclusivity.

India's Contribution to AI in Agriculture

Agriculture as a Priority: The declaration also agreed to support AI innovation in the agriculture sector as a new **"thematic priority".** The declaration specifically acknowledges India's role in bringing agriculture into the AI agenda.

Support for Sustainable Agriculture: The commitment to using AI innovation in sustainable agriculture is a new thematic priority for GPAI.

How does the New Delhi declaration contrast with the Bletchley declaration?

- While the **GPAI New Delhi declaration** addresses the need to tackle **AI-related risks**, it largely supports **innovation** in the technology in various sectors, including agriculture and healthcare. The essence of the declaration can be summed up

as follows: AI is inherently good and is a catalyst for economic growth, but some harms need to be mitigated along the way.

- By contrast, the declaration that was signed at the **UK AI Safety Summit** last month put security and safety risks related to AI in the centre of the discussions. At the **Bletchley Park** meeting, **28 major countries including the United States, China, Japan, the United Kingdom, France, and India, and the European Union** agreed to sign on a declaration saying global action is **needed to tackle the potential risks of AI.**

- The declaration noted the "potential for serious, even catastrophic, harm, either deliberate or unintentional, stemming from the most significant capabilities of these AI models", as well as risks beyond frontier AI, including those of bias and privacy. **"Frontier AI"** is defined as highly capable foundation generative AI models that could possess dangerous capabilities that can pose severe risks to public safety.

Hungary blocked EU aid to Ukraine

Subject :IR

Section: Groupings

Context: Hungary blocked EU aid to Ukraine

What is Hungary's stance on aid to Ukraine:

- Hungarian Prime Minister Viktor Orban, a right-wing leader and close ally of Russian President Vladimir Putin, ha**s expressed opposition to Ukraine's bid for EU membership**.

- Orban believes that **Ukraine is plagued by corruption** and is not prepared for EU accession.

- He suggests that **Ukraine should first become a strategic partner of the EU** before **engaging in membership talks**.

- Orban's stance is evident in his **opposition to a financial package for Ukraine, arguing that non-EU members should not receive significant funds** when Hungary, as an EU member-state, has faced challenges in securing allocated funds.

What is the backdrop of the latest move:

- The **European Union (EU)** had previously **frozen significant funds allocated for Hungary** due to **concerns about violations of EU norms on law, order, and judicial independence**.

- Analysts speculate that **Hungary, led by Prime Minister Viktor Orban, used its veto power on Ukraine's funding and membership talks as leverage** to pressure the EU to unfreeze the funds.

How will the EU now provide aid to Ukraine:

- If Viktor Orban r**emains unyielding**, the European Union (EU) **might consider circumventing the issue by establishing a trust** comprising the other 26 member states.

- While this **alternative could be a more cumbersome process**, it might result in delays in delivering much-needed funds to Ukraine.

What is the requirement for joining the EU:

- **Obligation:**
  - According to **Article 49 of the EU treaties, any European nation seeking to become an EU member must commit** to upholding and promoting the EU's fundamental values outlined in **Article 2**.
  - These values **encompass principles such as freedom, democracy, equality, and the rule of law, among others.**

- **Consideration:**
  - Following the submission of an application, **EU member states assess the nation's suitability for membership based on these principles.**

- **Specific criteria:**
  - The **Copenhagen European Council meeting in 1993** established **more detailed conditions** known as the **Copenhagen Criteria**.
  - These criteria **outline the fundamental requirements that all candidate countries must meet.**
  - For instance, **they encompass having a well-functioning market economy, maintaining a stable democracy and rule of law, and adhering to all EU legislation, including that related to the Euro.**

What is the Copenhagen Criteria

- The Copenhagen Criteria **refers to the conditions that candidate countries must meet** before they can be part of the European Union.

- The criteria had been **established in 1993** by the Copenhagen European Council, and **later strengthened in 1995 by the Madrid European Council.**

- Copenhagen Criteria also r**efer to the rules defined by the European Council in 1993** in Denmark, Copenhagen, which d**etermines whether a country is qualified to join the European Union.**

- In order to become a member of the EU, the **three criteria that must be achieved are:**

- o **Stability of institutions guaranteeing democracy,** the rule of law, human rights and respect for and protection of minorities.
- o The **existence of a functioning market economy** as well as the capacity to cope with competitive pressure and market forces within the union.
- o The **ability to take on the obligations of membership** including adherence to the aims of political, economic & monetary union.

What is the Criteria for Membership

- The European community **always monitors the progress of candidate** states that have applied for the EU accession.
- **Three documents** are used to **define the European Union membership criteria.** These include:
    - o **Article 49 of the 1992 Maastricht Treaty**
    - o The **1993 declaration the European Council in Copenhagen** (includes political, legislative, and economic policies)
    - o **Framework for negotiations with specific conditions** for every candidate country.

What is Candidate country status

- **Candidate country status is conferred by the European Council** on the **basis of an opinion from the European Commission,** drawn up following an application for membership of the European Union (EU) by the country concerned.
- Candidate country status **does not give an automatic a right to join the EU**.on.

What is the process of joining the EU:

- The **process for achieving European Union membership** involves **three distinct stages,** outlined as follows:
    - o **First stage:** The **country is granted the status of an official candidate**. In this initial phase, the **candidate nation responds to inquiries to demonstrate its alignment with the membership criteria.**
    - o **Second stage:** The **formal negotiations for membership commence** with the candidate. This phase encompasses the **integration of EU law into national legislation and the fulfillment of a wide range of requirements,** referred to as the **accession criteria, which pertain to the legal, administrative, economic, and other aspects.**
    - o **Third stage:** Upon the **successful completion of negotiations and the fulfillment of all accession criteria,** the candidate **becomes eligible for EU membership**. The **final decision regarding membership is subject to a unanimous vote** by the existing EU member states, **who must collectively endorse the new accession**.

The evolving role of the Colombo Security Conclave

Subject : IR

Section: International groupings

Context:

- In early December, India's National Security Adviser (NSA), Ajit Doval, took part in the **sixth NSA meeting of the Colombo Security Conclave (CSC).**
- The meeting reviewed the developments and progress made by the CSC in the last year and agreed upon a road map for the year 2024 **to promote a safe, secure, and stable Indian Ocean.**

About Colombo Security Conclave

- The Colombo Security Conclave is a **regional security grouping**.
- It was initially formed in 2011 as a trilateral Indian Ocean maritime security grouping of India, Sri Lanka and the Maldives.
- It was revived again in 2021. The Colombo Security Conclave has since expanded both its membership as well as scope.
- Colombo Security Conclave envisages sharing intelligence and **collaborating on the security aspects of marine security, human trafficking, counter-terrorism, and cyber security.**
- The fifth edition saw the induction of Mauritius as a new member and the scope of the conclave has been expanded to include **humanitarian assistance and disaster relief.**

Significance

- In light of the current global circumstances, the gathering that focuses on working together for military and security purposes becomes increasingly important in the region.
- **Maritime Security:** The conclave conducts "**CSC Focused Operation**" which plays a key role in keeping the Indian Ocean safe and secure for commercial shipping, international trade and conduct of legitimate maritime activities.
- **Exchange of Information:** It further improves the existing harmony in the region through timely exchange of information.

- **Cooperation between Agencies:** The conclave will aid in greater understanding and interoperability between the security agencies.
- **Cybersecurity**: The grouping helps in addressing key challenges such as Deep Web, Dark Net, Digital Forensics, Cyber Threat intelligence; and Defensive Operations in Cyber Domain.
- **Tackling Environmental Hazards:** Recent incidents like that of MV Xpress Pearl, MT New Diamond, and MV Wakashio caused wide-scale marine pollution in the Indian Ocean. The conclave also focuses its attention in this regard.

Some Other Security Dialogues:

1. **Quadrilateral Security Dialogue(QUAD)**
2. **Raisina Security Dialogue**
3. **India-EU Maritime Security Dialogue**
4. **India's 2+2 Ministerial Dialogue**

Indian ASEAN

Subject :IR

Section: Groupings

ASEAN (Association of Southeast Asian Nations):

- **Formation:** ASEAN, established on August 8, 1967, is a **regional intergovernmental organization comprising ten Southeast Asian countries**. The founding members are Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
- **Member States:** The current member states include **Brunei, Cambodia, Laos, Myanmar, and Vietnam**.
- **Motto:** "One Vision, One Identity, One Community."
- **Secretariat:** Located in Indonesia, Jakarta
- **ASEAN promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration** among its members.
- **Principles:** ASEAN operates on the principles of non-interference in internal affairs, consensus-building, and mutual respect.

ASEAN Plus Six:

- **ASEAN Plus Six refers to a regional grouping that includes the ten member states of ASEAN plus six more countries**, forming a broader economic and political framework.
- **Six Partner Countries:** The six partner countries are **China, Japan, South Korea, India, Australia, and New Zealand.**
- **Purpose:** The ASEAN Plus Six framework aims to **enhance economic cooperation, trade, and diplomatic relations among the participating nations**. It fosters regional integration and stability.
- **Areas of Cooperation:** The collaboration covers various areas, including **trade agreements, investment, technology exchange, cultural ties, and diplomatic dialogues.**
- **Economic Significance:** ASEAN Plus Six represents a significant economic bloc, bringing together **some of the world's major economies. The framework provides a platform for discussions on regional economic issues and facilitates the growth of the participating countries.**

Significance of the Grouping:

- 3rd largest market globally, larger than EU and North American markets.
- 6th largest economy globally, 3rd in Asia.
- Free-trade agreements (FTAs) with China, Japan, South Korea, India, Australia, and New Zealand.
- 4th most popular global investment destination.

India's Transition from Look East Policy to Act East Policy:

- **Look East Policy (LEP):** Initiated in the 1990s for active engagement with Southeast Asian countries.
  - Reasons: Collapse of the Soviet Union, Balance of Payment crisis.
  - Initially focused on trade and economic linkages with ASEAN.
- **Act East Policy (AEP):** Maturity of Look East Policy with a focus on extended neighborhood in the Asia-Pacific region since 2014.
  - **Principles: Promote economic cooperation, cultural ties, and strategic relationships.**
  - **Emphasis on tangible action, concrete results, deepening cooperation, and focus on North Eastern Region.**

Turkey panel nod takes Sweden closer to NATO Membership

Subject :IR

Section: Grouping

Context: Turkey panel nod takes Sweden closer to NATO Membership

More about the news;

- The **Turkish parliament's foreign** affairs commission has **approved Sweden's NATO membership application** after a 19-month delay **due to security concessions demanded by Turkey**.
- The panel, controlled by President Erdogan's ruling party, supported Sweden's petition in response to Russia's invasion of Ukraine.
- The **next step involves a vote by the entire parliament,** expected to pass as the ruling party and its allies control it.
- If **approved, the bill will be sent to Erdogan for signing**, concluding a nearly two-year process.
- However, Commission Chairman Fuat Oktay downplayed expectations for a quick vote, stating that the **speaker will decide the timing**.
- Despite Turkey confirming Finland's petition in April, it held Sweden hostage until further action against **local PKK members**.
- NATO Secretary-General Jens Stoltenberg and Swedish Foreign Minister Tobias Billstrom welcomed the decision, while Turkey remains a potential obstacle to Sweden's NATO membership.

What is the NATO membership — Process

- NATO has what it calls an "**open door policy" on new members** — any **European country can request to join,** so long as they meet certain criteria and all existing members agree.
- A country d**oes not technically "apply" to join**;
- **Article 10 of its founding treaty** states that, **once a nation has expressed interest, the existing member states "may, by unanimous agreement, invite any other European State in a position to further the principles of this Treaty … to accede."**
- Ratification of new members could take a year, **as the legislatures of all 30 current members must approve new applicants.**
- **Requirements for membership**, which include
    - having a **functioning democratic political system** based on a market economy;
    - **treating minority populations fairly;**
    - committing to **resolve conflicts peacefully;**
    - the ability and willingness to make a **military contribution to NATO operations;**
    - Committing to **democratic civil-military relations** and institutions.

What does NATO membership entail?

- The reason most countries join NATO is because of **Article 5 of the North Atlantic Treaty,** which stipulates that **all signatories consider an attack on one an attack against all.**
- **Article 5** guarantees that the **resources of the whole alliance — including the massive US military — can be used to protect any single member nation**, such as smaller countries who would be defenseless without their allies. Iceland, for example, has no standing army.

India, Russia-led Eurasian bloc to begin negotiations on FTA soon

Subject : IR

Section: Groupings

Context: India, Russia-led Eurasian bloc to begin negotiations on FTA soon

More about the news:

- **India and the Eurasian Economic Union (EaEU)**, led by Russia, are poised to **initiate negotiations on a free trade agreement** (**FTA**) aimed at bolstering India's exports to the region, particularly in engineering goods, electronics, and agriculture.
- During a **meeting in Moscow, External Affairs Minister S Jaishankar** and Russian Deputy Prime Minister Denis Manturov discussed enhancing India's engagement with the Russian Far East and affirmed plans for FTA negotiations.
- **Discussions on the FTA** between India and the **EaEU, comprising Russia, Kazakhstan, Belarus, Armenia, and Kyrgyzstan,** began in early 2020 but were delayed due to the Covid-19 pandemic.
- Despite recent resumed talks, negotiations are still pending.

Some facts about Eurasian Economic Union (EaEU):

- The Eurasian Economic Union (EEU) is an economic **union of states located primarily in Northern Eurasia.**
- The Eurasian Economic Union **consists of five member states** :**Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia.**
- **It** was formed in
- The EEU aims to **optimize the flow of goods and services** among its **member nations by coordinating policies** and regulations, thereby creating a single economic space.

Javier Milei writes to BRICS leaders, rejects invite for Argentina to join the grouping

Subject: IR

Section: Groupings

Context: Argentina rejects membership of BRICS

More about the news:

- Argentina's President, **Javier Milei,** has **formally rejected an invitation to join the BRICS grouping,** comprising Brazil, Russia, India, China, and South Africa.
- In letters sent to BRICS leaders, Milei stated that **Argentina's membership was "not considered appropriate at this time."**
- He had pledged not to join BRICS during his campaign, **expressing alignment with the United States and Israel.**
- Despite taking a **more conciliatory tone since taking office,** Milei's letters indicate a **reassessment of foreign policy decisions** made by the previous administration.

Some facts about BRICS:

- BRICS is an **acronym** for the **grouping of the world's leading emerging economies**, namely **Brazil, Russia, India, China, and South Africa**.
- In **2001**, the British Economist **Jim O'Neill** coined the **term BRIC** to describe the **four emerging economies of Brazil, Russia, India, and China.**
- The grouping was **formalized** during the **first meeting of BRIC Foreign Ministers'** in
- **South Africa** was invited to join BRIC in **December 2010**, after which the group adopted the acronym BRICS
- **Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates** are set to join the group with effect from **January 1, 2024.**

Sparking Disability Inclusive Rural Transformation (SPARK) project

Subject : IR

Section: Int .org

- It is being implemented by the International Fund for Agricultural Development (IFAD) and ILO in collaboration with the Women's Development Corporation in Maharashtra.
- Individuals with disabilities will take the lead in the project, becoming Disability Inclusion Facilitators (DIFs).
- These DIFs will then engage with the community, persons with disabilities, caregivers, women from self-help groups, and other stakeholders.
- It will also focus on raising awareness about disability inclusion and the barriers they face.
- Also DIFs will identify women with disabilities and integrate them into existing self-help groups for social and economic development.
- Through this integration, women with disabilities gain access to funds to initiate entrepreneurial endeavors.
- Thus, the SPARK project can significantly influence societal and administrative attitudes towards persons with disabilities International Fund for Agriculture and Development.
- The **International Fund for Agricultural Development (IFAD)** is an international financial institution and a specialized agency of the **United Nations** dedicated to eradicating poverty and hunger in rural areas of developing countries.
- It was created in **1977,** which is the outcome of the **World Food Conference of 1974.**
- It's Headquarter is in Rome (Italy)
- It has more than 150 members of which **India** is also one among them.

Section: Int Org

Context: Article 99 of the UN Charter, invoked for the first time in decades as Israel attacks Gaza

More about the news:

- **United Nations Secretary-General Antonio Guterres** has called for a **humanitarian ceasefire in the Gaza Strip** amid ongoing Israeli military attacks, **especially in the southern region**.

- Guterres **invoked Article 99** of the **UN Charter** and addressed a **letter to the President of the UN Security Council,** expressing **concerns about the imminent collapse** of the humanitarian system in Gaza.

- He urged the Council to take **action to prevent a humanitarian catastrophe** and requested the declaration of a ceasefire.

- The **UN Security Council,** consisting of **permanent and non-permanent members**, **plays a crucial role in addressing global security issues**.

- As of December 2023, Ecuador holds the presidency of the Security Council.

What is Article 99 of the UN Charter:

- The UN Charter **serves as the foundational document** of the **United Nations, granting the organization** the authority to address various global issues.

- Although **member states are legally bound by the Charter**, practical enforcement mechanisms are limited.

- **Article 99 of the Charter** provides the **Secretary-General with discretionary power** to bring to the **Security Council's attention** any matter deemed a **threat to international peace and security.**

- This provision **emphasizes the need for the Secretary-General** to **exercise political judgment, tact, and integrity.**

- According to the UN, **if the Secretary-General invokes Article 99**, the **President of the Security Council is obligated to convene a Council meeting to address the matter.**

When has Article 99 been invoked in the past:

- **Article 99** of the **UN Charter**, which grants the **Secretary-General the authority to bring matters** threatening **international peace and security** to the attention of the Security Council, has been seldom utilized.

- Historical instances include its **invocation during the upheaval in the Republic of the Congo in 1960 following the end of Belgium's colonial rule, as well as a complaint by Tunisia in 1961 against France's military actions.**

- The **current Secretary-General, Antonio Guterres**, is expected to **address the Security Council** on the situation **in Gaza** and advocate for a **humanitarian ceasefire this week.**

- UN spokesman **Stephane Dujarric** described the use of **Article 99 as a "very dramatic constitutional move" by the Secretary-General.**

How has Guterres invoked Article 99:

- UN Secretary-General Antonio Guterres **invoked Article 99 of the UN Charter in a letter to the UNSC President**, expressing concern about the escalating threats to international peace and security in the Israel-Palestine conflict.

- Guterres **highlighted the severe human suffering** and trauma in the region, condemned recent attacks, and called for a humanitarian ceasefire.

- The **UAE presented a draft resolution to the UNSC based on Guterres' letter,** demanding an **immediate ceasefire**, but achieving unanimous support, especially from permanent members like the US and Britain who back Israel's actions, remains uncertain.

- The resolution **requires at least nine votes in favor and no vetoes from the five permanent members**.

- The **vote is expected after Guterres briefs the council on Gaza.**

Section: Int Body

Context:75th anniversary of the Universal Declaration of Human Rights.

More about the news:

- On **December 10, 2023**, the U**niversal Declaration of Human Rights** (UDHR) celebrated its **75th anniversary.**

- The UDHR stands as a **pivotal document, safeguarding human rights and fundamental freedoms** for every individual.

What is the Universal Declaration of Human Rights:

- The **Universal Declaration of Human Rights** (UDHR) is a **concise document comprising a preamble and 30 articles** outlining fundamental rights and freedoms.
- **Article 1 emphasizes** the **inherent freedom and equality** of all human beings, while **Article 2 asserts that everyone is entitled to these rights without discrimination.**
- The **declaration further addresses** the **rights to life, liberty, and security of person, prohibiting slavery, torture, and degrading treatment**.
- It **emphasizes equality before the law**, the **right to a fair trial, and the entitlement to seek asylum from persecution** in other countries.
- The **UDHR also safeguards freedom of religion, opinion, expression,** peaceful assembly, and the **right to education**.
- The **UDHR, together with the International Covenant on Civil and Political Rights** and its **two Optional Protocols, and the International Covenant on Economic, Social and Cultural Rights** (ICESCR), form the **so – called International Bill of Human Rights.**
- It is **not a legally binding treaty**

Why and how was it drawn up:
- The **Universal Declaration of Human Rights** emerged from the **collective determination of political leaders**, driven by the "**never again**" sentiment **following two world wars and the Holocaust**.
- Complementing the **U.N. Charter, the foundational document** of the United Nations, the **UDHR was conceived** as a "road map" to **secure the rights of every individual.**
- **Eleanor Roosevelt**, widow of U.S. President Franklin D. Roosevelt, **chaired the drafting committee, composed of members from eight countries**, selected for geographical representation.
- With the **participation of over 50 U.N. member countrie**s, the **General Assembly approved the declaration on Dec. 10, 1948,** with unanimous support except for eight abstentions.
- Despite the **prevalence of colonial rule** at that time, the **drafting process, according to Amnesty International,** avoided dominance by powerful nations.
- Smaller nations **played a strategic role, ensuring the final text pledged** human rights for all, and **female delegates championed equal rights** for men and women.

What did it achieve:
- While **not legally binding** as a treaty, the **Universal Declaration of Human Rights (UDHR) has profoundly influenced** many countries' **legal frameworks, serving as the foundation for international human rights law**.
- It has **inspired over 70 global and regional human rights treaties** and played a **pivotal role in movements such as decolonization, anti-apartheid, and fights against gender discrimination, LGBTQ+ rights,** and racism.
- **The Vienna Declaration of 1993** is built **upon the principles of the 1948 declaration.**

Rajya Sabha passes Bill to regulate appointment of CEC and ECs

Subject :IR

Section: Reports

Context:
- The Rajya Sabha passed a bill that revises the process for appointing the Chief Election Commissioner (CEC) and Election Commissioners (ECs), replacing the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991.

Key Features of Election Commission Appointments Bill
- **Appointment Process:** The President will appoint the CEC and ECs based on recommendations from a Selection Committee comprising the Prime Minister, a Union Cabinet Minister, and the Leader of Opposition in Lok Sabha.
- **Search Committee Role:** A Search Committee led by the Cabinet Secretary will suggest candidates to the Selection Committee.
- **Eligibility Criteria:** Candidates must have held a post equivalent to the Secretary to the central government.
- **Salary and Conditions:** The CEC and ECs will receive salaries and benefits equivalent to the Cabinet Secretary, a change from the previous equivalence to a Supreme Court judge.

Constitutional Aspect
- **Constitutional Provisions:** Article 324 of the Constitution allows the President to appoint the CEC and ECs but does not specify the appointment process.
- **Supreme Court Directive**: In March 2023, the Supreme Court mandated a selection process involving the Prime Minister, Leader of Opposition, and the Chief Justice of India, until Parliament legislates otherwise.

Key Issues and Analysis

- **Independence Concerns:** The government-dominated Selection Committee could impact the Election Commission's independence.
- **Validity despite Vacancies:** The Selection Committee's recommendations will be valid even with vacancies, potentially leading to government control in appointments.
- **Salary and Status:** Aligning the CEC and ECs' salary with the Cabinet Secretary, determined by the government, may affect their independence compared to a salary fixed by Parliament.
- **Exclusion of Candidates:** Limiting eligibility to senior bureaucrats may exclude other qualified individuals, particularly those with judicialexperience.
- **International Practices:** The appointment processes for election commissions in countries like South Africa, the UK, the US, and Canada vary, with some involving judicial members or parliamentary approval.

Concerns over Independence and Selection Process

- **Government Influence:** The Bill's provisions for a government-majority Selection Committee and the acceptance of recommendations despite vacancies could lead to executive dominance in appointments.
- **Salary and Removal Parity:** The change in salary equivalence and the lack of parity in the removal process of the CEC and ECs compared to Supreme Court judges raise concerns about the Commission's independence.

Goswami Committee (1990) Recommendations

- **Background:** The Goswami Committee on Electoral Reforms (1990) made significant recommendations regarding the Election Commission's functioning.
- **Appointment Process:** The Committee suggested that the CEC should be appointed by the President in consultation with the Chief Justice and the Leader of Opposition in Lok Sabha.For ECs, it recommended a similar process but included the CEC in the consultative process.
- **Importance of Independence:** The Committee emphasized the need for the Election Commission's independence from executive influence to ensure free and fair elections.

Bengaluru airport wins award at UNESCO's 2023 Prix Versailles

Subject : IR

Section: International organisation

Context:

- **Terminal 2 (T2) of Kempegowda International Airport (KIA) in Bengaluru has been recognised as one of the world's most beautiful airports** and awarded the special prize for interiors at the UNESCO's 2023 Prix Versailles.

About PRIX VERSAILLES

- Announced each year at UNESCO since 2015, the Prix Versailles is a **series of architectural competitions that shine a light on the finest contemporary projects worldwide.**
- At the intersection between multiple disciplines, the members of the Prix Versailles World Jury are tasked with **awarding twenty-four World Titles from among the ninety-six projects** named Selected Sites (in the categories of Airports, Campuses, Passenger Stations and Sports) or Continental Laureates (in the categories of Shops & Stores, Shopping Malls, Hotels and Restaurants).
- The Official List – which **pays tribute to innovation, creativity, reflections of local heritage, ecological efficiency and the values of social interaction and participation, which the United Nations holds in high regard – is in line with the principles of intelligent sustainability,** taking the projects' ecological, social and cultural impacts into consideration.

Some More Accomplishments of Bengaluru International Airport:

- Earlier, Terminal 2 of the Bengaluru International Airport received the prestigious **IGBC platinum certification from the Indian Green Building Council under the IGBC Green New Building Rating system.**
- The Indian Green Building Council (IGBC) has launched IGBC Green New Buildings rating system to address the National priorities.
- This **rating programme is a tool which enables the designer to apply green concepts** and reduce environmental impacts that are measurable.
- The rating programme covers methodologies to cover diverse climatic zones and changing lifestyles.
- Designed to accommodate 25 million passengers per annum in its first phase, T2 aims to blend functionality with aesthetic appeal, offering passengers an unforgettable experience through its insightfully curated art and decor elements.
- The sustainable design of T2, the **world's largest terminal pre-certified with a platinum LEED rating by the US Green Building Council before operational commencement,** reflects the airport's commitment to environmental responsibility.

- **LEED (Leadership in Energy and Environmental Design) is the world's most widely used green building rating system.**
- LEED certification provides a framework for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits.
- LEED certification is a globally recognized symbol of sustainability achievement.

UNSC clear Gaza aid resolution

Subject: IR

Section: International Organisation

Context: UN Security Council calls for Gaza aid, but stops short of demanding a ceasefire

More about the news:

- The **UN Security Council** passed a **new resolution** calling for **speeding up humanitarian aid deliveries into Gaza,** but **without the original insistence on an "urgent suspension of hostilities"** between Israel and Hamas.
- The U**nited States and Russia abstained** from the vote.
- The Health Ministry in Gaza **reported that around 20,000 people have been killed, constituting approximately 1%** of the prewar population, with over **half a million people facing starvation** due to insufficient food entering the besieged territory amid ongoing Israeli airstrikes and ground operations for over 10 weeks.
- The **death toll includes both civilians and combatants,** while Israel reports over 130 of its soldiers killed in the ground offensive.

What is UNSC Resolutions:

- A United Nations Security Council **resolution is a United Nations resolution adopted by the fifteen members of the Security Council**
- The **UN Charter specifies in Article 27** that a **draft resolution on non-procedural matters is adopted if nine or more of the fifteen Council members vote** for the resolution, and i**f it is not vetoed by any of the five permanent members.**
- The **term "resolution" does not appear in the text of the United Nations Charter.**
- **Resolutions by the Security Council are legally binding.**
- In **instances where the council fails to achieve consensus** or **secure a majority vote** for **a resolution, an alternative option** is the **issuance of a non-binding presidential statement.** Such statements are **adopted through consensus**, serving as a **means to exert political pressure.** They act as a **cautionary signal that the Council is closely monitoring the situation,** with the **implication that additional actions might be taken in the future.**

Some more facts about UNSC:

- The **Security Council was established by the UN Charter in 1945**. It is one of the six principal organs of the United Nations.
- The **other 5 organs of the United Nations** are—the **General Assembly (UNGA), the Trusteeship Council, the Economic and Social Council, the International Court of Justice, and the Secretariat.**
- Its **primary responsibility is to work to maintain international peace and security.**
- The council is **headquartered in New York.**
- UNSC has 1**5 members of which 5 are permanent and 10 are non-permanent members**. Non-permanent members **elected for two-year terms** by the **UN General Assembly.**
- **Five permanent members** are- **US, UK, France, Russia, and China.**
- It is the **only UN body with the authority to issue binding resolutions to member states.**

The Donkey Route

Subject : IR

Section: Msc

Context: Theme of SRK's 'Dunki'

What is Donkey Route:

- The **"donkey route" to the United States** involves **migrants traveling through Latin American countries to reach the US border.**
- The journey **often starts in countries like Ecuador, Bolivia, or Guyana, where Indian citizens can obtain visas easily**.

- The route **includes crossing the dangerous Darién Gap, a forested area between Colombia and Panama,** facing risks such as lack of clean water, wildlife, and criminal gangs.
- **From Panama**, migrants are often routed through Guatemala to enter Mexico and eventually **reach the US border,** facing challenges like jumping fences and **crossing the Rio Grande river**.
- The **journey is expensive, ranging from Rs 15 lakh to Rs 70 lakh,** and involves **coordination with human trafficking** networks.
- **Agents in India collaborate with traffickers along the entire route to the US**.
- Despite the dangers, **many migrants continue to take this perilous journey in pursuit of the American Dream.**

Maldives will not renew agreement for joint hydrographic survey with India
Subject: IR
Section: India's neighbours
Context:
- The Maldives cabinet has decided against renewing a **2019 MoU with India** for **hydrographic surveying**.
- India had "agreed" to Maldivian demand that **Indian troops be withdrawn from the Indian Ocean Island nation.**
- **Maldives** considers it is an infringement on Maldivian sovereignty.

Details:
- So far, **three joint hydrographic surveys** have been undertaken – in **2021, 2022,** and **2023**.
- The **Indian Naval Ship (INS) Darshak** carried out the **first Joint Hydrographic survey** in February and March of 2021, second by **INS Sutlej** and third by **INS Investigator.**

Hydrographic surveys:
- Following the **2019 agreement**, the **Maldives National Defence Force (MNDF)** and the **Indian Navy** have carried out **three joint hydrographic surveys**.
- **Hydrographic surveys** are carried out by **ships,** which use **methods** such as **sonar** to understand the various features of a water body.
- These surveys help **"map out water depth, the shape of the seafloor and coastline, the location of possible obstructions, and physical features of water bodies"**, to ensure the efficiency and safety of maritime transportation.
- The surveys will generate updated **navigational charts/electronic navigational charts** that would **enhance the navigational safety of ships and enhance the Blue Economy of Maldives**.

Does India have such water survey pacts with other countries as well?
- In **2021**, **India's oldest Hydrographic Survey ship, INS Sandhayak,** was decommissioned.
- It undertook more than **200 major hydrographic surveys** along the **Western** and **Eastern coasts** of the **Indian peninsula,** and the **Andaman Sea**, as well as surveys in neighbouring countries including **Sri Lanka, Myanmar,** and **Bangladesh**.
- A **UN study** says that approximately **50 per cent of coastal states have no hydrographic capability** and **another 25 per cent have only limited capabilities**. **Only the remaining 25 per cent,** including **India**, have **adequate hydrographic capabilities.**

Will Myanmar rebel offensive change EU approach to conflict
Subject : IR
Section: Places in news
Context: A major offensive against Myanmar's military-run government by an alliance of three militias of ethnic minorities
What is the issue:
- Myanmar has been in flames ever since the military seized power on February 1, 2021
- The **Ethnic Armed Organizations (EAOs) and People's Defence Forces (PDFs),armed civilian groups,** have **joined hands** against the **military, aligning with the self-declared National Unity Government** in exile.
- In intense clashes, **they successfully took control of two towns near the India-Myanmar border**, i.e. **Rikhawdar, close to Zokhawthar in Mizoram, and**

Khampat in Sagaing region, around **60 km from Moreh in Manipur** causing a refugee influx into Mizoram.

- The recent conflict, **known as Operation 1027,** initiated by the **Three Brotherhood Alliance** on October 27 in **Shan State**, resulted in the capture of over 100 military outposts and crucial border towns.
- The alliance is a **front of three EAOs:**
  - **the Myanmar National Democratic Alliance Army (MNDAA),**

- o **the Ta'ang National Liberation Army, and**
- o **the Arakan Army.**
- **Chinshwehaw, a vital point** on the **China-Myanmar border t**rade route and a **key revenue source** for the junta, was among the seized locations.
- Simultaneously, **local resistance forces ignited fighting** in various parts of the country.
- **Khampat in Sagaing region** is also **part of the proposed India-Myanmar-Thailand trilateral highway project.**

More about the news:
- The recent offensive by the **"Three Brotherhood Alliance"** in Myanmar, composed of **three ethnic armed organizations,** known as **"Operation 1027,"** has **not led to a major shift in Western policy** towards the ongoing conflict, despite **reports suggesting it could be a turning point**
- Some observers suggest this offensive could be the **beginning of the end for the junta**, but Western governments are **taking a cautious "wait-and-see" approach.**
- The **National Unity Government (NUG)**, established after the coup, is trying to **garner support from ethnic armed organizations.**
- The EU stated it is **closely monitoring the situation, which could be a turning point, but it's too early to draw firm conclusions.**

What does the opposition want from the West:
- The N**ational Unity Government (NUG) of Myanmar** has been in communication with the European Union (EU), updating them on the ongoing offensive against the military junta.
- The NUG previously i**ssued the "Prague Appeal,"** outlining its **vision for a post-war federal democracy** and urging the EU to recognize the NUG and evolving state governments as Myanmar's legitimate authorities.
- The EU has **responded with humanitarian aid, releasing around €68 million this year**, and imposing **seven rounds of sanctions targeting individuals and entities linked to the military junta.**
- The EU emphasizes the **need for an end to hostilities, respect for international humanitarian law,** and the creation of an inclusive and democratic federal governance system in Myanmar.

What comes next for Myanmar:
- **Concerns persist** regarding the **balance of power** within the **anti-junta movement in Myanmar,** particularly as much of the recent **fighting has been carried out by ethnic militias not formally aligned with the National Unity Governmen**t (NUG).
- While the European Union (EU) and European governments express support for inclusive dialogue i**nvolving all parties**, **including ethnic armed organizations (EAOs),** un**certainty remains about how to engage** with these militias due to limited past contact.
- While no high-level meetings between the NUG and European officials are currently scheduled, the **NUG's foreign minister and representatives from some EAOs visited Lithuania** to meet local parliamentarians.
- An anonymous EU diplomatic source emphasized the **necessity of genuinely inclusive dialogue that involves both EAOs and the NUG.**
- The military junta's repression has consistently faced opposition, leading to concerns for the junta's stability.

Subject : IR

Section: Places in news

Context:

- **China and Vietnam are working on a possible significant upgrade of their underdeveloped rail links to boost a line that crosses Vietnam's rare earths** heartland and reaches the country's top port in the north.

More about News:

- The upgraded **railway would pass through the region where Vietnam has its largest deposits of rare earths,** of which China is by far the world's biggest refiner.
- Vietnam is trying to build its own industry in what is seen as a **possible challenge to China's dominance,** but what appear as internal fights have cast a shadow over these efforts.
- Chinese and Vietnamese rare earths industry experts last week discussed stronger cooperation on processing the minerals.
- It is unclear how much China would contribute to the upgraded railway track in Vietnam and whether Hanoi would accept sizeable financing from Beijing on this.
- The line could be seen as part of China's **flagship Belt and Road Initiative (BRI)** which is supporting infrastructure investment across the world, **but is not clear whether it would be labelled as a BRI project.**
- A strengthened railway link could also **boost Vietnam's export to China, mostly of agriculture products, boost Chinese tourism to northern Vietnam** and further integrate the two countries' manufacturing industries, which experts already consider as symbiotic, with factories in Vietnam largely assembling components produced in China.
- **China is Vietnam's largest trading partner and so far this year is also the main investor,** taking into account investment from Hong Kong, as many Chinese companies move south some of their operations amid trade tensions between Beijing and Washington.
- Despite the booming economic links, the two communist nations are embroiled in a years-long maritime dispute in the South China Sea and fought a brief war in the late 70s, China's latest.

What are Rare Earth Metals?

- They are a set of **seventeen metallic elements**. These include the fifteen lanthanides on the periodic table in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides.
- The 17 Rare Earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).
- These **minerals have unique magnetic, luminescent, and electrochemical properties** and thus are used in many modern technologies, including consumer electronics, computers and networks, communications, health care, national defense, clean energy technologies etc.
- Even **futuristic technologies need these REEs.**
- For example, high-temperature **superconductivity**, safe storage and transport of hydrogen for a post-hydrocarbon economy etc.
- They are called 'rare earth' because **earlier it was difficult to extract them from their oxides forms technologically.**
- They occur in many minerals but typically in **low concentrations to be refined in an economical manner.**

How China Monopolised Rare Earths?

- China has over time acquired **global domination of rare earths**, even at one point, it produced 90% of the rare earths the world needs.
- **Today, however, it has come down to 60% and the remaining is produced by other countries, including the Quad** (Australia, India, Japan and United States).
- Since 2010, when China curbed shipments of Rare Earths to Japan, the US, and Europe, production units have come up in Australia, and the US along with smaller units in Asia, Africa, and Latin America.
- Even so, the dominant share of processed Rare Earths lies with China.

What is India's Current Policy on Rare Earths?

- **Exploration in India has been conducted by the Bureau of Mines and the Department of Atomic Energy.** Mining and processing has been performed by some minor private players in the past, but is today concentrated in the hands of **IREL (India) Limited (formerly Indian Rare Earths Limited), a Public Sector Undertaking under the Department of Atomic Energy.**

- India has granted government corporations such as IREL a monopoly over the primary mineral that contains REEs: **monazite beach sand**, found in many coastal states.
- IREL produces rare earth oxides (low-cost, low-reward "upstream processes"), selling these to foreign firms that extract the metals and manufacture end products (high-cost, high-reward "downstream processes") elsewhere.
- IREL's focus is to provide thorium — extracted from monazite — to the Department of Atomic Energy.

What are the Related Steps taken?

Globally:

- The Multilateral **Minerals Security Partnership (MSP)** was announced in June 2022, with the goal of bringing together countries to build robust critical minerals supply chains needed for climate objectives.
- Involved in this partnership are the United States (US), Canada, Australia, Republic of Korea, Japan, and various European countries.
- **India is not included in the partnership.**

By India:

- **Ministry of Mines** has **amended Mines and Minerals (Development and Regulation) (MMDR) Act, 1957** through the Mines and Minerals (Development and Regulation) Amendment Act, 2021 for giving boost to mineral production, improving ease of doing business in the country and increasing contribution of mineral production to Gross Domestic Product (GDP).
- The amendment act provides that no mine will be reserved for particular end-use.

What is the Belt and Road Initiative?

- The BRI, represents a multifaceted development strategy aimed at **enhancing global connectivity and cooperation.**
- It was launched in 2013 and aims to link Southeast Asia, Central Asia, the Gulf region, Africa and Europe with a network of land and sea routes.
- The project was first named the **'One Belt, One Road'** but renamed as the BRI to convey a more open and inclusive initiative as opposed to a Chinese-dominated one.
- The initiative includes two principal components: the Silk Road Economic Belt and the Maritime Silk Road.

Routes of BRI:

Silk Road Economic Belt:

- This segment of the BRI is dedicated to improving connectivity, infrastructure, and trade links across Eurasia through a network of overland transportation routes.

Maritime Silk Road:

- This component emphasizes **maritime connections and cooperation in the form of ports, shipping routes, and maritime infrastructure projects.**
- It begins via the South China Sea going towards Indo-China, South-East Asia and then around the Indian Ocean thus reaching Africa and Europe.

Objective:

- The **primary goal of the BRI is to boost international connectivity by enhancing infrastructure, trade, and economic cooperation.**
- The initiative encompasses a wide range of projects, including railways, ports, highways, and energy infrastructure.

UN bars altering Guyana control of territory

Subject: IR

Section: Places in news

Context: UN court bars Venezuela from altering Guyana's control over disputed territory

More about the news:

- The **International Court of Justice (ICJ)** ordered **Venezuela to refrain from taking any action** that would **alter Guyana's control over** the disputed **Essequibo region**.
- The ruling, while **not explicitly halting Venezuela's planned referendum** on the territory's future, stated that **Venezuela must avoid any action modifying the current situation in Essequibo**.
- Guyana had sought the **ICJ's intervention**, expressing concerns that the **referendum was a prelude to Venezuela** annexing the disputed territory.
- The ICJ's l**egally binding order will remain in place until a final decision** is reached in the case brought by Guyana against Venezuela, a process that could take years.

- Both countries interpreted the ruling as supporting their positions.
- Venezuela, **despite not recognizing the ICJ's jurisdiction, considered it a victory as the court did not halt the referendum plans**.
- Guyana **welcomed the decision, emphasizing that Venezuela is prohibited from annexing or trespassing upon Guyanese territory.**
- The **territorial dispute has a long history**, dating back to the **1899 border decision and exacerbated** by oil and mineral resources in the region.

Some facts about ICJ:

- The **International Court of Justice (ICJ)** is the **principal judicial organ** of the United Nations (UN).
- It was **established in June 1945** by the Charter of the United Nations and began work in April 1946.
- The **seat of the Court is at the Peace Palace** in **The Hague (Netherlands).**
- The Court's role is to settle, in accordance with international law, legal disputes submitted to it by States and to **give advisory opinions on legal questions** referred to it by authorized United Nations organs and specialized agencies.
- The ICJ has **15 judges who are elected to nine-year terms** by the **UN General Assembly and Security Council,** which **vote simultaneously** but separately.
- To be elected, a **candidate must receive a majority of the votes** in both bodies.
- A **third of the court** is elected **every three years**.
- The **president and vice-president of the court** are **elected for three-year terms by secret ballot**. Judges are eligible for re-election.
- **Four Indians** have been members of the **ICJ so far**.
- **Justice Dalveer Bhandari, former judge of the Supreme Court,** has been serving at the **ICJ since 2012**. Others being **R S Pathak (1989-91), Nagendra Singh (1973-88), Sir Benegal Rau (1952-53).**
- It is **assisted by a Registry,** its administrative organ. Its official languages are English and French.

India at the ICJ:

- India has been a party to a case at the ICJ on **six occasions, four of which have involved Pakistan.**
- They are:
- **Right of Passage over Indian Territory** (**Portugal v. India, culminated 1960);**
- **Appeal Relating to the Jurisdiction of the ICAO** Council (India v. Pakistan, culminated 1972);
- **Trial of Pakistani Prisoners of War** (Pakistan v. India, culminated 1973);
- Aerial Incident of 10 August 1999 (Pakistan v. India, culminated 2000)
- **Obligations concerning Negotiations relating to Cessation of the Nuclear Arms Race and to Nuclear Disarmament** (**Marshall Islands v. India, culminated 2016)**;
- **Kulbhushan Jadhav** (India v. Pakistan, culminated 2019).

Some Facts about Guyana:

- The **Co-operative Republic of Guyana,** is a **country on the northern mainland of South America**.
- Guyana is an **indigenous word which means "Land of Many Waters"**.
- The **capital city is Georgetown**.
- Guyana is **bordered by the Atlantic Ocean to the north, Brazil to the south and southwest, Venezuela to the west, and Suriname to the east.**
- Guyana is the **third smallest country** in mainland South America.

At least 85 confirmed killed by Nigerian army's 'mistaken' drone attack

Subject: IR

Sec: Places in news

Context: At least 85 confirmed killed by Nigerian army's 'mistaken' drone attack

More about the news:

- At **least 85 people were confirmed dead** in northwest **Nigeria after a military drone attack on a religious gathering** during a Muslim holiday celebration.
- The victims, including children, women, and the elderly, were **attending an event in Kaduna state's Tudun Biri village.**
- The **drone strike, purportedly targeting terrorists** and bandits, resulted in **66 injuries**.
- This incident **adds to a series of mistakes in Nigeria's conflict zones**, prompting President Bola Tinubu to order a comprehensive investigation.
- Over **400 civilians have been killed in airstrikes since 2017**, aimed at armed groups in the country's north.
- Concerns are raised about the lack of collaboration among security agencies and the proliferation of drones without clear guidelines for their use.

Some facts about Nigeria:

- The **Federal Republic of Nigeria,** is a country in **West Africa**.
- It is **situated between the Sahel to the north and the Gulf of Guinea to the south in the Atlantic Ocean.**
- It is the **most populous country in Africa, and the world's sixth-most populous** country.
- Nigeria **borders Niger in the north, Chad in the northeast, Cameroon in the east, and Benin in the west.**
- **Abuja** is the **capital of Nigeria.**
- The **largest city** in Nigeria is **Lagos,**
- The **main river**s are the **Niger and the Benue,** which converge and **empty into the Niger Delta**
- It is **Africa's top oil producing country**.
- The **three largest ethnic groups** of Nigeria are;
  - **Hausa in the North.**
  - **Yoruba in the West.**
  - **Igbo in the east**

Bhutan to have 1000-sq. km. green city along Assam border 'connecting South Asia to Southeast Asia'

Subject :IR

Section: Places in news

Gelephu Smart city Project:

- **Bhutan's King Jigme Khesar Namgyel Wangchuck** announced plans for an **"international city"** on a **1,000+ sq. km.** area bordering **Assam,** at the **Changlimathang stadium** in **Thimpu.**
- This **Economic Corridor aims** to connect **South Asia** with **Southeast Asia** via **India's northeastern states** and will **enhance the connectivity.**

- **Infrastructure Development:** Includes **India-Bhutan railway line** to **Gelephu,** linking roadways, trading points, and connections to **Myanmar, Thailand, Cambodia,** and **Singapore.**

Project Details:

- Focus on environmental standards, sustainability, zero-emission industries, a mindfulness city, and infrastructure development.
- **Gelephu project** will have a distinct administrative region under different laws to attract international investment.
- **India has committed to improving roads, connecting border towns** with **railways**, and supporting **Bhutan's development.**

Impact on Bhutan:

- This mega project is considered to be a **'point of inflexion'** and **'transformation'** for **Bhutan** and **South Asia.**
- Anticipation among citizens for **job creation** and **economic opportunities,** especially for the youth.
- It will mark **Bhutan's international presence.**

The stormy Red Sea, the complexities of global events

Subject : IR

Section: Places in news

Context

- The Israel-Hamas war has opened a new front in the Red Sea, which will impact Asian economies.

Various Global Tensions

- **Escalation of Tensions:** At the end of October, a bold terror attack by Hamas against Israel disrupted regional stability, **drawing the Yemen-based Houthi militia into the conflict.**
- **Red Sea's Strategic Significance:** The announcement of Houthi involvement brought the critical Red Sea into the heart of the conflict, **posing a threat to the Suez Canal, a vital artery for nearly 15% of global trade.**
- **Houthi Aggression at Sea:** In mid-November, the Houthis raided a cargo vessel with reported Israeli links in the Red Sea, showcasing their military capabilities and escalating tensions.

Global Response

- **US Military Deployment:** The United States has taken a leading role, deploying military assets to counter Houthi threats, including drones, missiles, and direct operations.
- **Multinational Task Force:** In response to increasing incidents, the U.S. calls for a multinational task force in the **Bab al-Mandab Strait, a crucial passage connecting Yemen, Djibouti, and Eritrea.**
- **Saudi Arabia's Dilemma:** Despite the on-going conflict with the Houthis in Yemen, Saudi Arabia urges restraint by the U.S., signaling a complex geopolitical landscape.
- **Saudi-Iran Détente:** Surprisingly, talks between Saudi Arabia and the Houthi leadership have emerged following a Saudi-Iran detente brokered by China.
- **China's Diplomatic Role:** Arab response to the Gaza crisis indicates positive sentiments toward China, particularly due to its balanced stance compared to the unequivocal support given by the U.S. to Israel.

Global Impact on Asian Economies

- **Security Depletion in the Red Sea:** The global ramifications of security deterioration in the Red Sea extend to Asian economies such as India, Japan, South Korea, and China.
- **Persian Gulf Dynamics:** India, Japan, and South Korea navigate diplomatic channels in dealing with tensions in the Persian Gulf, each having specific interests and concerns.

Mobilizing Global Partners

- **US Call for Action:** Reflecting on past multilateral efforts against piracy, the U.S. calls for partners to mobilize, recognizing the necessity of a collective response.
- **Stakeholders in West Asian Security:** India, Japan, and South Korea, as net importers of oil and gas, emerge as stakeholders in West Asian security, underlining their strategic and kinetic interests.

Non-State Actors' Growing Influence

- **Shifting Geopolitical Order:** As the global geopolitical landscape evolves, the rise of non-state militant actors becomes a crucial factor, often aligned with state interests for short-term gains and long-term strategic victories.

What led to the coup attempt in Sierra Leone?

Subject : IR

Section: Places in news

Context:

- On November 26, unidentified gunmen attempted a coup in Sierra Leone, targeting military barracks, police stations, and correctional centers.

What is happening in Sierra Leone?

- In August 2023, the Sierra Leone police arrested several individuals, including senior military officers, accused of planning violent attacks on government institutions.
- The recent attacks aimed to free the arrested military officers and were declared an unsuccessful coup attempt by the government.
- **Political instability is a key factor**, intensified by President Julius Maada Wonie Bio's **contested re-election and the opposition's boycott of parliament.**
- **Economic instability, marked by a high cost of living, severe poverty, and a 50.94% inflation rate in August, contributes to unrest.**
- **President Bio's economic policies worsened the crisis**, leading to protests demanding his resignation in July and August 2022.
- Police aggression, seen in incidents like the 2020 prison riot and the August 2022 protests, fuels resentment toward the government.

Measures to End Resentment

- The state response includes an **indefinite curfew, flight rescheduling**, cash rewards for information on coup leaders, and ongoing security operations.
- **Sierra Leone is a member of the Economic Community of West African States (ECOWAS), and ECOWAS intervention may occur to maintain constitutional order.**
- ECOWAS has a **history of intolerance toward unconstitutional takeovers** and may impose sanctions on Sierra Leone if a coup attempt succeeds.

Some facts about Sierra Leone

- Sierra Leone, officially the Republic of Sierra Leone, is a **country on the southwest coast of West Africa.**
- The country is **bordered by Guinea to the north and east, Liberia to the southeast, and the Atlantic Ocean to the west and southwest.**
- The country's capital, Freetown, was founded as a settlement for freed slaves in the late 18th century.
- **Temne and Mende are the largest ethnic group of Sierra Leone.**
- The country is **rich in natural resources, especially diamond, gold, bauxite and aluminum.**
- Sierra Leone has one of the **world's largest deposits of rutile, a titanium ore used as paint pigment and welding rod coatings.**

Migrant vessel capsized off Libya

Subject : IR

Section: Places in news

Context: Over 60 drown in a migrant vessel off Libya while trying to reach Europe

More about the news:

- A boat **carrying 86 migrants capsized off the coast of Libya,** resulting in the tragic **death of over 60 people**, including women and children.
- The incident **occurred near the town of Zuwara on Libya's western coast**, with strong waves causing the boat to capsize.
- The **UN's International Organization for Migration (IOM)** reported the shipwreck, emphasizing the perilous nature of the central Mediterranean route, one of the world's most dangerous migration paths.
- Libya has become a major transit point for migrants fleeing conflict and poverty in Africa and the Middle East, and the central Mediterranean is a deadly route for those seeking entry into Europe.
- The region has **witnessed thousands of deaths,** with over 2,250 fatalities reported on this route in the current year alone.

Some facts about International Organization for Migration (IOM)

- IOM is an **intergovernmental organization** that provides **services and advice concerning migration to governments and migrants**, including refugees, internally displaced persons and migrant workers.
- IOM was established **in 1951 as Inter governmental Committee for European Migration (ICEM)** to help resettle people **displaced by World War II.**
- It was granted Permanent Observer status to the UN General Assembly in 1992.
- **Cooperation agreement** between **IOM and the UN was signed in 1996**.

- The **World Migration Report** is published every year by the International Organization for Migration (IOM) of the UN.
- IOM **works in four broad areas** of migration management:
    - **Migration and development,**
    - **Facilitating migration,**
    - **Regulating migration and**
    - **Forced migration.**
- It has **175 member states**, a further **8 states holding observer status** and offices in over 100 countries.
- **India is a member of IOM.**

Some facts about Libya:

- Libya is a **country in the Maghreb region** of North Africa.
- It borders the **Mediterranean Sea to the north, Egypt to the east, Sudan to the southeast, Chad to the south, Niger to the southwest, Algeria to the west, and Tunisia to the northwest.**
- **Tripoli is the capital of Libya.**
- Libya had the **largest proven crude oil reserves in Africa**

US announces 10-nation force to counter Houthi attacks in Red Sea

Subject : IR

Section: Places in news

Context:

More about the news:

- The **U.S. and several other nations** have initiated a **new force, Operation Prosperity Guardian**, to p**rotect ships in the Red Sea** that are under attack by drones and ballistic missiles from Houthi-controlled areas of Yemen.
- The attacks have **led to shipping companies ordering their vessels to hold in place.**
- The new multinational security initiative **aims to provide collective action against the attacks.**
- **Operation Prosperity Guardian** will not necessarily **escort specific vessels but will offer umbrella protection** to as many ships as possible in the **southern Red Sea.**
- The **U.K, Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles, and Spain have joined** the maritime security mission.
- **China,** despite having warships in the region, is notably **absent**.
- The new initiative will be **coordinated by the existing Combined Task Force 153, established in April 2022** to enhance maritime security in the region.
- The U.S. has also **called on the United Nations Security Council** to take action against the Houthi attacks on commercial vessels.

What is Combined Task Force 153:

- **Combined Task Force 153 (CTF 153)** is a **task force** that focuses on maritime security and capacity building **in the Red Sea, Bab al-Mandeb, and Gulf of Aden**.
- It was **established on April 17, 2022**, and is one of **five task forces operated by the Combined Maritime Forces (CMF)**

What is Combined Maritime Forces (CMF):

Who are the Houthis:

- The Houthis are a **large Zaidi Shia** clan that began a **movement against the dictatorship of Ali Abdullah Saleh** in the 1990s.
- Today, they are a faction in the bloody civil war that has raged in Yemen since 2014.
- The Houthis are **backed by Iran and control territory in the west and northwest of Yemen, including the capital Sana'a.**
- They are fighting against the **Sunni-led internationally recognised Yemeni government, backed by Saudi Arabia and the UAE**.

Red Sea patrol force to counter Houthi attacks

The United States has announced a 10-nation force to protect trade in the Red Sea after attacks by Yemen's Houthi rebels forced shipping companies to halt operations.

Red Sea attacks: Rerouting of ships to push up cost, impact India's trade

Subject :IR

Section: Places in news

Context:

- Global trade, which is heavily dependent on container shipping, is in troubled waters due to the fallout of the recent attacks by **Iranian-backed Houthi militants** on ships passing through the **Red Sea/Gulf of Aden**.

Details:

- Container ships are now being diverted via the **Cape of Good Hope** at the **southern tip of Africa,** resulting in a sharp rise in both the transit time and freight cost.
- These ships burn a million dollars worth of fuel per trip more than they would if they went via the **Suez Canal**.

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Consequences:

- The circuitous **Cape of Good Hope route,** which adds about **6,000 nautical miles** to a typical voyage from Asia to Europe, doubles the travel time to more than a fortnight.
- As ships spend more time sailing, their turnaround time is cur-tailed.
- Freight charges will double to more than $2,000 per TEU.

DOUBLE BLOW

- Global Shipping were facing the drought at Panama canal and now the Red Sea crisis.
- The **Panama Canal** is another vital link for ships from Asia heading to the Eastern Coast of the United States and Europe.

India's trade using Red Sea route:

- Exports include engineering goods, textiles, and tea, and its imports are electronics and minerals through the Red Sea and the Suez Canal.
- **Europe accounts for over 65 per cent of India's coffee exports**.
- In the short term, insurance rates may increase. Freight charges may go up, which will have an impact on costs.
- In this dynamic geopolitical situation, **India** is likely to emerge as an important player in strengthening the **food security** of the **Middle East and North Africa region (MENA).**

Alternative shipping route avoiding Red Sea

Using Red Sea/ Suez Canal
10,000 nautical miles (18,520 km)
25.5 days*

Around Cape of Good Hope
13,500 nautical miles (25,002 km)
34 days*

*Based on ultra large container vessel's average speed of 16.48 knots

Key terms:

- The **Suez Canal** is a man-made 193 km tiny strip of water that connects the **Red Sea** and the **Mediterranean Sea**.
- The **Gulf of Aden** is a deepwater gulf of the **Indian Ocean** between **Yemen** to the **north**, the **Arabian Sea** to the **east**, **Djibouti** to the **west**, and the **Guardafui Channel, Socotra** and **Somalia** to the **south**.
   - In the **northwest**, it connects with the **Red Sea** through the **Bab-el-Mandeb strait,** and it connects with the **Arabian Sea** to the **east**. To the **west**, it narrows into the **Gulf of Tadjoura** in **Djibouti**. The **Aden Ridge** lies along the middle of the Gulf and is causing it to widen about 15mm per year.
- The **Cape of Good Hope** is a rocky headland on the **Atlantic coast** of the **Cape Peninsula** in **South Africa**.
   - It is not the **southernmost** point of the **African continent,** but **Cape Agulhas** is the southernmost point.

A strategic choke point- Bab el Mandeb

Subject : IR

Section: Places in news

Context: Houthi attacks on tankers passing through the narrow Strait

More about the news:

- The Houthis, a **Shia militia in Yemen** backed by Iran, initially **declared war on Israel during the Israel-Hamas conflict.**
- They shifted tactics, **targeting ships in the Red Sea,** particularly around the **Strait of Bab el-Mandeb,** disrupting global shipping and leading to increased security concerns and rerouted traffic.

Who are the Houthis:

- The Houthis are a **large Zaidi Shia** clan that began a **movement against the dictatorship of Ali Abdullah Saleh** in the 1990s.
- Today, they are a faction in the bloody civil war that has raged in Yemen since 2014.
- The Houthis are **backed by Iran and control territory in the west and northwest of Yemen, including the capital Sana'a.**
- They are fighting against the **Sunni-led internationally recognised Yemeni government, backed by Saudi Arabia and the UAE**.

Some facts about Bab el Mandeb

- It is a **strait that connects the Red Sea (northwest) with the Gulf of Aden and the Indian Ocean (southeast).**
- It is **located between Arabia (northeast) and Africa (southwest)**.
- It is an important strategic connection in the **marine commerce route connecting the Mediterranean Sea to the Indian Ocean via the Red Sea and the Suez Canal.**
- It is one of the **world's most important seaborne** commodity shipping routes, primarily for crude oil and petroleum.
- **Yemen borders it on the Arabian Peninsula, and Djibouti and Eritrea border it on the African coast.**

Some facts about the Red Sea:

- **The Red Sea (Erythraean Sea) is a seawater** inlet of the Indian Ocean, lying between Africa and Asia.
- The connection to the ocean is in the south through **the Bab el Mandeb strait** and **the Gulf of Aden.**
- To the **north lie the Sinai Peninsula, the Gulf of Aqaba, and the Gulf of Suez** (leading to the Suez Canal).
- The sea is **underlain by the Red Sea Rift** which is part of the Great Rift Valley.
- The six countries bordering the Red Sea are: **Saudi Arabia, Yemen , Egypt , Sudan , Eritrea , Djibouti**
- Islands include **the Dahlak Archipelago, the Farasan Islands, and Zubair Archipelago.**
- Key ports of the **Red Seaare Jeddah (Saudi Arabia), Port Sudan (Sudan), Djibouti Port (Djibouti), Aqaba Port (Jordan).**
- **Bab el Mandeb Strait:** Located at the **southern** entrance of the Red Sea, connecting it to the **Gulf of Aden** and the **Indian Ocean**.
- **Strait of Tiran:** Situated at the **northern** end of the Red Sea, **separating the Sinai Peninsula from the Saudi Arabian coastline** and providing access to the **Gulf of Aqaba**.

Iran threatens Mediterranean closure amid intense Israel strike in North Gaza

Subject :IR

Section: Places in news

Context: Iran threatens Mediterranean closure amid intense Israel strike in North Gaza

More about the news:

- The **Houthi group in Yemen** is aligned with **Iran**, and **it has engaged in attacks on merchant vessels** in the Red Sea.
- This has **led to concerns** about the **security of shipping routes** in the region.
- **Brigadier General Mohammad Reza Naqdi**, a commander in the **Iranian Revolutionary Guards**, issued a **veiled warning**, suggesting that the **Mediterranean Sea could be shut down** if the **U.S. and its allies persist** in what **Iran perceives as "crimes"** in Gaza.
- The threat **seems more rhetoricalthan operational,** raising **doubts about the practicality of implementing a blockade** on the Mediterranean in response to the Gaza situation.

Some facts about Mediterranean Sea

- It is an **intercontinental sea** that is b**ordered by the continent of Europe in the north, by Asia in the east, and by Africa in the south.**
- **Bordering Countries (21 countries**): A**lbania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, and Turkey.**

- To the **west it is connected to the Atlantic Ocean** through the **Strait of Gibraltar, to the east with the Black Sea through the Dardanelles Straits, and to the south with the Red Sea through Suez Canal.**
- Some of the **large Mediterranean Islands** include **Corsica, Crete, Cyprus, Chios, Euboea, Lesbos, Mallorca, Rhodes, Sicily, and Sardinia. The island of Sicily is the largest island in the Mediterranean Sea.**
- A large number of rivers **drain into the Mediterranean Sea, including the Ebro, Rhone, Po, Nile, Tiber, etc**

UN calls for rescue of 185 Rohingya adrift in Indian Ocean

Subject :IR

Section: Places in news

Context: UN urges rescue of 185 Rohingya adrift in Indian Ocean

More about the news:

- The **United Nations has urgently called** for the **rescue of 185 people,** primarily women and children, stranded on a distressed **boat near the Andaman and Nicobar Islands** in the Indian Ocean.
- The **UNHCR refugee agency** reported that about 70 of those on board are children, 88 are women, and at least a dozen are feared to be in critical condition, with one reported death.
- The individuals are **believed to be Rohingya refugees**, and the UNHCR is appealing to coastal authorities to urgently rescue them.
- Rohingya refugees, heavily persecuted in Myanmar, **often undertake risky sea journeys to reach countries like Malaysia or Indonesia.**
- The UNHCR **stressed the need for timely rescue** efforts to prevent a larger tragedy.
- Thousands of Rohingya attempt such journeys every year, with over 2,000 believed to have done so in 2022.

Some facts about UNHRC:

- It is an **intergovernmental body** within the United Nations system.
- The UNHRC **replaced** the **former UN Commission on Human Rights**.
- It was **created by the UNGA** on **March 15, 2006**, and the **body met in its first session in June, 2006.**
- The **Council is made up of 47 UN Member States** who are **elected by majority vote** through a **direct and secret ballot** at the UNGA.
- The **membership of the Council** is based on **equitable geographical distribution.**
  - **African and Asia-Pacific states have 13 seats each,**
  - **Latin American and Caribbean states have 8 seats,**
  - **Western European and other states have 7 seats, and**
  - **Eastern European states have 6 seats**.
- The UNGA **takes into account the candidate States' contribution** to the promotion and protection of human rights, as well as their **voluntary pledges and commitments in this regard.**
- The members **serve for three years and are not eligible for immediate re-election** after **serving two consecutive terms.**

Some facts about Rohingya:

- The Rohingya are an **ethnic group**, mainly consisting of **Muslims, and primarily residing in the Rakhine province** of Western Myanmar.
- They **communicate in a Bengali dialect** rather than the widely spoken Burmese language.
- Despite having a longstanding presence in the Southeast Asian nation, **Myanmar views them as individuals who migrated to their territory** during the colonial era. The country **categorizes them as "resident foreigners"** or **"associate citizens."**

Migrants March in Mexico

Subject : IR

Section : Places in news

Context: Migrants are marching towards the US Border.

More about the news:

- A **large migrant caravan,** consisting of people from **Central America, Venezuela, Cuba, and other countries**, is making its **way through Mexico towards the US border.**

- The caravan, comprising around 6,000 individuals, signals challenges in the joint efforts by the Biden administration and the Mexican government to control the influx of migrants.
- **Departing from** Tapachula, near Mexico's southern border, the caravan includes many families with children.
- The Mexican authorities, **adopting past tactics, are observing the march, anticipating fatigue among the migrants** before offering temporary legal status.
- Despite previous agreements, the surge in migration disrupts bilateral trade and fuels anti-immigrant sentiments in the US.
- The **Biden administration and Mexican President López Obrador** are set to discuss the situation, with arrests at the US border reaching up to 10,000 a day this month.

Some additional Facts:
- **Migrants in Mexico** are **entitled to health care**, but many aren't receiving it. The country's **Comprehensive Health Care Plan for the Migrant Population** guarantees **health care for the migrant population** but has **not been fully funded nor implemented.**

Some facts about Mexico:
- Mexico is a country in the **southern portion of North America**.
- It is **bordered to the north by the United States; to the south and west by the Pacific Ocean; to the southeast by Guatemala, Belize, and the Caribbean Sea; and to the east by the Gulf of Mexico.**
- **Mexico City is the capital of Mexico**

Indians aboard grounded charter flight return to Mumbai

Subject: IR

Section: Places in news

Context: Twenty-five passengers on the flight to **Nicaragua** were grounded over a **human trafficking probe,** and have chosen to request **asylum in France.**

Details:
- The passengers were heading to Nicaragua but their flight was stopped at the **Varty airport (France)** for refuelling on its journey from **Fujairah** in the **United Arab Emirates** to **Managua, Nicaragua**.
- Twenty-five passengers did not return to India, requesting asylum in France. They were transferred to a special zone in Paris' Charles de Gaulle airport for asylum-seekers.

New law: A new, tougher law on immigration was recently cleared by the **French parliament.**

Benefits offered by France to asylum-seekers:
- **Generous system:** France had a generous system for asylum-seekers providing them up to 300 euros a month.
- **Housing:** Can apply for housing in the hundreds of asylum-seeker housing projects across the country
- **Cheap meals:** Cheap meals are often easily available at food banks.
- **Health:** They gets free health insurance while their application is being reviewed
- **Social security:** Foreign residents get social security benefits, which include assistance in paying rent, childcare, etc.

Key changes in the new law:

Key changes	Inference
Longer wait for non-EU migrants to get welfare:	People not from European Union countries will have to show they have been in the country for 30 months to receive social welfare benefits. Those not working will have to wait five years.
Review of medical care access:	The government will review current legislation that provides illegal residents unlimited access to government-funded medical care, reported Reuters.
Asylum-seekers can be detained:	Asylum seekers whose behaviour constitutes a threat to public order can be placed in preventive detention
Tougher citizenship rules:	Children of foreigners born in France will no longer get French citizenship automatically
Students have to make a deposit:	Foreign students requesting a student residency permit will have to make a refundable deposit to cover potential "sending back" costs , unless they have financial needs or excellent academic results.

UN Convention for Asylum Seekers:
- **Article 14:** Article 14 of the **Universal Declaration of Human Rights 1948** recognizes the **right of persons to seek asylum** from persecution in other countries.

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1951 Refugee Convention and 1967 Protocol:

- **Principal of Non Refoulement:** The foundational principle of international law is non-refoulement, which holds that a refugee must not be returned to a country where they would suffer severe threats to their life or freedom.
- **Adoption:** The United Nations Convention relating to the Status of Refugees was adopted in 1951, and is the centerpiece of international refugee protection today.
- **India perspective:** India is not a party to the 1951 Refugee Convention and its 1967 Protocol, the key legal documents pertaining to refugee protection.

Places in news:

- **Varty Airport-** France
- **Fujairah** - United Arab Emirates
- **Managua**- Nicaragua.

Why more Indians seem to be travelling to Nicaragua

Subject :IR

Section: Places in news

More about the news:

- Interest in **traveling to Nicaragua** has surged in India, leading to **increased queries about visas.**
- A recent incident **involved a Nicaragua-bound chartered flight** from the **UAE with 303 Indian passengers detained** in France on suspicion of 'human trafficking.'
- The **Airbus A340** made a **technical stop in Vatry, France,** where an anonymous tip prompted concerns.
- The flight **returned to Mumbai, but 25 passengers sought asylum in France**, highlighting a notable rise in Indian interest and travel to Nicaragua.

Why have cases of Indians seeking to travel to Nicaragua led to some concerns

- Increased **interest in traveling to Nicaragua** from India has **raised concerns about potential misuse** as a route for **illegal entry into the United States and Canada**.
- US Customs and Border Patrol data reveals a significant rise, with **96,917 Indians arrested for attempting illegal entry** into the US in the fiscal year 2023, marking a **51.61% increase**.
- While some travelers **may have legitimate reasons,** the surge in inquiries, especially from individuals with **limited international travel history,** has led to suspicions.
- Notably, a large number of q**ueries are coming from Punjab, followed by Gujarat**.

Is the process for obtaining a visa from Nicaragua easy

- Obtaining a **visa for Nicaragua can be challenging** for Indian passport holders due to a **lack of clarity and an absence of a Nicaraguan embassy in India**.
- The country **only has an honorary consul general in India**, **Vivek Burman of the Dabur group,** whose office **lacks the authority to issue visas** or authenticate related documents.
- While **Indian passport holders are technically eligible for a visa on arrival in Nicaragua,** the unclear policy and **lack of information in the public domain contribute to confusion in the application process.**

How do Indians reach Nicaragua

- **Indians with valid visas** for the **US, Canada, and Schengen countries can reportedly reach Nicaragua** and obtain a **visa on arrival by paying the necessary fee**.
- However, t**hose without valid visas** to these countries are **advised to apply for travel authorization** directly with the Nicaraguan Ministry of the Interior.
- **Travel agents recommend even** those with valid visas to **apply for advance travel authorization** due to potential complications in Nicaragua's immigration procedure, **language barriers (Spanish being prevalent), and limited familiarity** with regulations for Indian citizens.
- The **honorary consul general's office in India** directs **travelers to contact the Nicaraguan Ministry of the Interior** for further information on the visa on arrival process.

Some facts about Nicaragua:

- The Republic of Nicaragua is the **largest country in Central America**, bordered by **Honduras to the north,** the **Caribbean to the east, Costa Rica to the south, and the Pacific Ocean to the west**.
- **Managua** is the **country's capital** and largest city.

Telecom act doesn't give power to break encryption

Section: Places in news

Context: Telecom act doesn't give power to break encryption

More about the news:

- The **new Telecom Act** in India **does not grant the government** or service providers the **authority to break encryption** or intercept messages on **over-the-top (OTT) platforms**, according to Ashwini Vaishnaw, the Minister of Communications and Information Technology.

- Addressing **concerns about the vague definition** of **telecom service**, Vaishnaw emphasized that the **government lacks the power to request service providers** to break **encryption or intercept messages,** and its **authority is limited to blocking** fraudulent numbers.

- He clarified that **OTTs are not regulated** by the **Telecom Act**, which **aims to bring structural reforms** and **introduces principles** for spectrum allocation and dealing with insolvent telcos.

Some facts About Telecommunications Bill, 2023:

- The **Telecommunications Bill, 2023** amends and **consolidates the laws relating to:**
  - **development, expansion and operation of telecommunication services** and **telecommunication networks;**
  - **Assignment of spectrum**; and for matters connected therewith.

- The new Bill seeks to **replace the Indian Telegraph Act, 1885, the Indian Wireless Telegraphy Act, 1933, and the Telegraph Wires (Unlawful Possession) Act, 1950.**

Some Key Features of Telecommunications Bill, 2023

- **Authorization for Telecom Activities:**
  - **Central government approval required** for telecommunication services, network operations, and radio equipment possession.

- **Spectrum allocation through auction,except for specific purposes** like national **security, disaster management, and satellite services.**

- **Interception and Search Powers:**
  - **Messages may be intercepted or blocked** for public safety or emergencies.
  - **Telecom services may be suspended** under similar grounds.
  - **Authorized officers can search premises** or vehicles for unauthorized telecom equipment.

- **User Protection Measures:**
  - **Central government is empowered to implement** user protection measures.
  - Measures include **prior consent for specified messages**, creation of **"Do Not Disturb" registers, and a mechanism for reporting malware.**

- **Right of Way for Telecom Infrastructure:**
  - Entities **laying telecom infrastructure** can seek **right of way over public or private property.**
  - Right of **way provided on a non-discriminatory** and non-exclusive basis to the extent possible.

- **TRAI Appointments Amendment:**
  - Amendments to the TRAI Act allow **individuals with at least 30 years of professional experience to serve as Chairperson and 25 years for members.**

- **Digital Bharat Nidhi:**
  - **Universal Service Obligation Fundrenamed Digital Bharat Nidhi.**
  - Fund usage **expanded to include research and development in telecom.**

- **Offences and Penalties:**
  - **Criminal and civil offences specified in the Bill.**
  - Providing **unauthorized telecom services** or **breaching terms** incurs penalties, including imprisonment and fines.

- **Adjudication Process:**
  - **Central government appoints adjudicating officers** for civil offences.
  - Officers **must hold the rank of joint secretary or above.**

US allies reluctant on Red Sea Task force

Subject :IR

Section: Places in news

Context:

More about the news:

- The U.S. initiated **Operation Prosperity Guardian** to **safeguard Red Sea** shipping from Houthi attacks.
- While the **Pentagon claims over 20 nations** are part of the defensive coalition, some allies, **like Italy and Spain, seem reluctant** to associate publicly.
- The conflict's backdrop includes **tensions over Israel's Gaza offensive.**
- Houthi attacks on commercial ships **prompted Maersk to reroute vessels.**
- **Notable absentees from the coalition include China**.
- The new initiative will be **coordinated by the existing Combined Task Force 153, established in April 2022** to enhance maritime security in the region.

What is Combined Task Force 153:

- **Combined Task Force 153 (CTF 153)** is a **task force** that focuses on maritime security and capacity building **in the Red Sea, Bab al-Mandeb, and Gulf of Aden**.
- It was **established on April 17, 2022**, and is one of **five task forces operated by the Combined Maritime Forces (CMF)**

Polity

Sec 6A of Citizenship Act

Subject: Polity

Section: Constitution

Context: Supreme court ask the government about how many availed Sec 6A of Citizenship Act

More about the news:

- The Supreme Court **inquired about the number of individuals who acquired citizenship under Section 6A of the Citizenship Act, 1955**, implemented after the Assam accord.
- This provision **allows individuals who arrived in Assam between January 1, 1966, and March 25, 1971**, from Bangladesh to apply for Indian citizenship.
- The court, **hearing challenges to the provision, highlighted the historical context,** considering I**ndia's role in the creation** of Bangladesh during the war.
- The **Chief Justice noted that Section 6A** addresses **not just illegal immigration but a humanitarian aspect** connected to historical events.
- The petitioner **argued that the provision, by not protecting those arriving** after atrocities, may undermine democratic principles and the rule of law.

What is Section 6A of the Citizenship Act, 1955:

- **Section 6A** is a **special provision inserted into the 1955 Act** in furtherance of a **Memorandum of Settlement called the 'Assam Accord'** signed on **August 15, 1985** by the then **Rajiv Gandhi government with the leaders of the Assam Movement** to preserve and protect the Assamese culture, heritage, linguistic and social identity.
- **Under Section 6A, foreigners who had entered Assam before January 1, 1966, and been "ordinarily resident" in the State,** would have all the **rights and obligations of Indian citizens.** Those who had **entered the State between January 1, 1966 and March 25, 1971 would have the same rights and obligations except that they would not be able to vote for 10 years.**

What was Assam accord:

- The **Assam Accord was signed in 1985** between the **Union government and the All Assam Students' Union** at the **end of a 6-year-long agitation** against the influx of migrants from Bangladesh into the state.
- It determines **who is a foreigner in the state of Assam.**
- **Clause 5 of the Assam Accord** states that **January 1, 1966 shall serve as the base cut-off date for the detection and deletion of "foreigners"**.
- But it also contains **provisions for the regularization of those who arrived in the state after that date and up till March 24, 1971**.

Some facts about National Register of Citizens (NRC)

- N**ational Register of Citizens, 1951** is a **register prepared after the conduct of the Census of 1951** in respect of each village, **showing the houses or holdings in a serial order** and indicating against each house or holding the number and names of persons staying therein.
- The NRC was **published only once in 1951** and since then, **it has not been updated until 2019.**

- The **NRC of 1951 and the Electoral Roll of 1971 (up to midnight of 24 March 1971)** are together called **Legacy Data. Persons** and their **descendants whose names appeared in these documents are certified as Indian citizens.**

Not possible to accurate data to illegal migrants center to SC

Subject : Polity

Section: Constitution

Context: Supreme Court is hearing petitions challenging the constitutional validity of Section 6A

More about the news:

- The **Indian government** informed the **Supreme Court** that the entry of **illegal immigrants** into the country is **clandestine and surreptitious**, making it impossible to **gather accurate data** on their numbers.
- Responding to the **court's direction** seeking **details on the estimated inflow** of **illegal migrants to Assam** and other northeastern states after **March 25, 1971**, the government stated that **between 2017 and 2022**, **14,346 foreigners** were **deported due** to reasons **such as overstay**, visa violation, and illegal entry.
- The **affidavit** a**lso mentioned the challenges and delays in** border fencing, particularly in **West Bengal**, due to land acquisition **issues and non-cooperation** from the state government.
- The matter **is scheduled** for a **hearing in the Supreme Court** on Tuesday.

What is Section 6A of the Citizenship Act, 1955:

- **Section 6A** is a **special provision inserted into the 1955 Act** in furtherance of a **Memorandum of Settlement called the 'Assam Accord'** signed on **August 15, 1985** by the then **Rajiv Gandhi government with the leaders of the Assam Movement** to preserve and protect the Assamese culture, heritage, linguistic and social identity.
- **Under Section 6A**, foreigners who had entered Assam before **January 1, 1966, and been "ordinarily resident" in the State,** would have all the **rights and obligations of Indian citizens.** Those who had **entered the State between January 1, 1966 and March 25, 1971 would have the same rights and obligations except that they would not be able to vote for 10 years.**

What was Assam accord:

- The **Assam Accord was signed in 1985** between the **Union government and the All Assam Students' Union** at the **end of a 6-year-long agitation** against the influx of migrants from Bangladesh into the state.
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SC upholds repeal of J&K's special status

Subject : Polity

Section: Constitution

Context:

- A Constitution Bench of the Supreme Court unanimously upheld the power of the President to abrogate special status of Jammu and Kashmir under Article 370 of the Constitution, leading to the reorganization of the full fledged State to two Union Territories and the removal of its privileges.

Key Highlights:

- **Court's Ruling on J&K Sovereignty:** The Court unanimously dismissed the claim that J&K retained sovereignty, emphasizing its integral status in the Indian Constitution.
- **Article 370's Nature - Temporary or Permanent:** Petitioners argued for permanence, but both CJI Chandrachud and Justice Kaul concurred that Article 370 was temporary.
- **Legality of Article 370 Abrogation:** President's 2019 order redefining the Constituent Assembly was upheld; CJI Chandrachud asserted post-dissolution, the President could unilaterally abrogate Article 370.

- **President's Rule and Union's Actions:** The challenge focused on powers under Article 356; Court, citing Bommai ruling, stressed actions must not be mala fide or irrational.
- **Centre's Supremacy Upheld:** Here, interpreting Parliament's powers, the Court indicated it could change a state's status under President's rule; J&K Reorganisation Bill was referred to Parliament during President's rule.
- **Validation of Executive Orders:** Applying Bommai standards, the Court emphasized proof of mala fides is necessary to challenge executive orders.

Courts should not stray from the constitutional vision of secularism

Subject: Polity

Section: Constitution

Context:

- As an alternate view for the court's gyanvapi case judgment, there is a thought that Courts should not stray from the constitutional vision of secularism.

Allahabad High Court's Controversial Ruling

- **Legal Challenge Validated:** Allahabad High Court permits suits from 1991 to declare part of Gyanvapi Mosque property of Lord Vishweshwar.
- **Controversial Interpretation:** Court claims the Places of Worship Act is not applicable until the "religious character" is determined.
- **Potential for Communal Tension:** The ruling may expedite the conversion of a mosque into a temple, fueling societal tension.

Discrepancies in Judicial Treatment

- **Divergent Treatment:** Contrasts treatment of 2022 suits by women worshippers, focused on worship rights, with 1991 suits seeking mosque conversion.
- **Inconsistent Interpretation:** Despite explicit mosque-related relief sought in 1991 suits, the court deems them maintainable, raising concerns.
- **Survey Controversy:** ASI survey ordered for 2022 suits to decide 1991 suits, fostering ambiguity and potential for further disputes.

Constitutional Vision

- **Judiciary's Constitutional Role:** The judiciary must prioritize secularism and resist legitimizing attempts to change worship places' status.
- **National Importance Claim:** The High Court's claim of "vital national importance" raises eyebrows; judiciary should focus on impartial adjudication.
- **Enforcement of Legal Bar:** Upholding the statutory Places of Worship Act is crucial to prevent altering the status of religious sites.

How EC decides poll schedule and why it changed Mizoram's counting date

Subject :Polity

Section: Elections

Context: How EC decides poll schedule and why it changed Mizoram's counting date

What does the Election Commission take into account while deciding the schedule for elections:

- The **election schedule**, issued by the **Election Commission of India (ECI),encompasses the period** from the **gazette notification** issuance to the **conclusion of the election process.** The **critical dates for ordinary voters** are the **polling date(s)** and counting date.
- The **ECI has the flexibility** to **announce elections within six months** after the **Lok Sabha or state Assembly term** concludes, as **outlined in Sections 14 and 15 of the Representation of the People Act, 1951**. The election process **must be completed before the existing term expires.**
- In **determining the election schedule,** the **ECI considers factors** such as the **availability and movement requirements** of **security forces, logistics for electronic voting machines (EVMs)** and poll officials, significant national and local festivals, and the prevailing law and order situation.
- When **multiple state Assemblies face term expiration simultaneously**, the **ECI aims to conduct elections concurrently.** Although polling may occur on different days, the vote counting **typically takes place** on the same day.

What happened in this current round of Assembly elections

- After **extensive oversight by Election Commission of India** (ECI) officials and the Election Commissioners themselves, the **election schedule for five states was announced on October 9.**
- **Mizoram** and approximately **half the seats in Chhattisgarh** were set for **voting on November 7**, while **Telangana was scheduled last** on November 30. Counting for all states was initially planned for December 3.
- While the **ECI ensured that Mizoram's voting** was **not scheduled** on a Sunday, considering a **significant number of electors attend church on that day**, counting for all states, including Mizoram, was initially slated for a Sunday. **Following multiple representations advocating against counting** on a Sunday, the **ECI decided on December 1** to **postpone the counting in Mizoram** by a day to **December 4**.

Have counting dates for elections been shifted earlier:

- Yes, **changes in election dates** have occurred in **previous elections** as well, with the **Election Commission of India** (ECI) providing **various reasons** for such adjustments.
- In the **case of Mizoram**, during the **2013 Assembly elections**, the ECI initially declared that the counting of votes would take place on December 8, a Sunday. However, the **date was later revised to December 9, a Monday.**
- Similarly, in the **current round of elections**, the polling date for Rajasthan was initially set for November 23. However, just two days after the announcement, the **ECI modified the date to November 25.**
- The decision **was influenced by concerns** raised by **political parties and social organizations,** highlighting the **large-scale weddings and social engagements** scheduled for the **initially proposed date**, which **could inconvenience a significant number of people.**

Litigation shield after EC flagged court orders, FIRs against CEC

Subject :Polity

Section: Elections

Context: Litigation shield after EC flagged court orders, FIRs against CEC

More about the news:

- The **Election Commission of India** (ECI) had reportedly **expressed concerns over recent FIRs and court orders against the Chief Election Commissioner (CEC)** related to election matters.
- The **concerns led to an amendment in the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Bill, 2023,** providing **protection to the CEC and ECs from litigation**.
- The amendment states that **no court shall entertain or continue any civil or criminal proceedings against a current or former CEC or EC** for acts committed during the discharge of official duties.
- The move **follows recent cases, such as an FIR in Mahabubnagar, Telangana, where CEC Rajiv Kumar and other EC officials were named as co-accused.**
- **T**he Bill also maintains the **status of the CEC and ECs** equivalent to **that of a Supreme Court judge.**
- The removal process for the CEC and ECs has been amended to retain the status quo, allowing the **CEC's removal only through impeachment,** while **ECs can be removed based on the CEC's recommendation.**

Some facts about The Chief Election Commissioner and other Election Commissioners Bill, 2023:

- The bill **repeals the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991.**
- It addresses the **appointment, salary, and removal of the CEC and ECs**
- The Bill has **proposed that the selection panel** for appointing the **Election Commission, comprising the Chief Election Commissioner (CEC) and other Election Commissioners (ECs),** will consist of
  - The **Prime Minister** as the **chairperson,**
  - The **Leader of the Opposition** as a member,
  - A **Union Cabinet Minister nominated by the Prime Minister** as another member.
- A **Search Committee** headed by the **Cabinet Secretary** will propose a panel of names to the Selection Committee.
- **Eligibility for the posts includes holding (or having held) a post equivalent to the Secretary** to the central government.
- **Removal Process:**
  - The Bill **retains the constitutional provision** (**Article 324(5)**) that **allows the CEC to be removed like a Supreme Court Judge**, while **ECs can only be removed on the recommendation of the CEC.**
- **Protection for CEC And ECs:**
  - Bill **safeguards CEC and ECs from legal proceedings** related to actions taken during their tenure, **provided such actions were carried out in the discharge of official duties.**

The amendment **aimed to shield these officials from civil or criminal proceedings** related to their official functions.

MHA to Examine Constitutional Safeguards for Ladakh

Subject :Polity

Section: Federalism

Context:

- The Ministry of Home Affairs (MHA) has taken a significant step in addressing the demands of civil society groups in Ladakh by agreeing to examine constitutional safeguards for the Union Territory.
- This development is outlined in an order issued recently to re-constitute a high-powered committee (HPC) for Ladakh.

Background and Unrest:

- Ladakh, with a population of 2.74 lakh as per the 2011 Census, has witnessed protests in recent years due to concerns about the protection of land, resources, and employment for locals.
- The bifurcation of the erstwhile State of Jammu and Kashmir into two union territories - J&K and Ladakh - in 2019, following the abrogation of Article 370, has contributed to the region's unrest. Ladakh, unlike J&K, lacks a legislative assembly.

About Sixth Schedule (Indian Constitution):

- The sixth schedule contains provisions related to the Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram.
- The Sixth Schedule provides for the administration of certain tribal areas as autonomous entities.
- The provisions of the sixth schedule are provided under Articles 244(2) and 275(1) of the Indian Constitution.

Key Highlights:

Committee Reconstitution:

- The MHA has issued an order to re-constitute a high-powered committee (HPC) for the Union Territory of Ladakh.
- Chaired by Minister of State for Home Nityanand Rai, this 22-member committee includes representatives from both Kargil and Leh divisions.

Terms of Reference:

- The committee's terms of reference encompass a comprehensive set of objectives.
- These include discussing measures to preserve Ladakh's unique culture and language, ensuring protection of land and employment for the local population, promoting inclusive development and employment generation, and addressing concerns related to the Ladakh Autonomous Hill District Councils of Leh and Kargil.
- Importantly, the committee is tasked with examining constitutional safeguards that could be implemented to ensure the aforementioned measures and protections.

Leh Apex Body's Demands:

- The Leh Apex Body, supported by the influential Ladakh Buddhist Association and the Kargil Democratic Alliance, has been advocating for statehood for Ladakh, inclusion in the Sixth Schedule of the Constitution, job reservations for locals, and parliamentary representation for both Leh and Kargil.

Govt acting as Chancellor not bound by state advice :SC

Subject :Polity

Section: Federalism

Context: Governors acting as Chancellor not bound by advice of ministers, says Supreme Court

More about the news:

- The **Supreme Court of India** ruled that **Governors, when acting as University Chancellors,** are **not obligated to follow the advice of the council of ministers**.
- The decision came as the **court invalidated the reappointment of Gopinath Ravindran as Vice-Chancellor of Kannur University.**
- The **three-judge bench, led by Chief Justice D Y Chandrachud**, emphasized that the **Chancellor and the State Government are distinct authorities according to statutes, and the Governor, as Chancellor, acts in a personal capacity**.
- The ruling stated that the **powers and duties exercised by the Governor as the University Chancellor have no connection** to those **performed as the Governor of the state**.
- The judgment **highlighted the principle that statutory powers** must be **executed by the designated body** or authority and **any delegation of such powers is considered an abdication of statutory mandate,** contrary to the rule of law.

- The **decision referred to a 1981 judgment** emphasizing the **Governor's independence in appointing/removing a Vice-Chancellor**, asserting that the **Governor, as the ex officio Chancellor,** is **not bound by the advice of the council of ministers in this context.**

What is the role of the Chancellor in public universities:

- **State public universities** are established through **laws passed by state legislatures.**
- In **most laws** the **Governor has been designated as the Chancellor** of these universities.
- The Chancellor f**unctions as the head of public universities**, and **ap**points the Vice-Chancellor of the university.
- The Chancellor **can declare invalid, any university proceeding** which is not as per existing laws.
- The Chancellor also **presides over the convocation of the university, and confirms proposals for conferring honorary degrees**. (This is **different in Telangana**, where the **Chancellor is appointed by the state government**.)
- The Chancellor **presides over the meetings of various university bodies** (such as the **Court/Senate of the university**).
- The Court/Senate d**ecides on matters of general policy** related to the development of the university, such as:
  - **Establishing new university departments,**
  - **Conferring and withdrawing degrees and titles, and**
  - **Instituting fellowships.**

Does the Governor have discretion in his capacity as Chancellor:

- In **1997, the Supreme Court of India** ruled that the **Governor is not bound by the advice of the Council of Ministers** when performing **duties related to a separate statutory office,** such as that of the Chancellor in educational institutions.
- The **Sarkaria and Puunchi Commissions**, which addressed the Governor's role in educational institutions, **agreed that the Governor is not legally obligated to follow the advice of the Council of Ministers** while carrying out statutory functions.
- Both commissions **suggested that it could be beneficial for the Governor to consult the relevant Minister** despite **not being bound by their advice**.
- The **Sarkaria Commission recommended that state legislatures should refrain from granting statutory powers to the Governor** beyond those envisioned by the Constitution.
- The **Punchhi Commission noted that the Governor's role as Chancellor may expose the office to controversies or public criticism**, advocating for limiting the Governor's role to constitutional provisions.
- The **West Bengal University Laws (Amendment) Bill, 2022 cites this recommendation from the Puunchi Commission in its Statement of Objects and Reasons.**

Governor can't send re-adopted Bill to President after withholding assent: SC

Subject : Polity

Section: Federalism

Context: Governor can't send re-adopted Bill to President after withholding assent

More about the news:

- The **Supreme Court of India has urged Tamil Nadu Governor R N Ravi** to engage with **Chief Minister M K Stalin and resolve the impasse** over the delay in clearing Bills sent to him by the Assembly.
- The **court emphasized that a Governor cannot refer a Bill for Presidential assent after it has been re-adopted or re-enacted by the Assembly**.
- The Chief Justice of India, **D Y Chandrachud, suggested that the Governor and Chief Minister sit down and resolve the issues**.
- The **court clarified that if the Governor withholds assent** to a Bill, **he must send it back to the Assembly** and cannot simply retain it.
- The **case involves the Tamil Nadu Governor** withholding **assent and not returning the Bills to the Assembly,** referring them to the President after the Assembly re-enacted them.
- The **court stated that the Governor has three options** under **Article 200**:
  - **Assent to the Bill,**
  - **Withhold assent,**
  - **Reserve the Bill for the President.**
- The court will further examine the matter in the next hearing.

What does the Constitution say:

- **Article 200** of the **Constitution outlines four options** available to a **Governor** when a legislature-passed Bill is presented for assent:
  - **Grant assent immediately.**
  - **Withhold assent.**
  - **Return the Bill to the legislature, requesting reconsideration of the Bill or specific provisions.**
- **If the legislature reapproves the Bill**, with or without accepting Governor-suggested amendments, the Governor is **constitutionally obligated** to grant assent.
- Alternatively, the **Governor may reserve the Bill for the President's consideration.**
- In the **case of Presidential consideration** i.e **Article 201** the **decision to grant or withhold assent is made by the President.** Notably, **there is no specified timeframe for the President** to decide on the Bill's outcome.

Do Governors have discretion:
- **Governors did have a discretion** to **return Bills** before the **first provision in the draft Article 175(now Article 200).**
- This was **amended by the Constituent Assembly in 1949.**
- The **first provision to Article 200** is thus a **saving clause and retains the discretion over the fate of the Bill** solely in the hands of the State Cabinet.
- **Article 163** makes **it clear the Governor is not expected to act independently.**
- The **Supreme Court in the Shamsher Singh case** verdict has held that a **Governor exercises all his powers** and **functions conferred on him** by or under the Constitution **on the aid and advice of his Council of Ministers** save in **spheres where the Governor is required by or under the Constitution to exercise his functions** in his discretion.
- The **assent or return of the Bill does not involve the discretion** of individuals occupying the Governor's post.

Can a Governor in practice actually sit on a Bill forever:
- Granting assent to Bills is **among the limited areas where the Governor** has **discretionary powers**. However, the exercise of this discretion **must adhere to constitutional principles,** relying on compelling reasons rather than personal preferences.
- Notably, **Article 200** employs the term **"shall,"** suggesting that the Constitution framers intended a mandatory requirement** for Governors in this regard.

What were the recommendations of different commission:
- The **Sarkaria Commission (1987)** has **emphasized that the Governor's power** to reserve **Bills for the President's consideration** is a rare and implied discretionary authority, primarily applicable in cases of unconstitutionality.
- In all other instances, the **Governor should adhere to Article 200,** acting on **ministerial advice.**
- The commission **suggested that the President should resolve such Bills within a maximum of six months,** communicating reasons for withholding assent** when possible.
- Despite r**ecommendations from the Punchhi Commission (2010)** to decide on Bills **within six months,** these proposals remain unimplemented.

What are various Supreme Court observations w.r.t Governor
- **Purushothaman Nambudiri vs State of Kerala (1962):**
  - The **Constitution Bench clarified** that **no specific time limit is imposed by the Constitution for the Governor** to **provide assent to Bills.**
  - Emphasized that the **Governor must align actions with the will of the Legislature** and operate in harmony with their Council of Ministers.
  - The **Supreme Court asserted that withholding assent to a law validly passed by the Legislature constitutes a direct attack on the federal structure** of the Constitution. Noting that **causing delays in assenting to Bills would be an arbitrary exercise, contradicting the constitutional spirit**.
- **Shamsher Singh vs State of Punjab (1974):**
  - A **7-judge Constitution Bench** outlined that the President and Governor** should **exercise their formal constitutional powers** based on the **advice of their Ministers, with few well-known exceptions.**
- **Nabam Rebia case (2016):**
  - The **SC cited B R Ambedkar's observation**s, stating that the **Governor has no independent functions** to execute but **does have specific duties to perform,** urging recognition of this distinction by the House.
  - Ruled that **Article 163 of the Constitution does not grant the Governor general discretionary power** to act against or **without the advice of the Council of Ministers.**
- **Rajiv Gandhi assassination case (2018):**

o The **SC expressed dissatisfaction** with the **Governor's delay in taking action** on the **release of seven convicted prisoners**, citing a lapse of more than two years.

What are the other Constitutional Position related to Governor:

- **Article 153** of the Indian Constitution **mandates the appointment of a Governor** in each state. The **7th Amendment to the Constitution** however, **allows for the appointment of the same person as Governor of two or more states**.
- **Article 154:** The Governor shall have **executive power over the state,** which he shall **exercise either directly or through officers subordinate to him** in conformity with this Constitution.
- **Article 163:** There shall be a **council of ministers, led by the Chief Minister, to assist and advise the Governor** in the exercise of his powers, except when he is compelled to execute his **functions at his discretion.**
- **Article 164:** The **council of ministers is collectively responsible** to the state's legislative assembly. This provision is the **cornerstone of the state's parliamentary system** of governance.
- The G**overnor has the same Executive, Legislative, Financial, and Judicial authorities as the President of India**. However, the Governor's power is restricted in several ways compared to that of the President, as the **Governor lacks the President's military, diplomatic, and emergency authorities.**

What was Bommai judgment on which SC relied on

Subject : Polity

Section: Federalism

Context: Bommai judgment

More about the news:

- In the **Bommai case**, a **nine-judge bench of the Supreme Cour**t provided an **interpretation of Article 356** of the Constitution, **defining the conditions for the proclamation of President's rule**.
- Article 356 **addresses situations "in case of failure of constitutional machinery in States"** and **outlines the process for imposing President's rule**.
- The unanimous ruling **affirmed the provision but established that the President's decision would be subject to judicial review**.
- The Bommai **case remains the established legal precedent** for determining **when and how President's rule can be imposed.**
- It was referenced in **recent cases challenging President's rule in Uttarakhand (2016) and Arunachal Pradesh (2016), both of which were overturned** by the Supreme Court.

What is the background of the case:

- In **1989, the Congress government** at the **Centre dismissed the Janata Dal-led Karnataka government**, led by **Chief Minister SR Bommai**, by **imposing President's rule.**
- The dismissal was **based on alleged letters from 19 MLAs withdrawing their support. Karnataka Governor P Venkatasubbaiah** recommended to the President to take over the state's administration, citing the l**ack of majority support for Bommai** and no other political party being in a position to form the government.
- The **move was controversial**, and the **Supreme Court** later **noted that the Governor did not ascertain Bommai's** view before making the **report to the President.**
- Furthermore, **seven out of the 19 legislators** who **allegedly withdrew support later reversed** their stance, **claiming their signatures** were obtained through misrepresentation.
- **Bommai challenged** the **dismissal in the Karnataka High Court**, which ruled against him.
- The **case was then appealed** to the **Supreme Court, leading to the formation** of a **nine-judge bench to address the matter.**

What was the verdict:

- The **Supreme Court, in the Bommai case**, unanimously **ruled that the President's proclamation of President's rule** can be **subject to judicial review** on grounds of **illegality, malafide, extraneous considerations, abuse of power, or fraud.**
- The Court clarified that **while the President's subjective appraisal** couldn't be examined, the **material relied upon** for the decision could be reviewed.
- The verdict **also mandated Parliamentary approval** for imposing **President's rule**.
- The **President could only exercise** this power after the **proclamation** was **approved by both Houses of Parliament**.
- Until then, the **President could only suspend the state legislature**.

- If **Parliament didn't approve the proclamationwithin two months**, the **dismissed government would automatically** be revived.
- The **ruling established** a **clear boundary for center-state relationships**, emphasizing that **states were not mere appendages** of the Center.
- The **Bommai judgment significantly reduced the imposition of President's rule** after scrutinizing the **conduct of the Governor's office**, especially when dismissing state governments run by opposition parties.
- From **1950 to 1994, President's rule was imposed 100 times**, averaging 2.5 times a year.
- After Bommai, between 1995 and 2021, it was **imposed only 29 times,** a little over once a year.

What was the Kashmir reference

- In the **Kashmir case**, a **crucial question was whether Article 370** could be abrogated during **the President's rule** in the state.
- The Supreme Court, **drawing on the Bommai ruling**, affirmed the **constitutionality of the President's actions**.
- The Court r**eferred to the Bommai judgment**, emphasizing that **actions taken by the President post-proclamation were subject to judicial review.**
- It **highlighted the standards set by different judges** in Bommai, particularly those of **Justice PB Sawant (mala fide or palpably irrational exercise of power) and Justice Reddy (consideration of advisability and necessity by the President).**

Key Highlights:

- **SR Bommai Case Background:** Arising from the 1989 dismissal of Karnataka's Janata Dal-led government, Governor Venkatasubbaiah recommended President's rule, citing SR Bommai's loss of majority.
- **Controversy Surrounding Governor's Recommendation:** The move sparked controversy as some MLAs retracted support, alleging misrepresentation in obtaining their signatures.
- **Supreme Court's Verdict on President's Proclamation:** The Court unanimously ruled that the President's proclamation is subject to judicial review, considering grounds such as illegality, malafide, and abuse of power.
- **Impact on President's Rule Frequency:** Post-SR Bommai, President's rule decreased significantly, from an average of 2.5 times annually (1950-1994) to just over once a year (1995-2021).
- **Kashmir Reference in Article 370 Ruling:** The central question during the Article 370 ruling was whether its abrogation during J&K's President's rule (since 2018) was permissible.
- **Supreme Court's Reliance on SR Bommai:** The Court validated the President's actions in J&K by applying SR Bommai standards, as set by Justices PB Sawant and Jeevan Reddy, for testing the validity of executive orders.

Asymmetric federalism

Subject: Polity

Section: Federalism

Context: Recent SC judgement on Art 370

- Constitutionally, India's governance structure is **quasi-federal.** While in a unitary setup, the power to legislate is concentrated in the Centre, in a **federal structure**, the units that form the federation have varying **degrees of autonomy and powers to conduct their affairs.**
- In the Indian context, while states do **have autonomy**, the Constitution tilts towards the Centre on certain areas, thus making it quasi-federal. The Seventh Schedule of the
- Constitution contains the **Union, State and Concurrent lists** that prescribe subjects that the Centre and states are empowered to legislate upon. For those in the concurrent list—which both the Centre and state can legislate upon— the Union law would prevail in case of a conflict between the law made by Parliament and the state legislature.
- However, even in this quasi-federal structure that leans more towards the Centre, not all states are equal. India's plurality necessitates such an arrangement and the Constitution provides for differentiated equality for states depending on various factors, ranging from the fiscal, political and the administrative. However, an argument is made against asymmetric federalism, that the so-called special statuses sow seeds of regionalism and separatism and that it impacts 'national integration.'
- The term asymmetrical federalism refers to **"*differences in the status of legislative or executive powers assigned by the constitution to different regional units*".**
- It is a flexible type of union of states which allows the government to cut different deals with different states in special matters pertaining to them.
- This method allows the government to grant special status to some units providing them with special powers not enjoyed by other states. Asymmetry involves providing greater autonomy to some states when compared with others.
- It permits particular states to have greater executive, legislative, and at times, judicial powers than other states.

Why asymmetric federalism?

To address specific local, historical and geographical contexts.

Besides the Centre and the States, the country has Union Territories with a legislature, and Union Territories without a legislature.

How does it plays out in India?

Case Study 1 : UTs

Puducherry and Delhi have legislatures, while the other territories under the Centre do not have legislatures or a ministerial council to advise the administrator. Even between Puducherry and Delhi, there is a notable difference.

Puducherry has legislative powers on any matter mentioned in the State List or the Concurrent List, insofar as it applies to the Union Territory. Delhi, which has the same field, has three further exceptions: police, land and public order are outside its purview. However, Parliament has overriding powers over any law made by the Assembly in the Union Territories.

Puducherry has one more unique feature. Despite being a single administrative unit, the Union Territory is '**non-contiguous'**. That is, its territory is not limited to one extent of land. Besides Puducherry and its adjoining areas, it has enclaves located within other States: Karaikal (within Tamil Nadu) Yanam (within Andhra Pradesh) and Mahe (within Kerala).

Case Study 2: Article 370 (Now amended)

The foremost example of asymmetry among Centre-State ties was in the way J&K related to India until August 6, 2019, the day the President declared that its special status ceased to be operative. Under Article 370, the State was allowed to have its own Constitution, its own definition of 'permanent residents', the right to bar outsiders from holding property, and the privilege of not having any Indian law automatically applicable to its territory. Indian laws had to be specifically permitted by its Assembly before it could operate there. It was allowed to have its own Penal and Criminal Procedure Codes. The President was empowered to notify, from time to time, the provisions of the Constitution that could be extended to the State, with or without modifications

Case Study 3: Article 371

- The 'special provisions' applicable to some other States are mainly in the form of empowering the Governors to discharge some special responsibilities. These States are **Maharashtra, Gujarat, Manipur, Nagaland, Sikkim and Arunachal Pradesh.** The common feature is that wherever Governors have been asked to discharge special responsibilities, their discretionary power overrides the process of consultation with the respective Council of Ministers.

- **Article 371** says the Governor of Maharashtra has a special responsibility to establish separate development boards for Vidarbha, Marathwada, and the rest of the State, while the Governor of Gujarat has a similar responsibility towards Saurashtra, Kutch and the rest of Gujarat. The responsibilities cover equitable allocation of funds for development expenditure, and providing facilities for technical education and vocational training.

- **Article 371A** confers special status on Nagaland. Under this provision, no law made by Parliament in relation to Naga customary law and procedure, including civil and criminal justice matters, and ownership or transfer of land and resources will apply to Nagaland, unless the Legislative Assembly of Nagaland decides so. The protection of Naga laws and customs was written into the Constitution following the July 1960 agreement between the Centre and the Naga People's Convention, under which the State was later created. Further, the Governor of Nagaland has a 'special responsibility' regarding law and order in the State.

- Article 371B contained a special provision for Assam under which a committee of legislators from the tribal areas was formed to look after their interest. The tribal areas later became Meghalaya State.

- **Under Article 371C,** the Hill Areas of Manipur ought to have a committee of legislators. The Governor has a special responsibility to make an annual report to the President on the administration of the Hill Areas. The Centre is empowered to give directions to the State as far as these areas were concerned.

- **Article 371D** is a detailed provision under which the President can pass an order to provide equitable opportunities and facilities to people belonging to different parts of Andhra Pradesh in public employment and education. In particular, the President can create local cadres in various classes of employment and allot civil posts to specified local cadres only. The President can specify any part of the State as a 'local area' for this purpose. To give effect to this arrangement, an Administrative Tribunal has been set up. No court, other than the Supreme Court, has any power of superintendence over this tribunal.

- **Article 371F** incorporated special provisions after the addition of Sikkim to India. One major objective was to grant protection to existing laws in Sikkim so that they are not declared unconstitutional after being brought under the Constitution of India.

- **Article 371G** contains special provisions to preserve the religious and social practices of Mizos in Mizoram and their customary law and procedure and administration of criminal and civil justice, besides ownership of land.

- **Article 371H** vests a special responsibility on the Governor of Arunachal Pradesh with respect to law and order. It makes clear that the Governor shall discharge this function after consulting the Council of Ministers, but exercise his individual judgment as to the action taken.

Case Study 4: Sixth Schedule

- There is another significant tier of administration under the larger framework of asymmetric federalism.

- The **Sixth Schedule** to the Constitution contains provisions for the administration of tribal areas in **Assam, Meghalaya, Tripura** and **Mizoram.** These create autonomous districts and autonomous regions.
- Any autonomous district with different Scheduled Tribes will be divided into autonomous regions. These will be administered by District Councils and Regional Councils. These Councils can make laws with respect to allotment, occupation and use of land, management of forests other than reserve forests and water courses. Besides they can regulate social customs, marriage and divorce and property issues.
- In Assam, the Karbi-Anglong Autonomous Council, Dima Hasao Autonomous District Council and the Bodoland Territorial Council have been set up under the Sixth Schedule. Another six autonomous councils have been formed by Acts of the legislature.
- Ladakh has two autonomous hill development councils (Leh and Kargil). The Darjeeling Gorkha Hill Council is in West Bengal.

Retired judges control arbitration with a tight fist, need reform

Subject: Polity

Section: Judiciary

Context: Retired judges are keeping country's arbitration system in a tight grip

More about the news:
- **Vice-President Jagdeep Dhankhar** highlighted the **dominating influence of retired judges** in **India's arbitration space,** echoing Chief Justice DY Chandrachud's earlier remarks on the system resembling an "**Old Boys' club."**
- Dhankhar **called for necessary reforms**, including **potential legislation, emphasizing the need to diversify arbitrator appointments**.
- He **commended CJI Chandrachud** for speaking out **against the dominance of retired judges**, acknowledging the **courage required to address the issue within his own fraternity.**
- Dhankhar **stressed the importance of a robust, fast, and effective arbitration system** amid **India's explosive economic growth**, emphasizing the **role of institutional arbitration** in ensuring **fair and conclusive dispute resolution.**

What is Arbitration.
- Arbitration is a **form of alternative dispute resolution (ADR)** where **parties to a dispute agree to resolve** their differences outside of a court system.
- In arbitration, a **neutral third party, called an arbitrator,** is **appointed to hear the evidence presented by both parties** and make a **binding decision** that resolves the dispute.

What are the Mechanism for Arbitration in India.
- **Arbitration in India** is regulated by the **Arbitration and Conciliation Act, 1996.**
- The Act **draws inspiration from the 1985 UNCITRAL Model Law on International Commercial Arbitration and the UNCITRAL Arbitration Rules 1976.**
- **Legislative Amendment (2015):**
  - In 2015, t**he Arbitration and Conciliation (Amendment) Act was enacted** to enhance the arbitration process in India.
  - Objectives **included expediting contract enforcement, facilitating** the recovery of **monetary claims, reducing court case pendency**, and accelerating dispute resolution through arbitration.
- **New Delhi International Arbitration Centre (NDIAC):**
  - **Established in 2019** under the **provisions of the NDIAC Act, 2019.**
  - Aims to **improve the management of arbitration in India** by promoting institutional arbitration.
  - Provides **state-of-the-art infrastructure** for arbitration proceedings.
- **International Centre for Alternative Dispute Resolution (ICADR):**
  - **Founded in 1995** to promote and **develop alternative dispute resolution (ADR) facilities and techniques.**
  - Focuses on **facilitating early dispute resolution** and reducing the backlog of cases in the courts.

What are the Types of Arbitration in India.
- There are **two types of arbitration in India: Ad-hoc arbitration and Institutional arbitration.**
- **Ad-hoc Arbitration**
  - It is a process where a **tribunal conducts arbitration** using either **pre-agreed rules or tribunal-laid rules,** in the **absence of any agreement** between the parties.
- **Institutional Arbitration**

Allahabad High Court allows survey of Mathura's Shahi Idgah mosque

Subject : Polity

Section: Judiciary

Context:

- On December 14, the Allahabad High Court allowed an application for the inspection of the Shahi Idgah mosque complex, **reigniting the Sri Krishna Janmabhoomi-Shahi Idgah Masjid dispute.**
- Hindu petitioners assert that the **mosque, constructed by Emperor Aurangzeb in 1670, was built over Lord Krishna's birthplace in Mathura**. The mosque is adjacent to the Krishna Janmasthal Temple, a significant pilgrimage site.

Latest Legal Plea on Sri Krishna Janmabhoomi:

- **Nature of the Application**: The application is part of a petition initiated by eight individuals including the "next friend" of Bhagwan Shree Krishna Virajman.
- **Survey Approval**: Allahabad High Court approved the survey of the Shahi Idgah mosque on December 14.
- **Petition's Demands**: The petitioners seek the removal of structures allegedly encroaching on the disputed land by the UP Sunni Central Waqf Board and the mosque committee, and the transfer of this land to the Shree Krishna Janmbhoomi Trust.
- **Challenge to the 1968 Agreement**: The plea contests the legality of a compromise agreement dated October 12, 1968, **between the Shri Krishna Janmasthan Seva Sansthan and the Trust Shahi Masjid Idgah.**

Historical context and Claims

- **Aurangzeb's Alleged Demolition:** The Hindu petition cites historical records, claiming Aurangzeb ordered the demolition of Hindu temples, including one at Lord Krishna's birthplace, to construct the Idgah Mosque in 1669-70.
- **Reference to Official Records**: The petition mentions the Official Court Bulletin (Akhbaraat) from January to February 1670 as evidence of Aurangzeb's orders.

Counterclaims by the Muslim Side

- **Legal Arguments:** Representatives of the **UP Sunni Central Waqf Board** and the mosque committee argue in the High Court that the mosque does not fall within the disputed 13.37 acres and dispute the location of Krishna's birthplace.
- **Challenging the Hindu Claims**: They assert that the Hindu claims are based on speculation and lack documentary evidence.

Historical Ownership and Management

- **Land Ownership Changes**: The site, originally **nazul land, was auctioned by the East India Company** in 1815 to Raja Patni Mal of Benaras.
- **Subsequent Transactions**: The land was later sold to **Jugal Kishore Birla**, and the ownership rights were transferred to the **Shri Krishna Janmabhoomi Trust, established by Birla.**
- **Temple Management**: In 1956, the Shri Krishna Janmasthan Sewa Sangh, later renamed as Sansthan, was established for temple management.

Similarities with the Gyanvapi Case

- **Similar Legal Proceedings:** The Mathura case is comparable to the Gyanvapi Mosque dispute in Varanasi**, where a court-ordered survey led to the discovery of a structure claimed as a "shivling" by Hindus and a "fountain" by Muslims.**
- **Archaeological Surveys and Legal Challenges**: The Varanasi district court's order for a scientific survey of the Gyanvapi mosque and the subsequent legal hurdles reflect similar developments in the Mathura case.

Tribunals cannot direct govt. to frame policy: SC judgment

Subject : Polity

Section: Judiciary

Context:

- In a recent judgment on an appeal filed by the **Union of India under Section 31(1)** of the **Armed Forces Tribunal Act, 2007,** the Supreme Court emphasized that a tribunal cannot direct the framing of government policy.

Key Points from the Supreme Court Ruling:

- **Scope of Tribunal Powers:**

- o The Supreme Court held that a tribunal, **functioning within the confines of governing legislation, lacks the authority to direct the formulation of government policy.**
- o The court emphasized that even in **Writ jurisdiction**, which deals with fundamental rights, the judiciary does not possess the power to dictate policy formation.

- **Nature of Tribunal Functions:**
  - o The court highlighted that a tribunal operates as a quasi-judicial body, adhering to the parameters set by the governing legislation.
  - o While acknowledging the **tribunal's jurisdiction over disputes** related to promotions and vacancies, it clarified that directing those responsible for policy-making to formulate a policy in a specific manner is beyond the tribunal's purview.

- **Case Background:**
  - o The appeal involved a respondent commissioned in the **Administrative Branch of the Indian Air Force,** challenging the non-formation of a policy for filling the vacancy of **Air Vice Marshal (AVM) JAG (Air).**
  - o Despite participating in the **Promotion Board of 2015,** the respondent contested the lack of a policy for promotions to **AVM.**

- **Hierarchy of Tribunals:**
  - o The Supreme Court observed that under **Article 323 B of the Constitution**, which authorizes the establishment of tribunals for various matters, a hierarchy of tribunals may be created. However, it reiterated that the role of tribunals is adjudicatory, not policy formulation.

- **Promotion Board Recommendations:**
  - o The court clarified that recommendations from a promotion board are recommendatory and require approval from the competent authority.
  - o Challenging the basis of promotion after participating in the promotion process and being declared unsuccessful is not a valid ground to impugn the policy/method.

- **Role of the Judiciary:**
  - o Emphasizing that the making of policy falls outside the judiciary's domain, the court underscored that tribunals, being **quasi-judicial bodies,** are similarly restricted in directing the framing of policies.

Centre appoints Rakesh Asthana and 6 other as NHRC special monitor

Subject: Polity

Section: National body

Context: Center appoints Rakesh Asthana and 6 other as NHRC special monitor

More about the news:

- The **Centre has appointed seven special monitors**, including former **Delhi police commissioner Rakesh Asthana**, for the **National Human Rights Commission (NHRC).**
- The order, **effective until September 22, 2025**, designates **Asthana to oversee thematic areas such as terrorism, counter-insurgency, communal riots, and Left-wing extremism.**
- Other appointees will focus on areas like cybercrime, artificial intelligence, environment, climate change, human rights, elementary education, literacy, water sanitation, public health, healthcare, mental health, HIV/AIDS, spurious drugs, diagnostics, labs, livelihood, skilling, and employment.
- **Asthana, a retired IPS officer** with diverse experience, previously **served in the CBI and faced controversy during a feud** with the agency's then director Alok Verma.

Some facts about NHRC:

- The National Human Rights Commission is a **statutory body established under the Protection of Human Rights Act, 1993.**
- The Commission is the **watchdog of human rights in the country**
- The Commission is a **multi-member body** consisting of a **chairperson and five members.**
- The **chairperson should be a retired chief justice of India or a judge of the Supreme Court.**
- Members should be a **serving or retired judge of the Supreme Court, a serving or retired chief justice of a high court and three persons (out of which at least one should be a woman) having knowledge or practical experience with respect to human rights.**
- The **chairperson and members are appointed by the President** on the **recommendations of a six-member committe**e consisting of –

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- o **Prime Minister as its head**
- o **Speaker of the Lok Sabha**
- o **Deputy Chairman of the Rajya Sabha**
- o **Leaders of the Opposition in both the Houses of Parliament**
- o **Central Home Minister**
- The chairperson and members are **appointed for the term of 3 years or till the age of 70** years, whichever is earlier.
- The chairperson and members are **eligible for reappointment.**
- The Commission also has **five Specialized Divisions i.e. Law Division, Investigation Division, Policy Research & Programmes Division, Training Division and Administration Division.**

Centre announces ₹1,500cr. aid to T.N. and A.P. after cyclone wreaks havoc
Subject: Polity
Section: National body
Context:
- The Union government on Thursday released ₹493.60 crore to Andhra Pradesh and ₹450 crore to Tamil Nadu in the wake of the damage inflicted by severe cyclonic storm Michaung this week.
- The Prime Minister has approved the first urban flood mitigation project of ₹561.29 crore for 'Integrated Urban Flood Management activities for Chennai Basin Project' under the **National Disaster Mitigation Fund (NDMF).**

About Cyclone Michaung
- **Severe Intensity:** December cyclones in the North Indian Ocean typically do not reach high intensities. **Michaung, with its severe storm classification, is an exception.**
- **Upgraded Intensity:** Initially predicted as a tropical cyclone, IMD upgraded Michaung to a 'severe' storm due to its unexpected intensification.
- **Heat Index Contribution:** The intensification is attributed to the above-normal heat index values off the southern Andhra Pradesh coast.

How Is a Cyclone Named?
- **Rotational Basis for Naming:** The naming of cyclones is done by countries on a rotational basis, following certain existing guidelines.
- **Responsibilities of RSMCs and TCWCs:** Worldwide, there are six regional specialized meteorological centers (RSMCs) and five regional Tropical Cyclone Warning Centers (TCWCs) mandated for issuing advisories and naming of tropical cyclones.
- **IMD's Role:** IMD is one of the six RSMCs providing tropical cyclone and storm surge advisories to 13 member countries under the WMO/Economic and Social Commission for Asia-Pacific (ESCAP) Panel.
- **Naming Authority of IMD:** RSMC, New Delhi, is also mandated to name the tropical cyclones developing over the north Indian Ocean, including the Bay of Bengal and the Arabian Sea.
- **Guidelines for Naming:** Some rules are to be followed while naming cyclones, such as being neutral to politics, religious beliefs, cultures, and gender, avoiding offensive or cruel names, and keeping the name short and easy to pronounce.
- **Future Naming:** After 'Michaung', the next cyclone as per India's suggestion will be named **'Tej'**.

About

The **Disaster Management Act,** defines **National Disaster Mitigation Fund (NDMF)** is constituted under section **47(1) of the DM Act, 2005**.

This fund is exclusively for the purpose of mitigation projects in respect of disasters covered in **National Disaster Response Fund (NDRF) Guidelines only**.

The Mitigation Fund shall be used for those local level and community-based interventions, which reduce the risks and promote environment-friendly settlements and livelihood practices.

Large-scale mitigation interventions such as construction of coastal walls, flood embankments, support for drought resilience etc. shall be pursued through regular development schemes and not from the mitigation fund.

Mitigation measures can be both **structural** and **non- structural.**

Structural measures: Structural mitigation measures include any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems. These measures attempt to strengthen buildings to better endure future disasters like cyclones and earthquakes.

Non- Structural measures: It does not involve physical construction but use of knowledge, practices, policies, laws / regulations etc. e.g. building codes and laws, location specific planning/strategies, forest management / restoration of mangroves, awareness campaigns etc.

These guidelines are issued under sections 47 and 62 of the DM Act, 2005 and shall be called 'National Disaster Mitigation Fund (NDMF) guidelines and will be operative from the financial year 2021-22 to 2025-26, and will continue till further orders.

Technical Guidelines:

For the guidance of the State Governments/implementing partners etc., National Disaster Management Authority (NDMA) will issue technical guidelines separately, within the broad framework of these guidelines and with the concurrence of Ministry of Home Affairs (MHA). Further, Hazard specific mitigation guidelines and detailed procedures for project execution will continue to be issued by the NDMA from time to time in consultation with MHA.

Long Term Mitigation Strategy:

At the national and state level, the Disaster Management Authorities will conduct a risk assessment, which presents an assessment of hazards, exposure and vulnerability and their likely impacts. Based on the risk assessment, the Disaster Management Authorities will prepare long-term mitigation strategy for their respect jurisdiction.

National Disaster Mitigation Fund (NDMF):

The NDMF will be constituted with the nomenclature of "National Disaster Mitigation Fund" in the Public Account in the sub-section (b) Reserve funds not bearing interest of Government of India under Major Head 8235-'General and Other Reser Funds'-145- 'National Disaster Mitigation Fund'.

The NDMF will be operated by the Department of Expenditure, Ministry Finance (MoF) in consultation with Ministry of Home Affairs with an objective to release Grants-in-aid to the State Governments for mitigation projects as approved by High Level Committee (HLC).

The NDMF will be applied by NDMA for appraisal, monitoring and supervision o mitigation projects.

Contribution/Allocation to the NDMF:

Fifteenth Finance Commission (XV-FC) has recommended Rs. 13,693 crore [20% of National Disaster Risk Management Fund (NDRMF) of Rs.68,463 crore] for NDMF for the period 2021-22 to 2025-26. The details of annual allocations for the period from 2021-22 to 2025-26 is given in Annexure-1.

The Central Government can mobilize and pool funds in the NDMF from various other sources viz reconstruction bonds, contingent credit/standby facilities with international financial institutions, counterpart funding from implementing partners, crowd funding platforms and Corporate Social Responsibility (CSR) window etc.

Funds will be credited into the NDMF established in the Public Account of India by operating Major Head "2245-Relief on account of Natural Calamities-07-Disaster Management-797-Transfer to Reserve Funds/Deposits Accounts, in accordance with the provisions of section 47(1) of the DM Act, 2005. The budget provision for transferring funds to the NDMF shall be made in Demand for Grants No.40 'Transfers to the State of Department of Expenditure, Ministry of Finance.

House nod to raise age limit for GST appellate tribunal

Subject :Polity

Section: National body

Context: House nod to raise age limit for GST appellate tribunal

More about the news:

- The Rajya Sabha has **returned a bill** to raise the **age limit of the President and members of the Goods and Services Tax (GST) Appellate Tribunals from 67 to 70 years** and 65 to 67 years, respectively, **aligning them with the age limits of other tribunals.**
- The **Central GST (Second Amendment) Bill, 2023**, was **introduced by Union Finance Minister Nirmala Sitharaman.**
- The amendment aims to **address issues arising from the Madras High Court's 2019 decision to strike down the formation of GST Appellate Tribunals**, necessitating amendments to the GST Act in July 2023.
- The Bill **also allows members of the Bar with 10 years of experience to serve as judicial members of the tribunals**.
- The Rajya Sabha **also returned the Provisional Collection of Taxes Bill, 2023,** which **replaced the Provisional Collection of Taxes Act, 1931**. Both bills were passed by the Lok Sabha on the preceding day.

What is Goods and Services Tax (GST):

- GST is an indirect tax that **came into effect from 1 July 2017** through the implementation of the **101st Amendment to the Constitution of India** by the Indian government.
- It has actually replaced **various indirect taxes** such as - **service taxes, VAT, excise** and others in the country.
- GST rates are divided into f**ive different tax slab**s for collection of tax - **0%, 5%, 12%, 18% and 28%.**
- There are three types of GST i.e**State Goods and Services Tax (SGST), Central Goods and Services Tax (CGST) and the Integrated Goods and Services Tax(IGST)**

What is the GST Council:

- GST Council is a **constitutional body** for making recommendations to the Union and State Government on issues related to **Goods and Service Tax.**
- It makes **recommendations to the Union and State Government** on issues related to Goods and Service Tax and was introduced by the Constitution (**One Hundred and First Amendment) Act, 2016.**
- As per **Article 279A** of the amended Constitution, the **GST Council which will be a joint forum of the Centre and the States**, shall consist of the following members: –
    - **Union Finance Minister – Chairperson**
    - **The Union Minister of State, in-charge of Revenue of finance – Member**
    - **The Minister In-charge of finance or taxation or any other Minister nominated by each State Government – Members**
- As per **Article 279A (4)**, the Council will make **recommendations to the Union and the States on important issues** related to GST, like the goods and services that may be subjected or exempted from GST, model GST Laws, principles that govern place of Supply, threshold limits, GST rates including the floor rates with bands, special rates for raising additional resources during natural calamities/disasters, special provisions for certain States, etc.
- **Every decision of the Goods and Services Tax Council** shall be taken at a meeting by a **majority of not less than three-fourths** of the weighted votes of the members present and voting, in accordance with the following principles, namely:
    - The **vote of the Central Government** shall have a weightage of **one third of the total votes cast, and**
    - The **votes of all the State Governments** taken together shall have a **weightage of two-thirds of the total votes cast,** in that meeting.

What is GST Appellate Tribunal:

- The Central Goods and Service Tax Act, 2017 in **Section 109 mandates for the constitution of a GSTAT and its Benches.**
- The GSTAT is the **specialized appellate authority for resolving disputes under the GST laws.**
- **Composition:**
    - The GST Tribunal will have **one principal bench in New Delhi** and as many **benches or boards in states as decided by each state**, subject to approval of the council.
    - **North-eastern states could opt for one bench for 2-3 states** and an additional bench for very far-flung areas.
    - The **principal bench and state boards would have two technical and two judicial members** each, with equal representation from the Centre and states.
    - **All four members would not sit for hearing each case**. It depends on the **threshold or value of dues involved.**

Centre's 'swift effort' saved rain devastated south TN districts, says FM Sitharaman; lashes out at State govt

Subject: Polity

Section: National body

What are the classifications of disasters and how does this affect funding?

- According to the **National Disaster Management Policy**, the State governments have to provide disaster relief from their respective **State Disaster Response Funds (SDRFs),** and only for a "**calamity of severe nature**", will additional assistance be provided from the **National Disaster Response Fund (NDRF).**
- There is, however**, no provision in the law or rules for the government to designate a disaster a "national calamity".**
- Minister of State for Home Kiren Rijiju informed Parliament recently that the guidelines of the NDRF and SDRFs did not contemplate declaring a disaster a national calamity.

How are the NDRF and the SDRFs funded?

- The NDRF is funded through a National Calamity Contingent Duty levied on pan masala, chewing tobacco and cigarettes, and with budgetary provisions as and when needed. A provision exists to encourage any person or institution to make a contribution to the NDRF. However, this source of funding has not been tapped so far, according to the government.
- The 14th Finance Commission recommended changes to this structure once the cess was discontinued or subsumed within the Goods and Services Tax. However, the government, instead, decided to continue with the National Calamity Contingent Duty even in the GST regime.

- The SDRF corpus is contributed by the Union government and the respective State governments in a 75:25 ratio for general category States and 90:10 for Special Category States.
- The allocation of the SDRF for each State is done by the Finance Commission, and the Centre contributes its specified share each financial year.
- The Central share of SDRF is released in two equal instalments, in June and then in December.

What has been the trend in budgetary allocations to the NDRF and SDRFs?

The Union government has maintained a steady flow of funds to the NDRF each year, ranging from ₹5,690 crore in 2015-16 to a budgeted amount of ₹2,500 crore for the current financial year. In addition, the Centre has also been contributing to the SDRFs every year, amounting to ₹ 8,374.95 crore in 2016-17 and ₹7,281.76 crore in 2017-18.

Criteria for awarding disaster relief must laid down clearly

Subject: Polity

Section: National body

Context:

- The recent spat between the Central and Tamil Nadu governments over flood relief after two spells of heavy rainfall in the State has been disheartening for those struggling to rebuild their lives.

More about News:

- The central government does not declare any natural disaster a **national disaster.**
- It is only after an assessment by its team that any natural disaster is classified as a **disaster of severe nature** — as seen in the 2013 floods in Uttarakhand and 2018 floods in Kerala.
- In such a case, **there is additional financial assistance** from the National Disaster Response Fund (NDRF).
- The central government should ensure clear guidelines when it comes to relief.

Various Funds for mitigation of Disaster:

- **Prime Minister's National Relief Fund (PMNRF):**
  o The Prime Minister's National Relief Fund (PMNRF) was set up in January 1948, **originally to accept public contributions for the assistance of Partition refugees.**
  o It is now used to provide **immediate relief to the families of those killed in natural calamitiesand the victims of major accidents and riots and support medical expenses** for acid attack victims and others.
  o The PMNRF was originally **managed by a committee which included the Prime Minister** and his deputy, the finance minister, the Congress President, a representative of the Tata Trustees and an industry representative.
  o However, in 1985, the committee entrusted the entire management of the fund to the **Prime Minister, who currently has sole discretion for fund disbursal.**
  o A joint secretary in the PMO administers the fund on an honorary basis.
  o States also have similar **Chief Minister's Relief Funds.**
- **National Disaster Response Fund (NDRF)**
  o It is a fund managed by the Central Government to meet the expenses for **emergency response, relief and rehabilitation due to any threatening disaster situation or disaster.**
  o It is defined in **Section 46 of the Disaster Management Act, 2005.**
  o It is placed in the "**Public Account"** of GOI under "reserve funds not bearing interest".
  o **NDRF is constituted to supplement the funds of the State Disaster Response Funds (SDRF),** in case of a disaster of severe nature, provided adequate funds are not available in SDRF.
- **Eligibility:**
  o **NDRF guidelines state that natural calamities of cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and cold wave and frost considered to be of severe nature by Government of India (GoI)** and requiring expenditures by a state government in excess of the balances available in its own SDRF will qualify for immediate relief assistance from NDRF.
  o For availing the NDRF funds, states are required to submit a memorandum indicating the sector-wise damage and need of funds. The Centre, on its part, assesses the damage and grants the additional funds to states.
  o The financial assistance from NDRF is for providing immediate relief and is not compensation for loss/damage to properties /crops. In other words, NDRF amount can be spent only towards meeting the expenses for emergency response, relief and rehabilitation.
  o The **National Executive Committee (NEC) of the National Disaster Management Authority takes decisions on the expenses from National Disaster Response Fund.**
- **Sources of Financing NDRF:**

- It is financed through the levy of a cess on certain items, chargeable to **excise and customs duty,** and approved annually through the Finance Bill.
- The requirement for funds beyond what is available under the NDRF is met through general budgetary resources.

- **State Disaster Response Funds:**
  - It has been constituted in each State under **Section 48 (1) (a) of the Disaster Management Act, 2005.**
  - The fund is the primary fund available with State Governments for responses to notified disasters.

- **Funding Pattern:**
  - The **Central Government contributes 75% to the SDRF in general States and 90% in North-East and Himalayan States.**
  - The annual Central contribution is released in two equal installments as per the recommendation of the Finance Commission.
  - As per the guidelines, the funds are released on receipt of **Utilisation Certificate** of the amount released in the earlier instalment and receipt of a report from the State Government on the activities undertaken from SDRF.
  - However, in view of the urgency, these requirements were waived while releasing the funds this time.
  - The fund is to be **used only for meeting the expenditure for providing immediate relief to the victims of notified calamities like cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and frost & cold wave.**
  - Allocation of SDRF funds to the States is based on multiple factors like past expenditure, area, population, and disaster risk index.

Census postponed again, to be delayed till at least October next year
Subject: Polity

Section: National Body

Context:
- The **deadline to freeze the administrative boundaries** of districts, tehsils, towns, municipal bodies and others for the Census has been **extended till June 30, 2024.**
- This means the decennial exercise, which should have started in 2020, will now be postponed again till at least October 2024, as it usually takes about three months to prepare the list of enumerators after setting the boundaries.

Need of Freezing Administrative Boundaries:
- **Before every Census, states are required to provide information on changes in the number of notified districts**, villages, towns and other administrative units such as tehsils, talukas and police stations to the Registrar General of India (RGI).
- **Freezing of boundary limits of administrative units, at least three months prior**, thus is a prerequisite for conducting the census, to prevent State governments' tendency to create new districts and tehsils or reorganise existing ones.
- If changes in administration boundaries happen during a Census, there would be chaos in the field over supervision of such areas. This could lead to some areas being left out of the Census.
- The house-listing operations were traditionally taken up in various States at different points of time between March and September of the year prior to the Census.
- As a result, the government may have decided to freeze administrative boundaries to coincide with house-listing operations, thereby shortening the time between the freezing of boundaries and the actual Census enumeration.

About Census
- The **Census is the enumeration of the population of the country and it is being conducted at an interval of 10 years by the Office of the Registrar General** and Census Commissioner of India under the Ministry of Home Affairs.
- In the Census, data is collected on demographic and various socio-economic parameters like education, language, marriage, fertility, disability, occupation and migration of the individuals.
- It was **first started under British Viceroy Lord Mayo in 1872** and the first systematic census in India was held in 1881.
- The **Census 2021 will be the 15th Census** and will be conducted in two phases, i.e., house listing and population enumeration.
- It will also provide a facility to the public for self-enumeration and for the first time, the exercise will use Mobile App for data collection.

- In addition to allowing online self-enumeration, enumerators will continue home visits to collect census data as in the past.

Significance of Census

- The Census provides population data and characteristics, housing and amenities for every village and town.
- It helps in framing government programs to uplift vulnerable sections and it is used to validate or reject estimates of various sample surveys.
- The Census data are used to determine the number of seats to be reserved for SCs, STs in Parliament and State legislatures and delimitation of constituencies.
- In case of panchayats and municipal bodies, reservation of seats for SCs and STs is based on their proportion in the population. Other than the Census, there is no other source that can provide this information.
- It is also the basis for reviewing the country's progress in the past decade, monitoring the ongoing schemes of the government and planning for the future.

The role of special inquiry committees of Parliament
Subject: Polity

Section: Parliament

Context:

- Recently, the ethics committee of the Lok Sabha is believed to have recommended the **expulsion of a Trinamool Congress Member of Parliament (MP) from the Lok Sabha for her unethical conduct and breach of privileges**.

About ethics committee:

- The ethics committee was constituted in 2000, to oversee the moral and ethical conduct of members and examine cases of 'unethical conduct' referred to it.
- The **Committee examines complaints filed against members of the House by:**
- **other members; outsiders through a member; or referred by the Speaker.**
- The Committee makes a prima facie inquiry before deciding to examine a complaint and presents its report to the Speaker, who places it before the House for consideration.
- The **term 'unethical' is not defined.**
- It is left to the Committee to decide whether any act is unethical or not.

Role of Privileges committees:

- The **privileges committee or special inquiry committee examines the more serious accusations against a member.**
- In 1951, a special committee found a member guilty of promoting a business interest by putting questions in return for financial benefits.
- It was again a special committee that inquired into the 'cash for query' scam of 2005 where 10 MPs of Lok Sabha were recommended for expulsion.

How is an expulsion constitutional?

- The Constitution under Article 101 lists down the grounds for vacation of a seat by an MP.
- It **includes: voluntary resignation, disqualification and continuous absence from the House for 60 sittings.**
- Expulsion is not mentioned explicitly in the Constitution.
- **Supreme Court judgments in this regard:**
- In Raja Ram Pal versus Hon'ble Speaker (2007), it upheld the power of Parliament to expel its members for breach of privilege by interpreting Article 101 to include expulsion as a ground.
- In Amarinder Singh versus Special committee, Punjab Vidhan Sabha (2010), the Supreme Court held expulsion by the State Assembly as unconstitutional.

Reconciliation of privileges of the House and democratic representation:

- The privileges of the House developed in medieval Britain to protect the House of Commons from an authoritarian King.
- It is **important to preserve the dignity and privilege of the House.**
- It is equally imperative to ensure that democratic representation is not prejudiced for political reasons.
- It must be noted that Parliamentary Committee proceedings are not as detailed as a judicial case that is conducted as per the Evidence Act.
- Even in this case, the ethics committee is believed to have recommended legal inquiry and the CBI has already registered a preliminary inquiry.
- It would be prudent to set up fast track courts to conduct trials for such cases in a time bound manner of say 60 days.

- If they are convicted in such a trial, it would **result in their disqualification under the Representation of the People Act, 1951.**
- Otherwise, they should continue to be a member of the House.

After Mahua expulsion
Subject: Polity

Section: Parliament and legislation

Context: Trinamool Congress MP Mahua Moitra was Friday expelled from the Lok Sabha

More about the news:
- The Lok Sabha **expelled Trinamool Congress** member Mahua Moitra over the **"cash-for-query" allegation** through a voice vote amid chaos.
- Union Parliamentary Affairs Minister had moved the motion to **expel Ms. Moitra as per the recommendation of the Ethics Committee report.**
- The **report found her guilty** of sharing her credentials with others, **accepting gifts for favors from a businessman.**

Can she go to the Supreme Court:
- The **expelled individual** has the **option to challenge the expulsion** in the **Supreme Court.**
- While **Article 122** of the **Constitution typically** grants **immunity to parliamentary proceedings** from court challenges based on procedural irregularities, **the Supreme Court, in the 2007 Raja Ram Pal case**, clarified that t**hese restrictions are specifically for procedural irregularities**.
- In **certain cases, judicial review** may be **deemed necessary, despite the general immunity outlined in Article 122.**

What can be the grounds for a challenge
- Former **Lok Sabha secretary general P. D. T. Achary** explains that **while a House has the authority to expel a Member for breaching privilege**, the court can assess whether that **specific privilege** was in effect at the time.
- He notes the **distinct roles of the Privileges Committee and Ethics Committee, emphasizing that they investigate misconduct and assess if a member has compromised the House's dignity**.
- While **investigative procedures lack specific rules**, Achary suggests that **fair methods, such as allowing the accused to depose, cross-examine individuals, and present relevant evidence, should be followed to uncover the truth**.
- In the case of lawmaker Moitra, **who claims denial of natural justice, she alleges not being permitted to cross-examine** individuals involved in the bribery accusations against her.

What had been Supreme Court's stand on the issue in the past:
- The Supreme Court has **presented contrasting perspectives** on **analogous cases** in the past, illustrating the **intricacies of parliamentary expulsions**.
- The **2007 Raja Ram Pal case** emphasized **Parliament's authority to expel members,** contingent upon justiciability.
- Nevertheless, **discrepancies arose among judges regarding the interpretation of Article 101,** addressing seat vacation in Parliament. The **minority judgment** expressed reservations about the **comprehensive nature of Article 101,** pointing out its **omission of expulsion as a basis for vacancy**.
- In a **subsequent case, Amarinder Singh vs Special Committee, Punjab Vidhan Sabha,** the Supreme Court declared the **expulsion of former Punjab Chief Minister Amarinder Singh as unconstitutional**.
- The **ruling highlighted concerns about potential misuse** of legislative privileges to target political adversaries or dissenters, **particularly in relation to their past legislative actions.**
- The **Supreme Court's position** in this instance **raises apprehensions regarding vague grounds for expulsion**, such as **conduct unbecoming of a member or lowering the dignity of the House,** which could potentially **lead to the selective application of legislative privileges against political opponents.**

What is Article 105:
- **Article 105 of the Constitution addresses** the **powers and privileges of Parliament and its members and committees**.
- Art**icle 105(3) specifies** that these **powers, privileges, and immunities** are to be defined by Parliament through law.
- Until **such definition, they are to be those in effect** before the Constitution's **Forty-fourth Amendment Act, 1978.**
- The **court emphasized that Article 105(3) does not grant absolute immunity** to parliamentary proceedings, **allowing for judicial scrutiny**.
- However, the **court clarified that it won't question the truth or correctness** of the **material relied upon by the legislature**, nor will it assess the **adequacy of the material or substitute its opinion for that of the legislature**.
- Certain C**onstitutional provisions, such as Article 122 or 212, impose restrictions** on this judicial scrutiny.

<u>**Some facts about Ethics Committee:**</u>

- Each of the **two Houses of Parliament** has an ethics committee. They deal with the members'
- Besides **overseeing the moral and ethical conduct** of members, ethics committee also **prepares a Code of Conduct** for members, which are amended from time to time.
- The **ethics committee in Lok Sabha** has **15 members while in Rajya Sabha has 10 members.**
- The **members of the Ethics Committee** are appointed by the Speaker for a **period of one year.**

<u>**What is the history of Ethics Committees:**</u>

- A **Presiding Officers' Conference** held in **Delhi in 1996** first **mooted the idea of ethics panels for the two Houses.**
- Then Vice President **K R Narayanan** constituted the **Ethics Committee of the Upper House on March 4, 1997**, and it was inaugurated that May to **oversee the moral and ethical conduct of members** and examine cases of misconduct referred to it.
- The **Rules applicable to the Committee of Privileges also apply to the ethics panel.**
- In the **case of Lok Sabha,** a study **group of the House Committee of Privileges**, after visiting **Australia, the UK, and the US in 1997** to look into practices pertaining to the conduct and ethics of legislators, **recommended the constitution of an Ethics Committee,** but it **could not be taken** up by Lok Sabha.
- The **Committee of Privileges** finally **recommended the constitution of an Ethics Committee** during the **13th Lok Sabha.**
- The late Speaker, **G M C Balayogi, constituted an ad hoc Ethics Committee in 2000**, which became a **permanent part of the House only in 2015.**

<u>**What is the Procedure for complaints:**</u>

- **Any individual has the right to file a complaint** against a Member of Parliament (MP) by going **through another Lok Sabha MP.** This process **requires providing evidence of the alleged misconduct** and **submitting an affidavit affirming** that the complaint is **not "false, frivolous, or vexatious."**
- If the **MP in question files the complaint,** there is **no need for an affidavit**.
- The **Speaker has the authority to forward any complaint against an MP to the Ethics Committee**.
- Notably, **the committee does not entertaincomplaints solely based on media reports** or **matters under judicial consideration**.
- Before d**eciding to investigate a complaint, the committee conducts a prima facie inquiry and subsequently issues recommendations** based on its evaluation.
- The **committee then presents its report to the Speaker,** who **seeks the House's opinion on whether to consider the report.**
- Additionally, **there is provision for a half-hour discussion on the report.**

The Advocates Amendment Bill, which aims to weed out 'touts'

Subject :Polity

Section: Legislation in news

Context: The Advocates Amendment Bill

More about the news:

- The A**dvocates Amendment Bill, 2023**, was passed in the **Lok Sabha during the first day of Parliament's Winter Session**.
- The bill **aims to eliminate 'touts' from the legal system** by **repealing the Legal Practitioners Act, 1879,** and **amending the Advocates Act, 1961**.
- The bill **focuses on reducing unnecessary enactments** in the **statute book and eliminating obsolete laws**.

What does the now-repealed 1879 Act state

- The **Legal Practitioners Act**, enacted in **1880,** aimed to **consolidate and amend the law related to legal practitioners** in certain provinces.
- The Act a**pplied to areas in West Bengal, Uttar Pradesh, Punjab, Bihar, Madhya Pradesh, Assam, Orissa, and Delhi,** and could be extended to other states by their governments.
- **Section 2 defined "legal practitioner"** to include **advocates, vakils, or attorneys of any High Court**.
- It also **introduced the term "tout," referring** to someone **who procures employment for a legal practitioner** in exchange for remuneration.
- **The Advocates Act of 1961 repealed most provisions of the 1879 Act** but **retained elements related to its extent,** definitions, and powers to frame and publish lists of touts.

What is the Advocates Act of 1961:

- The **Advocates Act of 1961** was enacted to amend and **consolidate the law concerning legal practitioners and the establishment of Bar Councils** and an **All-India Bar.**
- **Before its enactment, legal practitioners** were governed by **three Acts – the Legal Practitioners Act of 1879, the Bombay Pleaders Act of 1920, and the Indian Bar Councils Act of 1926.**
- The need for **judicial administration** reforms **post-independence** prompted the **Law Commission** to recommend **repealing the 1879 Act in its 249th Report, titled 'Obsolete Laws: Warranting Immediate Repeal'.**
- The **All-India Bar Committee** also provided **recommendations in 1953**, contributing to the passage of the 1961 Act.

What does the Advocates Amendment Bill, 2023, say:

- The **Advocates Amendment Bill, 2023**, has been passed in the Lok Sabha to **eliminate 'touts' from the legal system.**
- The bill **repeals the Legal Practitioners Act, 1879**, and **amends the Advocates Act, 1961**, with the **aim of reducing superfluous enactments and eliminating obsolete laws.**
- The new **Section 45A allows High Courts** and **district judges** to frame and **publish lists of touts.**
- Individuals **can contest their inclusion** in such **lists before publication.**
- If **found to be a tout**, their **names will be published** and **displayed in every court.**
- The Bill **also imposes penalties** for **acting as a tout** while included in such a list.

Adhar based consent for children goes online

Subject :Polity

Section: Legislation in news

Context: Adhar based consent for children goes online

More about the news:

- The **Union Ministry of Electronics and IT** in India is planning to **consult industry stakeholders** on **proposed data protection rules** to operationalize the **Digital Personal Data Protection Act.**
- The **rules include using an Aadhaar-based system** to verify **children's age for online services** and obtain parental consent.
- Additionally, a **two-stage notification process for tech companies** to inform users **about data breaches** is suggested.
- The rules may **recommend using parents' DigiLocker app or an electronic token system for age verification**, subject to government authorization.
- The closed-door consultation is scheduled for December 19.

Some facts about Digital Personal Data Protection Act 2023, (DPDP Act)

- The DPDP Act is **India's comprehensive legislation for personal data protection**. Enacted in 2023, it **regulates the processing of personal data and establishes the rights of individuals over their data.**
- **Key features** include:
- **Scope:**
  - Applies to **organizations processing personal data** of individuals **in India.**
  - Applicable to **entities both within and outside India,** if they **process data of individuals in India.**
- **Consent:**
  - Allows **data processing without explicit consent** in specific cases, such as **contractual obligations or public interest.**
  - Emphasizes the **right to be forgotten and the right to erasure.**
- **Data Localization:**
  - **Does not mandate the storage of personal data within India.**
  - Provides f**or the cross-border transfer of data,** subject to certain conditions.
- **Data Breaches:**
  - Requires **organizations to notify the Data Protection Board** and affected individuals **within 72 hours** of becoming aware of a data breach.
  - Establishes o**bligations for data fiduciaries to implement security safeguards.**
- **Penalties:**
  - **Imposes fines up to INR 200 crores for non-fulfilment of obligations** for **children**
  - Imposes **fines up to INR 250 crores for violations**.

o Includes penalties for **failure to conduct a data impact assessment** or follow breach notification procedures.

- **Lower age of consent:**
    o The Bill g**ives powers to the central government** to prescribe a **lower age of consent than 18 years** for **accessing Internet services without parental consent** if the platform they are **using can process their data in a "verifiably safe manner".**

Some important cases w.r.t to data protection:

- **State of Tamil Nadu v. Suhas Katti (2004)**: This case played a **crucial role in encouraging citizens nationwide** to report instances of **online abuse.**
- **Amar Singh v. Union of India (2011):** This case is significant in the **context of Sections 69, 69A, and 69B of the IT Act, 2000.** The court emphasized that **service providers must validate the legitimacy of government** orders authorizing phone tapping to prevent unlawful call interception. The court further d**irected the central government to establish specific directives and rules.**
- **Shreya Singhal v. Union of India (2015):** The Supreme Court declared the **entire Section 66A unconstitutional,** asserting that its **provisions went beyond reasonable restrictions under Article 19(2)** of the Indian Constitution concerning protection against annoyance, inconvenience, danger, obstruction, insult, injury, and criminal intimidation.
- **Justice K.S. Puttaswamy (Retd) v. Union of India (2017):** This landmark case affirmed the **right to privacy as a constitutionally protected right in India.**
- **Praveen Arimbrathodiyil v. Union of India (2021):** Various companies, including **WhatsApp, Quint, LiveLaw, and the Foundation for Independent Journalists, challenged the 2021 regulations in this case**. The judgment's outcomes will influence the future trajectory of Indian information technology law, and the case is currently pending before the Supreme Court for listing.

How MPs are suspended

Subject: Polity

Section: Parliament

Context:78 Opposition MPs suspended

Who can suspend an MP:

- It is the **role and duty of the Presiding Officer** i.e. **Speaker of Lok Sabha and Chairman of Rajya Sabha** to maintain order so that the House can function smoothly.
- In order to ensure that proceedings are conducted in the proper manner, **the Speaker/ Chairman is empowered to force a Member to withdraw from the House.**

What are the rules under which the Presiding Officer/Chairman acts:

For Lok Sabha

- **Rule Number 373** of the **Rules of Procedure and Conduct of Business**
    o The **Speaker can order a member** to **immediately leave the House** if the member's conduct is disorderly.
    o Those directed to withdraw **must do so promptly and stay absent for the remainder of the day's sitting.**
- **Rule 374:**
    o The **Speaker can name a member** who **disrespects the Chair's authority or persistently obstructs House business.**
    o The named member **faces suspension from the House**, but this **suspension should not exceed the remainder of the session.**
    o The suspended member **must leave the House premises.**
- **Rule 374A (Added in December 2001):**
    o In cases of gross violations or serious charges, if named by the Speaker, a **member is automatically suspended from the House's service for five consecutive sittings or the remaining session, whichever is shorter.**

For Rajya Sabha:

- **Rule 255 of the Rule Book of Rajya Sabha:**
    o It empowers the **Chairman of Rajya Sabha to** direct any Member to **withdraw immediately from the House for any disorderly conduct.**
- **Rule 256**
    o This rule empowers the Chairman to name the members who persistently disregards the authority of the Chair or **abuses the rules of the Council.**
    o After that, the House may **adopt a motion suspending the Member for a period not exceeding the remainder of the session.**

- It should be noted that, **unlike Lok Sabha (under rule 374A), Rajya Sabha can not suspend its members without passing a motion for the same.**

What are the terms of Suspension:

- The **maximum period** of suspension is for the **remainder of the session**.
- Suspended members **cannot enter the chamber or attend the meetings** of the committees.
- He **will not be eligible to give notice** for discussion or submission.
- He **loses the right to get a reply to his questions.**

Can courts intervene in a matter of suspension of MPs:

- **Article 122** of the Indian Constitution **establishes the principle that parliamentary proceedings are not subject to questioning in a court of law**.
- Nevertheless, there **have been instances** where the **judiciary has intervened in the procedural workings** of legislatures.
- One such case involves the **Maharashtra Legislative Assembly,** which, **during its 2021** Monsoon Session, **passed a resolution to suspend 12 BJP MLA**s for a year. This matter eventually r**eached the Supreme Court,** which ruled that the resolution's **legal effect extended only for the duration of the Monsoon Session and not beyond.**

Finance Secy. fails to appear in House, matter sent to Privileges Committee

Subject: Polity

Section: Parliament

Context:

- The Principal Secretary of the Finance Department failed to appear before the Delhi Legislative Assembly after being summoned by it, prompting Speaker Ram Niwas Goel to refer the matter to the Privileges Committee of the House.
- **The Assembly had passed a resolution asking Principal Secretary (Finance)** Ashish Chandra Verma to appear before it to explain why funds were not being released by his department for various works in the city.

Basic Concepts For Prelims:

- **Parliamentary Privileges:**
  o Parliament and its Members (MP's) have **certain rights and immunities that enable them to function effectively in their legislative roles.** These are called parliamentary privileges.
  o **Article 105 and Article 194 of the Indian Constitution** mentioned certain privileges for the Member of Parliament and State Assembly respectively so they can perform their duties without any obstruction.
  o **They are the special rights, immunities and exemptions enjoyed by the Members of Parliament/State Assembly, its committees and their members.**
  o **These privileges do not extend to the president** who is also an integral part of the Parliament. These privileges are necessary to secure their independence in working.
  o Without these privileges; The Houses cannot maintain their authority, dignity and honour. The House cannot protect its members from any obstacle in the discharge of their parliamentary responsibilities.
  o The Indian Constitution has also extended these privileges to the persons who are authorised to speak and take part in the Parliamentary procedures or any of its committees.
  o **These include the attorney general of India and Union ministers.**

Sources of the privileges:

- The Parliament till now not explicitly create code for privileges. As of now, it is based on **5 sources – Constitution, statutes, House procedures, Parliamentary conventions and judicial interpretations.**

Breach of privilege:

- A breach of privilege is a **violation of any of the privileges** of MPs/Parliament.
- Among other things, any action 'casting reflections' on MPs, parliament or its committees; could be considered breach of privilege.
- This may include publishing of news items, editorials or statements made in newspaper/magazine/TV interviews or in public speeches.

Two broad categories of Privileges:

- **Collective Privileges -** Those that are collectively enjoyed by the each House of Parliament.
- **Individual Privileges -** Those that are individually enjoyed by the members.

About the Privilege committee:

- **Each House of Parliament is the guardian of its privileges**. Lok Sabha and Rajya Sabha have the authority to take suit- able action against anyone who breaches the privileges of its members or commits contempt of the House.

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- There are two mechanisms by which Parliament takes up these matters. The first is by a member raising the issue on the floor of the House, and then the House decides on it.
- But Lok Sabha and Rajya Sabha usually **send the matter for a detailed examination to their Privilege committee.** The committee recommends to the House a course of action which is then accepted by it.
- This **Committee consists of 15 members (10 members in case of Rajya Sabha) nominated by the Speaker (Chairman in case of Rajya Sabha).**
- Its function is to examine every question involving breach of privilege of the House or of the members of any Committee therefore referred to it by the House or by the Speaker.
- It determines with reference to the facts of each case whether a breach of privilege is involved and makes suitable recommendations in its report.
- It also states the procedure to be followed by the House in giving effect to the recommendations made by it.
- When a question of privilege is referred to the Committee by the House, the report of the Committee is presented to the House by the Chairman or, in his absence, by any member of the Committee.
- Where a question of privilege is referred to the Committee by the Speaker under rule 227, the report of the Committee is presented to the Speaker who may pass final orders thereon or direct that it be laid on the Table of the House.
- The Speaker/ Chairman may refer to the Committee any petition regarding disqualification of a member on ground of defection for making a preliminary inquiry and submitting a report to him.
- The procedure to be followed by the Committee in these cases is so far as may be same as applicable to questions of breach of privilege.

What kinds of cases come to the committee?
- Usually, the committees examine cases where MPs complain that an outsider has breached their privilege.
- For example, the Lok Sabha committee recently looked at multiple instances in which **MPs alleged that government officials have either violated protocol or been unresponsive. But this year, MPs have also brought questions about breach of privilege by other MPs.**
- In Rajya Sabha, MPs have brought eight cases of breach of privilege against their colleagues. These are about video recording unauthorised proceedings, gross disorderly conduct, repeated submission of identical notices, disrespectful observations against the chairman, misleading the media about the house proceedings.

What actions can the committee take?
- The **Committee of Privileges has the power to recommend to the House for its consideration the issuance of admonitions, reprimands, suspension and, in rare cases, expulsion from the House.**
- The convention followed by the committee of both Houses is that if the MP against whom a privilege House proceedings matter is raised gives an unqualified apology the issue is allowed to rest.

Lok Sabha passes Telecom Bill 2023 to replace 138 year old Telegraph Act

Subject :Polity

Section: Legislation in news

Context:
- The Telecommunications Bill, 2023 was introduced in the Lok Sabha by the Union minister for Communications, Electronics & Information Technology recently.

About the Telecommunications Bill, 2023:
- The Telecommunications Bill, 2023 amends and consolidates the laws relating to:
  - development, expansion and operation of telecommunication services and telecommunication networks;
  - assignment of spectrum; and for matters connected therewith.
  - The new Bill seeks to **replace the Indian Telegraph Act, 1885,** the Indian Wireless Telegraphy Act, 1933, and the Telegraph Wires (Unlawful Possession) Act, 1950.

Highlights of the Bill:
- **National Security:**
  - The Bill allows the government to take over telecom services and intercept messages in the interests of national security and in case of emergencies.
- The Bill says that on the occurrence of any public emergency, including disaster management, or in the interest of public safety, the Central Government or a State Government can:
  - take temporary possession of any telecommunication service or telecommunication network from an authorised entity; or

- o provide for appropriate mechanism to ensure that messages of a user or group of users authorised for response and recovery during public emergency are routed on priority.
- o Under the new Bill, the government can also ask telecommunication services to transmit specific messages.

Simplification of licensing:
- The Bill seeks to **simplify the current licensing regime for telecom networks by moving towards an authorisation system.**
- Currently, the telecom department issues more than 100 types of licences, registrations, and permissions.
- The Bill seeks to club many of those in a single authorisation process.

Voluntary disclosure:
- A voluntary undertaking mechanism to facilitate voluntary disclosure of inadvertent lapses and to facilitate compliance has been introduced.
- A tiered structure for settling disputes arising out of breach of terms and conditions involving an adjudicating officer, designated committee of appeals and the **Telecom Disputes Settlement and Appellate Tribunal (TDSAT)** on top.

Biometric authentication:
- Entities have been mandated to carry out **biometric authentication of their users as a measure to curb fraud.**
- The provision has raised concerns about the privacy of users.

Powers of government:
- The Bill empowers the central and state governments or a specially authorised officer to seek interception, disclosure, and suspension powers in case of a public emergency or interest or safety.
- Press messages, meant for publication in India and of correspondents accredited to state or central governments, have been exempted from interception, although they can be intercepted for national security reasons.

Authorisation for telecom-related activities:
- Prior authorisation from the central government will be required to:
- provide telecommunication services,
- establish, operate, maintain, or expand telecommunications networks, or
- possess radio equipment.
- Existing licences will continue to be valid for the period of their grant, or for five years, where the period is not specified.

Assignment of spectrum:
- Spectrum will be assigned by auction, except for specified uses, where it will be allocated on an administrative basis. These include purposes such as:
- national security and defence,
- disaster management,
- weather forecasting, transport,
- satellite services such as DTH and satellite telephony, and
- BSNL, MTNL, and public broadcasting services.
- The central government may re-purpose or re-assign any frequency range.
- The central government may permit sharing, trading, leasing, and surrender of spectrum.

Powers to specify standards:
- The central government may prescribe standards and assessments for telecom equipment, infrastructure, networks, and services.

Right of way:
- Facility providers may seek a right of way over public or private property to establish telecom infrastructure.
- Right of way must be provided on a non-discriminatory and non-exclusive basis to the extent possible.

Protection of users:
- The central government may provide for measures to protect users which include:
  - o prior consent to receive specified messages such as advertising messages,
  - o creation of Do Not Disturb registers, and
  - o a mechanism to allow users to report malware or specified messages.
- Entities providing telecom services must establish an online mechanism for registration and redressal of grievances.

Digital Bharat Nidhi:

- The **Universal Service Obligation Fund** has been established under the 1885 Act to provide for telecom services in underserved areas.
- The **Bill retains this provision, renames the fund as Digital Bharat Nidhi**, and also allows its use for research and development.

Adjudication process:
- The central government will appoint an adjudicating officer to conduct inquiries and pass orders against civil offences under the Bill.
- The officer must be of the rank of joint secretary and above.
- Orders of the adjudicating officer may be appealed before the Designated Appeals Committee within 30 days.
- Appeals against the orders of the Committee, in connection to breach of terms and conditions, may be filed with The Telecommunications Dispute Settlement and Appellate Tribunal within 30 days.

Issues:
- As per the new Bill, telecom services and networks will need authorisation from the government, unless it decides to exempt certain entities in public interest.
- There are concerns that the current definition of telecommunication could be interpreted in a way to potentially open the door for the telecom department to regulate online platforms.
- The Allocation of Business Rules could stand in the way of that since the telecom department's remit is limited to regulating the 'carrier' layer, that is telecom services, under those rules.

IPC to BNS what has change

Subject :Polity

Section: Legislation in news

Context: Lok Sabha nod for 3 bill on criminal law

More about the news:
- The **Bharatiya Nyaya Sanhita Bill, 2023** proposes **significant changes** to the **Indian Penal Code; it aims** to replace some **notable modifications including incorporating terrorism and organized crime into regular criminal law, implementing gender neutrality for offenses related to children, and repealing Section 377**, which criminalized homosexuality.

What are the new offenses:
- **Promise to Marry: Clause 69 criminalizes a "deceitful" promise** to marry, addressing the "**love jihad" narrative.** It **includes consensual sexual activity**, making it punishable with imprisonment up to ten years.
- **Mob Lynching:** The Bill **codifies offenses** linked to **mob lynching** and **hate-crime murders,** imposing punishments **ranging from life imprisonment to the death penalty for offenses committed by a mob of five or more** individuals based on factors such as race, caste, community, or personal belief.
- **Organized Crime:** For the first time, **organized crime is brought under ordinary criminal law,** with punishment for **attempts and committed offenses ranging from five years to life imprisonment or death,** depending on whether death is involved.
- **Petty Organized Crime:** A **separate category** criminalizes **offenses such as theft, snatching, cheating, unauthorized selling of tickets,** unauthorized betting or gambling, and s**elling of public examination question papers.**
- Terrorism: Terrorism is included under **ordinary criminal law**, **borrowing language from the Unlawful Atrocities Prevention Act**. The **definition of "terrorist" is broad, and the offense involving** terror financing is **broader in the BNS** than in UAPA.
- **Attempt to Suicide:** The BNS **criminalizes attempting suicide** with the intent to compel or **restrain a public servant from discharging official duty,** prescribing a **jail term up to one year with community service.** This provision could be applied to prevent self-immolations and hunger strikes during protests.

What are the deleted offences:
- The Bharatiya Nyaya Sanhita Bill, 2023 **introduces changes in various areas**:
- **Unnatural Sexual Offences**: **Section 377**, which **criminalized homosexuality** and other **"unnatural" sexual activities**, has been repealed. However, concerns arise as its total omission may impact **addressing non-consensual sexual acts, especially as rape laws remain gendered.**
- **Adultery:** The offense of adultery, **previously struck down by the Supreme Court in 2018 as unconstitutional, has been omitted in the BNS.**
- **Thugs:** The BNS **fully omits Section 310 of the IPC**, which **criminalizes individuals habitually associated** with others for purposes like **robbery and child-stealing, labeled as "thugs."**

- **Gender Neutrality:** While **rape laws still apply only to women, the BNS introduces gender neutrality in certain laws**. **Procuration of a girl (Section 366A of IPC) and kidnapping of minors (Section 361 of IPC) are made gender-neutral. For offenses like outraging the modesty of women (354A) and voyeurism (354C), gender neutrality for the accused is established,** allowing women to be booked under the law.

Schemes

Centre launches forest certification scheme to counter foreign agency

Subject: Schemes

Section: Environment

Context: Center launches forest certification scheme to counter foreign agency

More about the news:

- The Indian government has l**aunched the Indian Forest and Wood Certification Scheme (IFWCS)** to **address rising global concerns** over **deforestation and illicit timber trade.**
- IFWCS will serve as a **national forest certification scheme**, providing an **alternative to foreign private certification agencies** that have operated in India **for the past two decades**.
- The move follows **concerns raised in a global investigation** by the **International Consortium of Investigative Journalists (ICIJ)** about the i**ntegrity of existing certifications,** affecting the acceptance of Indian products in international markets.
- The new certification scheme **is government-backed** and aims to bring transparency and **trust to forest-based product processes.**
- It **covers sustainable forest management**, **sustainable management of trees outside forests, and chain of custody to trace the origin of forest products** throughout the supply chain.
- While c**ertification is not mandatory** for forest divisions, adhering to the newly developed **Indian Forest Management Standards** makes them eligible for certification.
- The IFWCS is expected to **enhance the acceptability of Indian forest-based products in international markets.**
- The scheme will be o**verseen by the Indian Forest and Wood Certification Council (advisory),** involving **various stakeholders, and managed by the Indian Institute of Forest Management (overall management of the scheme)**

Culture ministry sets aside ₹350 crore fund for promoting eight schemes

Subject : Schemes

Section: History

Context: Culture ministry sets aside ₹350 crore fund for promoting eight schemes

More about the news:

- The **Ministry of Culture** in India **plans to disburse over ₹350 crore** over a **five-year period to promote art and culture** through various schemes.
- The **financial assistance** will be **directed towards cultural organizations**, including **NGOs, institutions, and voluntary organizations.**
- The **disbursements are allocated as follows: ₹68.79 crore in FY22, ₹71.19 crore in FY23, and ₹71.16 crore each year from FY24 to FY26**.
- The Ministry of Culture in India is **extending financial assistance** to cultural organizations with a **national presence**, offering **grants of up to one crore rupees.** Additionally, the **Cultural Function & Production Grant (CFPG)** provides a **maximum grant of ₹5 lakh, which can be increased to ₹20 lakh** under exceptional circumstances.
- These funding initiatives **aim tosupport cultural organizations, cultural functions and production, preservation of cultural heritage in the Himalayan region**, development of Buddhist/Tibetan organizations, building grants, and safeguarding intangible cultural heritage.

What is Cultural Function & Production Grant (CFPG)

- The objective of this scheme **component is to provide financial support to NGOs/ Societies/ Trusts/ Universities etc. for Seminars, Conference, Research, Workshops, Festivals, Exhibitions, Symposia, Production of Dance, Drama-Theatre, Music** etc.
- The **maximum grant provided under CFPG is Rs.5 Lakh which can be increased to Rs. 20 Lakh** under exceptional circumstances.

₹930 crore saved from being siphoned off in financial frauds

Subject: Schemes

Section: IT and computer

Context:₹930 crore saved from being siphoned off in financial frauds

More about the news:

- The **Ministry of Home Affairs reported that the timely action** against over **3.80 lakh complaints through the 'Citizen Financial Cyber Fraud Reporting and Management System' saved ₹930 crore** from being **siphoned off in financial frauds.**

- The system is **part of the 'Indian Cyber Crime Coordination Centre (I4C)' initiative.**

- Additionally, the MHA informed that more than **2.45 lakh SIM cards and 42,000 IMEIs reported by police** from different states have been **blocked by the Central government. The National Cyber Forensics Laboratory (Investigation),** established under **I4C**, has provided services in around 8,840 cyber forensics cases.

- The MHA has also **provided financial assistance of ₹122.24 crore under the 'Cyber Crime Prevention against Women and Children (CCPWC)' Scheme** to states and union territories for capacity building.

- The public **can report cyber offenses**, particularly those **against women and children, on the 'National Cyber Crime Reporting Portal.'**

- Seven Joint Cyber Coordination Teams (JCCTs) have been established **under I4C to enhance coordination among law enforcement agencies.**

What is Cyber crime

- It is **unlawful acts wherein the computer** is either a tool or a target or both.

- Cyber crimes can involve criminal activities that are traditional in nature, such as theft, f**raud, forgery, defamation and mischief,** all of which are subject to the Indian Penal Code.

- Cyber crimes are of **two type:**
  - **Computer as a Target :**-using a **computer to attack other computers**–e.g. Hacking, Virus/Worm attacks, DOS attack etc.
  - **Computer as a weapon :**-using a **computer to commit real world crimes**–e.g. Cyber Terrorism, IPR violations, Credit card frauds, EFT frauds, Pornography etc.

What are the Cyber crime control regime in India

- **Information Technology Act 2000** is the **main law connected with cyber security** in India.

- **Section 65** – **Tampering with computer** Source Document

- **Section 66** – **Using password of another person**

- **Section 66D** – **Cheating** Using computer resource

- **Section 66E** – **Publishing private Images** of Others

- **Section 66F** – Acts of **cyber Terrorism**

- **Section 67** – Publishing **Child Porn** or predating children online

- **Section 69** – **Govt.'s Power to block websites**

- **Section 43A** – **Data protection at Corporate level**

- A c**ybercrime complaint can be filed using the National Crime Reporting Portal of India-**This portal is an initiative of the Government of India to facilitate victims/ complainants to report cybercrime complaints online.

What is Indian Computer Emergency Response Team (CERT-IN or ICERT)

- The Indian Computer Emergency Response Team (CERT-IN or ICERT) is an office **within the Ministry of Electronics and Information Technology o**f the Government of India.

- CERT-In is the **national nodal agency** for responding to **computer security incidents as and when they occur.**

- CERT-In has been **operational since January 2004 and** has been **designated to serve as the national agency** to perform the following functions in the area of cyber security:
  - **Collection, analysis and dissemination** of information on cyber incidents.
  - Forecast and alerts of cyber security incidents.
  - Emergency measures for handling cyber security incidents.
  - Coordination of cyber incident response activities.
  - Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents.

- CERT-IN has **overlapping responsibilities** with other agencies such as **National Critical Information Infrastructure Protection Centre (NCIIPC).**

- **Indian Penal Code, 1860 is also used to book criminals connected with cybercrimes.**

- India also has a **cyber security policy.**

What are the Government Initiatives to Cope with Cyber Crimes in India

- **Indian Cyber Crime Coordination Centre (I4C):**
    - **Coordinates nationwide efforts** to combat various forms of cyber-crime.
- **National Cyber Forensic Laboratory:**
    - Offers **early-stage cyber forensic suppor**t to Investigating Officers **from all State/UT Police through online and offline modes.**
- **CyTrain Portal:**
    - A **Massive Open Online Courses (MOOC) platform** designed for the capacity building of police officers, judicial officers, and prosecutors.
    - **Focuses on critical aspects of cyber-crime investigation, forensics, and prosecution.**
- **National Cyber Crime Reporting Portal:**
    - A **platform allowing the public to report cyber-crime incidents**, with special attention to crimes against women and children.
- **Citizen Financial Cyber Fraud Reporting and Management System:**
    - Enables **immediate reporting of financial frauds.**
    - Assists in **lodging online cyber complaints** through a toll-free helpline.
- **Cybercrime Prevention against Women and Children (CCPWC) Scheme**:
    - Provides **financial assistance to States/UTs** to enhance the **capabilities of Law Enforcement Agencies in investigating cyber-crimes.**
- **Joint Cyber Coordination Teams:**
    - Established to **improve coordination among Law Enforcement Agencie**s in States/UTs, particularly in areas with multi-jurisdictional issues related to cyber-crimes.
- **Central Assistance for Modernization of Police:**
    - Offers **financial support to States/UTs for the acquisition of modern weaponry, advanced communication/forensic equipment**, and cyber policing equipment.
- **Cyber Surakshit Bharat Initiative:**
    - M**eitY in collaboration with National e-Governance Division (NeGD)** came up with this initiative in **2018 to build a cyber-resilient IT set up**.
- **National Critical Information Infrastructure Protection Centre (NCIIPC)**
    - To battle **cyber security threats** in strategic areas such as air control, nuclear and space. It will **function under the National Technical Research Organisation,** a technical **intelligence gathering agency** controlled directly **by the National Security Adviser in PMO.**

After COVID break, Centre approves fourth phase rollout of GIAN scheme

Subject: Govt schemes

Section: Msc

Context: Centre approves fourth phase roll-out of GIAN scheme

More about the news:

- **Eight years** after its launch and a **brief discontinuation during the COVID period**, the **Ministry of Education** is set to resume the **fourth phase of the Global Initiative of Academic Networks (GIAN)**.
- This initiative, **spearheaded by Prime Minister Narendra Modi, aims to bring distinguished scholars from around the world** to **teach at Indian universities.**
- The government has **allocated a substantial amount, approximately ₹126 crore,** for **foreign faculty's travel expenses and honorarium**.
- Notable experts, including**indologist David Shulman and cell biologist Bhanu Pratap Jena,** have participated.
- The **National Institute of Educational Planning and Administration (NIEPA)** has **recommended the program's continuation** after evaluation.
- Of the **2,101 approved courses, 1,772 have been delivered**, involving 1,612 foreign faculty members **from 59 countries**.

- Phase **four applications began in July 2023** after a two-year hiatus due to COVID. The **majority of courses were conducted at IIT and NIT campuses**, prompting a call for greater involvement in state universities and smaller colleges.
- The **U.S. contributed 41.4% of visiting academicians, benefitting approximately 72,000 Indian students.**
- The **Ministry of Education** is emphasizing the **inclusion of video recordings and webcasting** in the approval process for **phase four,** with **plans to create a repository of GIAN lectures** accessible to universities across India as a teaching and assessment tool.

Some facts about Global Initiative of Academic Networks (GIAN):
- Global Initiative of Academic Networks (GIAN) in Higher Education was **launched in 2015.**
- It is a **program of the Ministry of Education**.
- An **honorarium is paid to the foreign experts** to **cover their travels and other expenses.**
- **Short term courses** are c**onducted by these experts/faculties** in Indian Institutions.
- This programme was **first launched to establish** collaboration **between India and The United States of America,** but later, the scope of the programme was extended.
- The duration of courses differ for different courses. The **minimum duration is one week and the maximum duration is 3 weeks.**
- A **lump-sum amount of up to US$ 8000** for **12 to 14 hours** of contact and up to US$ 1**2000 for 20 to 28 hours** of contact can be **paid to the foreign experts covering their travel and honorarium.**
- Up to **41.4% (668) of academicians who visited India belonged to the U.S. The rest consisted of experts from the U.K. (143), Germany (93), Canada (89),**

Ministry holds meet with CMs of northeast States over lag in DevINE scheme
Subject: Schemes
Section: MSc
Context:
- With a little over **10% of funds under the Prime Minister's Development Initiative for North East Region (PM-DevINE) sanctioned so far**, the Ministry of Development of North Eastern Region (DoNER) convened a meeting with the Chief Ministers of the States in the region.

What is PM-DevINE?
- **Origin of PM-DevINE:**
  - The PM-DevINE scheme as a **Central Sector scheme,** was introduced as a part of the **Union Budget 2022-23.**
  - The Cabinet granted approval for the PM-DevINE scheme on 12th October 2022. It has been granted **100% Central funding**, ensuring that resources are directly allocated to the development initiatives.
  - It will be **implemented by Ministry of Development of North-East Region.**

Objectives of PM-DevINE:
- **Infrastructure Development:** In line with the spirit of PM GatiShakti, PM-DevINE aims to fund infrastructure projects in a cohesive manner, ensuring seamless connectivity and accessibility across the NER.
- **Supporting Social Development Projects:** Recognizing the unique needs and challenges of the NER, the scheme endeavors to support social development projects that address critical issues and improve the overall quality of life for the region's inhabitants.
- **Empowering Youth and Women:** PM-DevINE seeks to create **livelihood opportunities** specifically targeting the youth and women of the NER, enabling them to participate actively in the region's development and progress.

Budget Allocation:
- The scheme received an initial allocation of Rs. 1500 crore in the Union Budget 2022-23.
- Over the 4-year period from 2022-23 to 2025-26, which aligns with the remaining years of the 15th Finance Commission period, the scheme has an overall outlay of Rs. 6,600 crore.
- A state-wise, project-wise list of projects approved during FY 2022-23 has been laid out, with each project tailored to address the specific needs of the respective states.

Other Initiatives Related to Development of Northeast Region:
- **North East Industrial Development Scheme (NEIDS)**
- **North Eastern Council (NEC)**
- **North East Road Sector Development Scheme**

- **Connectivity Projects: Kaladan Multi-Modal Transit Project (Myanmar) and Bangladesh-China-India-Myanmar (BCIM) Corridor.**
- **Bharatmala Pariyojana**(5,301 km road stretches in NER for improvement)
- North East has been kept as a priority area under **RCS-UDAN** (to make flying more affordable).

World Bank recalls paper on decline in toilet usage in India
Subject : Govt Schemes

Section: Places in news

Context:
- World Bank published a departmental working paper highlighting the "**most concerning" trend of toilet usage declining in rural India since 2018** despite early gains of the Swachh Bharat Mission-Gramin.

What is Swachh Bharat Mission Grameen (SBM-G)?
- It was **launched in 2014 by the Ministry of Jal Shakti** to accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation.
- The mission was implemented as a nation-wide campaign/Janandolan which aimed at eliminating open defecation in rural areas.

Swachh Bharat Mission (G) Phase-I:
- The rural sanitation coverage in the country at the time of launch of SBM (G) on 2nd October, 2014 was reported as 38.7%.
- More than 10 crore individual toilets have been constructed since the launch of the mission, as a result, rural areas in all the States have declared themselves ODF as on 2nd October, 2019.

SBM(G) Phase-II:
- It emphasizes the sustainability of achievements under phase I and **to provide adequate facilities for Solid/Liquid & plastic Waste Management (SLWM) in rural India.**
- It will be implemented from 2020-21 to 2024-25 in a mission mode with a total outlay of Rs. 1,40,881 crores.
- The SLWM component of ODF Plus will be monitored on the basis of **output-outcome indicators for 4 key areas:**
- **Plastic waste management,**
- **Biodegradable solid waste management (including animal waste management),**
- **Greywater (Household Wastewater) management**
- **Fecal sludge management.**

Top Performing States:
- The top five performing states are **Telangana, Tamil Nadu, Odisha, Uttar Pradesh and Himachal Pradesh** where maximum number of villages have been declared as ODF Plus.

What is the Significance of Swachh Bharat Mission?
- It will continue to generate employment and provide impetus to the rural economy through construction of household toilets and community toilets, as well as infrastructure for SLWM such as compost pits, soak pits, waste stabilisation ponds, material recovery facilities etc.
- It will also help rural India effectively handle the challenge of solid and liquid waste management and will help in substantial improvement in the health of the villagers in the country.

What is Open Defecation Free Status?
- **ODF:** An area can be notified or declared as ODF if at any point of the day, **not even a single person is found defecating in the open.**
- **ODF+:** This status is given if at any point of the day, **not a single person is found defecating and/or urinating in the open, and all community and public toilets are functional and well maintained.**
- **ODF++:** This status is given if the area is **already ODF+ and the faecal sludge/septage and sewage are safely managed and treated, with no discharging or dumping of untreated faecal sludge and sewage into the open drains, water bodies or areas.**

What are the Schemes as part of SBM?
- **GOBAR-DHAN (Galvanizing Organic Bio-Agro Resources) Scheme:** Launched by the **Ministry of Jal Shakti in 2018** and aims to **augment income of farmers by converting biodegradable waste into compressed biogas (CBG).**
- **Individual Household Latrines (IHHL):** Individuals get around **15 thousand for the construction of toilets.**

- **Swachh Vidyalaya Abhiyan:** The **Ministry of Education launched** the Swachh Vidyalaya Programme with an **objective to provide separate toilets for boys and girls in all government schools within one year.**

Context:
- On December 6, the Tribal Affairs Ministry told the Rajya Sabha that the **population of Particularly Vulnerable Tribal Groups (PVTGs) was not in decline,** citing information provided by the **Office of the Registrar General and Census Commissioner of India (ORGI).**
- This was in variance with the State Wise Census data provided by the Ministry to a **Parliamentary panel last year showing that the numbers of these tribal groups fell almost 40% in at least nine States and Union Territories in the first decade of this century.**

About Scheduled Tribes in India
- **Scheduled Tribe (ST) communities:** India's 705 Scheduled Tribe (ST) communities — making up 8.6% of the country's population — live in 26 States and six Union Territories.
- **Scheduled Areas:** Scheduled Areas cover 11.3% of India's land area, and have been notified in 10 States: Andhra Pradesh, Telangana, Odisha, Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan, Gujarat, Maharashtra, and Himachal Pradesh.
- **PVTGS:** India has a Scheduled Tribe population of 10.45 crore, according to the 2011 census.
- Of the total, **75 communities in 18 states** and the Union Territory of Andaman and Nicobar Islands have been categorised as PVTGs.
- On the recommendation of the **Dhebar Commission**, the Central government began to identify the most vulnerable tribal groups as a separate category in 1975.
- These PVTGs continue to face vulnerability in social, economic and educational fields.
- The Pradhan Mantri PVTG Development Mission to improve the socio-economic conditions of these groups was announced in the Union Budget for 2023-24.

Various Constitutional Provisions
- **Article 244:** Pertaining to the administration of Scheduled and Tribal Areas, Article 244 is the single most important constitutional provision for STs.
- **Article 244(1)** provides for the application of Fifth Schedule provisions to Scheduled Areas notified in any State other than Assam, Meghalaya, Tripura, and Mizoram.
- The **Sixth Schedule** applies to these States as per Article 244(2).
- The **Fifth Schedule under Article 244(1) of the Constitution** defines Scheduled Areas. On the other hand, the Sixth Schedule under Article 244 (2) of the Constitution defines Tribal areas.

PM JANMAN
- The Union Cabinet chaired by the Prime Minister has approved Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan **(PM JANMAN) to uplift the Particularly Vulnerable Tribal Groups (PVTGs).**
- The scheme will have a total outlay of Rs.24, 104 crore, with the Centre and the States sharing the cost in a **ratio of 64:36.**
- The PM-JANMAN scheme is in line with the Budget announcement of 2023-24, in which the Finance Minister had proposed to launch a **Pradhan Mantri PVTG of Development Mission to improve the socio-economic conditions of the PVTGs.**
- The Mission will aim to provide basic amenities and services to all PVTG households and habitations, such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.
- The Mission will be implemented in the next three years under the **Development Action Plan for the Scheduled Tribes (DAPST), with an allocation of Rs.15,000 crore.**

The PM-JANMAN scheme will focus on 11 critical interventions through 9 Ministries including the Ministry of Tribal Affairs. These interventions are:
- **Housing:** To provide safe and dignified housing to all PVTG households under Pradhan Mantri Awas Yojana-Gramin (PMAY-G).
- **Drinking water and sanitation:** To ensure universal coverage of piped water supply and individual household toilets under Jal Jeevan Mission (JJM) and Swachh Bharat Mission-Gramin (SBM-G).

- **Education:** To enhance access to quality education for PVTG children through residential schools, hostels, scholarships, bridge courses, e-learning platforms and special coaching under Samagra Shiksha Abhiyan (SSA) and other schemes.
- **Health and nutrition:** To improve health outcomes and nutritional status of the PVTG population through dedicated mobile medical units, health camps, immunization drives, supplementary nutrition programmes, Anganwadi centres and other schemes.
- **Road connectivity:** To connect all PVTG habitations with all-weather roads under Pradhan Mantri Gram Sadak Yojana (PMGSY).
- **Telecom connectivity:** To provide mobile connectivity and internet access to all PVTG habitations under BharatNet and other schemes.
- **Livelihood opportunities:** To promote sustainable livelihoods for PVTG households through skill development, self-help groups, micro-enterprises, value addition, market linkages and other schemes.
- **Land rights:** To secure land rights and titles for PVTG households under the Forest Rights Act (FRA) and other laws.
- **Social security:** To provide social protection and insurance to PVTG households under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY) and other schemes.
- **Cultural preservation:** To preserve and promote the rich cultural heritage and identity of PVTGs through documentation, dissemination, festivals, awards and other schemes.
- **Institutional support:** To strengthen the institutional mechanisms for planning, monitoring, evaluation and convergence of the PM-JANMAN scheme at various levels.

Govt. targets documents' saturation in PVTG villages in one week

Subject :Schemes

Section :Vulnerable section

Context:

- Centre has set a target of one week to achieve Aadhaar, caste certificate, and Jan Dhan account saturation across 15,000 PVTG habitations in 100 districts.

What is the PM-JANMAN Scheme?

- PM JANMAN is a government scheme that aims **to bring tribal communities into the mainstream.**
- The scheme (**comprising Central Sector and Centrally Sponsored Schemes) will be implemented by the Ministry of Tribal Affairs, in collaboration with the State governments and the PVTG communities.**
- The scheme will concentrate on **11 critical interventions overseen by 9 line Ministries**, ensuring the implementation of existing schemes in villages inhabited by PVTGs.
- It encompasses various sectors, including safe housing under the **PM-AWAS Scheme, access to clean drinking water, improved healthcare, education, nutrition, road and telecommunications connectivity, as well as opportunities for sustainable livelihoods.**
- The plan also includes the establishment of **Van Dhan Vikas Kendras** for trading in forest produce, off-grid solar power systems for 1 lakh households, and solar street lights.
- The scheme is expected to enhance the quality of life and well-being of the PVTGs, by addressing their multiple and intersecting forms of discrimination and exclusion, and by recognizing and valuing their unique and valuable contribution to national and global development.

Who are Particularly Vulnerable Tribal Groups (PVTGs)?

- In 1973, the **Dhebar Commission established Primitive Tribal Groups (PTGs) as a distinct category, encompassing tribal communities characterized by a declining or stagnant population, the use of pre-agrarian technology, economic backwardness, and low literacy.**
- These groups are identified as less developed among the tribal communities.
- In **2006, the Government of India renamed the PTGs as PVTGs**. They reside in remote and inaccessible areas, facing challenges due to poor infrastructure and administrative support.
- There are **75 PVTG communities spread across 18 States and Union Territories in India.**
- **Odisha has the highest number of PVTGs (15),** followed by Andhra Pradesh (12), Bihar and Jharkhand (9), Madhya Pradesh and Chhattisgarh (7), Tamil Nadu (6), and Kerala and Gujarat (5 each).
- The rest of the communities are spread across Maharashtra, West Bengal, Karnataka, Uttarakhand, Rajasthan, Tripura, and Manipur.
- All four tribal groups in the **Andaman and one in the Nicobar Islands are recognized as PVTGs.**

Other Initiatives for PVTGs

- Janjatiya Gaurav Divas.

- Viksit Bharat Sankalp Yatra.
- PM PVTG Mission.

Science and Tech

The transformative benefits of population level genome sequencing

Subject: Science and Tech

Section: Biotechnology

Context:

- The UK has recently achieved a significant milestone by completing the sequencing of half a million whole genomes, constituting nearly 0.7% of its population, as part of the **'deCODE' Initiative.**
- This initiative follows the global trend of large-scale genome projects, with a particular focus on understanding disease genetics and utilizing genomic data for various objectives.

Key Highlights:

'deCODE' Initiative:

- **Inception**: Launched in Iceland in 1996, deCODE genomics enrolled a substantial portion of the Icelandic population for genetic studies.
- **Contributions**: The initiative has significantly contributed to the understanding of disease genetics and has set standards for the responsible handling of genomic data. It integrates medical records with genealogies.

Merit of Large-Scale Sequencing:

- Large-scale genome projects globally aim to comprehend disease prevalence, identify therapeutic targets, and formulate public-health initiatives using extensive genomic data.
- The UK's '100K Genome' project has translated into immediate health benefits for participants.

Cost and Accessibility:

- **Decreasing Costs:** The cost of whole-genome sequencing is consistently decreasing, making it more accessible to larger populations.
- **Potential Impact:** The decreasing costs pave the way for a future where a substantial portion of the global population may have their genomes sequenced, revolutionizing routine medical diagnostics.

Genomic Initiatives in Asia and India:

- **GenomeAsia Project:** Aiming to sequence 100,000 whole genomes across diverse Asian populations.
- **India's IndiGen Programme**: Providing insights into genetic diseases and variants, with plans for a larger Genome India initiative to sequence 10,000 genomes.

Country/Company	Name of their Genome Initiative
UK	'100K Genome
USA	AllofUS
European Union	'1+ Million Genomes'
Private pharmaceutical companies	Diversity Human Genome Initiative.

Long-Term Impact and Future Prospects:

- **Beyond Individual Health:** Population-scale genomics is anticipated to enhance understanding of human evolution, migration, and adaptation.
- **Personalized Medicine:** Large-scale sequencing paves the way for personalized healthcare based on individual genetic profiles.
- **Billion Genome Project**: There is a prospect of sequencing a billion genomes in a single project, accompanied by considerations of individuals' rights to access and understand their genomic data.

U.S. FDA approves pair of gene therapies for sickle cell disease

Subject: Science and Tech

Section: Biotechnology

Context:

- The U.S. Food and Drug Administration (FDA) approved a pair of gene therapies for sickle cell disease, including the first treatment based on the breakthrough CRISPR gene editing technology.

Key details:

- The agency approved **Lyfgenia** from bluebird bio, and a separate treatment called **Casgevy** by partners Vertex Pharmaceuticals and CRISPR Therapeutics for the illness.
- Both the therapies were approved for people **aged 12 years and older.**
- The Vertex/CRISPR gene therapy uses the breakthrough **gene editing technology** that won its inventors the **Nobel Prize in 2020**.
- Makers of both the therapies have pitched them as **one-time treatments**, but data on how long their effect lasts is limited.
- The **only longer-term treatment** for sickle cell disease is a **bone marrow transplant**.

Sickle cell disease:

- Sickle cell disease (SCD) is a group of **inherited red blood cell disorders**.
- Red blood cells contain **hemoglobin**, a protein that carries oxygen.
- **Healthy** red blood cells are **round**, and they move through small blood vessels to carry oxygen to all parts of the body.
- SCD, causes the red blood cells to become **hard and sticky** and look like a **C-shaped farm tool** called a "**sickle**."
- The sickle cells **die early**, which causes a **constant shortage of red blood cells**.
- Also, when they travel through small blood vessels, they **get stuck and clog the blood flow**.
- This can cause **pain and other serious complications** (health problems) such as infection, acute chest syndrome and stroke.

What is CRISPR?

- CRISPR is a powerful tool for **editing genomes.**
- It allows researchers to easily **alter DNA sequences** and **modify gene function**.
- It has many potential applications, including: correcting genetic defects, treating and preventing the spread of diseases, and improving the growth and resilience of crops.
- "CRISPR" is shorthand for "**CRISPR-Cas9**."
- CRISPRs are specialized **stretches of DNA**, and the **protein Cas9** (where **Cas** stands for "**CRISPR-associated**") is an **enzyme** that acts like a **pair of molecular scissors**, capable of cutting strands of DNA.
- CRISPR technology was **adapted from** the natural defense mechanisms of **bacteria** and **archaea**, a domain of relatively simple **single-celled microorganisms**.
- These organisms use **CRISPR-derived RNA** to **foil attacks by viruses**.
- When the components of CRISPR are transferred into more complex organisms those components can then **manipulate genes**, a process called "**gene editing**." How CRISPR works as a genome-editing tool

About Casgevy:

- Casgevy is a **gene therapy** that utilises the gene-editing tool **CRISPR**.
- The process works by taking the **patient's bone marrowstem cells** and **editing them** to express the **fetal version** of haemoglobin before **transplanting** these edited stem cells **back into the patient.**
- **Fetal haemoglobin** is the version expressed in **utero**, **before birth**.
- In most people, expression of the **fetal version is turned down** and the **non-fetal version is turned on** when they are a baby, although there is still usually a very small amount of fetal haemoglobin expressed.
- Casgevy **edits this** by **turning up the expression** of the **fetal version**.
- The functional haemoglobin produced from this version of the gene **compensates for the non-functional haemoglobin** that the non-fetal version of the gene is producing.
- The **edited stem cells** are the **patient's own cells**, just slightly edited, and as such there is **no risk of rejection**.
- The results have the **potential to be life-long**.

About Lyfgenia:

- Lyfgenia is a cell-**based gene therapy**.
- Lyfgenia uses a **lentiviral vector** (gene delivery vehicle) for **genetic modification** and is approved for the treatment of patients **12 years of ageand older** with sickle cell disease and a history of **vaso-occlusive events**.
- With Lyfgenia, the patient's blood stem cells are **genetically modified to produce HbAT87Q**, a **gene-therapy derived hemoglobin** that functions similarly to hemoglobin A, which is the normal adult hemoglobin produced in persons not affected by sickle cell disease.
- Red blood cells containing HbAT87Q have a **lower risk of sickling** and occluding blood flow.
- These modified stem cells are then **delivered to the patient.**

Subject :Science and Tech

Section: Biotechnology

Context:

- The medical world is witnessing a significant breakthrough with the approval of CRISPR-based therapies for **sickle-cell disease and β-thalassemia in the U.K. and the US.**
- These advancements hold the potential to transform the lives of millions suffering from these inherited blood disorders.

Historical Background of CRISPR Technology

- **Origins of CRISPR:** Discovered in archaea in 1993, **CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) elements were later found to form an antiviral defense system in bacteria with Cas (CRISPR-associated) proteins.**
- **Nobel Prize-Winning Innovation:** Emmanuelle Charpentier and Jennifer Doudna's work on CRISPR-Cas9 as a 'molecular scissor' earned them the 2020 Nobel Prize in chemistry.
- **Eukaryotic Genome Editing:** Subsequent research demonstrated CRISPR-Cas9's ability to edit eukaryotic genomes, paving the way for various applications in genetic therapies and agriculture.

CRISPR Applications in Medicine

- **CRISPR-Based Treatment for Blood Disorders:** The MHRA in the U.K. and the FDA in the U.S. approved **'Casgevy'** for treating sickle-cell disease and transfusion-dependent β-thalassemia.
- **Treatment Mechanism: Casgevy involves modifying a patient's blood stem cells to correct the genetic defect** causing sickling, then regrafting them to produce normal red blood cells.
- **Historical Context:** This approval marks a full circle from Linus Carl Pauling's description of sickle-cell disease as a molecular disorder 74 years ago.

Emerging CRISPR Technologies and Approaches

- **Base-Editing**: This technique allows genome editing at the single nucleotide level.
- **Prime Editing:** A newer method that uses a search-and-replace strategy for precise genome modifications.
- **Epigenetic Modifications**: CRISPR systems are also being developed to target epigenetic effects.

Future Prospects and Challenges

- **Safety and Accuracy Concerns:** Issues like off-target events, where CRISPR-Cas9 edits unintended parts of the genome, pose significant challenges.
- **Balancing Risks and Benefits:** While the potential of these technologies is enormous, their risks must be weighed against both short- and long-term benefits.
- **Ongoing Research and Surveillance:** Continuous scrutiny is essential to uncover potential side effects that are currently unknown.

Customised mRNA is the next frontier in personalised medicine

Subject: Science and tech

Section: Biotechnology

Context

- mRNA (messenger RNA) technology has emerged as a **groundbreaking platform in the realm of personalized medicine,** showcasing the ability to be easily customized for effective and **tailored therapies with minimal side effects.**

Basics of mRNA:

- At its core, mRNA is a **scalable and versatile molecule that plays a vital role in cellular functions.**
- Unlike traditional drugs, **mRNA is inherently present within the human body,** with cells naturally creating **mRNAs to serve as instructions for protein synthesis.**
- When cells need to produce specific proteins essential for various functions, they rely on **mRNA as the messenger carrying the genetic code or recipe for protein creation.**

How mRNA Makes Excellent Medicine:

- The unique qualities of mRNA make it an ideal candidate for therapeutic applications.
- **Scientists can manipulate mRNA to create powerful medicines that address diverse cellular issues.**
- Since the language of **mRNA consists of four nucleotides**, scientists can easily decipher the codes and **understand the instructions for protein synthesis.**
- **Mutations in the DNA can disrupt these instructions,** leading to diseases, and mRNA medicines offer a way to correct or replace these faulty instructions.

- The production of mRNA treatments is not only scalable but also consistent.
- Unlike traditional drugs that require distinct manufacturing methods for each compound, the process of creating mRNA remains the same for all types.
- This uniformity simplifies the production process, making it akin to mastering a basic recipe and allowing for endless variations.
- Moreover, the transient nature of mRNA within cells allows for easy dosage adjustments based on changing patient needs.
- As cells naturally destroy mRNA when it is no longer required, the flexibility in altering doses ensures that treatments can be fine-tuned to accommodate dynamic health conditions.

mRNA Vaccines and Beyond:
- The mRNA technology gained significant recognition with the development of **COVID-19 vaccines by Moderna and Pfizer-BioNTech, marking the first FDA-approved mRNA-based medicines.**
- These vaccines demonstrated the adaptability of mRNA-based therapies, enabling quick adjustments to target new viral variants.
- Beyond COVID-19, ongoing clinical trials explore mRNA-based vaccines for diseases such as seasonal flu, herpes, respiratory syncytial virus, and more.

mRNA Applications in Disease Treatment:
- Expanding beyond vaccines, **mRNA holds promise in treating diseases like cancer.**
- Some mRNA cancer treatments operate as vaccines, **training the immune system to specifically target cancer cells.**
- By leveraging the mutational landscape of cancer cells, mRNA cancer vaccines can be personalized to match individual patients' specific cancer mutations.
- Clinical trials employing personalized mRNA approaches for cancers like pancreatic cancer are currently underway.
- The **potential applications of mRNA-based medicine extend to various diseases where correcting protein synthesis holds the key to effective treatment.**
- Ongoing research explores the use of mRNA in **heart disease, neurodegenerative disorders, bone loss, and other conditions, offering hope for future protein replacement therapies.**

mRNA-Based Medicine: The Future Landscape
- The future holds promise for treating diseases arising from **incorrect protein synthesis.**
- Early studies show encouraging signs in areas such as **wound healing for diabetic patients and addressing rare genetic disorders like propionic acidaemia.**
- The ability to easily customize and produce mRNA positions it as a transformative force in **personalized medicine.**
- With ongoing advancements and a deeper understanding of mRNA's capabilities, this technology stands poised to revolutionize medical treatments, offering **effective and tailored therapies with fewer side effects.**

India is building its own 'sovereign AI'

Subject : Science and Tech

Section: Awareness of IT

Context: India is building its own 'sovereign AI'

More about the news:
- India is **aiming to adopt a Digital Public Infrastructure (DPI)** approach to artificial intelligence (AI) after **successfully implementing similar strategies** for initiatives like **Aadhaar and Unified Payments Interface (UPI).**
- The government **wants to establish sovereign AI**, emphasizing the **importance of developing its own AI ecosystem** rather than relying solely on global players like Google and Meta.
- The **focus is not only on competing in generative AI models** but also on addressing **real-world applications in healthcare, agriculture, governance, language translation**, and more.
- The goal is to **leverage AI for economic development** and offer a sanctioned AI compute infrastructure for **various use cases.**
- Minister of State for Electronics, Rajeev Chandrasekhar, **expressed this vision during an event organized by the Financial Express.**

What is India's plan for controlling its own AI:
- India's **Ministry of Electronics and IT** has **proposed the creation of an India Datasets platform** as part of the **National Data Governance Framework Policy**.

- The platform **aims to house non-personal and anonymized datasets** from Central government entities, which have collected data from Indian citizens.
- The **objective is to make this non-personal data accessible to startups and Indian researchers,** fostering an environment **for artificial intelligence (AI) and data-led research and startups in the country**.
- The **proposal is part of an effort to modernize government data** collection and enhance governance.
- A **report from a working group under the IT Ministry** suggests that the **India datasets program could serve as a unified national data sharing** and **exchange platform, benefiting various stakeholders**, including government bodies, private sector companies, startups, academia, and more.
- The **non-personal data within the platform might also be monetized, contributing to the growth of the AI ecosystem in India** by providing a **solid foundation for data-driven innovation and development.**

How will India regulate AI:
- India is planning to **introduce laws governing artificial intelligence (AI)** with a focus on bringing **significant changes to its digital economy**.
- The approach is **expected to be a hybrid of both the European model, which emphasizes regulation for the rights of citizens, and the U.S. model**, which **focuses on market regulation**.
- The government is **reportedly considering issuing a directive to major tech companies like Facebook, Google, and Amazon** to share **anonymized personal data with a government-backed database**, as part of the **draft Digital India Bill**.
- The directive **could mandate depositing non-personal data into the India datasets platform.**
- This initiative **aims to harness economic benefits from aggregated non-personal datasets and was initially proposed by a committee chaired by Infosys co-founder Kris Gopalakrishnan.**

What are the key Provisions of the Digital India Bill:
- The Bill is a key **part of a comprehensive legal framework** which encompasses various legislative measures such as
  - **The recently-notified Digital Personal Data Protection Act 2023**
  - **The draft Indian Telecommunication Bill 2022, and**
  - **A policy addressing the governance of non-personal data.**
- The Bill p**rioritizes online safety and trust**, aiming to **protect citizens' digital rights while remaining adaptable** to market changes and **international legal principles.**
- Recognizing the **significance of new technologies like artificial intelligence (AI)** and blockchain, the **Bill provides guidelines** for their responsible use.
- It **upholds the idea of an open internet,balancing accessibility** with necessary regulations to **maintain order and protect users.**
- The Bill **introduces stringent Know Your Customer (KYC) requirement**s for **wearable devices, backed by criminal law sanctions**.
- Contemplating a **review of the "safe harbour" principle,** the Bill suggests a **potential shift in online accountability standards,** presently **shielding online platforms from liability related to user-generated content.**

Google unveils 'Gemini', AI tech trained to behave like humans
Subject: Science and Tech
Section: AWARENESS IN IT,COMPUTER
Context:
Google Gemini, a new multimodal general AI model is now available to users across the world.

What is Google Gemini?
- Google Gemini comes in three sizes: **Ultra, Pro and Nano.**
- It is being seen as **Google's answer to ChatGPT** which has been ahead of the gameso far when it comes to GenAI.
- **Gemini is multimodal, which means it is not limited to the type of information it can process and can work understand and operate across text, code, audio, image and video.**
- In contrast, **ChatGPT cannot work on video at the moment.**
- It is also **much more powerful** than existing models.
- Gemini can understand, explain and generate high-quality code in the world's most popular programming languages, like Python, Java, C++ and Go.

What is the need of launching Gemini in three sizes?

- Gemini will be **available in different sizes** to scale it as per the need.
- **Gemini Ultra, the largest and most capable model, will be meant for highly complex tasks.**
- Gemini Pro will be best at scaling across a wide range of tasks for regular users across the world.
- Gemini Nano will manage on-device tasks.

About ChatGPT

- ChatGPT is an **AI chatbot capable of natural language generation, translation, and answering questions.**
- **GPT stands for Generative Pre-trained Transformer.**
- GPT-3 was the largest language model in existence at the time of its 2020 launch, with 175 billion parameters.
- The latest version, GPT-4, accessible through ChatGPT Plus or Bing Chat, has one trillion parameters.

Google Gemini

Subject : Science and Tech

Section: AWARENESS IN AI

Context: Google has introduced Gemini, a new multimodal general AI model

What is Google Gemini:

- Gemini is a **family of highly capable multimodal models,** offering features such as **image recognition and real-time speech,** reported to be **five times more powerful than GPT-4.**
- Gemini is **now accessible to users worldwide** through platforms such as Bard, various developer platforms, and the newly released Google Pixel 8 Pro phones.
- The **AI model comes in three sizes**: **Ultra (yet to be launched), Pro, and Nano**.
- Gemini is **positioned as Google's response** to ChatGPT, which has been a **frontrunner in the field of generative artificial intelligence (GenAI)**

How Gemini has performed:

- Google shared a comparison sheet showcasing how **Gemini surpasses GPT-4, the most powerful model of ChatGPT.**
- **Gemini Ultra**, designed **for data centers**, achieved **state-of-the-art benchmarking** and is under safety review, expected to be **available in early 2024.**
- Gemini **excels in Massive Multitask Language Understanding (MMLU) with a 90% score, covering 57 subjects across various domains.**
- The model is **trained on massive datasets, including text, code, books, and multimedia, enabling real-time learning and constant improvement.**
- Gemini's capabilities in **analyzing vast data, recognizing patterns, and generating hypotheses** are seen as revolutionary for scientific research.
- Gemini Pro, **integrated into Google's chatbot Bard** and other apps, **outperforms GPT-3.5 in six out of eight benchmarks**, making it a **powerful free AI chatbot**.
- **Gemini Ultra, the most powerful in the family**, outperforms GPT-4 in 30 out of 32 academic benchmarks, showcasing superiority in reasoning and code generation.

What is ChatGPT:

- **OpenAI** is the **artificial intelligence** research company **responsible for developing ChatGPT,** an AI chatbot **employing natural language processing** to **generate humanlike conversational dialogue**.
- This language model can **answer questions and generate various types of written content,** encompassing articles, social media posts, essays, code, and emails.
- As a form of **generative AI, ChatGPT enables users to input prompts and receive AI-created images, text, or videos** that resemble human output.
- The term **"GPT" in ChatGPT stands for "Generative Pre-trained Transformer,"** reflecting the **model's process of handling requests and crafting responses**.
- Reinforcement **learning, incorporating human feedback** and reward models that rank responses, is used to tr**ain ChatGPT**, enhancing its machine learning capabilities for improved future interactions.
- **Besides ChatGPT,** notable examples of AI algorithms, also recognized as **AI Chatbots, include Google's Bard and Microsoft's Bing Chat.**

How Google DeepMind's AI breakthrough could revolutionise chip, battery development

Subject : Science and Tech

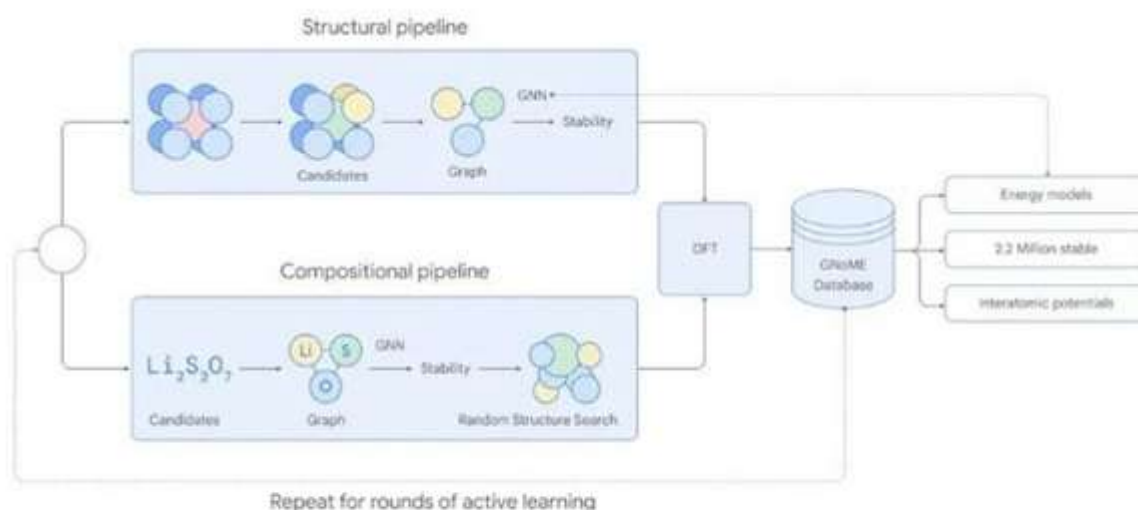**Section: Awareness in IT, Computer**

More about the news:

- Researchers at **Google DeepMind** have made a **significant breakthrough by using artificial intelligence (AI)** to predict the structures of **over 2 million new materials**.
- This development, **facilitated by the AI tool named Graph Networks for Materials Exploration (GNoME)**, holds **immense potential** in various sectors, **including renewable energy, battery research,semiconductor design, and computing efficiency.**
- While **earlier claims of breakthroughs** in materials like **LK-99 faced scrutiny**, the **DeepMind AI tool** offers a **promising avenue** for the design and generation of potential recipes for new materials, marking a notable advancement in the field.

Why is this significant

- The **AI breakthrough by Google DeepMind** has significantly **increased the number of known 'stable materials'** by ten-fold, encompassing inorganic crystals **crucial for various modern tech** applications such as computer chips and batteries.
- This **development is particularly** impactful in **fields like the search** for **stable solid electrolytes to replace current Li-ion battery** electrolytes and the **exploration of new layered compounds akin to graphene** for potential advancements in electronics and superconductors.
- **DeepMind's AI-led** discovery **employs filters to scale up** the process, **narrowing down a list of synthesizable materials** that could meet specific requirements and potentially offering insights at the atomic bond level.
- Traditional **methods of discovering** stable materials **involve time-consuming trial and error processes, making AI predictions a more efficient** and groundbreaking approach.

How does GNoME actually work

- **Google DeepMind's project, Graph Networks for Materials Exploration (GNoME),** utilizes a **state-of-the-art graph neural network model (GNN)** to predict the **structures of over 2 million new materials.**
- The **model, trained using active** learning, **leverages a graph representation resembling** atomic connections, **making it well-suited** for discovering **new materials by identifying patterns not present** in the original dataset.
- **GNoME employs two pipelines**—a **structural one creating candidates** akin to known **crystals and a compositional one following a more randomized approach based** on chemical formulas.
- The **precision rate for predicting materials** stability has been significantly boosted from **50% to around 80%, equivalent** to nearly **800 years of knowledge based** on publicly available stable predictions.
- **GNoME was trained on crystal structure data** from **The Materials Project, contributing** to the ongoing **quest for innovative materials** in various scientific domains.

Harnessing graph networks for materials exploration. (Via 'Millions of new materials discovered with deep learning': Amil Merchant and Ekin Dogus Cubuk/Google DeepMind research blog)

In world first Europe reaches deal on AI

Subject : Science and Tech

Section: Awareness in IT

Context: Europe agrees landmark AI regulation deal

More about the news:

- The **European Union (EU)** reached a **provisional deal** on groundbreaking regulations for artificial intelligence (AI), addressing concerns such as the **use of AI in biometric surveillance and the regulation of AI systems like ChatGPT**.

- The agreement **requires foundation models and general-purpose AI systems** to comply with **transparency obligations, conduct evaluations,** and report on various aspects.

- Governments are **restricted in using real-time biometric surveillance, and the agreement bans practices like cognitive behavioral manipulation and untargeted scrapping of facial images.**

- The legislation, **once formally ratified**, is expected to **come into force in two years and could influence global AI governance standards.**

Some details about the EU framework:

- The European Union (EU) has reached a provisional deal on AI legislation, **incorporating safeguards** for consumer complaints, **restrictions on facial recognition technology, and penalties for rule violations.**

- The **legislation classifies AI applications** into risk categories, **with certain applications, such as mass-scale facial recognition**, being largely banned.

- High-risk applications, like **AI in self-driving cars, will require certification and transparency.**

- **Medium-risk applications, such as chatbots, will have documentation and transparency obligations.**

- The EU **aims for this legal framework** to **support trustworthy AI development** and **provide a launchpad for EU startups** and **researchers in the global AI race.**

What is the Legal Framework Related to AI in India:

- In **India**, there are **currently no specific legal regulations** governing the **use of deepfake technology.** However, **existing laws can be applied to address the misuse of this technology,** covering aspects such as **Copyright Violation, Defamation, and cybercrimes.**

- For instance, the **Indian Penal Code,** which **addresses defamation, and the Information Technology Act of 2000,** which pertains to **sexually explicit material**, could **potentially be used** to combat malicious deepfake usage.

- **The Representation of the People Act of 1951** contains **provisions that prohibit the creation or dissemination of false or deceptive information** about candidates or political parties during election periods.

- Additionally, **the Election Commission of India has established regulations requiring registered political parties and candidates** to **obtain prior approval for all political advertisements on electronic media.**

- Despite these measures, **they may still be inadequate in fully addressing** the multifaceted challenges arising **from AI algorithms, including the potential risks associated with deepfake content.**

What are the Recent Global Efforts to Regulate AI:

- The **world's inaugural AI Safety Summit**, hosted at **Bletchley Park** in the UK, saw **28 major nations, including the US, China, Japan, the UK, France, India, and the European Union, unite in signing a declaration** emphasizing the necessity for **global action to address the potential perils of AI.**

- The declaration **underscores the recognition of significant risks** stemming from potential deliberate **misuse and unintended control challenges** in advanced AI, particularly in **domains such as cybersecurity, biotechnology, and the spread of disinformation.**

- In response to these concerns, the **US President issued an executive order** aiming to **fortify defenses against AI-related threats and exercise regulatory oversight** over safety standards applied by companies in the assessment of **generative AI systems like ChatGPT and Google Bard.**

- During the **G20 Leaders' Summit held in New Delhi,** the **Indian Prime Minister advocated for the creation of a global framework governing the development of "ethical" AI tools**.

- This **shift in New Delhi's stance signifies a transition** from a position of **non-interference in AI regulation to a proactive approach, involving the formulation of regulations** grounded in a "risk-based, user-harm" perspective.

How fractals offer a new way to see the quantum realm

Subject : Science and Tech

Section Awareness in IT

Introduction:

- Quantum physics is too weird for many people to understand, and part of the weirdness is due to some of its counter intuitive features. For example, many quantum phenomena are bound by **Heisenberg's uncertainty principle, so it is impossible to know them with great certainty.**

- According to this principle, **we can't obtain the information about a particle's position,** say, until we actively check for it.

What do we mean by Fractal Dimensions?

- **Fractals in Quantum Physics:** Fractals are shapes that have non-integer dimensions, used in quantum physics to describe complex systems.
- **Fractals in Nature:** Fractals are patterns that repeat at different scales.The Koch snowflake, for example, has a fractal dimension of about 1.26.

Visualizing Fractals in Different Scales

- **Fractals in Nature:** Fractal patterns are visible in natural phenomena like tree branches, clouds, and river networks.
- **Fractals in Quantum Materials:** In quantum materials, such as neodymium nickel oxide and graphene, fractal patterns can be observed in the arrangement of magnetic domains or electron density.

Applications of Fractals

- **Early Uses:** Fractals were initially used to understand random particle movements, like Brownian motion.
- **Diverse Applications:** Today, fractals are used in various fields, including technology, space research, and biology.
- **Studying Complex Systems:** Fractals help in understanding complex systems that exhibit patterns at different scales.

Importance of Fractals

- **Beyond Geometry:** Fractals are important in understanding complex patterns in both quantum physics and natural phenomena.
- **Complexity from Simple Rules:** Fractals show how complex patterns can emerge from simple rules, offering insights into the quantum world and the natural environment.

Quantum Mechanics and Wave-function Collapse

- **Measuring Particles:** In quantum mechanics, when you measure a particle's property, such as its position, you affect its wave-function.
- **Wavefunction Defined:** The wave-function is a mathematical function that describes all possible states of a particle. When it collapses, it results in a single state.
- **Particles in Multiple States:** Before measurement, a particle can exist in multiple states or locations simultaneously.

Cyberthreats: Centre sets up secure email network for staff of critical departments

Subject :Science and Tech

Section: Awareness in IT

Context:

- In response to rising cyberattacks, the **Centre has established a secure e-mail system for 10,000 users** across critical ministries and departments.
- The **National Informatics Centre (NIC)** has designed this system, incorporating Zero Trust Authentication (ZTA).

About Zero Trust Authentication (ZTA)

- ZTA is a security concept and framework that **operates on the principle of "never trust, always verify."**
- This approach to cybersecurity is a significant shift from traditional security models that operated under the assumption that everything inside an organization's network should be trusted.
- In contrast, Zero Trust assumes that trust is never granted implicitly but must be continually evaluated and authenticated, regardless of the user's location or the network's perimeter.

Key Principles of ZTA

- **Least Privilege Access:** Users are granted only the minimum level of access needed to perform their job functions. This limits the potential damage in case of a security breach.
- **Strict User Verification:** Every user, whether inside or outside the organization's network, must be authenticated, authorized, and continuously validated for security configuration and posture before being granted access to applications and data.
- **Micro-segmentation: The network is divided into small zones to maintain separate access for separate parts of the network. If one segment is breached, the others remain secure.**
- **Multi-Factor Authentication (MFA):** ZTA often requires multiple pieces of evidence to authenticate a user's identity. This could include something the user knows (password), something the user has (security token), and something the user is (biometric verification).
- **Continuous Monitoring and Validation:** The system continuously monitors and validates that the traffic and data are secure and that the user's behaviour aligns with the expected patterns.

Benefits of Zero Trust Authentication

- **Enhanced Security Posture:** By verifying every user and device, Zero Trust reduces the attack surface and mitigates the risk of internal threats.

- **Data Protection:** Sensitive data is better protected through stringent access controls and encryption.
- **Compliance:** Helps in meeting regulatory requirements by providing detailed logs and reports on user activities and data access.
- **Adaptability:** Zero Trust is adaptable to a variety of IT environments, including cloud and hybrid systems.

Implementation of Zero Trust Authentication

- **Technology:** Implementation of Zero Trust requires technologies like identity and access management (IAM), data encryption, endpoint security, and network segmentation tools.
- **User Education and Awareness:** Training users on the importance of cybersecurity and the role they play in maintaining it is crucial.
- **Policy and Governance:** Organizations need to establish comprehensive security policies that enforce Zero Trust principles, including how data is accessed and protected.

India's AI Mission

Subject : Science and Tech

Section: awareness in IT

Context: In big AI push, Centre to step up compute capacity

More about the news:

- As part of its **Artificial Intelligence Mission,** India **aims to develop its own "sovereign AI" by building computational capacity** in the country and offering **compute-as-a-service to startups**.
- The plan **involves a public-private partnership** model and **government initiatives, with a goal of creating a digital public infrastructure** (DPI) for startups to utilize c**omputational capacity at a lower cost**.
- The initiative **aims to support AI applications in sectors like agriculture, healthcare, and education.**
- The government is also **working on building datasets and considering directing big tech companies to share anonymized personal data** with the **India Datasets platform.**

What is the Centre's Plan to Step up Compute Capacity under the AI Mission

- The **overall plan** includes:
- Establishing a **compute capacity** ranging from **10,000 to 30,000 GPUs(graphic processing units) under the PPP model.**
- Adding an **extra 1,000-2,000 GPUs** through the **PSU Centre for Development of Advanced Computing** (C-DAC).
- The government is **also considering diverse incentive structures** for **private firms to establish computing centers**, such as a **capital expenditure subsidy model** used in the **semiconductor scheme,** incentives based on operational expenses, and **offering a "usage" fee.**

How the Public Model for Building Computing Capacity Will Work

- In the **public model, computational capacity will be established within the C-DAC** as a component of the **National Supercomputing Mission**.
- C-DAC **currently possesses the Rudra and Param systems**, with plans to integrate 1,000-2,000 GPUs to them.
- **Rudra, an indigenous server platform** developed by C-DAC, **features two expansion slots for graphic cards**.
- **Param Utkarsh,** a high-performance computing system at C-DAC, **provides AI capabilities across machine learning and deep learning** frameworks, along with **compute and storage services** as a cloud offering.

What is the Legal Framework Related to AI in India:

- In **India**, there are **currently no specific legal regulations** governing the **use of deepfake technology.** However, **existing laws can be applied to address the misuse of this technology,** covering aspects such as **Copyright Violation, Defamation, and cybercrimes.**
- For instance, the **Indian Penal Code,** which **addresses defamation, and the Information Technology Act of 2000,** which pertains to **sexually explicit material**, could **potentially be used** to combat malicious deepfake usage.
- **The Representation of the People Act of 1951** contains **provisions that prohibit the creation or dissemination of false or deceptive information** about candidates or political parties during election periods.
- Additionally, **the Election Commission of India has established regulations requiring registered political parties and candidates** to **obtain prior approval for all political advertisements on electronic media.**
- Despite these measures, **they may still be inadequate in fully addressing** the multifaceted challenges arising **from AI algorithms, including the potential risks associated with deepfake content.**

How an AI tool can make weather forecasts more accurate and help tackle climate change

Subject : Science and Tech

Section: Awareness in IT

Watsonx.ai:

- It is an **Artificial Intelligence (AI) tool** that will help users **monitor the Earth from space,** measuring **environmental changes** that have already happened while also making predictions about the future.
- Launched by **NASA** and **IBM** at the COP28 summit and available on the **open-source AI platform Hugging Space.**
- It can help scientists estimate the past and future extent of wildfires, floods, and urban heat maps.

How it works?

- It is similar to **Bing** and **ChatGPT,** it operates on a **foundation model** but uniquely incorporates **NASA's satellite image datasets instead of text.**
- **IBM** developed the model to interpret these visual datasets.
- **Training Process:** To teach the model to understand evolving visual sequences, scientists tasked it with filling in gaps in images, prompting it to reconstruct the missing parts. As it pieced together more images, the model improved in understanding their connections. It underwent adjustments for tasks like photo segmentation and categorization.
- It boasts **user-friendly simplicity.** Users can select a **location and date,** prompting the model to highlight changes in **floodwater levels, reforestation initiatives,** and other pertinent factors.

What will be its impact?

- **IBM's approach** could significantly **reduce data cleaning needs** and **accelerate geographical analysis** by **three to four times,** streamlining processes.
- The insights derived from this technology can **aid in mitigating flooding effects, infrastructure development, disaster response improvement,** and **environmental protection.**
- **Future integration of generative AI** in **weather forecasting** may lead to **more accurate predictions of hurricanes, droughts,** and **other catastrophic weather events.** It could shed light on how environmental changes, like polar ice melting, impact daily life.
- Businesses, disaster response teams, and logistics companies could benefit. This AI could help prepare for **housing-related fires, optimize supply chain logistics,** and **understand broader weather patterns.**

How AI has helped in weather forecasting?

- **Accessing** and **analyzing** the **vast and growing climate data sets** pose significant hurdles. By **2024,** an estimated **250,000 terabytes of climate data** will be available, necessitating **time-consuming analysis.**
- The use of **AI**, particularly **deep-learning models** like **AI emulators, aids in interpreting these complex data sets**.
- **European Center for Medium-Range Weather Forecasting** has begun employing **AI emulators** to generate forecasts based on historical weather patterns. These models can infer **weather patterns from data,** enabling quicker desktop-based forecasts, and bypassing the time-consuming processes of traditional systems.
- AI integration streamlines data interpretation, potentially reducing forecasting time from hours to minutes, offering a promising approach to handle the increasing volume of climate data for informed decision-making in weather forecasting.

AI and Climate Change:

- **AI-powered vehicles** have the **potential to minimize energy consumption** by identifying **optimal routes,** thus **reducing environmental impact.**
- **AI aids farmers** by **optimizing crop irrigation, cutting water wastage by 40%,** and **enhancing harvest productivity,** as demonstrated by a **30% increase** in **yields** among **AI-equipped peanut farmers** in **India**.
- AI's potential extends to assessing, reducing, and mitigating emissions at both macro and micro levels, potentially cutting an **organization's carbon footprint** by **5-10%.**

Why ransomware attacks on Indian IT firms are a cause for concern?

Subject: Science and Tech

Section: Awareness in IT

Context:

- A 2023 study conducted by Sophos, a cybersecurity company, **showed that 73% of organizations reported being victims of ransomware attacks, up from 57% the previous year.**

What is Ransomware?

- Ransomware is a **type of malware that prevents users from accessing their system or personal files and demands ransom payment in order to regain access.**
- The malware may usually be injected remotely by tricking the user into downloading it upon clicking an ostensibly safe web link sent via email or other means, including hacking.

- It can spread throughout the network by exploiting existing vulnerabilities.
- Ransomware attacks can be accompanied by **theft of sensitive data**.
- Recently, Spice jet, Oil India and HCL had faced a cyber-threat.

How are cyber-attacks dealt in India?

- **Indian Computer Emergency Team (CERT-In)** -
  - CERT-In is the **national nodal agency for responding to computer security incidents as and when they occur.**
  - CERT-In is operational since January **2004**.
  - The constituency of CERT-In is the Indian Cyber Community.
  - CERT-In has been designated to perform the **following functions:**
  - Collection, analysis and dissemination of information on cyber incidents.
  - Forecast and alerts of cyber security incidents.
  - Emergency measures for handling cyber security incidents
  - Coordination of cyber incident response activities.
  - Issue guidelines, advisories, vulnerability notes and whitepapers relating to information security practices, procedures, prevention, response and reporting of cyber incidents.
  - Imparting training to computer system managers.
- **National Cyber Security Coordinator** - The National Cyber Security Coordinator, **under the National Security Council Secretariat,** coordinates with different agencies at the national level on cybersecurity issues.
- **The National Critical Information Infrastructure Protection Centre** - It has been set up for the protection of national critical information infrastructure.
- **The Cyber Swachhta Kendra** - It is a **Botnet Cleaning and Malware Analysis** Centre that has been launched for detection of malicious software programmes and to provide free tools to remove them.
- **The National Cyber Coordination Centre** - It works on creating awareness about existing and potential threats.
- **Cyber Crisis Management Plan** - The government has formulated a Cyber Crisis Management Plan for countering cyber-attacks.

Pegasus infection found on Indian journalists' phones after Apple alert

Subject: Science and Tech

Section: Awareness in IT

Context:

- The founder editor of The Wire news website, the South Asia editor of the Organised Crime and Corruption Report Project (OCCRP) and other journalists in India were targeted with Pegasus spyware this year, the Security Lab of Amnesty International announced after testing their devices.

About Organised Crime and Corruption Reporting Project (OCCRP)

- The Organized Crime and Corruption Reporting Project is a **global network of investigative journalists with staff on six continents.**
- Founded in 2006, it **specializes in organized crime and corruption.**
- It publishes its stories through local media and in **English and Russian through its website.**
- The entity was involved in the coverage of Pegasus spyware as well as Panama Papers leak.
- The OCCRP conducted research and published a report on the Adani Group (AG).

About Pegasus Spyware

- Pegasus is a **malware/spyware developed by Israel's NSO Group.**
- The spyware suite is designed to access any smartphone through **zero-click vulnerabilities remotely.**
- Once a phone is infiltrated, the spyware can access entire data on that particular phone.
- It also has **real-time access to emails, texts, phone calls, as well as the camera and sound recording capabilities of the smartphone.**

Zero-click exploit

- A zero-click exploit refers to **malicious software installed on a device without the device owner's consent.**
- More importantly, it **does not require the device owner to perform any actions to initiate or complete the installation.**

Three Anti submarine Warfare ships for the Indian Navy launched

Section: defence

Context:

- Recently, the Cochin Shipyard marked a significant milestone with the simultaneous launch of the first three ships in a series of eight Anti-Submarine Warfare (ASW) shallow water crafts commissioned by the Indian Navy.
- The ceremony, attended by distinguished naval officials and their spouses, unveiled INS Mahe, INS Malva, and INS Mangrol.

Key Highlights:

Capabilities:

- Cochin Shipyard, in a 2019 contract with the Ministry of Defence, undertook the construction of eight ASW vessels known as the Mahe class.
- These vessels are designed to replace the Navy's existing Abhay class ASW corvettes, equipped with capabilities for anti-submarine operations, low-intensity maritime scenarios, mine laying, and sub-surface surveillance operations.

Indigenous Content:

- With over 80% indigenous content, the ASW SWC ships exemplify India's commitment to 'Aatmanirbhar Bharat' (self-reliant India).
- The emphasis on indigenous production contributes to large-scale defense manufacturing within the country, fostering employment opportunities and enhancing national capabilities.

Arms and Equipment:

- The ASW vessels are armed with state-of-the-art technology, including light-weight torpedoes, ASW rockets, mines, a close-in weapon system (30 mm gun), and 12.7 mm stabilized remote control guns.
- These armaments enhance their effectiveness in various naval operations, including coordinated ASW operations with aircraft and search and rescue missions.

Vessel Specifications:

- Each Mahe class vessel, measuring 78 meters in length, 11.36 meters in width, with a draught of 2.7 meters, boasts a displacement of 896 tonnes and can achieve speeds of up to 25 knots.
- With an endurance of 1,800 nautical miles, these vessels accommodate indigenously-developed sonars for underwater surveillance.
- The crew composition includes 57 personnel, including seven naval officers.

Challenges Overcome:

- Madhu S. Nair, CMD of the shipyard, addressed challenges faced during the construction process, including the pandemic, forex variations, and the war in Ukraine.
- Despite these obstacles, the vessels were delivered within specified price limits, showcasing the resilience and dedication of the Cochin Shipyard.

Project Timeline:

- According to a press release, the first ship of the ASW SWC project is scheduled for delivery by November 2024.
- This timeline emphasizes the efficiency and dedication with which Cochin Shipyard is progressing in the construction and commissioning of these crucial naval assets.

India's defence budgeting and the point of deterrence

Section: Defence

Context:

To have India's defence Budget and national security goals examined through the prism of electoral imperatives would be unprofessional.

Introduction

- With India in election mode and sops being showered on the electorate (even more certain before the general election in 2024), the allocation for defence in Budget 2024-25, which starts getting planned now, could take a hit. This could impact India's deterrence posture, which defence preparedness is all about.

Procurements

- The **Medium Multi-Role Combat Aircraft (MMRCA) programme of the Indian Air Force (IAF) earned the sobriquet of being the 'mother of all procurements'** due its cost, pegged at around $10 billion in 2007.
- A decade later, **the purchase of 36 Rafale jets was of limited value because the requirement was for 126 aircraft**. Consequently, many IAF chiefs have spoken of the depleting squadron strength in the IAF, which is now an abysmal 32.
- It would take another 10 years before it reaches 35 squadrons, as stated by the current IAF chief.

Need for judicious assessment

- The question is whether 'affordable defence' — due to the perennial guns versus butter dilemma — will be the driving factor. Or will **'affordable effectiveness' drive the defence Budget allocation?**
- This is best illustrated by the IAF going in for 97 more **Tejas Mk1A fighters to overcome the deficit in squadron strength**, though this was to be achieved by the 114 multi role fighter aircraft project that the IAF has been pushing for.
- The threat on the northern borders is a live one, and it would be unprofessional to dismiss our western neighbour's present benign stance as indicative of a lessening of risk.
- India needs to be prepared for both. **The imperativeness of a judicious assessment of how India plans to prosecute the next war could not be more pressing in these days of electoral one-upmanship.**
- Enough has been written on the inescapable necessity of accretion in sea power to deter China in the environs of the Malacca Strait and further east, as also in the Indian Ocean. The Army needs to modernise too and, considering its size, the Budget requirement would be considerable.
- The planning and budgeting in the Indian military before the Russia-Ukraine war was for a short sharp conflict. The logistics design was to stock up on 10i (10 days intense) war, and build up to a 40i scenario.
- The refrain has changed, with the leadership of the armed forces now visualising an extended war scenario, as seen in Ukraine.

The indigenous drive: R&D

- It needs no reiteration that the armed forces should be technologically modern at any given time. However, developing a local defence industry takes decades, necessitating a smart balance to be maintained between imports and indigenous accretions to ensure the required potency.
- The Atmanirbhar Bharat public relations drive notwithstanding, a hard clinical view is required on the realities of the armament supply chain that would be in place in the near to mid-term.
- **India's defence Budget, in real terms, has been more or less stagnant.** Defence expenditure (revenue and capital), as a percentage of central government expenditure, has been declining — from around 16.4% in 2012-13 to 13.3% in 2022-23.
- The Ministry of Defence had asked for ₹1,76,346 crore in 2023–24 for capital acquisitions but only ₹1,62,600 crore was allotted, creating a deficit of ₹13,746 crore.
- In the sphere of research and development, the picture is not rosy either. **The Global Innovation Index 2022 pegs India's research and development expenditure at just 0.7% of its GDP which places it 53rd globally.**
- The government's emphasis on indigenisation through the **Innovations For Defence Excellence (iDEX) scheme and service-specific projects such as the Baba Mehar Singh competition for unmanned aerial vehicles by the IAF**, and similar ones in the other two services, are laudable.
- Similarly, the restructuring of the Ordnance Factory Board and promulgation of negative lists for imports instil confidence in the private sector for assured contracts.
- While all these are welcome, and the increase in defence exports heartening, it must be accepted that this drive still has a long gestation period.
- The momentum should be sustained with a continuum in policy making and adequate defence budgeting by making them election-proof in our boisterous democracy — bipartisan statesmanship would be key in this endeavour.

Ministry sends social media firms advisory to regulate deepfakes

Subject: Science and Tech

Section: Defence

Context:

- The Ministry of Electronics and Information Technology said that it had sent another advisory to social media firms to comply with the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

What are Deepfakes?

- Deepfakes are **highly realistic and often convincing digital forgeries of videos, images, or audio recordings.**
- They are generated using **artificial intelligence (AI) and machine learning techniques,** particularly deep learning, from which the term "deepfake" is derived.

- Deepfakes are made using algorithms called generative adversarial networks (GANs), among other techniques.
- A GAN consists of two parts: the generator, which creates images or videos, and the discriminator, which evaluates their authenticity. They work in tandem to improve the quality of the forgeries.
- With deepfake technology, creators can make people appear to say or do things they never did.
- This includes facial expressions, lip movements, voice, and even body language if full-body deepfakes are made.

Government's Action Against Deepfakes

- **Issuing Notices:** The IT Ministry has sent notices to **social media intermediaries** (like Facebook, Twitter, Instagram, etc.) reminding them that online impersonation, including the creation and dissemination of deepfakes, is illegal under **Section 66D of the Information Technology Act, 2000.**
- **Content Takedown**: The IT Ministry has instructed these platforms to remove content that qualifies as **deepfakes within 36 hours,** as required by the IT Rules, 2021.
- **Due Diligence and Reasonable Efforts**: The IT Ministry has told social media companies that they need to exercise due diligence and make reasonable efforts to identify and flag misinformation and deepfakes.
- **Prohibition of Impersonating Content:** The IT Rules, 2021, as cited in the article, specifically prohibit hosting any content that impersonates another person. This includes deepfakes where someone's appearance and voice can be manipulated to appear as someone else.
- **Requirement for Prompt Action:** Social media firms are required to quickly take down artificially morphed images or videos of an individual when they are alerted to such content.

Laws Against Deepfakes in India

- India does **not have any specific laws** that exclusively address deepfakes. However, various provisions of existing laws can be applied to tackle issues arising from deepfakes.
- **Section 66E of the IT Act of 2000**:
  - This section applies in cases of deepfake offenses that entail recording, publishing, or **sending a person's photographs in mass media, infringing on their privacy.**
  - Offenders face up to **three years in prison** or a fine of up to two lakh rupees.
- **Section 66D of the IT Act of 2000**:
  - It allows for the prosecution of those who utilize communication devices or computer resources with the criminal goal of cheating or impersonating someone.
  - It is punishable by up to **three years in prison** and/or a fine of up to one lakh rupees.
- **Copyright Protection**:
  - The Indian Copyright Act of 1957 protects works such as films, music, and other **creative content.**
  - Copyright holders can sue persons who construct **deepfakes utilizing copyrighted works without permission.**
  - Penalties for copyright infringement are set out in **Section 51 of the Copyright Act.**
- **Government Advisory**:
  - On January 9, 2023, the Ministry of Information and Broadcasting issued a warning to media outlets to be cautious when **airing content that could be modified or tampered with.**
  - The Ministry also suggested that **manipulated content be labeled as "manipulated" or "modified" to alert viewers** that the content has been altered.

What incentives do scientists have to study rare diseases

Subject: Science and Tech

Section: Defence

Context:

- **The 2024 Breakthrough Prizes** laureates demonstrate the cutting edge ways scientists are making use of basic science to improve the quality of human lives.
- But they also highlight systemic, non-scientific factors that influence what scientists choose to study and who gets to access the fruits of their labour .

About Breakthrough Prizes:

- Created in 2010 by Silicon Valley entrepreneurs: Milner, Mark Zuckerberg, Priscilla Chan (Facebook), and Sergey Brin (Google).
- **Acknowledges top scientists globally in fundamental sciences**.
- Categories include **mathematics, fundamental physics, and life sciences.**
- **First awarded in 2012;** inaugural ceremony hosted by Morgan Freeman.

- The Breakthrough Prizes, often dubbed the **"Oscars of Science,"**
- Awardees receive $3 million each, surpassing the Nobel laureates' $1 million prize.
- Includes additional prizes like New Horizons in Physics and Mathematics and the Maryam Mirzakhani New Frontiers Prize for early-career researchers.

Rare Diseases

- Rare diseases, also known as **orphan diseases, pose unique challenges due to their low prevalence in the population.**

Characteristics Of Rare Diseases:

- Rare diseases are debilitating lifelong conditions occurring infrequently in the human population.
- WHO defines rare diseases with a **prevalence of 1 or less per 1000 population.**
- In India, a prevalence of less than **100 patients per 100,000 people** is considered as a rare disease.

Examples Of Rare Diseases:

- **Tyrosinemia-Type 1:**
  - A **rare autosomal recessive genetic metabolic disorder**.
  - Characterized by a deficiency of the enzyme fumarylacetoacetate hydrolase (FAH).
  - Results in the abnormal accumulation of tyrosine, potentially causing severe liver disease.
- **Gaucher's Disease:**
  - Characterized by the **accumulation of glucocerebroside in organs.**
  - Organs, particularly the spleen, liver, and bone marrow, enlarge and may suffer impaired function.
- **Wilson's Disease**:
  - A rare genetic disorder leading to the **accumulation of copper in organs.**
  - Affects the liver, brain, and cornea.
- **Dravet-Lennox Gastaut Syndrome:**
  - Two distinct types of epileptic syndromes.
  - **Dravet syndrome**: A severe form of epilepsy beginning in infancy.
  - **Lennox-Gastaut syndrome**: Childhood-onset epilepsy with multiple seizure types and cognitive impairment.

RARE DISEASES IN INDIA:

- Approximately **450 rare diseases** identified, with 80% of patients affected by around 350 rare diseases.
- Estimated burden of 80 to 96 million cases annually in India.
- 70-80% of rare diseases are genetic, and the majority remain asymptomatic until later in life.
- Less than 5% of rare diseases in India have available therapies.

GOVERNMENT INTERVENTIONS:

- **National Policy for Rare Diseases, 2021:**
  - Aims to lower the incidence and prevalence of rare diseases through an integrated preventive strategy.
  - Encompasses awareness generation, screening, and counseling programs.
- **Production Linked Incentive Scheme 2.0 for Pharmaceuticals:**
  - An INR 15,000 Crore initiative supporting orphan drugs development.
  - Targets Category 1 pharmaceutical goods in the Production Linked Incentive Scheme.
- **Central Drugs Standard Control Organisation (CDSCO):**
  - Provisions for fast-track processing of applications for rare disease drugs in drug trials and experimental therapies.
  - Exemption of application fees for potential drug candidates.
- **Genomics for Understanding Rare Diseases: India Alliance Network (GUaRDIAN):**
  - A **non-profit clinical genomics research network**.
  - Establishes a network of clinicians and scientists for extensive clinical genomics research in India.
- **Council of Scientific & Industrial Research (CSIR):**
  - Establishes the Indian Genetic Disease Database (IGDD).
  - Tracks mutations in causal genes for genetic diseases common in India, providing insights to physicians and researchers.

INS Imphal (Pennant D68)

Subject: Science and Tech

Section: Defence

Context: INS Imphal commissioned in the Indian Navy.

Some facts about INS Imphal

- INS Imphal **(Pennant D68)** is the **third of four warships** of **Project 15B** that together form the **Visakhapatnam class stealth-guided missile destroyers.**
- It is built by Mazagon Dock Shipbuilders Limited (MDSL)
- The ship measures **163m in length, and 17m in breadth** with a **displacement of 7,400 tonnes** and is amongst the most potent warships built in India.
- The ship has a **'combined gas and gas' (COGAG) configuration** integrating **four gas turbines**.
- The propulsion system **allows the ship to reach a maximum speed of 30 knots and a maximum range of 4000 nautical miles**
- These ships are **equipped with BrahMos supersonic cruise missiles** and long-range **Surface-to-Air Missiles .**
- The ship has **several indigenous weapons** systems like **medium range Surface-to-Air Missile** , i**ndigenous torpedo tube launchers**, **anti-submarine indigenous rocket launchers and 76-mm super rapid gun mount.**
- The class also has a **total atmospheric control system (TACS)** that offers **protection to the crew from chemical, biological and nuclear threats.**
- It can **operate two multi-role helicopters,** including Sea King or HAL Dhruv.
- **INS Imphal** Is the **first warship to have been named after a city from the northeast.**

Few of Indian Navy Warships Projects

- **Project 17** – **Shivalik class Frigate.**
  - The Shivalik class or **Project 17 class is a class of multi-role frigates in service** with the Indian Navy.
- **Project 15 – Delhi Class destroyers.**
  - Delhi-class destroyers are guided-missile destroyers of the Indian Navy
- **Project 15A – Kolkata Class Destroyer**
  - The Kolkata class (Project 15A) are a class of stealth guided missile destroyers
- **Project 15B – Visakhapatnam Class Destroyer**
  - The Visakhapatnam class (Project 15B) is a class of **stealth guided missile destroyers** currently being built for the Indian Navy.
- **Project 17A**
  - The Project 17A-class frigate is **follow-on of the Project 17 Shivalik-class frigate for the Indian Navy.**
- **Project 75**
  - Project 75 (P75) involves the acquisition of **six ships of the Kalvari-class diesel-electric attack submarines.**
- **Project 75I**
  - **6 Diesel submarines** with Air Independent Propulsion System (AIP) technology for the Indian Navy.

Some facts about Project 15B

- The **Visakhapatnam-class destroyers**, also classified as the **P-15 Bravo class**, or simply **P-15B,** is a class of **guided-missile destroyers** currently being built for the Indian Navy.
- The Visakhapatnam class is an **upgraded derivative of its predecessor, the Kolkata class,** with improved features of stealth, automation and ordnance.
- A total of **four ships are being built** by Mazagon Dock Limited (MDL), under the Make in India
- These **four ships are Visakhapatnam, Mormugao, Imphal, Surat.**
- The **first vessel of the class, INS Visakhapatnam** was commissioned in **November 2021**. The **second ship INS Mormugao in December 2022**.

UK university academic is lending expertise to cut India's snakebite deaths

Subject : Science and Tech

Section: Health

Context:

- **India** has the **biggest burden of deaths due to snakebites** in the **world**, with most of the cases in **rural India**.

Death due to snakebite in India:

- According to the **World Health Organization (WHO)**, around **81,410** to **137,880** people around the **world** die each year because of snakebites.
- With **more than 50,000 people** dying from **snakebites** each year, **India** is the global capital of snakebite deaths.
- WHO formally listed **snakebite envenoming** as a **highest-priority neglected tropical disease** in **June 2017**.
- In **2015,India** ratified the **WHO's Snakebite Envenoming Strategy** for Prevention and Control through the **National Action Plan,** along with the **United Nations' Sendai Framework for Disaster Risk Reduction** for halving the number of deaths by **2030**.

Avoidable Deaths Network (ADN):

- It is a diverse, dynamic, inclusive and innovative global membership network dedicated to avoiding human deaths from natural hazards, naturally triggered technological hazards and human-made disasters in low- and middle-income countries.
- In **2023**, it launched a **global campaign**, declaring **12 March** as the **'International Awareness Day for Avoidable Deaths' (IAD4AD)**. Their campaign slogan is **'Disaster Deaths Are Avoidable'** with the ultimate goal of saving lives. This global campaign **aims** to raise the visibility of indirect disaster deaths and missing persons. Join us to celebrate this day annually.
- Experts from the ADN have set up a pilot study to prevent death from snakebite in Burujhari village in **Odisha**.
- **Their suggestions to reduce the deaths due to snakebite is-** setting up early warning system for snakes, positioning motorcycles and ambulances to transport snakebite victims to the nearest hospital, developing a risk governance infrastructure

The spread of AIDS can be stopped with science backed protocols

Subject : Science and tech

Section: Health

Context:

- As of December 1, 2023, individuals with HIV who consistently undergo antiretroviral therapy (ART) experience a life comparable to those without HIV, with modeling studies indicating nearly identical life expectancies.
- This development challenges historical perceptions of HIV as a life-threatening condition and emphasizes the efficacy of sustained antiretroviral treatment.

Key Highlights:

Normal Life with ART:

- Individuals with HIV who adhere to uninterrupted antiretroviral therapy are reported to lead normal lives.
- This marks a significant shift from earlier perceptions of HIV as a potentially life-threatening condition.

Life Expectancy Parity:

- Modeling studies have demonstrated that the life expectancy of individuals with HIV under consistent antiretroviral therapy is nearly indistinguishable from that of individuals without HIV.
- This finding underscores the effectiveness of modern medical interventions in managing the virus.

Global HIV Statistics:

- Since the first reported case of HIV in 1981, approximately 39 million people globally are currently living with HIV.
- In India, the number stands at 2.4 million. This highlights the global and national impact of the virus.

New Infections:

- Despite progress in managing HIV, there were 1.3 million new HIV infections worldwide in 2022, with India contributing 63,000 to this figure.
- The data emphasizes the ongoing challenges in preventing new infections.
- Key Populations at Risk: Most transmissions occur within key populations, including female sex workers, men having sex with men, the transgender community, and injecting drug users.

About Human Immunodeficiency Virus (HIV):

- HIV is a lentivirus, a sub-classification of retrovirus, that leads to the HIV infection and, over time, progresses to AIDS (Acquired Immunodeficiency Syndrome).

Types of HIV:

- **Type One (HIV-1):** This is the most common type, further categorized into four groups - Group M (Major), Group N (Non-M & Non-O), Group O (Outlier), and Group P.
- Group M is responsible for approximately 90% of HIV cases worldwide.
- **Type Two (HIV-2):** Found primarily in Western Africa, with some cases in India and Europe, HIV-2 is further categorized into eight groups (A to H).

- It is closely related to the simian immunodeficiency virus endemic in a monkey species.

AIDS: This is a severe condition where the immune system fails, making the affected person susceptible to life-threatening infections and cancers.

Transmission: HIV can be transmitted through blood, breast milk, vaginal fluids, semen, or pre-ejaculate. It exists as free particles and within infected immune cells in bodily fluids.

Survival Period: Without treatment, the average survival period for a person with HIV is nine to eleven years, depending on the subtype of HIV.

Treatment: Antiretroviral therapy can prevent the progression of HIV to a severe form.

First-line HIV Treatment – TLD:

- **Tenofovir Disoproxil Fumarate, Lamivudine, and Dolutegravir** (TLD) is a **single-pill antiretroviral treatment**.
- **WHO** endorsed TLD in 2018 due to its effectiveness, fewer side effects, and simplicity.

Historical Progress and Collaboration:

- **2017**: **TLD** was introduced at **$75 annually in low- and middle-income countries with global support.**
- Partnerships led to **19 million in resource-limited settings receiving TLD**, promoting efficiency and sustainable pricing.

Future Initiatives and Impact:

- **Global Fund's NextGen approach** focuses on **affordable HIV treatment** through collaborations, particularly in India and Africa.
- **Pooled Procurement Mechanism and Reach**
- Mechanism negotiated $1.5 billion in 2021 orders, serving 90 countries, and providing access to essential health products.

The Global Fund

- The Global Fund is an **international financing and partnership organization**.
- It was created in **2002** and its secretariat is located in **Geneva, Switzerland**.
- The Global Fund aims to attract, leverage, and invest additional resources to end the **epidemics of AIDS, tuberculosis, and malaria** to support the attainment of the **Sustainable Development Goals.**
- It is designed to promote innovative solutions to global health challenges. It works in partnership with governments, civil society, technical agencies, and people affected by the diseases.
- **Public sector contributions have constituted 95 percent** of all financing raised; the **remaining 5 percent** comes from the **private** sector or other financing initiatives such as **Product Red**.

Govt Initiatives to control HIV

- Government of India provides free lifelong antiretrovirale (ARV) medicines for people living with HIV. Under its National AIDS Control Programme, presently 15.23 lakh (Approx.) people living with HIV are given ARV medicines through 687 ART centers and 1261 link ART centers irrespective of their income background. It includes free adherence counselling, diagnostic and monitoring services like baseline laboratory investigations, CD4 count testing, viral load testing, etc.
- To de–stigmatize the myths revolving around the disease, NACO implements multimedia campaigns along with mass media supported by outdoor media such as hoardings, bus panels, information kiosks, folk performances and exhibition vans to create awareness on HIV/AIDS and promoting services/facilities across the country. At the inter-personal level, training and sensitization programmes for Self-Help Groups, Anganwadi workers, ASHA, members of Panchayati Raj Institutions and other key stakeholders are carried out to spread awareness about treatment and other facilities. This year's World Aids Day, observed on 1st December, was observed widely with the theme Equalize.
- The Adolescence Education Programme is implemented in more than 50,000 schools, providing 100% coverage to students of class 8th, 9th and 11th through co-curricular activities based on life skill education approach in senior and senior secondary schools. 32 States included the topic of HIV /AIDS in curricula of schools.
- Red Ribbon Clubs are formed in colleges to encourage peer to peer messaging on HIV prevention and provide a safe space for young people to seek clarification to their doubts on myths surrounding HIV/AIDS.

What was the Bhopal Gas Tragedy?

Subject: Science and Tech

Section: Health

About:

- The Bhopal gas tragedy was one of the worst industrial accidents in history that occurred on the night of 2-3 December 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, MP.

- It exposed people and animals to the **highly toxic gas methyl isocyanate (MIC),** causing immediate and long-term health effects and deaths.

Causes of Gas Leak:
- The exact cause of the gas leak is still disputed between corporate negligence or employee sabotage. However, some of the factors that contributed to the disaster are:
- The **UCIL plant was storing large quantities of MIC, a highly reactive and volatile chemical, in poorly maintained tanks.**
- The plant was operating with reduced staff and safety standards due to financial losses and market competition.
- The plant was located in a densely populated area with no proper emergency plans or warning systems for the nearby residents.
- On the night of the disaster, a large amount of water entered one of the MIC storage tanks (E610), either due to a faulty valve or a deliberate act of sabotage by a disgruntled worker.
- This triggered an exothermic reaction that increased the temperature and pressure inside the tank, causing it to rupture and release a large cloud of MIC gas into the atmosphere.

Reactions:
- A 2019 report by the UN's International Labour Organization (ILO) said at least 30 tonnes of the poisonous gas affected more than 600,000 workers and nearby inhabitants.
- It added the disaster was among the world's "major industrial accidents after 1919".

Laws Passed:
- **Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985** - Gave the Central Govt the "exclusive right" to represent, and act in place of every person connected with the claims.
- **Environment (Protection) Act, 1986**, - Authorised the central govt to take relevant measures and regulate industrial activity for environmental and public safety.
- **Public Liability Insurance Act of 1991 -** Provides public liability insurance for providing immediate relief to the persons affected by an accident occurring while handling any hazardous substance.
- **Civil Liability for Nuclear Damage Act 2010**- India enacted the CLNDA in 2010 to put in place a speedy compensation mechanism for victims of a nuclear accident. It provides for strict and no-fault liability on the operator of the nuclear plant, where it will be held liable for damage regardless of any fault on its part.

BCG revaccination study in adults to begin in 23 States

Subject: Science and Tech

Section: Health

Context:
- Twenty three States have consented to participate in the BCG revaccination study in adults that will be undertaken in a "programme implementation study mode" to evaluate the effectiveness of the vaccine in reducing TB disease incidence.

About Bacillus Calmette–Guérin (BCG) vaccine:
- It is a **vaccine for tuberculosis (TB).**
- The vaccine was **developed by Calmette and Guerin** and was first administered to human beings in 1921.
- It is the most widely administered vaccine and is usually a part of the routine newborn immunization schedule.
- BCG vaccine also **offers protection against non-tuberculous mycobacterial infections like leprosy and Buruli ulcer.**
- It is often given to infants and small children.
- It is rarely given to anyone over the age of 16 because there is little evidence it works very well in adults.

Key facts about Tuberculosis (TB):
- Tuberculosis (TB) is caused by **bacteria (Mycobacterium tuberculosis)**that most often affect the lungs.
- It is **curable and preventable disease.**
- **Two kinds of tuberculosis infection:**
- **Latent TB**-The bacteria remain in the body in an inactive state. They cause no symptoms and are not contagious, but they can become active.
- **Active TB**- The bacteria do cause symptoms and can be transmitted to others. About one-quarter of the world's population has latent TB.
- People infected with TB bacteria have a 5–15% lifetime risk of falling ill with TB.

- However, persons with compromised immune systems, such as people living with HIV, malnutrition or diabetes, or people who use tobacco, have a much higher risk of falling ill.

Transmission:
- TB is **spread from person to person through the air.**
- When people with lung TB cough, sneeze or spit, they propel the TB germs into the air.
- Even after inhaling a few drops of these germ, a person can get infected.

Study of 50000 dogs says vaccines, not culling, will stop rabies

Subject: Science and tech

Sec: Health

Context:

A 16-year study in Tanzania led by Professor Katie Hampson delves into rabies transmission dynamics among dogs.

What is Rabies?
- Rabies is a **viral disease** that **attacks the central nervous system, causing brain inflammation and eventually leading to death if left untreated.**
- It is **transmitted through the bite of an infected animal, most commonly dogs.**
- Rabies is almost always fatal, but it can be **prevented through vaccination.**

Key findings of the study:
- The comprehensive study spans 15 years, involving data collection on 50,000 dogs in the Serengeti district.
- Rabies persists locally, with a few "**super-spreader" dogs travelling long distances, contributing to virus dissemination.**
- Mass dog-vaccination, not culling, emerges as the most effective strategy against rabies spread.
- Rabies differs from typical infectious diseases as it **spreads solely through bites, allowing for localized transmission.**

Implications and Vaccination Advocacy:
- Traditional infectious disease models struggle to predict rabies spread due to its local nature.
- Lower dog density doesn't necessarily reduce transmission, challenging the efficacy of culling.
- Large-scale dog vaccination is crucial for preventing rabies spread, contrasting with ineffective culling strategies.

Global Perspective and Vaccine Inequity:
- While high-income countries have successfully used vaccination to eliminate rabies, **equitable vaccine distribution remains a challenge.**
- The **study advocates for prioritizing mass dog-vaccination globally to protect both canine and human populations from rabies.**
- In countries like India, where rabies is prevalent, mass sterilization efforts overshadow crucial vaccination initiatives.

Initiatives taken by Government of India
- **National Rabies Control Programme:** This programme is being restructured as Integrated National Rabies Control Programme under **'One Health Approach',** with a aim to provide vaccination to stray dogs and free vaccines through Government hospitals.

Targeted Cancer Drugs

Subject : Science and Tech

Section: HEALTH

What are targeted cancer drugs?
- These drugs work by **'targeting'** those differences that help a cancer cell to survive and grow. They are one of the **main treatments** for some cancers like **advanced melanoma** and some types of **leukaemia.**
- **Different types of targeted drugs** are-
  - **Monoclonal antibodies** (it is a type of immunotherapy that trigger the immune system to attack and kill cancer cells)**,**
  - **Cancer growth blockers,**
  - **Drugs that block cancer blood vessel growth** and
  - **PARP inhibitors(poly-ADP ribose polymerasea**is a **protein (enzyme)** found in **our cells**. It helps **damaged cells to repair themselves**.)
- Targeted drugs are **not suitable** for **all types of cancers**.

- **Targeted therapy depends on:**
  - The type of cancer one have
  - How far one's cancer has spread (the stage)
  - Other cancer treatments one've had

Testing:
- It is done to find out whether the **treatment is likely to work**. These tests look for **changes in certain proteins or genes**.

How do they work?
- **Cancer cells** have **changes in their genes (DNA)** that make them **different** from **normal cells.**
  - The changes that make a **lung cancer grow** can be **different** to ones that make a **breast cancer grow**. And the **changes** in the **genes of one person** who has **lung cancer** might be **different** to the **changes** in someone else with **lung cancer.**
- **Targeted cancer drugs** work by **'targeting'** those differences that a cancer cell has.
- **Targeted drugs might:**
  - stop cancer cells from dividing and growing
  - seek out cancer cells and kill them
  - encourage the immune system to attack cancer cells
  - stop cancers from growing blood vessels
  - help carry other treatments such as chemotherapy, directly to the cancer cells

Improved Drug Regimens for TB likely to reduce treatment time

Subject : Science and Tech

Section: HEALTH

Context:
- The **Union World Conference on Lung Health 2023** showcased optimism in the fight against tuberculosis (TB) with the **introduction of four new improved drug regimens.**

More about News
- The primary focus was on reducing the treatment time for drug-resistant tuberculosis, which is crucial due to the long duration of conventional treatments leading to **patient intolerance and non-compliance.**
- The duration of TB treatment and the associated drug toxicity contribute to the development of **drug-resistant TB,** a serious concern in global TB control efforts.
- Previous advances in TB care have been limited, with the absence of a viable vaccine for prevention, making news of effective treatments particularly significant.

Key Highlights:
- **New Drug Regimens:**
  - Four improved drug regimens were presented at the conference, demonstrating the **potential toreduce treatment time for drug-resistant TB by up to two-thirds.**
  - These regimens offer hope for more effective and tolerable treatments, addressing the challenge of patient non-compliance and drug resistance.
- **Positive Outcomes:**
  - **Three regimens achieved favorable outcomes in 85-90% of participants for the treatment of multidrug-resistant tuberculosis or rifampicin-resistant tuberculosis (MDR/RR-TB).**
  - A **fourth regimen showed a strong treatment response at 85.6%,** providing an alternative for individuals unable to tolerate specific drugs.
  - The regimens demonstrated similar efficacy and safety to conventional treatments but significantly reduced treatment time.
- **Research Impact:**
  - Over 750 participants from 11 sites, 7 countries, and 4 continents were involved in the study, funded by Unitaid, highlighting a collaborative global effort.
  - Combining antibiotics in new ways through research led by organizations such as Médecins Sans Frontières, Partners in Health, and Interactive Research and Development showed promising results.
- **Global Significance:**
  - The findings represent a **significant step in addressing issues related to access to and affordability of quality TB care, offering hope to vulnerable populations globally.**

- o The urgency of continued research and innovation, along with accountability of private companies receiving public funds, was emphasized.
- **Multi-pronged Approach:**
  - o Experts emphasize a **multi-pronged approach to tackle TB, addressing not only treatment regimens but also improving case detection.**
  - o Advances in diagnostic tools, including AI-assisted tests and portable, battery-operated tests, were discussed as essential for early detection and prevention.
- **Future Directions:**
  - o Calls for a stronger commitment to **developing a TB vaccine** were made, highlighting the need for global efforts to eliminate the disease.
  - o **Phasing out old diagnostic tools like smear microscopyin favor of rapid molecular tests was emphasized to narrow the diagnostic gap.**

India's alarming 'fixed dose combination' problem
Subject: Science and Tech
Section: Health
Concept:
- Antimicrobial resistance is at risk due to the study's shocking findings on the frequency of antibiotics' unapproved and illegal Fixed Dose Combinations (FDCs) in India.
- Public health requires immediate action in response to the pharmaceutical industry's use of FDCs as a means of circumventing legislation and regulatory inefficiencies.

Historical Aspect:
- Tracing the issue back to 1978 and subsequent regulatory amendments provides context to the ongoing challenges.

Key Highlights:
- **Alarming Prevalence:** In 2020, 60.5% of antibiotics in India were unapproved FDCs, with an additional 9.9% banned, raising concerns about antimicrobial resistance.
- **Patient Compliance vs. Risks:** FDCs, aimed at improving patient adherence, pose risks due to potential interactions between combined drugs, necessitating a stringent approval process.
- **Pharmaceutical Industry's Strategy:** Exploitation of FDCs allows the industry to evade drug price regulations, contributing to the proliferation of irrational combinations.

Key Terms:
- **Fixed Dose Combination (FDC):** Combinations of multiple drugs in a single dosage form, potentially affecting drug interactions and therapeutic efficacy.
- **Antimicrobial Resistance (AMR):** The ability of microorganisms to resist the effects of medications, posing a global health threat.

Key Challenges:
Continued sale of unapproved FDCs highlights regulatory inefficiency, allowing non-compliance despite existing legal provisions.
Reliance on Section 26A orders reveals a reactive rather than proactive regulatory approach, indicating systemic challenges.

Key Issues:
- **Pharmaceutical Industry's Exploitation:** The strategic use of FDCs to avoid regulatory scrutiny undermines the integrity of drug pricing and quality.
- **Ineffectiveness of Regulatory Measures:** Despite legal provisions, the regulatory system relies on reactive prohibitions rather than proactive prevention.

Hopes dashed as last HIV vaccine trial in Africa for this decade ends in failure
Subject : Science and Tech
Section: Health
Context:
- A trial of a **human immunodeficiency virus (HIV) vaccine** in **Africa** has been stopped after preliminary data showed it was not effective in preventing infections.

PrEPVacc:
- **PrEPVacc**is the **study trial** of **Vaccine** for **HIV.** Researchers were testing a new form of oral **pre-exposure prophylaxis (PrEP),** a drug that reduces the risk of getting HIV.
- It was led by African researchers with support from European scientists.

- Triel was done in **Uganda, Tanzania** and **South Africa.**
- About **39 million people worldwide** are **living with HIV,** with more than **25 million** in **sub-Saharan Africa,** according to the **JointUnited Nations Programme on HIV/AIDS (UNAIDS)** and **World Health Organization (WHO).**

Joint United Nations Programme on HIV?AIDS (UNAIDS):

- **Established** by **ECOSOC** resolution 1994/24 in **1994,** UNAIDS officially launched in January **1996**.
- The **aim** of **UNAIDS** is to help mount and support an expanded response to HIV/AIDS, one that engages the efforts of many sectors and partners from government and civil society.
- UNAIDS seeks to prevent the HIV/AIDS epidemic from becoming a severe pandemic.
- UNAIDS is **headquartered** in **Geneva, Switzerland,** where it shares some site facilities with the **World Health Organization.**
- It is a member of the **United Nations Development Group.**

Pompe Disease

Subject : S&T

Section: Health

Context: India's first Pompe disease patient passes away

What is Pompe Disease:

- Pompe disease, **also called Glycogen Storage Disease Type II**, is a **rare genetic disorder** resulting **from a deficiency of the enzymeacid alpha-glucosidase (GAA)**.
- This enzyme is **essential for breaking down glycogen** into glucose **within the lysosomes of cells**.
- The **prevalence of Pompe disease** varies, with e**stimates ranging from 1 in 40,000 to 1 in 300,000 births.**
- It occurs in **diverse ethnicities** and **populations, with varying ages of onset** and **severity, leading to a spectrum of clinical presentations.**

How does Pompe disease affect an individual:

- Pompe disease **exhibits varying degrees** of **severity and symptom progression** among individuals.
- **Key symptoms** include **progressive muscle weakness affecting both skeletal and smooth muscles, leading to mobility challenges and difficulties in daily activities.**
- **Motor skill delays**, particularly in **achieving milestones like sitting, crawling, and walking,** are common in affected children.
- Prolonged **muscle weakness** can result in **bone degeneration, causing joint contractures and skeletal deformities.**
- **Respiratory complications,** including **weakened respiratory muscles** and **potential breathing difficulties,** are prevalent, **especially during physical exertion** or while lying down.
- **Cardiac involvement** may occur, **leading to symptoms like heart palpitations, fatigue, and chest pain,** with the **possibility of hypertrophic cardiomyopathy**—thickening of heart muscle walls.
- The **disease's impact on daily living** is significant, as patients may face challenges in performing routine activities independently. **Assistive devices such as wheelchairs and respiratory support equipment may become necessary** for those affected by Pompe disease.

How is Pompe disease diagnosed:

- The **diagnosis of Pompe disease** employs a comprehensive approach involving various assessments:
  - **Enzyme Assays**: These tests measure the **activity of acid alpha-glucosidase (GAA), the enzyme deficient** in Pompe disease. Enzyme assays are **often conducted on blood or skin cells to evaluate GAA activity levels**.
  - **Genetic Testing:** Genetic analysis is performed to **identify specific mutations in the GAA gene associated** with Pompe disease. This **helps confirm the genetic basis** of the condition.
  - **Clinical Evaluations:** Healthcare professionals consider the patient's symptoms and medical history as part of the diagnostic process. **Clinical assessments contribute valuable information** to the overall diagnosis.
- The **combination of enzyme assays, genetic testing, and clinical evaluations** allows for an **accurate and comprehensive diagnosis of Pompe disease**. This approach is crucial for timely intervention and effective disease management.

Is Pompe disease curable:

- Pompe disease **currently lacks a cure,** but there are **available treatment options aimed at managing symptoms** and enhancing the **patient's quality of life**.
- **Enzyme Replacement Therapy (ERT)** is a **well-established treatment approach,** involving the **infusion of the deficient enzyme** to **reduce glycogen accumulation and address** the underlying enzymatic deficiency.

Game-changer Gene therapy offers new hope for those with sickle cell disease

Subject : S&T

Section :health

Context:

- Gene therapy offers new hope for those with sickle cell disease.

Introduction

- Less than a month after the U.K. drug regulator **approved Casgevy**, the gene therapy to treat people above 12 with sickle cell disease and beta thalassemia, the U.S. FDA has approved two gene therapies — Casgevy and Lyfgenia — to treat sickle cell disease in patients over 12. Its decision on approving Casgevy gene therapy for treating beta thalassemia is expected by March 2024.

Gene therapy

- **Gene therapy is a technique that uses a gene(s) to treat, prevent or cure a disease or medical disorder**. Often, gene therapy works by adding new copies of a gene that is broken, or by replacing a defective or missing gene in a patient's cells with a healthy version of that gene.

- Both inherited genetic diseases (e.g., **hemophilia and sickle cell disease**) and acquired disorders (e.g., leukemia) have been treated with gene therapy.

- It is a direct way to treat genetic conditions as well as other conditions. There are also other related approaches like gene editing. There are many different versions and approaches to gene therapy and gene editing.

- It all rests on understanding how genes work and how changes in genes can affect our health. Researchers all over the world are studying many different facets of gene therapy and gene editing.

Beginning of gene therapy using the CRISPR-Cas9 tool

- These landmark decisions mark the beginning of gene therapy using the CRISPR-Cas9 tool to treat diseases that could otherwise be cured only through bone marrow transplantation.

- While **Lyfgenia uses a disabled lentivirus as a vector to introduce into the blood stem cells a new gene for haemoglobin that mimics the healthy version, Casgevy uses the gene-editing tool of CRISPR-Cas9 to disable a particular gene (BCL11A) that turns off foetal haemoglobin production in blood stem cells.**

- While about 10% of adults continue to produce foetal haemoglobin, in others, the BCL11A gene prevents the production of foetal haemoglobin. By disabling the BCL11A gene, foetal haemoglobin that is produced, which does not have the abnormalities of adult haemoglobin, helps treat patients with sickle-cell disease or beta thalassaemia.

- In clinical trials, 28 of 29 sickle-cell disease patients who received Casgevy gene therapy were relieved of the debilitating effects of the disease for a year; for beta thalassaemia, 39 of 42 patients did not require blood transfusion for one year, and in the remaining three the need for blood transfusion reduced by more than 70%.

- In the case of clinical trials involving Lyfgenia, 30 of 32 sickle cell disease patients did not suffer from severe blocked blood flow caused by sickle cells, while 28 of 32 patients did not experience any blocked blood flow events six to 18 months post-infusion.

Huge potential and huge expenditure

- Since both **gene therapies use patients' own blood cells for gene editing, the number of patients who can potentially be treated will be huge as these treatments do not rely on matching bone marrow donors.**

- But in reality, these treatments would be exorbitantly expensive. Also, much like bone marrow transplantation, only certain hospitals will be equipped to extract a patient's blood stem cells and use the genetic editing tool to the stem cells before reinjecting them, thus limiting the number of beneficiaries.

About Sickle cell disease

- **Sickle cell disease is an inherited blood disorder.** It is marked by flawed haemoglobin. That's the protein in red blood cells that carries oxygen to the tissues of the body. So, sickle cell disease interferes with the delivery of oxygen to the tissues.

- **Red blood cells** with normal haemoglobin are **smooth, disk-shaped, and flexible, like doughnuts without holes.** They can move through the blood vessels easily. Cells with sickle cell haemoglobin are stiff and sticky.

- When they lose their oxygen, they form into the shape of a sickle or crescent, like the letter C. These cells stick together and can't easily move through the blood vessels. This can block small blood vessels and the movement of healthy, normal oxygen-carrying blood. The blockage can cause pain.

- Normal red blood cells can live up to 120 days. But sickle cells only live for about 10 to 20 days. Also, sickle cells may be destroyed by the spleen because of their shape and stiffness. The spleen helps filter the blood of infections.

- Sickled cells get stuck in this filter and die. With less healthy red blood cells circulating in the body, you can become chronically anaemic. The sickled cells also damage the spleen. This puts you are at greater at risk for infections.

Significance of an influenza A (H1N2)v case in the U.K.

Subject : Science and Tech

Section: Health

Context:

- The United Kingdom Health Security Agency (UKHSA) reported the first known human case of influenza A (H1N2)v in the UK, a variant of the influenza virus **previously not known to cause infections in humans**.

More about the news:

- Health officials in the UK are investigating the **first confirmed case of a new strain of swine flu, identified as A(H1N2)v.**
- The virus is similar to those **circulating in pigs in the UK.**
- The infected person, detected during routine flu screening in North Yorkshire, is being closely monitored, and contacts are being traced.
- This is the first time A(H1N2)v has been found in humans in the UK, though it resembles viruses previously detected in pigs.
- **Influenza A(H1) viruses are common in swine globally.**
- Investigations are ongoing to determine how the individual contracted the virus.
- A total of 50 human cases of A(H1N2)v have been reported globally since 2005, and this strain has not been previously detected in humans in the UK.
- The UK case represents a distinct clade (1b.1.1), different from recent global cases but similar to viruses in UK pigs.

About Swine flu:

- Swine influenza, also called pig influenza, **is an infection caused by any one of several types of swine influenza viruses. Swine influenza virus or swine-origin influenza virus is any strain of the influenza family of viruses that is endemic in pigs.**
- **Influenza A (H1N1) virus is the subtype of influenza A virus** that is the most common cause of human influenza.
- It is an orthomyxovirus that **contains the glycoproteins haemagglutinin and neuraminidase.**
- For this reason, they are described as H1N1, H1N2 etc. depending on the type of H or N antigens they express with metabolic synergy.
- **Haemagglutinin causes red blood cells to clump together and binds the virus to the infected cell.**
- **Neuraminidase is a type of glycoside hydrolase enzyme which helps to move the virus particles** through the infected cell and assist in budding from the host cells.
- Some strains of **H1N1 are endemic in humans and cause a small fraction of all influenza-like illness and a small fraction of all seasonal influenza.** Other strains of H1N1 are endemic in pigs (swine influenza) and in birds (avian influenza).

What is 'noma', the latest addition to WHO's list of neglected tropical diseases

Subject: Science and tech

Section: Health

In the news:

- The **WHO** recently acknowledged **noma**, a severely debilitating **oral and facial gangrenous disease,** as an **official neglected tropical disease (NTD)** due to its dire impact and historical neglect.

About the Noma disease:

- Noma eats away facial tissue and bones if not treated early.
- Also known as **cancrumoris** or **gangrenous stomatitis, noma** primarily affects **impoverished children aged 2-6 in poor communities,** linked to **extreme poverty, malnutrition,** and **inadequate hygiene**. It has a **mortality rate** of approximately **90 per cent.**
- Noma is prevalent in **sub-Saharan Africa,** predominantly affecting children in impoverished settings.
  - **Noma** was **prevalent in the past** but largely **vanished from the Western world** with improved living conditions. It was even noted in **World War II concentration camps.**
- Noma begins with **gum inflammation,** caused by **bacteria** in the **mouth**, and rapidly progresses into **extensive tissue destruction** and **bone damage** if untreated.
- Scarce data exists on current cases, with estimates dating back to **1998,** reflecting the **disease's hidden nature**.
- **Early detection is crucial** as therapy **effectiveness diminishes in later stages.** Basic hygiene, antibiotics, and nutrition rehabilitation slow its spread, but access to adequate treatment remains a challenge due to poverty.

- **Survivors face severe consequences** such as **facial disfigurement, muscle spasms, speech problems,** and **oral incontinence,** compounding the challenges posed by extreme poverty.
- **Inclusion in the WHO's NTD list aims to raise awareness, drive research, secure funding,** and **implement comprehensive strategies** to combat the disease's devastating impact, especially in underserved communities.

JN.1 COVID sub-variant cases on rise: All you need to know as WHO issues alert

Subject: Science and tech

Section: Health

Context:

- A new **JN.1 COVID sub-variant** is on the **rise.**

Details:

- **Respiratory diseases** are increasing around the world due to a number of pathogens including COVID19, flu, rhinovirus, mycoplasma pneumonia & others.
- SARS-CoV-2 continues to evolve. **JN.1 (subvariant of BA.2.86)** is already a **Varient of Interest (VOI)** and continues to increase in circulation.

JN.1 variant of COVID:

- It is considered the **Omicron subvariant BA.2.86** or **Pirola**. This variant was **first detected** in September 2023 in the **United States.**
- It is **capable of spreading faster and evading immunity**.
- It is a **severely immune-evasive** and **fast-spreading variant,** markedly different from **XBB** and all other prior versions of this virus.
- This enables it to infect people who had previous Covid infections and also people who were vaccinated.

Classification of Variants by CDC:

1. **Variant of Interest (VOI):**
   o **Characteristics:** Variants with specific genetic markers linked to changes in receptor binding, reduced neutralization by antibodies, potential diagnostic impact, or increased transmissibility/severity.
   o **Example:B.1.617 variant** with mutations **E484Q** and **L452R**, identified in **India,** classified as **VOI** by **WHO.**
2. **Variant of Concern (VOC):**
   o **Traits:** Variants showing evidence of increased transmissibility, severe disease, reduced neutralization by antibodies, vaccine/treatment effectiveness, or diagnostic failures.
   o **Examples:**1.1.7 (UK), B.1.351 (South Africa), P.1 (Brazil), B.1.427, and B.1.429 variants in the US.
3. **Variant of High Consequence:**
   o **Definition:** Variants drastically reducing the effectiveness of preventive measures or medical countermeasures.
   o **Status:** No variants of high consequence reported circulating in the US by CDC.
4. **Variants Under Investigation (VUI):**
   o **Criteria:** Variants with potential epidemiological, immunological, or pathogenic properties warrant formal investigation.
   o **Status:** Variants emerging from the **1.617 lineage** currently designated as **VUI** by Public Health England (PHE).

Tax 'HFSS' foods, view it as a public health imperative

Subject :Science and Tech

Section: Health

India's Dietary Shift:

- **India,** a **major producer and consumer of sugar**, has seen a **sharp rise in high-fat sugar-salt (HFSS) food consumption.**
- The **processed food industry** consumes **50%-60%** of produced sugar, salt, and fat. Sales of snacks and soft drinks exceeded **$30 billion,** indicating concerning dietary trends impacting health and the economy.

Global Health Risks:

- Consumption of **HFSS foods** is a major contributor to **health problems** like **obesity, diabetes,** and **high blood pressure.**
- The **World Bank's 2019 report** highlighted that **70%** of overweight individuals live in **Low- and Middle-Income Countries (LMICs),** with a **55% increase** in **rural areas.**

- **India's Non-Communicable Diseases (NCDs)** burden has **surged** from **38%** in **1990** to **65%** in **2019,** causing **1.2 million annual deaths** due to dietary risks alone. The economic impact was estimated at **$23 billion** in **2017**, projected to reach **$480 billion** by **2060** if unaddressed.

Global Trends in HFSS Taxation:
- Many countries are using **fiscal measures** like **taxation to combat obesity.** While **sugar-sweetened beverage (SSB) taxes** are common, **HFSS food taxes** are gaining traction.
- Countries like **Denmark, France, Mexico,** and **the UK** have implemented dedicated taxes, setting models for others.
- India experimented with a **'fat tax'** in **Kerala** in **2016,** later absorbed into the **Goods and Services Tax (GST)** in **2017**.

Justification for HFSS Taxation:
- HFSS consumption creates **societal costs** in **increased healthcare expenses** and **internal harm** due to **limited consumer understanding influenced by aggressive marketing**.
- Taxes serve as a targeted tool to **reduce detrimental habits,** proven effective in reducing the **purchase of unhealthy items** in various nations.

Purpose of HFSS Tax:
- Unlike **revenue-raising taxes** like those on **tobacco** or **alcohol, HFSS taxation aims** to **incentivize industry reformulation** towards **healthier alternatives** and encourage individuals to opt for **healthier diets.**
- Properly designed, these taxes can be **non-regressive** and **fiscally neutral.**
- The current **GST rates** on **ultra-processed foods don't consider nutritional content,** applying uniform taxes regardless of varying impacts. This oversight limits the shift towards healthier alternatives.

Public Health Imperative:
- **HFSS taxation in India** should be viewed beyond economics—it's a **public health necessity.**
- Effective taxes can deter **HFSS consumption,** promote **healthier choices,** drive **food reformulation**, improve **public health,** reduce **healthcare burdens,** and contribute to a **sustainable food system** when combined with **nutrition education** and **effective labelling**.

Key terms:
- **High Fat Sugar Salt foods (HSSF)** are known for their **negative impact on health**.
- A **negative externality** is something that impacts a person or people who are uninvolved in a situation. Example: **Smoking cigarettes** or **burning coal.**
- **Internalities:** Harm caused to individuals due to limited understanding influenced by marketing.
- **Non-regressive Tax:** A tax that does not disproportionately burden lower-income individuals.

COVID vaccines pillar COVAX to wind down by year-end left with billions unspent

Subject: Science and Tech

Section: Health

Context:
- **COVAX mechanism,** a worldwide initiative launched in April 2020 to ensure equitable access to **COVID-19 vaccines** is coming to an end from Dec 31, 2023.

COVAX mechanism:
- It was launched to make the **vaccines available equitably** and, more importantly, to **low-income countries** that otherwise would not be able to afford them.
- The vaccine distribution will shift to regular immunisation programmes.
- It was initiated by the **GAVI-the Vaccine Alliance**, the **Coalition for Epidemic Preparedness Innovations (CEPI)**, the **World Health Organization (WHO)** and the **United Nations Children's Fund (UNICEF)**.
- **COVAX** is one of three pillars of the Access to **COVID-19 Tools (ACT) Accelerator.**
  - This **ACT Accelerator** aimed to bring together governments, global health organisations, manufacturers, scientists, the private sector, civil society and philanthropy with the **goal** of providing innovative and equitable access to COVID-19 diagnostics, treatments, and vaccines.
- It helped **lower-income countries** achieve **57 per cent two-dose coverage,** compared to the **67 per cent global average**.
- The unspent funds of **COVAX** will be used by **GAVI**.
- **Burundi** in **east Africa** received the **least number of vaccinations**, with **0.32 per cent** of its population receiving at least one dose of a COVID-19 vaccine. **Yemen** (3.85 per cent), **Haiti** (5.73 per cent), **Papua New Guinea** (7.27 per cent), **Madagascar** (10.44 per cent) and the **Republic of the Congo** (13.93 per cent) were some of the other countries with the least number of vaccinations.

About Gloval Vaccine Alliance (GAVI):

- Founded in **2000**, it **aims** to improve access to vaccines in the world's poorest countries.
- It operates through **collaborations with governments, WHO, UNICEF, the World Bank, vaccine manufacturers,** and **philanthropic foundations.**
- **Mission:** Its core goal is to save lives, reduce poverty, and protect against epidemics by enhancing vaccine access in lower-income nations.
- **Financial Mechanism:** Utilizes a financing model to provide affordable vaccines and support healthcare systems in recipient countries.
- **Impact:** Contributed significantly to increasing vaccination rates, reducing child mortality, and preventing the spread of diseases in developing nations.
- **COVID-19 Role:** Played a pivotal role in **COVAX**, ensuring **equitable COVID-19 vaccine access globally,** particularly for low- and middle-income countries.

CEPI:

- It was **established in 2017** to develop vaccines against emerging infectious diseases and epidemics.
- **Core Mission:** Aims to proactively tackle global health threats by accelerating vaccine development and ensuring equitable access to vaccines during outbreaks.
- It works in partnership with **public, private, philanthropic,** and **civil society sectors,** collaborating with organizations like **WHO** and **Gavi**.

CDSCO to ban common cold and flu syrups for children below 4 yrs; Pharma cos asked to insert warning

Subject : Science and Tech

Section::Health

In the news:

- The **Central Drugs Standard Control Organisation (CDSCO),** the **country's apex health regulatory agency,** has decided to **ban the use of a popular anti-cold cocktail medicine combination** among **children below four years of age**.

Expert Committee Recommendation:

- In June, an expert committee discussed the matter and advised against using this drug combination for **children under four.**
- The committee suggested **adding a warning regarding this restriction on labels** and **package inserts**.

Reason:

- Some concerns have been raised over the **use of a fixed drug combination** of **Chlorpheniramine Maleate IP 2mg** and **Phenylephrine HCI IP 5mg drops.** The formulation was an **unapproved one for infants**.
  - The combination is used to treat **cold** and **flu-like symptoms,** which include **coughing, sneezing, watery eyes**, among others.
  - Makers of these medicines have been asked to insert a **'warning'.**

About CDSCO:

- Formed in **1961,** operates under **India's Ministry of Health and Family Welfare.**
- **Regulatory Scope and Functions:**
  - Oversees drugs, cosmetics, and medical devices' safety, efficacy, and quality as per the Drugs and Cosmetics Act.
  - **Grants approvals** for **new drugs, licenses for manufacturing,** and **regulates clinical trials.**
- **Organizational Structure:**
  - Comprises expert committees focusing on drug approvals, adverse event monitoring, and policy formulation.
- **Quality Control and Inspections:**
  - Manages a **network of drug testing laboratories,** conducts facility inspections to ensure compliance with regulations.
- **International Collaborations:**
  - Collaborates with **global regulatory bodies and organizations** to align with **international standards and practices**.

WHO prequalifies malaria vaccine by Serum Institute

Subject: Science and Tech

Section: Health

Context:

- The World Health Organization(WHO) added the R21/Matrix M malaria vaccine, developed by Oxford University and manufactured by Serum Institute of India, to its list of prequalified vaccines. In October 2023, the WHO had recommended its use for the prevention of malaria in children.

About the R21/Matrix-M Vaccine:

- It is a **new vaccine approved for the prevention of malaria in children**.
- It was **developed by the University of Oxford and the Serum Institute of India with support from the European and Developing Countries Clinical Trials Partnership ('EDCTP'), the Wellcome Trust, and the European Investment Bank ('EIB').**
- It is the first malaria vaccine to reach the WHO's target of **75% efficacy.**
- It has already been **approved for use in Burkina Faso, Ghana, and Nigeria.**
- The vaccine will be rolled out in those African countries in early 2024 and will be available in mid-2024 in other countries.

What is malaria?

- It is a **life-threatening disease** caused by parasites that are transmitted to people through the **bites of infected female Anopheles mosquitoes.**
- There are 5 parasite species that cause malaria in humans, and 2 of these species, **Plasmodium falciparum and Plasmodium vivax, pose the greatest threat.**
- **Malaria is common in tropical areas where it's hot and humid.**
- Children under 5 years of age are the most vulnerable group affected by malaria.

Symptoms:

- The signs and symptoms of malaria are similar to flu symptoms. **They include:**
  - **Fever and sweating.**
  - **Chills that shake your whole body**
  - **Headache and muscle aches.**
  - **Fatigue.**
  - Chest pain, breathing problems, and cough.
  - Diarrhoea, nausea and vomiting.
  - As malaria gets worse, it can cause anemia and jaundice.
- The most severe form of malaria, which may progress to a coma, is known as **cerebral malaria.** This type represents about 15% of deaths in children and nearly 20% of adult deaths.

Treatment:

- It is **preventable and curable**. With early treatment, most people with malaria will make a full recovery.
- Some drugs are given in combination with other drugs. The type of parasite will determine the type of medication.
- The **main antimalarial drugs are:**
  - chloroquine
  - hydroxychloroquine
  - primaquine
  - artemisinin-based therapy
  - atovaquone-proguanil

As JN.1 emerges as variant of interest, time to evaluate preparedness

Subject : Science and Tech

Section: Health

Context:

- The identification of a sub variant — JN.1 — has sparked fresh interest in the epidemiological world, and has sounded the need for caution. The World Health Organisation, has decided, due to its rapid spread, to classify the **variant JN.1 as a separate variant of interest (VOI) from the parent lineage BA.2.86.**

About JN.1 Variant

- **Variant Lineage:** JN.1 is a sub-variant of BA.2.86, also known as **Pirola**, first detected in the United States in September and globally as early as January.
- **Mutation Characteristics:** While JN.1 has only one additional mutation on the spike protein compared to Pirola, its high number of spike protein mutations has drawn attention of researchers.

Possible Consequences of JN.1

- **Transmission and Severity:** Currently, there is no evidence suggesting that JN.1 causes more severe symptoms or spreads faster than other circulating variants.
- **WHO Assessment:** Both Pirola and JN.1 have been effectively neutralized by serum from infected and vaccinated individuals, according to the WHO Technical Advisory Group on COVID-19 Vaccine Composition.

Current Concerns and Global Spread

- **Increasing Cases:** A rise in cases caused by Pirola and JN.1 has been observed globally, including in the USA, Europe, Singapore, and China.
- **WHO Data:** JN.1 accounted for a significant proportion of **COVID-19 sequences in the GISAID database** and a notable percentage of variants in the United States.
- **Singapore's Situation:** Singapore reported a surge in COVID-19 cases, predominantly JN.1, with increased hospitalizations among older individuals.

Vaccination and Immunity in India

- **Hospitalization Risk:** Data from Singapore indicates higher hospitalization risks for those who received their last COVID-19 vaccine dose over a year ago.
- **Indian Immunity Levels:** Doctors suggests that widespread vaccination and exposure to COVID-19 have likely resulted in substantial immunity in India, reducing the need for updated vaccines.
- **Consistent Precautions:** Experts recommend standard **protective measures against respiratory viruses, including masking in crowded and enclosed spaces, staying in well-ventilated areas, and frequent hand washing.**

"FLip" mutations of SARS-COV-2 may be evading immunity and leading to a surge in COVID cases, suggests researchers

Subject :S&T

Section : HEALTH

JN.1 Emergence:

- The **omicron sub-variant JN.1,** featuring the **L455S "FLip" spike protein mutation,** is expected to become the **predominant strain** of the **SARS-CoV-2 virus** worldwide.
- **JN.1** emerged from the **BA.2.86 lineage**, rapidly surpassing its predecessors and related strains due to the mutation's impact on the **spike protein**.
- **JN.1** is expected to make up a **significant proportion of SARS-CoV-2 variants,** raising concerns about its **transmissibility and immune evasion.**
- While **JN.1's prevalence increases,** its specific impact on infection rates or severity remains uncertain.

Mutations and ACE2 Receptors:

- **ACE2** is a **protein** found in the **epithelial cells in different parts of the body,** such as the **lungs, heart,** and **kidneys. SARS-CoV-2 virus binds to ACE2** as an entry point through the virus' spike-like protein on its surface.
- Mutations like **L455S/F** alter the **spike protein,** potentially affecting **ACE2 receptor binding.** This could impact transmissibility, immune evasion, and the virus's entry point into cells.

Transmissibility vs. Danger:

- Dominance doesn't inherently imply **increased danger;** viruses **naturally mutate**. However, the **L455S/F mutations** may **enhance transmissibility**.
- **JN.1** displays **heightened transmissibility** and **potential ability to evade immunity conferred by vaccines,** observed in breakthrough infections and reinfections.

EG.5 Variant:

- Another **omicron subvariant, EG.5,** remains the most reported variant of interest globally but is **declining** in occurrence.

ICMR initiates steps to provide easy to use non-invasive testing to tackle anaemia in India

Subject : Science and tech

Section: Health

Context:

- **Indian Council of Medical Research (ICMR)** initiates testing and treatment of anaemia, with a special focus on pregnant women and on school-going adolescents

Details:

- **Anaemia:** Anemia is a condition in which the body does not have enough healthy red blood cells.

- **WHO criteria:** The **World Health Organization (WHO)** defines **anaemia** as a condition when **haemoglobin levels fall below 12 grams per decilitre (g/dL) for women** in the **reproductive age group** and **below 11.0 g/dL** for **children under five**.
  - The **Indian Council of Medical Research (ICMR)** accepted that anaemia continued to be a **major public health problem** in India despite the comprehensive **Anaemia Mukt Bharat (AMB) programme.**
  - ICMR will employ **digital methods** and **point-of-care treatment**, focussing on **pregnant women** and on **school-going adolescents.**
- **Anaemia prevalence in India:**
  - As per the **National Family Health Survey 5 (2019-21) Anemia prevalence** in **India** is as follows:

Category	Prevalence rate
Men (15-49 years)	25.0%
Women (15-49 years)	57.0%
Adolescent boys(15-19 yrs)	31.1%
Adolescent girls(15-19)	59.1 %
Pregnant women (15-49 years)	52.2 %
Children (6-59 months)	67.1%

About Test and treat strategy:

- **Non-invasive hemoglobinometer:** For the test and treat method, a non-invasive hemoglobinometer that is user-friendly and simple enough for everyone to use is needed.
- **Make in India: '** **Make in India'** non-invasive hemoglobinometer devices are available over the past few years.
- **Validation study:** ICMR is carrying out a validation study of such non-invasive hemoglobinometer devices followed by health technology assessment for evaluating its suitability for the AMB programme

About Anemia Mukt Bharat:

- **Launch:** The Government of India launched the Anaemia Mukt Bharat (AMB) strategy in 2018 to reduce the prevalence of anaemia in women, children and adolescents through a life cycle approach.
- **Objective. T**he strategy aims at preventive and curative mechanisms through a 6X6X6 strategy including six target beneficiaries, six interventions and six institutional mechanisms for all stakeholders

About ICMR:

- **Establishment:** In 1911 as Indian Research Fund Association (IRFA), later in 1949, IRFA was renamed ICMR.
- **Body:** It is neither a statutory body nor a regulatory body. It is an Autonomous Body registered under the Society Act XXI of 1860.
- **Headquarters:** New Delhi.
- **Function:** It helps in the formulation, coordination and promotion of biomedical research, and is one of the oldest medical research bodies in the world.

For Huntington's disease clues, scientists are looking in fruit flies

Subject: Science and Tech

Section: Health

Context: Researchers from Hungary, genetically engineered fruit flies (Drosophila melanogaster) to express the polyglutamine tract of a mutated human HTTgene in their nervous system by using a gene called Gal4 from baker's yeast (Saccharomyces cerevisiae).

More on news:

The medical genetics clinic at the Nizam's Institute of Medical Sciences, Hyderabad sees three to four patients with Huntington's disease every month.

About Huntington's disease:

- **Genetic / Inherited:** Huntington's disease (HD) is an inherited disorder that causes nerve cells (neurons) in parts of the brain to gradually break down and die.
- **Affects neural system:** The disease attacks areas of the brain that help to control voluntary (intentional) movement, as well as other areas.
- **Causes:** A gene called HTT are involved in the production of a protein called huntingtin.

- **Mutation:** When these genes mutate, they provide faulty instructions leading to production of abnormal huntingtin proteins and these form into clumps.
- The clumps disrupt the normal functioning of the brain cells, which eventually leads to death of neurons in the brain, resulting in Huntington disease.
- **Treatment:** Treatment consists of supportive therapy to manage symptoms
- **Cure:** No cure exists, but drugs, physiotherapy and speech therapy can help manage some symptoms.

About Glutamine repeats:

- **Mutated version of Htt:** The patient's misfortune is that they carry a mutated version of a gene called HTT. The HTT gene codes for a protein called huntingtin, or Htt.
- **Destroys Neural systems:** Nerve cells requires the Htt protein for their normal functioning and survival. The mutated gene which encodes an abnormal Htt protein that instead destroys the neurons that regulate movement, thinking, and memory.
- **Inheritance:** Each one of us has two copies of the HTT gene of which one is inherited from the father and one from the mother. The disease is triggered even if only one copy of the gene is mutated while the other is normal.

Clues from fruit flies

Recent study: In the new study from Hungary, the researchers genetically engineered fruit flies (*Drosophila melanogaster*) to express the polyglutamine tract of a mutated human HTTgene in their nervous system.

About GaIp and UAS: They used a gene called Gal4 from baker's yeast (*Saccharomyces cerevisiae*), containing information with which cells manufacture a protein called Gal4p. This protein binds specifically to a short DNA sequence called the upstream activating sequence (UAS)

Gene expression: DNA sequence for the Gal4p protein when is placed downstream of a fly gene called *elav*, leading to expression of the Gal4p protein in all of the fly's neurons Expressing the longer tract produced symptoms in the fruit flies resembling those of Huntington's disease in humans while on the other hand expressing the shorter tract did not.

The Science of Yod1 gene: On investigating 32 genes it was found that excessive expression – or overexpression – of gene called Yod1, removed all of the disease-like effects in the flies including the neurodegeneration, impediments to motor activity, and lower viability and longevity.

Trendy to toxic: Is turmeric losing its golden hue?

Subject: Science and Tech

Section: Health

In the news:

- **Lead chromate,** used to **enhance turmeric's colour,** has raised **safety concerns** due to **high lead levels** found in turmeric samples from households in **Bihar, India,** and larger surveys across **eight districts,** including **other spices exceeding permissible limits.**

Details:

- **Why adulterants are used?**
    - Brighter spices correlate with better quality, enhancing **turmeric's golden colour.**
- **Lead poisoning impact:** It is a **neurotoxin** that affects children's learning abilities, hampers brain development and increases the risk of heart and brain diseases.
- The **average blood lead levels** in **23 states** are **above safe levels.**
- **Spice adulterants used are:** Powdered paper pulp, synthetic dyes, metanil yellow and lead chromite.
- **Efforts to tackle spice adulteration:Raids, educational campaigns,** and **stricter testing** to **tackle spice adulteration**.
    - **Bangladesh** successfully **eradicated turmeric adulteration** using **raids** and **education,** providing a potential model for India.
    - **Stakeholders,** including **FSSAI** and **public policy organizations,** emphasize **stringent testing on spice sellers** and **increasing public awareness** to address this pervasive issue threatening public health.

Health effects of Turmeric:

- Turmeric contains the element **'curcumin'** which provides health benefits.
- The reports underline that **turmeric** has **"choleretic" properties,** which means it stimulates the **secretion of bile to improve digestion**.

India's spice export:

- **India** is the **top producer of spices** globally.
- **India's spice exports** have **doubled** in the last nine years, reaching significant values.
- **India** is a **leading producer** and **exporter of turmeric** in the **world. India** produces **80% of turmeric** in the **world**.

Challenges associated:

- The **high costs** associated with conducting larger-scale studies and the need for comprehensive data to understand the extent of the issue, paving the way for effective **policy interventions.**

Patent exclusions — Madras High Court shows the way

Subject : S&T

Section: IPR

Context:

- Madras High Court's recent rulings on pharmaceutical patents clarify Section 3(e) and Section 3(i) exclusions, emphasizing evidence and contextual analysis for patent eligibility. The decisions highlight the necessity of bright-line rules for consistency in patent office decisions and suggest a legislative role in addressing gaps in pharmaceutical patent issues.

Key Highlights:

- Recent Madras High Court judgments by Justice Senthilkumar Ramamoorthy bring clarity to pharmaceutical patent exclusions in the Indian context.
- The first case, **Novozymes vs Assistant Controller of Patents, interprets Section 3(e)**, excluding compositions that are mere aggregations. The court specifies that known aggregates can still be patent-eligible if individual components meet patent criteria.
- The second case, **Hong Kong and Shanghai University vs Assistant Controller of Patents, deals with Section 3(i),** excluding inventions related to the treatment of humans or animals. The court provides insights into the types of diagnoses excluded under this provision.

Key Challenges:

- Lack of bright-line rules in the interpretation of patent exclusions, leaving room for ambiguity and varied decisions.
- Balancing the interests of pharmaceutical innovation, public health, and preventing overbroad monopolies poses a challenge for the courts.
- The need for more legislative clarity on exclusions, with suggestions for in vitro process considerations and potential compulsory licensing.

Key Terms and Phrases:

- **Section 3(e):** Exclusion related to compositions that amount to a mere aggregation of components.
- **Section 3(i):** Exclusion pertaining to inventions involving processes for the treatment of humans or animals.
- **Bright-line rules:** Clear and specific guidelines for interpreting patent exclusions, ensuring consistency in decision-making.

74% Indians could not afford healthy diet in 2021

Subject : S&T

Section: IPR

Context:

- More than 74% of Indians could not afford a healthy diet in 2021, the Food and Agriculture Organization of the United Nations said in a report.

What is the State of Food Security and Nutrition in the World (SOFI) Report?

- SOFI is an annual flagship report **jointly prepared by:** Food and Agriculture Organisation of the United Nations (**FAO**), International Fund for Agricultural Development (**IFAD**), United Nations Children's Fund (**UNICEF**), World Food Programme (**WFP**) and World Health Organisation (**WHO**).
- **Aim**: To inform on progress towards ending hunger, achieving food security and improving nutrition and to provide an in-depth analysis of key challenges for achieving this goal in the context of the SDG.

What are the key findings of the SOFI 2023 related to India?

- **Healthy diet**: India has the lowest cost of a healthy diet among BRICS nations and neighboring countries. However, a significant portion of the population can't afford it due to stagnant or decreasing incomes.
- For instance, meal costs in Mumbai increased by 65% in five years, while salaries/wages only grew by 28%-37%.
- **Healthy diet in terms of Purchasing Power Parity (PPP):** In India, a healthy diet costs 3.066 PPP dollars per person per day, the lowest among the countries considered.
- PPP stands for 'Purchasing Power Parity'. In simple terms, 1 PPP dollar in the United States should buy the same amount of goods and services as 1 PPP dollar in, say, India or Brazil.

- Share of the population that is unable to afford a healthy diet in 2021: In India, 74% were not able to afford a healthy diet, the fourth highest share among the nations considered.
- Change in the cost of a healthy diet over the years across regions: Between 2019 (before the COVID-19 pandemic) and 2021, the expense of maintaining a healthy diet increased by almost 9% in Asia — the highest across regions.
- Change in the number of people unable to afford a healthy diet over time across regions: Between 2019 and 2021, Asia and Africa saw the highest growth in the number of people who could not afford a healthy diet.
- In Asia, South Asia had the highest number of people (1.4 billion) and the highest share (72%) who could not afford a healthy diet.

What is the Food and Agriculture Organization?

About:

- FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger.
- World Food Day is celebrated every year around the world on 16th October. The day is celebrated to mark the anniversary of the founding of the FAO in 1945.
- It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the World Food Programme and the International Fund for Agricultural Development (IFAD).

Initiatives Taken:

- Globally Important Agricultural Heritage Systems (**GIAHS).**
- Monitors the **Desert Locust** situation throughout the world.
- The **Codex Alimentarius Commission** or CAC is the body responsible for all matters regarding the implementation of the Joint FAO/WHO Food Standards Programme.
- The **International Treaty on Plant Genetic Resources for Food and Agriculture** was adopted by the Thirty-First Session of the Conference of the FAO in 2001.

Flagship Publications:

- The State of World Fisheries and Aquaculture (SOFIA).
- The State of the World's Forests (SOFO).
- The State of Food Security and Nutrition in the World (SOFI).
- The State of Food and Agriculture (SOFA).
- The State of Agricultural Commodity Markets (SOCO).

Kraft process, a paper maker's craft

Subject :Science and Tech

Section: MSC

- It is a technique that accepts **wood chips** as **input** to **produce cellulose fibres,** which are then used to make **paper** and other materials used in everyday objects.
- **Paper** is **most commonly produced by the kraft process** today.
- **Process:**
  o The process is **chemical** in nature. The chips are **treated with water, sodium hydroxide,** and **sodium sulphide**– the last two forming a **highly alkaline mixture** called **white liquor** – at a relatively **high temperature.**
  o This breaks the bonds between **lignin** (an organic polymer and important constituent of cell walls), **hemicellulose** (cellulose-like fibres that are shorter), and **cellulose.**
  o The steps are followed by those to obtain the **wood pulp,** wash off and recover the reaction chemicals, bleaching, and processing.
- **Advantage:**
  o **Kraft-process paper** has **higher sulphidity** (a measure of **strength**) than that produced by other processes.
- **Drawbacks:**
  o The process is **not environmentally friendly.** It requires a **large volume of water**; the process of **removing lignin** from the wood chips also **discharges the lignin through water** along with **dissolved carbon, alcohol ions,** and **heavy metals**.

Host's last minute withdrawal leaves historic Science Congress in the lurch

Subject :Science and Tech

Section: Msc

Context:

- A month after announcing that it would host the **109th edition of the Indian Science Congress, the Jalandhar based Lovely Professional University (LPU) has backed out.**

What is the India Science Congress?
- With a history dating back to 1914, the Science Congress is a one-of-its-kind event in the country.
- It **brings together scientists and researchers not just from the premier institutions and laboratories but also science teachers and professors from colleges and universities.**
- It **offers a platform for their interaction with students and the general public on matters related to science.**
- It is a celebration of Indian science that has had an illustrious past, with the who's who of Indian science participating and organizing.
- The first session of the Indian Science Congress was held in 1914.

Organiser:
- It is organized by **Indian Science Congress Association (ISCA).**
- ISCA is an independent body functioning **with the support of the Department of Science and Technology (DST) in the central government.**

Decline of Science Congress:
- In more recent times, the event has attracted attention for all the wrong reasons:
- Lack of serious discussion, the promotion of pseudoscience, outlandish claims by random speakers, and the absence of useful outcomes.
- As a result, several top scientists have advocated the discontinuation of the event, or at least withdrawal of government support.
- For organising the Science Congress, the government provides an annual grant.
- Besides this, the government has no role to play in organising the ISC.

Kakrapar-4 nuclear reactor attains criticality

Subject :Science and Tech

Section: Nuclear technology

Context:
- The **fourth unit** of the **Kakrapar Atomic Power Project (KAPP-4)** in **Gujarat,** with **700 MWe capacity,** started a **controlled fission chain reaction** and thus became **critical**. **Kakrapar** is situated about 80 km from **Surat**.
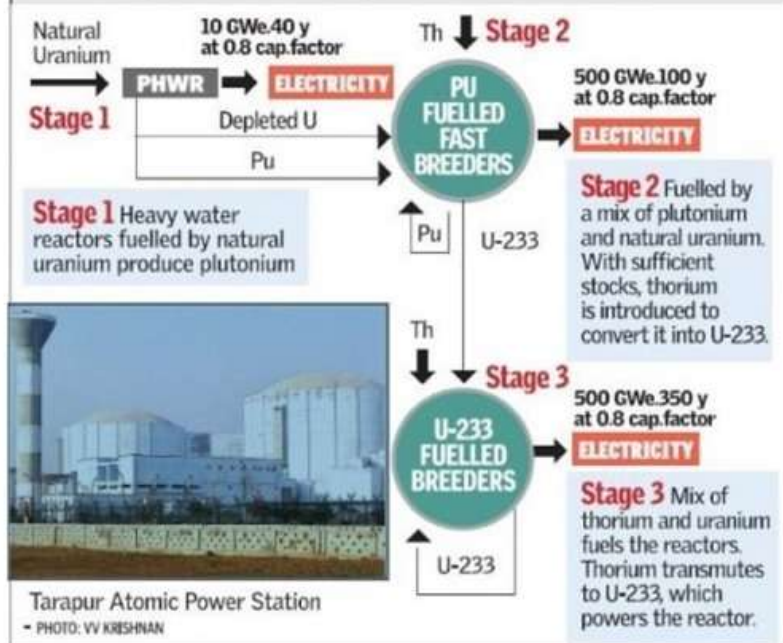
Details:
- **NPCIL,** part of **India's Department of Atomic Energy,** indigenously built **700 MWe pressurised heavy water reactors (PHWRs),** the **largest of their kind in India**.
- These reactors use **natural uranium as fuel** and **heavy water as coolant** and **moderator,** similar to other **indigenous PHWRs** operated by NPCIL.
- **Unit-3 of KAPP** started producing commercial electricity from August 30.
- The reactors met **Atomic Energy Regulatory Board conditions** and achieved **criticality,** signifying safety and functionality.
  - **Criticality** is the **normal operating condition** of a **nuclear reactor,** in which **nuclear fuel sustains a fission chain reaction.**
  - A reactor achieves **criticality** (and is said to be critical) when **each fission releases a sufficient number of neutrons to sustain an ongoing series of nuclear reactions**.
- Indian industries supplied equipment for the reactors, which boast **advanced safety features** like **steel lining** and a **passive decay heat removal system.**
- **NPCIL** currently operates **23 nuclear reactors** with **7,480 MWe capacity,** with **nine units under construction** and plans for **10** more reactors in the pre-project phase, totalling **7,000 MWe**.

India's Three-Stage Nuclear Power Programme:
- India's three-stage nuclear power programme was **formulated by Homi Bhabha in the 1950s** to secure the country's long term energy independence, through the **use of uranium and thorium reserves found in the monazite sands** of coastal regions of South India.

INDIA'S THREE-STAGE NUCLEAR PROGRAMME

Homi Bhabha envisioned India's nuclear power programme in three stages to suit the country's low uranium resource profile

Tarapur Atomic Power Station
- PHOTO: VV KRISHNAN

- **Stage 1- Pressurized heavy water reactor (PHWR):** The first stage involved using natural uranium to fuel PHWR to produce electricity and Plutonium-239 as a byproduct.
  - o Also, the byproduct plutonium-293 would be used in the second stage.
- **Stage 2- Fast breeder reactor (FBR):** The second stage involves using plutonium-239 to produce fuel, which would be used in Fast Breeder Reactors. Plutonium 239 undergoes fission to produce energy. Once a sufficient amount of plutonium-239 is built up, thorium will be used in the reactor, to produce Uranium-233. This uranium is crucial for the third stage.
- **Stage 3- Advanced Heavy Water Reactor (AHWR):** The main purpose of stage-3 is to achieve a sustainable nuclear fuel cycle.
  - o The advance nuclear system would be used a combination of Uranium-233 and Thorium.
  - o **Thorium** absorbs the neutrons, which can more efficiently produce more Plutonium in Fast Breeder Reactor for a faster growth.
- Thus, the ultimate objective of the above programme is to create capacity to use Thorium for sustainable production of nuclear energy and make India energy independent.

India and Russia ink 'key' pacts related to Kudankulam nuclear power plant

Subject: Science and Tech

Section: Nuclear Technology

Context:

- In a major boost to their time tested partnership, India and Russia signed some "very important" agreements related to the construction of the future power generating units of the Kudankulam nuclear power plant.

Kudankulam Nuclear Power Plant:

- **India's largest nuclear power plant is located in Tamil Nadu.**
- Construction commenced in March 2002 with technical assistance from Russia.
- The first power unit has been operational since February 2016, operating at a capacity of 1,000 MW.
- Full operational capacity expected by 2027, according to Russian state media.

What is the Status of Nuclear Energy in India?

- Nuclear energy is the **fifth-largest source of electricity in India, contributing about 2% of the country's total electricity generation.**
- India currently has over **22 nuclear reactors** in 7 power plants across the country, which together produce **6,780 MW of nuclear power.**

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- Of these reactors, **18 are Pressurized Heavy Water Reactors (PHWRs) and 4 are Light Water Reactors (LWRs).**
- In January 2021, the Kakrapar Atomic Power Project (KAPP-3), India's first 700 MWe unit and the biggest indigenously developed variant of the PHWR, was connected to the grid.
- The Indian government has allowed joint ventures between the **Nuclear Power Corporation of India Limited (NPCIL) and public sector undertakings (PSUs) to enhance India's nuclear program.**
- NPCIL is now in joint ventures with the National Thermal Power Corporation Limited (NTPC) and the Indian Oil Corporation Limited (IOCL).
- The government is promoting the expansion of nuclear installations to other parts of the country. For example, an upcoming nuclear power plant in Gorakhpur town in Haryana will become operational in the near future.
- India is also working on an entirely indigenous thorium-based nuclear plant, "**Bhavni,**" which will be the first of its kind using Uranium-233. The experimental thorium plant "**Kamini**" already exists in Kalpakkam.

India set to launch Xray Polarimeter Satellite, says ISRO

Subject :Science and Tech

Section: Space tech

Context:

Indian Space Research Organisation (ISRO) has announced that India is set to launch its first X-Ray Polarimeter Satellite (XPoSat), aiming to investigate the polarisation of intense X-Ray sources.

About the mission:

- The XPoSat spacecraft is designated for **observation from Low Earth Orbit**, carrying two scientific payloads.
- With these two payloads, the XpoSat mission is capable of simultaneous studies of **temporal, spectral, and polarization features** of the **bright X-Ray sources**.
- The **mission objectives** include:
  - **measurement of X-Ray polarization** in the energy band of **8-30 keV** emanated from X-Ray sources,
  - **long-term spectral and temporal studies** of **cosmic X-Ray sources** in the energy band of **8-15 keV.**
- The **mission life** is expected to be approximately **five years**.
- The payloads onboard XpoSat will observe the X-Ray sources during the spacecraft's transit **through the Earth's shadow**, i.e., during the eclipse period.
- The XpoSat will be launched by the **Polar Satellite Launch Vehicle** (PSLV), from the Satish Dhawan Space Center in Sriharikota.
- XpoSat (X-ray Polarimeter Satellite) is **India's first dedicated polarimetry mission** to study various dynamics of **bright astronomical X-ray sources** in extreme conditions.
- The spacecraft will **carry two scientific payloads** in a **low earth orbit**.
  - The **primary payloadPOLIX** (Polarimeter Instrument in X-rays) will measure the **polarimetry parameters** (degree and angle of polarization) in medium X-ray energy range photons of astronomical origin.
  - The **XSPECT** (X-ray Spectroscopy and Timing) payload will give **spectroscopic information**.

Significance of the mission:

- The **emission mechanism** from various astronomical sources such as blackhole, neutron stars, active galactic nuclei, pulsar wind nebulae etc. **originates** from **complex physical processes** and are challenging to understand.
- While the **spectroscopic and timing information** by various space based observatories provide a wealth of information, the **exact nature** of the emission from such sources still poses **deeper challenges to astronomers**.
- The polarimetry measurements **add two more dimension** to our understanding:
  - the **degree of polarization** and
  - the **angle of polarization**
- Thus is an **excellent diagnostic tool** to understand the **emission processes** from astronomical sources.

Six exoplanets found orbiting a nearby bright star

Subject: Science and Tech

Section: Space technology

Context:

- Six exoplanets orbiting around a nearby bright star (HD 110067) in the Coma Berenices constellation has been discovered.

About HD110067

- **HD 110067 is a star with 6 known sub-Neptune exoplanets.**

- The star is located in the constellation Coma Berenices, which is near Virgo in the northern sky. It is about 100 light-years away from Earth.

- The 6 planets in HD 110067 orbit the star in a rhythmic pattern. The planets form a "resonant chain" in successive pairs of 3:2, 3:2, 3:2, 4:3, and 4:3.

- **NASA's Transiting Exoplanet Survey Satellite (TESS) detected the star's brightness dipping in 2020.** This indicated that planets were passing in front of the star.

What are Exoplanets?

- **Exoplanets are planets that orbit other stars and are beyond our solar system.** The first confirmation of detection of exoplanets occurred in 1992.

- **According to NASA, to date, more than 5,000 exoplanets** have been discovered.

- **Scientists believe that there are more planets than stars as each star have at least one planet orbiting it.**

- Exoplanets come in a host of different sizes. They can be gas giants bigger than Jupiter or as small and rocky as Earth. They are also known to have different kinds of temperatures — boiling hot to freezing cold.

Discovery:

- **Exoplanets are very hard to see directly with telescopes.** They are hidden by the bright glare of the stars they orbit.

- So, astronomers use other ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit.

- Scientists rely on indirect methods, such as the transit method, which is measuring the dimming of a star that happens to have a planet pass in front of it.

- Other detection methods include **gravitational microlensing**- Light from a distant star is bent and focused by gravity as a planet passes between the star and Earth. The same method could hypothetically use our Sun to see exoplanets.

Significance:

- Studying exoplanets **not only broadens our understanding of other solar systems but also helps us piece together information about our own planetary system and origin.**

- However, the most compelling reason to learn about them is to find the answer to one of the most profound and thought-provoking questions of humankind — are we alone in this universe?

- Another important element of the study is finding out the distance between an exoplanet and its host star.

- This helps scientists determine if a discovered world is habitable or not. If an exoplanet is too close to the star, it might be too hot to sustain liquid water. If it's too far, it might only have frozen water.

- When a planet is at a distance that enables it to have liquid water, it is said to be in the "**Goldilocks zone" or the habitable zone.**

A massive exoplanet closely orbits a very low-mass star

- The discovery of a Neptune-mass exoplanet **orbiting the very lowmass M dwarf star LHS 3154 challenges theoretical models of planet formation.**

- The planet, which has a mass at least 13 times that of Earth, tightly orbits a star nine times less massive than the Sun, demonstrating that small stars can sometimes host larger planets than was previously thought.

- Although massive planet candidates have been detected around a few very low mass dwarfs.

NASA finds energy source and molecule at Saturn's moon Enceladus

Subject :Science and Tech

Section: Space technology

Context:

- NASA has found evidence of a **key ingredient for life (hydrogen cyanide)** and a **supercharged energy source to fuel it**, **at Saturn's moon Enceladus.**

- Researchers also uncovered evidence that **an ocean,** which is **hiding below the moon's icy outer shell** and **supplies the plume,** holds a **powerful source of chemical energy.**

- The combination of **carbon dioxide, methane,** and **hydrogen** in the **plume** was suggestive of **methanogenesis,** a **metabolic process** that produces **methane**.

Significance of the finding:

- It indicates there may be more chemical energy inside Enceladus than previously thought.
- It provides evidence that the **moon is a host** to important **molecules** for both **creating the building blocks of life** and **sustaining that life through metabolic reactions.**
- Enceladus seem to meet the **basic requirements for habitability.**

Enceladus:
- It is the **sixth-largest moon** of Saturn (**19th largest** in the **Solar System**).
- It is about **a tenth of that of Saturn's largest moon, Titan**.
- It is mostly covered by **fresh, clean ice,** making it **one of the most reflective bodies of the Solar System.**
- Consequently, its surface temperature at noon reaches **only −198 °C** (75.1 K; −324.4 °F), far colder than a light-absorbing body would be. Despite its small size, Enceladus has a wide range of surface features, ranging from old, heavily cratered regions to young, tectonically deformed terrain.
- The giant plume of ice grains and water vapour spewing from Enceladus is rich in organic compounds.

Cassini mission:
- **Cassini–Huygens,** commonly called **Cassini,** was a **space-research mission** by **NASA,** the **European Space Agency (ESA),** and the **Italian Space Agency (ASI)** to send a space probe to **study the planet Saturn and its system,** including its **rings** and **natural satellites.**
- The Flagship-class robotic spacecraft comprised both **NASA's Cassini space probe** and **ESA's Huygens lander,** which landed on **Saturn's largest moon, Titan**.
- Cassini was the **fourth space probe** to visit **Saturn** and the **first to enter its orbit,** where it stayed from **2004** to **2017.**

Can Amazon strategy help Blue Origin top SpaceX?

Subject :Science and Tech

Section :Space Tech

Context:
- An Amazon veteran tapped by Jeff Bezos to lead Blue Origin aims to pull from the ecommerce giant's speedy manufacturing playbook to give the space company's rocket launch and moon lander business a badly needed boost against Elon Musk's SpaceX.

Space Tourism
- Space tourism is about humans travelling into space for recreational purposes. **It seeks to give laypeople the ability to go to space for recreational, leisure or business purposes.**
- It will make space more accessible to those individuals who are not astronauts and want to go to space for non-scientific purposes.
- **Three private companies – Blue Origin, Virgin Galactic and SpaceX are now spearheading the human endeavour to explore space.**
- Their progress will decide whether space travel will one day become as accessible as air travel.

Previous Space Tourists:
- The **first space tourist was US millionaire Dennis Tito,** who in 2001 paid USD 20 million to hitch a ride on a Russian Soyuz spacecraft to visit the international space station and spent eight days there.
- After Tito, there were only seven other private citizens who travelled to space until 2009 when the Russian space agency wound up the business of selling tickets to private citizens.
- **Space Adventures is the only private company to send paying customers to orbital space so far.** In 2004, test pilot Mike Melville became the first private astronaut to fly beyond the Karman Line.

Significance:
- **Huge Market:** There is an estimated market of 2.4 million people for such flights.
- **Base for Testing:** It can provide a base for testing supersonic travel between different destinations on earth, significantly compressing travel time. Besides, it heralds the entry of the private sector into this arena.

Will Smart Lander for Investigating Moon (SLIM) revolutionize lunar landing

Subject : Science and Tech

Section: Space tech

Context: On December 25, Japan's Smart Lander for Investigating Moon (SLIM) spacecraft entered into orbit around the moon and will land on January 19.

More on news:

- Japan will become the fifth country to soft-land a robotic craft on the natural satellite
- SLIM's success or failure will also affect the upcoming Chandrayaan 4 mission.
- India succeeded with its Chandrayaan 3 mission in August 2023 to demonstrate end-to-end capability in safe landing and roving on the lunar surface.

About SLIM:

- **Spacecraft:** SLIM is a spacecraft built and launched by the Japan Aerospace Exploration Agency (JAXA) on September 7, 2023
- **Low Weight:** It weighed only 590 kg at launch(one-seventh of Chandrayaan 3 3,900 kg at launch).
- **Counterparts:** SLIM was launched with XRISM which is a next-generation X-ray space telescope which is onboarded an H-2A rocket.
- **Other global missions:** JAXA launched SLIM only two weeks after the surface component of India's Chandrayaan 3 mission succeeded and Russia's Luna 25 spacecraft failed.

SLIM and its path to moon:

- **4 months:** SLIM took four months because it followed a longer but more fuel-thrifty route based on weak-stability boundary theory.
- **Kinetic energy:** Once it is launched into an orbit around the earth, SLIM will swung around the planet multiple times in order to build up its kinetic energy with each swing.
- **Deflection in moon's direction:** On getting nearer to the moon, SLIM instead of slowing down and being captured by the moon's gravity, it allowed itself to be deflected in the moon's direction. This deflection is the result of the combined forces exerted by the earth and the moon.
- **About Hiten:** Physicists worked it out in the late 1980s for another JAXA mission, called 'Hiten'.

SLIM and its objective:

- **Moon sniper:** SLIM's standout feature is its reputation as the "moon sniper" as it will try to land within 100 meters of its chosen landing site which is an unusually tight limit given the history of moon-landing missions.
- For example, the 'Vikram' lander of Chandrayaan 3 landed at a spot 350 meters away from a predetermined one.
- **Soft land:** SLIM will attempt to soft-land with the smallest ever area tolerance on the moon. The chosen site is near the Shioli Crater, at 13.3º S and 25.2º E., SLIM will use data from JAXA's SELENE orbiter, which ended in 2009.
- **Lower mass:** Its lower mass (only 120 kg excluding fuel) will help in this endeavor by rendering it more maneuverable while its small size will be a test of its economical design.
- **Two rovers:** SLIM will deploy two small rovers called Lunar Excursion Vehicle (LEV) 1 and 2.
- LEV-1, LEV-2, and SLIM will together study the lunar surface near the landing point, collect temperature and radiation readings, and attempt to study the moon's mantle.

How will SLIM affect Chandrayaan 4?

The terrain near the moon's poles is rocky, pocked with several craters, and full of steep slopes. Axiomatically, if there is a suitable landing spot for a (relatively) large landing module or rover, its downrange and cross-range limits will be lower than they were for Chandrayaan 3. The craft will have to land as close to the site as possible, if not at the site itself