Current Affairs (Consolidation)

March 2023 (Part – I)

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Polity and Governance

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6 Digit Alphanumeric HUID

Why in News?

Bureau of India Standards (BIS) has prohibited the sale of hallmarked gold jewelry or gold artefacts without 6-digit alphanumeric **Hallmark Unique Identification Number (HUID)** after 31st March 2023. However, Hallmarked jewelry lying with consumers as per old schemes shall remain valid.

➢ Earlier, the old hallmarked jewelry with 4 marks without HUID was also permitted to be sold by the jewelers along with the 6-digit HUID mark.

What is Hallmarking?

➢ **About:**
  - ○ Hallmarking is the **accurate determination and official recording of the proportionate content of precious metal** in precious metal articles.
  - ○ Hallmarking scheme for Jewelry was started by **BIS** in the year 2000. In India, at present two precious metals namely **gold and silver** have been brought **under the purview of Hallmarking.**
  - ○ However, **Mandatory Hallmarking** has been successfully implemented in 288 districts of the country **with effect from 23 June 2021** by **Hallmarking of Gold Jewellery and Gold Artefacts Order, 2022.**
  - ○ After introduction of 6-digit HUID in 2021, **hallmark consisted of 3 marks viz, BIS logo, purity of the article and six-digit alphanumeric HUID**. Each

hallmarked article has unique HUID number which is traceable.

➢ **Working Mechanism:**
  - ○ A consumer can check and authenticate hallmarked gold jewelry items with HUID number using '**verify HUID**' in **BIS CARE app.**
  - ○ It provides **information of the jeweler** who got the article hallmarked, **their registration number, purity of the article, type of article as well as details of hallmarking centre** which test and hallmark the article.
    - Using this information, a **common consumer can verify the article** being purchased by matching it with article type as well as it's purity.

What is the Significance of Hallmark?

➢ As per **BIS Rules, 2018,** in case Hallmarked jewelry bought by the consumer is found to be of lesser purity than that marked on jewelry, then the **buyer/customer shall be entitled for compensation** which shall be

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two times the amount of difference calculated on the basis of shortage of purity for the weight of such article sold and the testing charges.

➢ It is a **tool to safeguard and protect the consumers** and enhance their confidence in purchase of hallmarked gold jewelry with traceability and assurance of quality.

SWAYATT Initiative

Why in News?

Recently, a function was held to **commemorate the success of "SWAYATT",** an initiative to **promote 'Start-ups, Women and Youth Advantage Through e-Transactions'(SWAYATT)** on **Government E-Marketplace** (GeM) in New Delhi.

What is SWAYATT Initiative?

➢ **About:**
  ❍ The initiative was **launched in February 2019 under Ministry of Commerce and Industry.**
  ❍ It **brings together the key stakeholders** within the Indian entrepreneurial ecosystem to Government e-Marketplace the national procurement portal.

➢ **Progress So Far:**
  ❍ **Increased Business Opportunities:** More than 8.5 lakh **Micro and Small Enterprises (MSEs)** have been registered on GeM portal who have been able to get business of over Rs. 1.87 lakh crore spread across 68 lakh+ orders.
  ❍ **Empowerment of Women:** More than 1.45 lakh women MSEs have fulfilled 7.32 lakh orders worth 15,922 Crore.
  ❍ **Empowering SC/STs:** Approximately 43000 SC/ST MSEs have delivered 1.35 lakh+ orders worth 2,592 Crore on the GeM portal so far.
  ❍ **Market to Farmers:** 105 **Farmer Producer Organisations** (FPOs) can now sell more than 200 Agri products directly to the Government through GeM.

What is Government e-Marketplace?
➢ GeM is an **Online Market platform was setup in 2016** to facilitate procurement of goods and services by the government ministries, departments, public sector undertakings (PSU) etc.

➢ It has been envisaged as **National Procurement Portal of India.**

➢ It has been developed by **Directorate General of Supplies and Disposals (Ministry of Commerce and Industry)** with technical support of **National e-governance Division (Ministry of Electronic and Information Technology).**

➢ It functions under **Directorate General of Supplies and Disposals (DGS&D), Ministry of Commerce and Industry.**

➢ GeM is a completely **paperless, cashless and system driven e-market place** that enables procurement of common use goods and services with minimal human interface.

British' Online Safety Bill and End-to End Encryption

Why in News?

Recently, WhatsApp's head said that WhatsApp would not comply with the country's proposed **Online Safety Bill (OSB)** which will in effect outlaw **End-to-End (E2E) encryption.**

What is the British' Online Safety Bill?

➢ The OSB is a proposed British legislation **aimed at improving online safety by placing "Duty of Care" obligations** on online platforms.

➢ Clause 110 of the OSB empowers the regulator to **issue notices to most internet service providers**, including private messaging apps, to identify and take down **Terrorism** and **Child Sex Exploitation and Abuse (CSEA) content.**

➢ The OSB does not mandate removal of E2E encryption, but it would require messaging apps to scan all messages to flag such content, which would **de facto mean breaking encryption.**
  ❍ Privacy and free speech advocates view the OSB as a disproportionate step that **allows for bulk interception and surveillance.**

Is there any Similar Law in India?

➢ Through the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules,**

2021, the Indian government made it mandatory for messaging platforms with more than five million users in India to **"enable the identification of the first originator"** of a message, or what is commonly called traceability.

➤ This is not the same as asking for scanning and flagging of all encrypted content; it is about getting to the first person who sent a message that may have been forwarded multiple times.

➤ In India, WhatsApp did not threaten to leave the market. It instead sued the Indian government **over the traceability requirement.**

○ This is mainly because India, with 487.5 million WhatsApp users, is home to 22% of the platform's 2.24 billion monthly active users. WhatsApp's penetration rate in India is over 97% while in the U.K., it is at about 75%.

What is End-to-End Encryption?

➤ E2E encryption is a **secure communication mechanism** that allows data to be encrypted on the sender's device, transmitted securely over the internet or any communication channel, and then **decrypted only by the intended recipient**.

➤ The message can only be decrypted by the intended recipient using a **unique decryption key** that is **only accessible by the recipient's device**.

○ This means that no one else, **not even the service provider, can access the content of the message or data** being transmitted.

➤ E2E encryption is used to **ensure privacy and security in various communication platforms**, such as messaging apps, email services, and file-sharing services, as it provides a high level of protection against unauthorized access, interception, or eavesdropping by hackers, governments, or service providers.

What is the other Legal Framework for Encryption in India?

➤ **Minimum Encryption Standards:**

○ India does not have a specific encryption law. Although, a number of industry rules, such as those governing the banking, finance, and telecommunications industries, include requirements for minimum **encryption standards to be utilised in protecting transactions.**

➤ **Prohibition on Encryption Technologies:**

○ Users are not authorised to employ encryption standards larger than 40 bits using symmetric key algorithms or similar methods without prior clearance and deposition of decryption keys, **according to the licensing agreement between the ISP (Internet Service Provider) and the DoT (Department of Telecommunications).**

○ There are a variety of additional rules and recommendations that use a greater encryption level than 40 bits for particular sectors.

➤ **Information Technology Act of 2000:**

○ It regulates electronic and wireless modes of communication, is devoid of any substantive provision or policy on encryption.

Future-ready Transmission System

Why in News?

Recently, Ministry of Power has accepted the Recommendations of the Task Force Report to adopt the **Future-Ready Transmission System** in India.

➤ The task force was set up by the Ministry of Power in September 2021 under the chairmanship of POWERGRID to suggest ways for modernization of the **Transmission Sector** and making it smart & future ready.

What are the Key Recommendations?

➤ The task force has recommended **a bouquet of technological and digital solutions** which have been clubbed under,

○ Categories of modernization of existing transmission system,

○ Use of advanced technology in construction & supervision, operations & management,

○ Smart & future-ready transmission system,

○ Up-skilling of the workforce.

➤ The Task Force has recommended **Centralized Remote Monitoring, Operation of Substations including SCADA** (supervisory control and data acquisition), Flexible AC Transmission devices (FACTs), **Cyber Security, Drones & Robots** in construction/inspection of transmission assets etc.

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➢ Also recommended **benchmarks for transmission network availability and voltage control** based on performance of global transmission utilities.

What is the Need for a Future-ready Transmission System?

➢ **Meeting Growing Energy Demand:**
   ○ With India's population growing and the economy expanding, there is an increasing demand for energy.
   ○ A future-ready transmission **system can help meet this demand by enabling the transmission of power from new power generation sources** to the distribution network.

➢ **Integration of Renewable Energy:**
   ○ India has set an ambitious target of achieving 500 GW of **Renewable Energy** capacity by 2030.
   ○ A future-ready **transmission system can help integrate this large-scale renewable energy** into the grid by ensuring efficient transmission and distribution of power.

➢ **Improved Grid Stability:**
   ○ A future-ready transmission system can help improve grid stability by enabling the integration of advanced technologies such as **smart grids,** energy storage systems, and demand response systems.

➢ **Increased Efficiency:**
   ○ A future-ready transmission system can **help reduce transmission losses**, which **currently account for around 22% of the total power generated in India**. By reducing transmission losses, the country can save a significant amount of energy and reduce greenhouse gas emissions.

➢ **Enhancing Grid Resilience:**
   ○ A future-ready transmission system can help enhance grid resilience by providing backup power during emergencies, ensuring the availability of power during **natural disasters, and preventing blackouts.**

➢ **Meeting Sustainable Goals:**
   ○ A modern transmission grid is vital to achieve the government's vision **to provide 24x7 reliable and affordable power to the people** and also meet the sustainability goals.
   ○ Modern transmission systems can play a significant role in meeting sustainable goals by **enabling the integration of renewable energy, reducing greenhouse gas emissions**, and improving energy efficiency.

What are the Challenges to the Transmission System in India?

➢ **Fossil fuel derived energy:**
   ○ Thermal power based on fossil fuels such as coal, natural gas and diesel accounts **for 80% of the country's generation.**
   ○ Moreover, the majority of plants in India **are old and inefficient.**

➢ **Higher Cost of Fuel:**
   ○ Coal extraction from state-run Coal India, has stagnated due to **delayed environmental clearances, land acquisition** troubles and little investment in advanced technologies.
   ○ Many power companies have to **look for coal mines overseas and source more expensive imports** (despite having abundant coal reserves).

➢ **Discoms Facing Losses:**
   ○ Tariffs haven't risen enough for years to cover costs for subsidies in the agriculture sector. Also, high aggregate technical and commercial (AT&C) losses, has forced electricity distributors (discoms) into losses as high as 40% in some states, while the country-wide average is 27%.

What is the Potential of the Transmission Sector?

➢ India is the **third-largest producer and consumer of electricity worldwide**, with an installed power capacity of 408.71 GW as of 31st October 2022.
   ○ As of October 31, 2022, **India's installed renewable energy capacity (including hydro) stood at 165.94 GW**, representing 40.6% of the overall installed power capacity.

➢ The Government of India is preparing a 'rent a roof' policy for supporting its target of generating 40 GW of power through solar rooftop projects by 2022. It also plans to set up 21 new **Nuclear Power Reactors** with a total installed capacity of 15,700 MW by 2031.

➢ The **Central Electricity Authority (CEA)** estimates India's **power requirement to grow to reach 817 GW by 2030.** Also, by 2029-30, CEA estimates that the share of renewable energy generation would increase from 18% to 44%, while that of thermal energy is expected to reduce from 78% to 52%.

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30th Anniversary of the 73rd and 74th Amendments

Why in News? '

The year 2023 marks the **30th anniversary** of the **73rd and 74th Amendment** to the Indian Constitution. But still India's local government requires many **technical, administrative and financial fixes.**

What are the 73rd and 74th Constitutional Amendments?

➢ **73rd Constitutional Amendment Act:**
  ○ **Panchayati Raj Institution** was constitutionalized through the **73rd Constitutional Amendment Act, 1992.**
  ○ This act has added a new **Part-IX to the Constitution of India** and consists of provisions from **Articles 243 to 243 O.**
  ○ In addition, the act has also added a new **11th Schedule** to the Constitution and contains 29 functional items of the panchayats.

➢ **74th Constitutional Amendment Act:**
  ○ **Urban local governments** were constitutionalized through the **74th Amendment Act** during the regime of **P.V. Narsimha Rao's government** in 1992. It came into force on 1st June 1993.
  ○ It added **Part IX -A** and consists of provisions from **Articles 243-P to 243-ZG.**
  ○ In addition, the act also added **the 12th Schedule to the Constitution.** It contains **18 functional items of Municipalities.**

What is the Status of Democratic Decentralisation in India?

➢ **Positive Aspects:**
  ○ **Empowerment of Local Communities:** Democratic decentralisation has given more power to local communities to participate in **decision-making** processes and to implement **development projects** according to their specific needs and priorities.
    ● This has led to **greater participation of citizens in governance** and **decision-making processes.**
  ○ **Accountability and Transparency:** Decentralisation has also led to greater accountability and transparency in governance.
    ● Local governments are more **directly accountable to citizens**, and decision-making processes are more transparent and open to public scrutiny.
  ○ **Promotion of Diversity and Inclusivity**: Democratic decentralisation has allowed for **greater representation of marginalised communities** in decision-making processes.
    ● This has led to more **inclusive policies** that address the needs and interests of all citizens, regardless of their social, economic, or cultural background.

➢ **Challenges Related to Decentralisation in India:**
  ○ **Uneven Distribution of Power and Resources:** Decentralisation has been implemented **unevenly across different states and regions of India**, leading to **disparities in the distribution of power and resources.**
    ● Some states and regions have been more successful in implementing decentralisation than others, which has **led to uneven development outcomes.**
  ○ **Ceremonial Status to Mayor:** The **2nd Administrative Reform Commission** noted the Mayor in the Urban Local Government in most states enjoys primarily a ceremonial status.
    ● In most cases, the **Municipal Commissioner,** appointed by the State Government has all the powers and the elected Mayor ends up performing the role of the subordinate.
  ○ **Infrastructural Loopholes:** Many **Gram Panchayats (GPs)** lack a building of their own and share spaces with **schools, anganwadi, and other entities.**
    ● While some have their own building, they lack basic facilities such as **toilets, drinking water, and electricity.**
    ● Although **Panchayats have internet connections,** they are not always functional. Panchayat officials have to visit **Block Development offices** for any data entry purposes, which delays the work.

ESG and India

Why in News?

People across the world are embracing the idea that business should be measured on the **Environment, Social and Governance (ESG)** metric, however ESG laws and

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Regulations are still at a nascent stage in India, and much further to go in this direction.

What is ESG?

- ➤ **About:**
  - ❍ ESG goals are a set of standards for a company's operations that force companies to follow better **governance, ethical practices, environment-friendly measures and social responsibility.**
    - ● **Environmental** criteria consider how **a company performs as a steward** of nature.
    - ● **Social criteria** examine how it manages **relationships with employees**, suppliers, customers, and the communities where it operates.
    - ● **Governance** deals with a **company's leadership, executive pay, audits**, internal controls, and shareholder rights.
  - ❍ It focuses on non-financial factors as a metric for guiding investment decisions wherein increased financial returns is **no longer the sole objective of investors.**
  - ❍ Ever since the introduction of the **United Nations Principles for Responsible Investing (UNPRI)** in 2006, the **ESG framework has been recognised as an inextricable link** of modern-day businesses.
- ➤ **Differing from CSR:**
  - ❍ India has a robust **Corporate Social Responsibility (CSR)** policy that mandates that corporations 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.**
    - ● The amendments require companies in any given financial year to spend at **least 2% of their net profit** over the preceding three years on **CSR activities.**
  - ❍ Whereas ESG regulations **differ in process and impact.**

What is the Need for ESG in India?

- ➤ India faces significant environmental challenges, including air and water pollution, **deforestation**, and **climate change,** also there are significant social challenges such as **poverty, inequality**, discrimination,

and human rights abuses, making the importance of investing in companies t**hat are committed to addressing these issues** and promoting **social justice.**
- ➤ India has **a complex regulatory and legal environment,** and companies operating in India may face challenges related to corruption, regulatory compliance, and corporate governance. Therefore, there is an increasing need for recognizing the companies with **strong governance practices to mitigate these risks.**

What are the Challenges related to ESG Compliance in India?

- ➤ **Limited Awareness:** Many companies in India may not be fully aware of the **importance of ESG factors** or may not have the resources to integrate ESG considerations into their business practices.
- ➤ **Inadequate Data:** In India, there may be limited publicly available data on ESG factors for companies, making it difficult for investors to evaluate ESG performance and make informed investment decisions.
- ➤ **Weak Regulatory Environment:** India's regulatory environment **may not be fully developed or enforced to ensure ESG** compliance by companies. This may lead to a lack of accountability and transparency in corporate practices.
- ➤ **Cultural Factors:** India has a **diverse cultural landscape, and some traditional business practices** may not align with ESG principles. Companies may need to navigate these cultural factors to implement ESG policies effectively.
- ➤ **Limited ESG-focused Investment Options:** Investors may have limited investment options that focus specifically on ESG factors in India, making it difficult to fully integrate ESG considerations into investment decision-making.

What Initiatives have been taken to Ensure ESG Compliance?

- ➤ One of the initial milestones towards identifying ESG disclosure requirements for companies was the release of the National Voluntary Guidelines on Social, Environmental and **Economic Responsibilities of Business (NVGs) in 2011 by the Ministry of Corporate Affairs (MCA).**
- ➤ In 2012, the SEBI formulated the **Business Responsibility Reports (BRR)** which mandated top 100 listed entities (which was extended to top 500

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listed entities in 2015) by market capitalization to file BRR as part of their annual report.

➢ In 2021, SEBI replaced the existing BRR reporting requirement with a more comprehensive integrated mechanism, the **Business Responsibility and Sustainability Report (BRSR).**

  ○ It will be mandatorily applicable to the top 1,000 listed entities (by market capitalization) from FY 2022-23 onwards.

➢ The BRSR seeks disclosures from listed entities on their performance against the nine principles of the 'National Guidelines on Responsible Business Conduct' (NGBRCs).

Digital India Act, 2023

Why in News?

The Ministry of Electronics and Information Technology will soon come up with the **Digital India Act, 2023** which will replace the **Information Technology Act (IT Act) of 2000**.

➢ The Indian parliament plans to implement the Digital India Act alongside the **Digital Personal Data Protection Bill, 2022**, proposed in November 2022, where the two legislations will work in tandem with each other.

What is the Need for a New Act?

➢ Since the IT Act of 2000 was enacted, there have been many revisions and amendments (IT Act Amendment of 2008, IT Rules 2011) in attempts to define the **digital space in which it regulates while trying to put more emphasis on the data handling** policies.

➢ However, because the IT Act was originally designed only to protect e-commerce transactions and define cybercrime offenses, it **did not deal with the nuances of the current cybersecurity landscape** adequately nor did it address data privacy rights.

➢ Without a complete replacement of the governing digital laws, the **IT Act would fail to keep up with the growing sophistication** and rate of cyber-attacks.

➢ The new Digital India Act envisages to act as **catalysts for Indian economy by enabling more innovatio**n, more startups, and at the same time protecting the citizens of India in terms of safety, trust, and accountability.

What are the Likely Provisions under Digital India Act 2023?

➢ **Freedom of Expression:**

  ○ Social media platforms' own moderation policies may now be reduced to constitutional protections for freedom of expression and Fundamental speech rights.

    ● An October 2022 amendment to the IT Rules, 2021 says that **platforms must respect users' free speech rights**.

  ○ Three Grievance Appellate Committees have now been established to take up content complaints by social media users.

  ○ These are now **likely to be subsumed into the Digital India Ac**t.

➢ **Online Safety:**

  ○ The Act will cover **Artificial Intelligence (AI)**, **Deepfakes**, cybercrime, competition issues among internet platforms, and data protection.

  ○ The government put out a draft Digital Personal Data Protection Bill in 2022, which would be one of the four prongs of the Digital India Act, with the National Data Governance Policy and amendments to the Indian Penal Code being others, **along with rules formulated under the Digital India Act.**

➢ **New Adjudicatory Mechanism:**

  ○ A new "Adjudicatory Mechanism" for criminal and civil offenses committed online would come into place.

➢ **Safe Harbour:**

  ○ The government is reconsidering a key aspect of cyberspace — 'safe harbour', which is the principle that **allows social media platforms to avoid liability for posts made by users.**

  ○ The term has been reined in recent years by regulations like the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, which require platforms to take down posts when ordered to do so by the government, or when required by law.

What is the Digital Personal Data Protection Bill?

➢ The Bill will apply to the processing of digital personal data within India where such data is collected online, or collected offline and is digitised. It will **also apply**

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to such processing outside India, if it is for offering goods or services or profiling individuals in India.

➤ Personal data m**ay be processed only for a lawful purpose for which an individual has given consent.** Consent may be deemed in certain cases.

➤ Data fiduciaries will be **obligated to maintain the accuracy of data**, keep data secure, and delete data once its purpose has been met.

 ❍ "Data Fiduciary" is defined as any person who alone or in conjunction with other persons **determines the purpose and means of processing** of personal data.

➤ The Bill grants **certain rights to individuals including the right to obtain information**, seek correction and erasure, and grievance redressal.

➤ The central government **may exempt government agencies from the application of provisions of the Bill** in the interest of specified grounds such as security of the state, public order, and prevention of offences.

➤ The central government will establish the **Data Protection Board of India to adjudicate non-compliance** with the provisions of the Bill.

What Data Protection Laws are there in other Nations?

➤ **European Union Model:**

 ❍ The General Data Protection Regulation focuses on a comprehensive data protection law for processing of personal data.

 ❍ In the EU, **the right to privacy is enshrined as a fundamental right** that seeks to protect an individual's dignity and her right over the data she generates.

➤ **US Model:**

 ❍ There is **no comprehensive set of privacy rights** or principles in the US that, like the EU's GDPR, addresses the use, collection, and disclosure of data.

 ❍ Instead, **there is limited sector-specific regulation.** The approach towards data protection is different for the public and private sectors.

  ● The activities **and powers of the government vis-a-vis personal information are well-defined** and addressed by broad legislation such as the Privacy Act, the Electronic Communications Privacy Act, etc.

  ● For the private sector, there are some sector-specific norms.

➤ **China Model:**

 ❍ New Chinese laws on **data privacy and security issued over the last 12 months include the Personal Information Protection Law (PIPL),** which came into effect in November 2021.

  ● It gives Chinese data principals new rights as it seeks to prevent the misuse of personal data.

 ❍ The **Data Security Law (DSL), which came into force in September 2021, requires business data** to be categorized by levels of importance, and puts new restrictions on cross-border transfers.

Court Martial

Why in News?

An Army court has recommended **life imprisonment for a Captain involved in the staged killings** of three men at Amshipora in Jammu and Kashmir's Shopian district in 2020. The sentence will be final after it is confirmed by the Northern Army Commander.

➤ The Captain was court-martialled after a **Court of Inquiry (CoI)** and subsequent summary of evidence found that troops under his command had **exceeded their powers** under the **Armed Forces (Special Powers) Act.**

What is the Process of Court Martial?

➤ When the Army wants an allegation against its personnel investigated, it first sets up a CoI for the purpose.

 ❍ This stage is **similar to the registering of a First Information Report (FIR)** by police.

➤ A Court of Inquiry investigates **the complaint but cannot award a punishment.** The CoI records the statements of witnesses, which is comparable to the examination of witnesses by a police officer under **Section 161 of the Code of Criminal Procedure (CrPC).**

➤ Based on the findings of the CoI, a **tentative charge sheet is drawn up by the commanding officer** of the accused officer.

 ❍ After this, the **hearing of charges takes place** (just like the initial summoning of an accused by the magistrate in a case involving civilians). The **summary of evidence is then recorded.**

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➢ Once this process has been completed, a **General Court Martial (GCM)** is ordered; similar to the conduct of a trial by a judicial court for civilian matters.

What is the Legal Recourse Available?

➢ Under section 164 of the **Army Act 1950**, the accused **can file a pre-confirmation petition as well as one post-confirmation.**

  ○ A **pre-confirmation petition will go to the Army Commander**, who may look into its merits.

  ○ Whereas a **post-confirmation petition must be filed with the government** since the officer is cashiered — his ranks are removed, and he is dismissed from service — after confirmation of the sentence by the Army commander.

➢ After these options have been exhausted, the **accused can approach the Armed Forces Tribunal,** which can suspend the sentence.

  ○ For instance, in 2017, the Tribunal **suspended the life sentences awarded to five Army personnel**, including two officers, in the Machil fake encounter case of 2010.

National Assessment and Accreditation Council (NAAC)

Why in News?

Recently, the **National Assessment and Accreditation Council (NAAC)** has been facing allegations of **irregularities in its functioning.**

What is NAAC?

➢ **About:**

  ○ Established in 1994, it is an autonomous body under the **University Grants Commission (UGC)** responsible for assessing the quality of **higher educational institutions** in India.

➢ **Functions of NAAC:**

  ○ Through a multi-layered assessment process, it **awards grades ranging from A++ to C** based on parameters such as **curriculum, faculty, infrastructure, research and financial well-being.**

➢ **Allegations:**

  ○ The former chairperson of NAAC's executive committee resigned after alleging that **malpractices were leading to questionable grades** being awarded to some institutions.

  ○ An inquiry commissioned found **irregularities in the IT system and allocation of assessors.**

    ● The inquiry also highlighted that nearly **70% of experts from the pool of around 4,000 assessors** have not **received any opportunity to make site visits.**

  ○ As of **January 2023**, out of the 1,113 universities and 43,796 colleges in the **All India Survey on Higher Education (AISHE), 2020-2021,** only 418 universities and 9,062 colleges were NAAC-accredited.

What are the Current Accreditation Criteria in India?

➢ **Criteria:**

  ○ Currently, only institutes that are at least **6 years old or from where at least two batches of students have graduated** can apply for **accreditation**, which is valid for 5 years.

➢ **Accreditation Mandate:**

  ○ Accreditation by NAAC is **voluntary**, though many circulars have been issued by the UGC urging institutions to undergo assessment.

➢ **Efforts to Expedite Accreditation:**

  ○ The **UGC** launched a scheme named **'Paramarsh' in 2019** to mentor institutes aspiring to get accredited.

  ○ NAAC explored the possibility of issuing **Provisional Accreditation for Colleges (PAC)** to **one-year-old institutes.**

  ○ The **National Education Policy (2020)** has set an ambitious target of getting all higher educational institutes to obtain the **highest level of accreditation** over the next 15 years.

What are the Other Challenges in India's Higher Education System?

➢ **Limited Access:** Despite efforts to **increase access to higher education**, many students from **marginalised communities** still face barriers to entry, including financial constraints and **lack of educational opportunities.**

  ○ Especially, the number of students in the **Persons with Disabilities** category **dropped in 2020-21 to 79,035 from 92,831 in 2019-20.**

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- ➢ **Gender Inequality:** Women continue to face **significant barriers to accessing higher education in India**, including social and cultural biases and a lack of support systems.
  - o According to **All India Survey on Higher Education (AISHE), 2020-2021**, the female enrolment in higher education programmes was **49% of total enrolments in 2020-21.**
- ➢ **Employability Issues:** Despite having a large number of graduates, **many students in India struggle to find employment** due to a lack of practical skills and industry-relevant education.
  - o Also**, India lags behind many other countries in terms of research output**, and there is a **lack of a research culture** in many higher education institutions.

Forest Certification

Why in News?

With **climate change**, **Deforestation** has become a **critically sensitive issue globally** in recent years, making imperative for **Forest Certification** to regulate the entry and sale of forest-based products.

- ➢ At the **Glasgow climate meeting in 2021**, more than 100 countries made a pledge to stop, and start reversing, deforestation by 2030.

What is Forest Certification?

- ➢ **Need:**
  - o Forests absorb **large amounts of carbon dioxide that is emitted in various economic activities**, keeping a check on global warming.
  - o Many Countries are trying to **avoid consumption of any product that might be the result of deforestation** or illegal logging.
  - o And therefore, Europe and the United States have passed laws that **regulate the entry and sale of forest-based products** in their markets, creating the need for **Forest Certification.**
- ➢ **Forest Certification:**
  - o It is a mechanism **for forest monitoring, tracing and labelling** timber, wood and pulp products and non-timber forest products.

- o It is a process through which quality of management from environmental, social and economic perspectives is judged **against a series of agreed standards.**
- o There are **two major international standards for sustainable management** of forests and forest-based products,
  - ● One has been developed by **Forest Stewardship Council (FSC);**
  - ● The other by Programme for Endorsement of Forest Certifications (PEFC).
- o FSC certification is **more popular and in demand**, and also more expensive.
- ➢ **Two Types of Certifications:**
  - o Forest management (FM) and Chain of Custody (CoC).
    - ● CoC certification is meant to guarantee the traceability of a forest product like timber throughout the supply chain from origin to market.
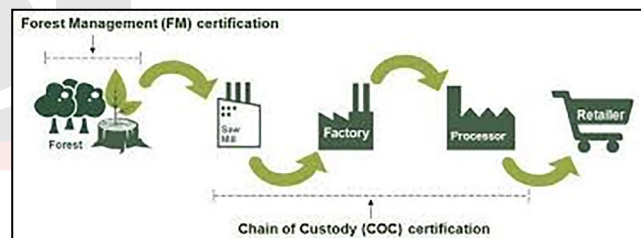
- ➢ **Forest Certification in India:**
  - o The forest certification industry has been operating in India for the last 15 years.
  - o Currently, **forests in only Uttar Pradesh are certified.**
    - ● Forty-one divisions of the UP-Forest Corporation (UPFC) are PEFC-certified, meaning they are being managed according to standards endorsed by PEFC.
    - ● Some other states **too obtained certifications**, but subsequently dropped out.
  - o Forest certification in India is **still at an early stage and therefore the nation has not been able to make use of the benefits** of forest certification.

What are India Specific Standards?

- ➢ India **allows the export of only processed wood, not timber**. In fact, the timber harvested from Indian forests is not enough to meet the domestic demand for housing, furniture, and other products.

Note:

➢ India's forests contribute just **about five million cubic metres of wood every year**. Almost 85% of the demand for wood and wood products is met by trees **outside forests (ToF). About 10 % is imported.**

➢ India's **wood import bill is Rs 50,000-60,000 crore per year.**

➢ Since ToF are so important, new certification standards are being developed for their sustainable management.

➢ PEFC already has certification for TOF and in 2022, **FSC came up with India-specific standards that included certification for ToF.**

Article 142

Why in News?

Recently, the Supreme Court (SC) under Article 142 ruled that the lawyers and professionals with **10 years of experience will be eligible for appointment as President** and member of the state consumer commission and district forums.

➢ The SC upheld the **Bombay High Court judgement quashing the provisions of Consumer Protection Rules, 2020**, under section 101 of Consumer Protection Act 2019, which prescribe a minimum professional experience of 20 years and 15 years for adjudicating members to the State consumer commissions and District forums respectively.

What is the Court's Ruling?

➢ The Central government and the state governments concerned have to come up with an amendment in the **Consumer Protection (Qualification for appointment, method of recruitment, procedure of appointment, term of office, resignation and removal of President and Members of State Commission and District Commission) Rules, 2020** to provide for 10 years' experience to become eligible for appointment as President and member of the state commission and district forums **instead of 20 years and 15 years respectively.**

➢ Till suitable amendments are made, **the Lawyers and professionals with a bachelor's degree who has 10 years of experience** in consumer affairs, law, public affairs, administration, economics, commerce, industry, finance, management, engineering, technology, public health or medicine will be eligible for appointment as President and member of the state consumer commission and district forums.

➢ It also introduced **written exams and viva voce to check the candidates'** performance.

What is Article 142?

➢ **About:**

○ Article 142 provides **discretionary power to the Supreme Court** as it states that the SC in the exercise of its jurisdiction **may pass such decree or make such order as is necessary for doing complete justice** in any cause or matter pending before it.

➢ **Constructive Application:**

○ In the early years of the evolution of **Article 142,** the general public and the lawyers both lauded the SC for its efforts to **bring complete justice to various deprived section**s of society or to protect the environment.

● The Cleansing of Taj Mahal and justice to many undertrials is a result of the **invocation of this article only.**

➢ **Cases of Judicial Overreach:**

○ In recent years, there have been several judgments of the Supreme Court wherein it has been foraying into areas which had long been forbidden to the judiciary by reason of the doctrine of 'separation of powers', which is part of the basic structure of the Constitution. One such example is:

● **The ban on the sale of alcohol along national and state highways:** While the notification by the central government prohibited liquor stores along National Highways only, the Supreme Court put in place a ban on a distance of 500 metres by invoking Article 142.

● Additionally, and in the absence of any similar notification by any of the State governments, the court extended the ban to State highways as well.

● Such judgments have created uncertainty about the discretion vested in the court to invoke **Article 142** where even fundamental rights of individuals are being ignored.

Note:

Academic Freedom Index Report

Why in News?

According to the **Academic Freedom Index report,** India's academic freedom index is in the bottom 30% among 179 countries in 2022.

➢ Academic freedom refers to the **principle that scholars and researchers should have the freedom to pursue their research and express** their findings without interference, censorship, or retaliation from the government, private institutions, or other external entities.

What is the Academic Freedom Index?

➢ It has been published by **Global Public Policy Institute** as a part of a global time-series dataset (1900-2019) in close cooperation with **Friedrich-Alexander University Erlangen-Nürnberg,** Scholars at Risk and the V-Dem Institute.

➢ The report provides **an overview of academic freedom in 179 countries** by assessing five indicators. It is based on **assessments by more than 2,197 country experts from around the world.**

➢ The **indicators include,**
  ○ Freedom to research and teach
  ○ Freedom of academic exchange and dissemination,
  ○ Institutional autonomy of universities
  ○ Campus integrity
  ○ The freedom of academic and cultural expression.

➢ The scores **are scaled from 0 (low) to 1 (high).**

What are the Key Highlights of the Report?

➢ **Global:**
  ○ It **identified 22 countries**, including India, China, the United States and Mexico – where it said universities and scholars experience significantly less academic freedom today than they did ten years ago.
  ○ Only **five small countries** (Gambia, Uzbekistan, Seychelles, Montenegro, and Kazakhstan) representing 0.7 % of the global population, improved their rankings.

  ○ In the remaining 152 countries, **academic freedom has stayed stagnant,** For the average global citizen, academic freedom has gone back to levels last registered four decades ago.

  ○ Like China and India, populous countries like the United States of America and Mexico have recorded a decline in academic freedom over the past decade.
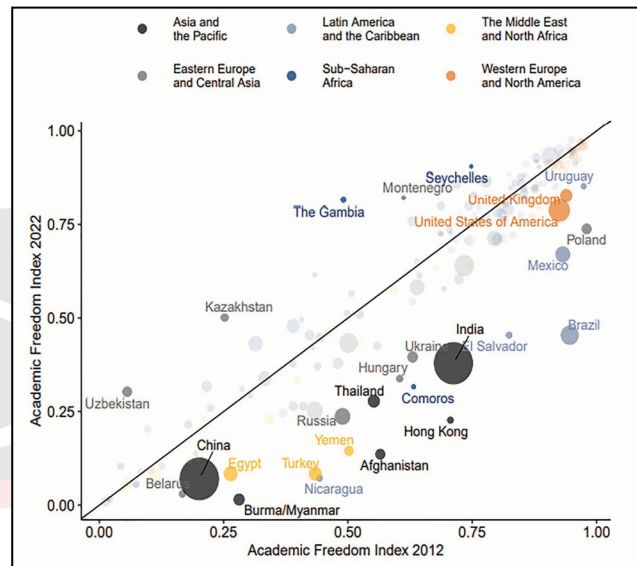
➢ **Indian Overview:**
  ○ India scored 0.38, lower than Pakistan's 0.43 and the United States' 0.79.
    • India's freedom index score was high in the past, ranging from **0.60-0.70 between 1950 and 2012**, except from 1974-1978.
    • China's academic freedom index stood at 0.07 in 2022, occupying the bottom 10 %.
  ○ India scored **low in campus integrity,** which measures the extent to which campuses are free from politically motivated surveillance or security infringements.
  ○ India also fared **poorly in institutional autonomy** and academic and cultural expression related to political issues.
  ○ As for **freedom to research and teach and freedom of academic exchange** and dissemination, India did slightly better than the three indicators above.

Note:

India

ACADEMIC FREEDOM INDEX (1956)   0.67 ⓘ

Freedom to Research and Teach (1956)   2.55 ⓘ

Institutional Autonomy (1956)   2.46 ⓘ

Academic Exchange and Dissemination (1956)   2.90 ⓘ

Campus Integrity (1956)   3.08 ⓘ

Academic and Cultural Expression (1956)   3.03 ⓘ
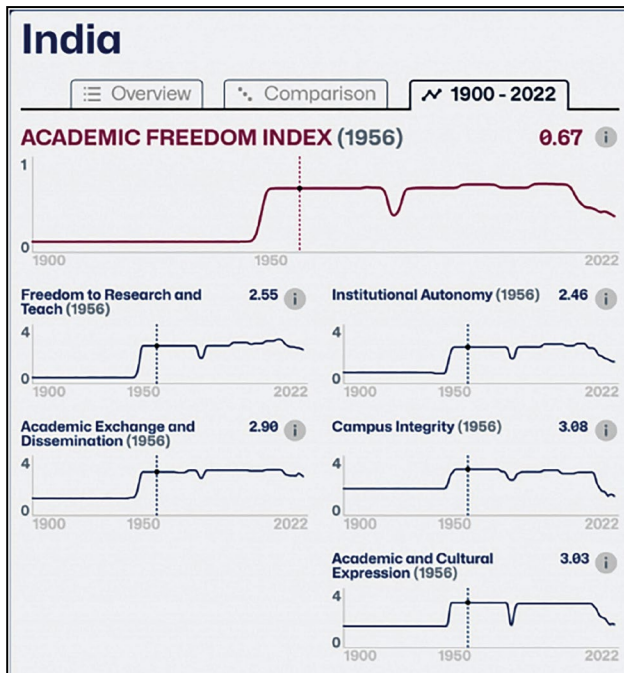
➤ **Factors for Declining India's Score:**
   ○ Around 2013, all aspects of academic freedom began to decline strongly, reinforced with the election in 2014.
   ○ A lack of a legal framework to protect academic freedom has enabled attacks on academic freedom under the ruling government.
   ○ There has been notable pressure on the **institutional dimensions of academic freedom** — institutional autonomy and campus integrity — combined with constraints on the academic freedom of expression.
➤ **Suggestions:**
   ○ The declines in India and China could bear more consequences as they are home to 2.8 billion people.
   ○ Call on higher education policymakers, university leaders, and research funders to promote academic freedom in their own academic institutions as well as abroad.

Right against Self Incrimination and Constitutional Remedies

Why in News?

The **Supreme Court** refused to hear a bail plea by the Deputy CM of Delhi in the excise policy case, as he had approached the court directly under Article 32 of the Constitution instead of first seeking remedy in the High Court under Section 482 of the CrPC.

➤ SC argued that though in previous cases petitions were entertained directly under **Article 32**, those cases involved free speech issues while this case is about **Prevention of Corruption act.**

What is the Background?

➤ Previously, Special CBI Judge had granted **Central Bureau of Investigation(CBI)** custody of Deputy CM on the ground that he **'failed to provide satisfactory answers.'**
   ○ The court had rejected the argument that it was a violation of **right against self-incrimination.**

What is an Individual's Right against Self-incrimination?

➤ **Constitutional Provisions:**
   ○ **Article 20** grants protection against arbitrary and excessive punishment to an accused person, whether citizen or foreigner or legal person like a company or a corporation. It contains three provisions in that direction:
   ○ It contains provisions related to **No ex-post-facto law, No double jeopardy, No self-incrimination.**
      • **No self-incrimination: No person** accused of any offence **shall be compelled to be a witness against himself.**
         ▪ The protection against self-incrimination **extends to both oral evidence and documentary evidence.**
         ▪ However, it **does not extend to**
            ◆ compulsory production of material objects,
            ◆ compulsion to give thumb impression, specimen signature, blood specimens, and
            ◆ compulsory exhibition of the body.
            ◆ Further, it extends **only to criminal proceedings** and **not to civil proceedings** or proceedings which are not of criminal nature.

Note:
➤ **No ex-post-facto law:** No person shall be
   ○ convicted of any offence except for violation of a law in force at the time of the commission of the act, nor

○ subjected to a penalty greater than that prescribed by the law in force at the time of the commission of the act.

- However, this **limitation is imposed only on criminal laws and not on civil laws or tax laws.**
- Also, this provision **cannot be claimed in case of preventive detention** or demanding security from a person.

➢ **No double jeopardy:** No person shall be prosecuted and punished for the same offence more than once.

➢ **Judicial Rulings:**

○ In 2019, the SC in its ruling in *Ritesh Sinha versus State of Uttar Pradesh* broadened the parameters of **handwriting samples** to include **voice samples**, adding that this **would not violate the right against self-incrimination**.

○ Earlier in 2010, in *Selvi v State of Karnataka*, the SC held that a **narcoanalysis test without the consent of the accused would amount to violation of the right against self-incrimination.**

○ However, **obtaining a DNA sample from the accused is permitted**. If an accused refuses to give a sample, the court can draw adverse inferences against him **under** Section 114 of the **Evidence Act.**

What is Right to approach SC under Article 32?

➢ **Article 32** confers the **right to approach SC for remedies for the enforcement of the fundamental rights of an aggrieved citizen**. It is a **basic feature of the Constitution.**

➢ In this regard the jurisdiction of the Supreme Court is **original but not exclusive**. It is **concurrent with** the jurisdiction of the **high court under Article 226**.

➢ Rights other than Fundamental rights are not entertained under article 32 but are within the scope of HC under Article 226.

➢ Since the right guaranteed by Article 32 is in itself a fundamental right, **the availability of alternate remedy is no bar to relief under Article 32.**

○ However, the Supreme Court has ruled that where relief through high court is available under Article 226**, the aggrieved party should first move the high court.**

Cow Vigilantism and Mob Lynching

Why in News?

Recent incident of killing and burning of two men in Haryana on suspicion of illegal transportation, smuggling or slaughtering of cows by cow vigilantes **highlight the issue of Mob Lynching.**

What is Mob Lynching?

➢ **Mob lynching** refers to **targeted violence by a large group of people** which includes **offenses against the human body or property, whether public or private.**

➢ The mob believes they are punishing the victim for some perceived wrongdoing, even if it's not necessarily illegal and **take the law into their own hands disregarding legal rules and procedures.**

Cow Vigilantism: Cow vigilantism or lynching in the name of **Cow Protection** poses a serious threat to the **secular fabric of the nation.** Killing of people just on the suspicion of beef depicts the intolerance among the vigilantes.

What are the Causes of Mob Lynching?

➢ **Biases:**

○ Mob lynching is a hate crime that is rising due to the biases or prejudices among various castes, classes of people, and religions.

➢ **Rise of Cow Vigilante:**

○ In Hindu religion, cows are revered and worshipped. This sometimes leads to Cow vigilantism.

○ It is perpetrated by the majority towards the minority on the presumption that the minorities are in regular consumption of bovine meat.

➢ **Lack of Speedy Justice:**

○ Inefficient working of justice rendering authorities is the primary reason why people take law into their own hands and have no fear of the consequences.

➢ **The Inefficiency of Police Administration:**

○ Ineffective investigation and lack of trust in the legal process is one reason that promotes people to take matters in their own hands.

Note:

What are the Issues related to Mob Lynching?

➢ Mob lynching is a **violation of human dignity, Article 21 of the Constitution**, and a gross infringement of the **Universal Declaration of Human Rights.**

➢ Such incidents **violate the Right to Equality and Prohibition of discrimination,** which are enshrined in **Articles 14 and 15 of the Constitution of India.**

➢ However, it is **nowhere mentioned in the law of the land** and is hence simply put as murder since it has not been yet incorporated under the **Indian Penal Code.**

What are the Government Steps on the Issue?

➢ **Preventive Measures:**
  ○ In July 2017, the Supreme Court in the case of *Tahseen s. Poonawala v. UOI* had laid down several preventives, remedial and punitive measures to deal with lynching and mob violence.
    ● The Supreme Court in this case aptly **referred to mob lynching as a 'horrendous act of mobocracy.'**

➢ **Designated Fast Track Courts:**
  ○ States were directed to set up **designated fast track courts in every district** to exclusively deal with cases involving mob lynchings.

➢ **Special Task Force:**
  ○ The court had also mooted the **setting up of a special task force** with the objective of **procuring intelligence reports about the people involved** in spreading hate speeches, provocative statements and fake news which could lead to mob lynchings.

➢ **Victim Compensation Schemes:**
  ○ Directions were also issued to set up **Victim compensation schemes** for relief and rehabilitation of victims.
  ○ A year later in **July 2019 the Supreme Court** issued notices to the Centre and several states asking them to submit the steps taken by them towards implementing the measures and file compliance reports.
  ○ As of now **only three states Manipur, West Bengal and Rajasthan have enacted laws against mob lynching.**
    ● The **Jharkhand** Assembly has passed **Prevention of Mob Violence and Mob Lynching Bill, 2021** which has been returned by governor recently for reconsideration of a few provisions.

Global Internet Shut-Offs

Why in News?

According to a report by **Access Now and the KeepItOn coalition, India enforced as many as 84 internet shutdowns in 2022** and was on top of the list for the fifth year in a row.

India is the worst perpetrator of internet shutdowns

#KeepItOn

Documented internet shutdowns by year
These numbers reflect the latest data available as of publication of this report and include updates to previously published totals for past years.

■ Number of global shutdowns ■ Number of shutdowns in India
Source: #KeepItOn Report 2022

	2016	2017	2018	2019	2020	2021	2022
Global	75	106	196	213	159	184	187
India	30	69	134	121	109	107	84

What are the Highlights of the Report?

➢ **Global Scenario:**
  ○ At least **187 internet shutdowns across 35 countries** were recorded in 2022.
  ○ Thirty-three of these 35 countries are repeat offenders.
  ○ **Ukraine comes a distant second** with 22 shutdowns in 2022, followed by Iran with 18, and with seven internet shutdowns, Myanmar stands fourth in the list.
    ● People in many regions across Myanmar had been in the dark for 500+ days by March 2022.
  ○ By the end of 2022, **people in Tigray, Ethiopia had endured 2+ years of full communications blackout**, and many remained disconnected.

➢ **Indian Scenario:**
  ○ In 2022, the Internet was shut down **49 times in Jammu and Kashmir, the highest of any state** in the country.
  ○ Authorities in Rajasthan **imposed shutdowns on 12 different occasions** followed by West Bengal, which ordered shutdowns seven times.

➢ **Digital Authoritarianism:**
  ○ Internet shutdowns are dangerous acts of digital authoritarianism.
  ○ The report states that authorities used shutdowns to try to hide serious rights violations and sever communications between individuals and

Note:

drishti

communities, which also impacted human rights monitoring, including shutdown tracking and provision of humanitarian aid.

➢ **Causes:**
  ○ The shutdowns were ordered on various accounts including protests, conflict, school exams, and elections.

What is an Internet Shutdown?

➢ **About:**
  ○ Internet shutdowns are a means **to wipe out online communication,** which directly impacts day to day functioning in an increasingly digital world, but they also have important and serious knock-on effects on democratic movements, and sometimes provide **cover for violence, as reporting crime and making contact for support becomes hard to do.**

➢ **Impact:**
  ○ **Economic losses:** Internet shutdowns can lead to significant economic losses, particularly for businesses that rely on the internet to operate.
  ○ **Social Disruptions:** The internet is a crucial communication tool that enables people to connect with each other, share information, and participate in social movements.
  ○ **Political Consequences:** Internet shutdowns are often used by governments to suppress dissent, control information, and limit political opposition.
  ○ **Educational Setbacks:** Internet shutdowns can also disrupt educational activities, particularly for students who rely on online resources for learning.
  ○ **Health Implications:** During the Covid-19 pandemic, the internet has become a critical tool for accessing health information, telemedicine, and online support groups.

Who Governs Internet Shutdowns in India?

➢ Internet shutdown orders are governed under the **Temporary Suspension of** Telecom Services **(Public Emergency or Public Safety) Rules, 2017**, under **the Indian Telegraph Act, 1885.**
  ○ The 2017 Rules provide for **temporary shutdown of telecom services in a region on grounds of public emergency** and give senior bureaucrats from the Home Ministry at the central and state levels the power to order shutdowns.

➢ The 1885 Act **empowers the central government to regulate various types of telecom services** including internet services and grant licenses for them.

What is the Related SC's Judgment and Further Amendments?

➢ In *Anuradha Bhasin vs Union of India (2020)*, the Supreme Court ruled that an indefinite suspension of internet services would be illegal under Indian law and that orders for internet shutdown **must satisfy the tests of necessity and proportionality.**

➢ Subsequently, the Union government made some amendments (to limit Internet suspension orders to a maximum of 15 days) to the **2017 Rules in November 2020.**

➢ However, in December 2021 the Standing Committee on Communication and Information Technology was not satisfied with the amendments and **recommended more changes in the 2017 Rules.**
  ○ The Committee recommended reviewing the Rules to address all aspects of internet shutdown, to make amendments in the **Rules that are in tune with changing technology to ensure minimum disturbance to the public and issuing uniform guidelines** for states/UTs before ordering an internet shutdown.

■■■

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Economic Scenario

Highlights

- Har Payment Digital Mission
- Ornamental Fish Aquaculture
- Genetic Improvement Program for Indigenous Fish Species
- Social Stock Exchange
- Foreign Contribution Regulation Act
- World Bank to Lend USD 1 Billion to India's Health Sector
- MSME Competitive (LEAN) Scheme
- India-US Pact on Semiconductor

Har Payment Digital Mission

Why in News?

At the launch of the **'Har Payment Digital' mission during the Digital Payments Awareness Week (DPAW) 2023**, the **Reserve Bank of India (RBI)** has launched a programme **to adopt 75 villages and convert them into digital payment enabled villages in observance of 75 years of independence**.

What is this Initiative?

➢ **About & Aim:**
  ❍ Under the initiative, **Payment System Operators (PSOs)** will adopt these villages across the country and conduct camps in each of these villages **with an aim to improve awareness and onboard merchants for digital payments**.
    ● PSOs are **entities authorised by RBI to set up and operate a payment system**.
      ■ As of February 2023, **there are 67 PSOs under various categories such as retail payments organisations**, card payment networks, ATM networks, prepaid payment instruments, etc.
➢ **Significance:**
  ❍ The **Har Payment Digital campaign by RBI aims at reinforcing the ease and convenience of digital payments** and facilitate onboarding of new consumers into the digital fold.
  ❍ Various campaigns highlighting the digital payment channels available are being planned by the banks and non-bank payment system operators.
    ● This will further **encourage and support the adoption of digital payments in the country**.

Ornamental Fish Aquaculture

Why in News?

National Bureau of Fish Genetic Resources (NBFGR) under **Indian Council of Agricultural Research** (ICAR) is providing technical support to provide intensive training **to islanders of Lakshadweep for Ornamental Fish Aquaculture.**

What is Ornamental Fish Aquaculture?

➢ Ornamental fish culture is the **culture of attractive, colourful fishes** of various characteristics, which are **reared in a confined aquatic system**.
➢ Farmers and hobbyists mainly grow it and these fish are also known as **living jewels.**

What is this Initiative about?

➢ **About:**
  ❍ A total of 82 islanders, including 77 women, underwent training for an **experimental initiative aimed at promoting self-reliance** through community aquaculture.
  ❍ The NBFGR provided support and supplies for capacity building, including **culture devices** and **shrimp/clownfish seeds.**
  ❍ **Four community aquaculture units** involving 46 women were created and have successfully **raised ornamental shrimps to marketable size.**
  ❍ NBFGR also **maintains a germplasm resource center** on Agatti Island for marine ornamental organism conservation and as a livelihood source for islanders.

Note:

➢ **Significance:**
  ○ **Limited resources** on the island, mostly in the form of **coconut and tuna fish** make it important.
  ○ **During the monsoon season, fishing virtually comes to a halt,** shutting out a key economic activity.
    ● However, ornamental fish aquaculture is expected to sustain the rhythm of economic life in the islands.

What is ICAR-NBFGR?

➢ ICAR-National Bureau of Fish Genetic Resources (ICAR-NBFGR) was established in December 1983 at Allahabad.
  ○ Currently, the office is located in Lucknow, Uttar Pradesh, India.
➢ It was established **under the aegis of Indian Council of Agricultural Research (ICAR).**
➢ It aims to **undertake research related to the conservation of fish germplasm resources** of the country.

Genetic Improvement Program for Indigenous Fish Species

Why in News?

Union Minister of Fisheries, Animal Husbandry and Dairying, launched three national flagship programmes at **Indian Council of Agricultural Research**-CIBA Campus, Chennai.

What are the Three National Flagship Programmes Launched?

➢ **Genetic Improvement Programme of Indian White Shrimp:**
  ○ The farmed shrimp sector contributes about **70% of India's seafood exports worth** Rs. 42000 crores, but it mostly depends on **one exotic Specific Pathogen-Free stock of Pacific white shrimp species** (*Penaeus vannamei*)**.**
  ○ To break this dependence on one species and to promote indigenous specie**s, ICAR-CIBA has taken up the genetic improvement program** of Indian white shrimp, *P. indicus,* as a national priority under the **Make in India** flagship program.

➢ **Shrimp Crop Insurance:**
  ○ ICAR-CIBA developed a **Shrimp Crop Insurance** product where the product charges differential premium based on location and requirements of the individual farmer from **3.7 to 7.7 %** of input costs and farmer will be compensated to the tune of 80 % loss of input cost in the event of total crop loss. i.e., more than 70% crop loss.
➢ **NatIonal Surveillance Programme for Aquatic Animal Diseases (NSPAAD): Government of India is implemented** the NSPAAD since 2013 with a major emphasis on strengthening farmer-based disease surveillance system. The results of the first phase proved **the reduction in revenue losses due to diseases, increased farmers' income and exports**.
  ○ **Phase II:** Government of India has sanctioned the NSPAAD: Phase-II under the **Pradhan Mantri Matsya Sampada Yojana** programme of the Govt. of India. It will be implemented at pan-India.

Social Stock Exchange

Why in News?

National Stock Exchange of India received final approval from SEBI to set up the **Social Stock Exchange (SSE).**

What is a Social Stock Exchange?

➢ **About:**
  ○ The **SSE would function as a separate segment within the existing stock exchange** and help social enterprises raise funds from the public through its mechanism.
  ○ It would serve as a **medium for enterprises to seek finance for their social initiatives, acquire visibility** and provide increased transparency about fund mobilisation and utilisation.
  ○ Retail investors can only invest in securities offered by **for-profit social enterprises (SEs) under the Main Board.**
    ● In all other cases, **only institutional investors and non-institutional investors** can invest in securities issued by SEs.
➢ **Eligibility:**
  ○ Any **non-profit organisation (NPO)** or **for-profit social enterprise (FPSEs)** that establishes the

Note:

primacy of social intent would be recognised as a **SE,** which will make it eligible to be **registered or listed on the SSE.**

○ 17 plausible criteria under **SEBI's ICDR Regulations, 2018** include **serving to eradicate hunger, poverty, malnutrition,** **promoting education, employability,** equality, and environmental sustainability among others

➢ **Ineligibility:**

○ Corporate foundations, political or religious organisations, professional or trade associations, infrastructure and housing companies (except affordable housing) would not be identified as SE

○ NPOs would be deemed **ineligible if dependent on corporates** for **more than 50% of its funding.**

➢ **NPO Money Raising:**

○ NPOs can raise money either through issuance of **Zero Coupon Zero Principal (ZCZP) Instruments** from private placement or public issue, or **donations from mutual funds.**

● ZCZP bonds differ from conventional bonds in the sense that it entails zero coupon and **no principal payment at maturity.**

● For ZCZP issuance, the minimum issue size is presently prescribed as **Rs 1 crore and minimum application size for subscription at Rs 2 lakhs**.

○ Also, **Development Impact Bonds** are available upon completion of a project and delivered on pre-agreed social metrics at pre-agreed costs/rates.

➢ **FPSE Money Raising:**

○ FPEs **need not register with SSE** before raising funds through SSE.

○ It can raise money through issue of equity shares or issuing equity shares to an **Alternative Investment Fund including Social Impact Fund** or issue of debt instruments.

Foreign Contribution Regulation Act

Why in News?

Recently, the **Ministry of Home Affairs** suspended the **Foreign Contribution Regulation Act (FCRA) licence** of the **Centre for Policy Research (CPR).**

➢ **CPR (not-for-profit society), along with Oxfam India and the Independent and Public-Spirited Media Foundation (IPSMF)**, was surveyed by the Income Tax department earlier.

What is the Foreign Contribution Regulation Act?

➢ **About:**

○ **FCRA was enacted during the Emergency in 1976** amid apprehensions that foreign powers were **interfering in India's affairs** by pumping money into the country through independent organisations.

○ The law sought to regulate foreign donations to individuals and associations so that they functioned in a manner consistent with the values of a **sovereign democratic republic.**

➢ **Amendments:**

○ An amended FCRA was enacted in 2010 to **"consolidate the law"** on **utilisation of foreign funds**, and "to prohibit" their use for "any activities detrimental to national interest".

○ The law was amended again in **2020,** giving the government tighter control and scrutiny over the receipt and **utilisation of foreign funds by NGOs.**

➢ **Criteria:**

○ The FCRA requires every person or NGO seeking to receive foreign donations to be:

● **registered under the Act**

● to open a bank account for the receipt of the foreign funds in **State Bank of India,** Delhi

● to utilize those funds only for the purpose for which they have been received and as stipulated in the Act.

○ FCRA registrations are granted to individuals or associations that **have definite cultural, economic, educational, religious, and social programmes.**

➢ **Exceptions:**

○ Under the FCRA, the **applicant should not be fictitious and should not have been prosecuted or convicted for indulging in activities** aimed at conversion through **inducement or force**, either directly or indirectly, from one religious faith to another.

○ The applicant should also not have been prosecuted for or convicted of creating communal tension or disharmony.

- Also, should not be engaged or likely to be engaged in the propagation of **sedition.**
  - ❍ The Act prohibits the **receipt of foreign funds by candidates for elections, journalists or newspaper and media broadcast companies, judges** and government servants, members of legislature and political parties or their office-bearers, and organisations of a political nature.
- ➢ **Validity:**
  - ❍ FCRA registration is valid for **5 years**, and **NGOs are expected to apply for renewal within six months** of the date of expiry of registration.
  - ❍ The government can also **cancel the FCRA registration of any NGO if it finds that the NGO is in violation of the Act**, if it has not been engaged in any reasonable activity in its chosen field for the benefit of society for **two consecutive years, or if it has become defunct.**
  - ❍ Once the registration of an NGO is cancelled, it is **not eligible for re-registration for three years.**
- ➢ **FCRA 2022 Rules:**
  - ❍ In July 2022, the **MHA effected changes to FCRA rules which increased the number of compoundable offences** under the Act from 7 to 12.
  - ❍ The other key changes were exemption from intimation to the government for contributions less than **Rs 10 lakh – the earlier limit was Rs 1 lakh** — received from relatives abroad, and **increase in time limit for intimation of opening of bank accounts.**

World Bank to Lend USD 1 Billion to India's Health Sector

Why in News?

The **World Bank** has approved a loan of **USD 1 billion** to India to help the country **prepare for future pandemics** and **strengthen its healthcare** infrastructure.

- ➢ The loan will be split into two loans of **USD 500 million each**.

hat Are the Areas Where World Bank Loan will be Channelised?

- ➢ The loan will be used to support India's flagship **Pradhan Mantri-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM),** which was launched in

October 2021, and will improve the public healthcare infrastructure across the country.

- ➢ Both loans utilize th**e Program-for-Results financing instrument**, which focuses on achieving results rather than inputs. The loans have a **final maturity of 18.5 years,** including a **grace period of five years.**
- ➢ The **Public Health Systems for Pandemic Preparedness Program (PHSPP)** will provide **USD 500 million** to support the government's efforts to prepare India's **surveillance system** to detect and report potential international **epidemics.**
- ➢ The **Enhanced Health Service Delivery Program (EHSDP)** will provide another **USD 500 million** to support the government's efforts to strengthen service delivery through a redesigned primary healthcare model.
- ➢ One of the loans will also prioritize **health service delivery in seven states**: Andhra Pradesh, Kerala, Meghalaya, Odisha, Punjab, Tamil Nadu, and Uttar Pradesh.

What is the Status of India's Health Sector?

- ➢ **About:**
  - ❍ According to **World Bank estimates**, India's performance in health has improved over time. **India's life expectancy has increased from 58 in 1990 to 70.19 in 2022.**
  - ❍ The **under-five mortality rate,** infant mortality rate, and maternal mortality ratio** are all **close to the average for India's income level.**
- ➢ **Major Issues:**
  - ❍ **Inadequate Medical Infrastructure**: India has a shortage of hospitals, particularly in rural areas, and many existing healthcare facilities lack basic equipment and resources.
    - According to the **National Health Profile,** India has only **0.9 beds per 1000 population** and out of which only **30% are in rural areas.**
  - ❍ **Gap in Doctor-Patient Ratio:** One of the most critical concerns is the gap in the **doctor-patient ratio**. According to the **Indian Journal of Public Health, India** needs **20 lakh doctors by 2030.**
    - However, currently a doctor in the government hospital attends to **~11000 patients**, which is more than the **WHO recommendation** of **1:1000.**
  - ❍ **Lack of Adequate Mental Healthcare:** India has one of the **lowest numbers of mental health care professionals** per capita.

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- **Government's spending on mental health** is also very low. This has resulted in poor mental health outcomes and inadequate care for people suffering from mental illness.
  - ○ **Recent Government Initiatives Related to Healthcare**:
    - **National Health Mission**
    - **Ayushman Bharat**
    - **Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)**
    - **National Medical Commission**

MSME Competitive (LEAN) Scheme

Why in News?

Recently, Ministry of **MSMEs** launched the MSME Competitive (LEAN) Scheme to provide a **roadmap to global competitiveness** for the MSMEs of India.

➢ The idea is to **improve quality, productivity, performance and capability** to change the mind-sets of manufacturers and **transform them into world class manufacturers**.

What is Lean Manufacturing?

➢ **About:** Lean Manufacturing or Lean Production, known simply as LEAN, is a **production practice that considers the expenditure of resources for any goal, other than the creation of value for the end customer, to be wasteful** and hence should be eliminated.

➢ **Lean Principles:** Lean manufacturing includes a set of principles that lean thinkers use to achieve improvements in productivity, quality, and lead-time by **eliminating waste through kaizen. Principles of Lean Manufacturing are:**

- ○ **Identify Value:** Determine what value means from the customer's perspective. This includes understanding what the customer wants, needs, and is willing to pay for.
- ○ **Map the Value Stream:** Create a map of the value stream, which is the sequence of steps required to produce a product or service. This helps identify areas of waste and inefficiency.
- ○ **Create Flow:** Create a smooth, uninterrupted flow of work through the value stream. This involves eliminating bottlenecks and interruptions that slow down the process.
- ○ **Implement Pull:** Implement a pull system that produces products only as they are needed, based on customer demand. This helps to reduce inventory and waste.
- ○ **Strive for Perfection:** Continuously strive for perfection by identifying and eliminating waste, improving processes, and ensuring quality.

Note:

➢ Kaizen is a Japanese word that essentially means **"change for the better"** or "good change."

➢ The goal is to provide the customer with a **defect free product or service when it is needed** and, in **quantity, it is needed**.

What are the Key Points of the Scheme?

➢ **Objective:**

- ○ Through the LEAN journey, MSMEs can **reduce wastage** substantially, **increase productivity, improve quality, work safely, expand their markets**, and finally **become competitive and profitable**.

➢ **Tools:**

- ○ Under the scheme, MSMEs will implement **LEAN manufacturing tools like 5S**, **Kaizen, KANBAN, Visual workplace, Poka Yoka** etc under the able guidance of trained and competent LEAN Consultants to attain **LEAN levels like Basic, Intermediate and Advanced.**

➢ **Government Support:**

Note:

○ The government will contribute **90% of implementation cost** for handholding and consultancy fees.

○ There will be an **additional contribution of 5%** for the MSMEs which are part of **SFURTI clusters, owned by Women/SC/ST and located in Northeast region.**

○ There will be an **additional contribution of 5% for MSMEs** which are **registering through Industry Associations/ Overall Equipment Manufacturing (OEM) organizations** after completing all levels.

  ● This is a unique feature to encourage Industry Associations and OEMs for motivating their supply chain vendors to participate in this scheme.

What are the Recent Government Initiatives Related to MSMEs?
➢ **Raising and Accelerating MSME Performance (RAMP) Scheme**
➢ **Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE)**
➢ **Interest Subsidy Eligibility Certificate (ISEC)**
➢ **A Scheme for Promoting Innovation, Rural Industry & Entrepreneurship (ASPIRE)**
➢ **Credit Linked Capital Subsidy for Technology Upgradation (CLCSS)**
➢ **Zero Defect & Zero Effect (ZED)**

India-US Pact on Semiconductor

Why in News?

Recently, India and the US have signed Memorandum of Understanding (MoU) on establishing the **Semiconductor Supply chain** during **India – USA 5th Commercial Dialogue 2023, which can help India** realize its long-nurtured dream of becoming a hub for electronic goods.

➢ The MoU seeks to establish a collaborative mechanism between the two governments **on semiconductor supply chain resiliency and diversification** in view of **US's CHIPS and Science Act** and **India's Semiconductor Mission.**

What is the Significance of the Deal?

➢ **Commercial Opportunities:**

○ The US and China are giants in chip manufacturing. So, this pact with the US to strengthen cooperation in the semiconductor sector to facilitate commercial opportunities and development of innovation ecosystems **is likely to help India immensely.**

➢ **Electronics Supply Chain:**

○ It can help India get aligned into **a more central role in the global electronics supply** chain.

➢ **Can Address Semiconductor Crunch:**

○ The crunch in semiconductors supply began during the **Covid-19** and went on to intensify in 2021. A Goldman Sachs report suggested that a**t least 169 industries had been impacted by the global chip supply shortage** in 2021.

○ The crunch has eased now but some disruptions in the supply chain still exist.

➢ **Realignment towards Chip Manufacturing:**

○ From a domestic perspective, this could also prompt a **potential realignment of India's current policy approach on chip manufacturing:** which is currently focused, almost entirely, on the manufacture of **mature nodes – generally defined as chips that are 40 nanometres (nm) or above** and find application in sectors such as the automotive industry – before trying to attempt an entry into **the more advanced nodes (smaller than 40nm),** which are far more strategic, but require exceptional manufacturing capabilities and project execution skills.

What are the Challenges for India?

➢ **High Investments Required:** Semiconductors and display manufacturing is a very **complex and technology-intensive sector** involving huge capital investments, high risk, long gestation and payback periods, and rapid changes in technology, which require significant and sustained investments.

➢ **Minimal Fiscal Support from Government:** The level of fiscal support currently envisioned is minuscule when one considers the scale of investments typically required to set up manufacturing capacities in the various sub-sectors of the semiconductor industry.

➢ **Lack of Fabrication Capacities:** India has a decent chip design talent but it never built-up chip fab capacity. The **ISRO and the DRDO** have their respective fab foundries but they are primarily for their own requirements and are also not as sophisticated as the latest in the world.

○ India has only government-owned semiconductor fabrication unit- can be added as there might be other private fabs old fab which is located in Mohali, Punjab.

➢ **Extremely Expensive Fab Setup:** A semiconductor fabrication facility (or fab) can cost multiples of a billion dollars to set up even on a relatively small scale and lagging by a generation or two behind the latest in technology.

➢ **Resource Inefficient Sector:** Chip fabs are also very thirsty units requiring millions of litres of clean water, an extremely stable power supply, a lot of land and a highly skilled workforce.

Where does India Stand in the Semiconductor Market?

➢ India currently imports all chips and the market is estimated to touch USD 100 billion by 2025 from USD 24 billion now. However, for the domestic manufacturing of semiconductor chips, India has recently launched several initiatives:

○ The Union Cabinet has allocated an amount of Rs 76,000 crore in 2021 for supporting the **development of a 'semiconductors and display manufacturing ecosystem'.**

● Consequently, a significant number of incentives would be provided to design companies to design chips.

○ India has also launched the **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)** for manufacturing of electronics components and semiconductors.

○ In 2021, India announced its roughly USD 10 billion-dollar **Production-Linked Incentive (PLI) scheme** to encourage semiconductor and display manufacturing in the country.

○ In 2021, the MeitY also launched the **Design Linked Incentive (DLI) Scheme** to nurture at least 20 domestic companies involved in semiconductor design and facilitate them to achieve a turnover of more than Rs.1500 Crore in the next 5 years.

➢ India's own consumption of semiconductors is expected to cross USD 80 billion by 2026 and to USD 110 billion by 2030.

What are the Top 5 Countries Producing Semiconductors?

➢ Top 5 Countries that produce the most semiconductors are Taiwan, South Korea, Japan, United States, China.

➢ **Taiwan and South Korea make up about 80% of the global foundry base** for chips. TSMC, the world's most advanced chipmaker, is headquartered in Taiwan.

➢ Currently, **foundries in Taiwan account for over 70% of the chips** that mobile devices made in India utilise, according to industry estimates by the Indian Cellular and Electronics Association.

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Note:

International Relations

Highlights

- UN Specialised Agencies - UNWTO, IFAD and UPU (Part–2)
- UN High Seas Treaty
- UN Specialised Agencies: FAO, UNIDO and ICAO
- Conference of Global Intelligence Chiefs
- India Denmark Cooperation
- Japan's Asia Energy Transition Initiative
- What is the Status of India -Japan Bilateral Relations?
- G-20 and Need for Multilateralism
- India-Australia Relations
- IBSA and Digital Governance Reform
- Saudi, Iran Agree to Restore Diplomatic Ties
- India-US Commercial Dialogue
- CJI Urges SCO Member States to Strive for Judicial Cooperation

UN Specialised Agencies - UNWTO, IFAD and UPU (Part–2)

UN SPECIALISED AGENCIES

Part II
UNWTO, IFAD and UPU

UNSAs are 15 autonomous international organizations working with the UN

UN World Tourism Organisation

- Estd. - 1975
- Headquarters - Madrid, Spain
- Function -
  - » Promotion of responsible, sustainable & universally accessible tourism
  - » Implementation of the Global Code of Ethics for Tourism
- Member States - 160 (India is a member of UNWTO Executive Council for last 19 years and has chaired it twice)

World Tourism Day is celebrated on 27 September

International Fund for Agricultural Development

- Estd. - 1977 (an outcome of World Food Conference, 1974)
- Headquarters - Rome, Italy
- Function -
  - » Intl. financial institution
  - » Poverty eradication in rural areas of developing countries
- Member States - 177 (incl. India)
- Flagship Publication - Rural Development Report (annual)

Universal Postal Union

- Estd. - 1874 (by Treaty of Bern, 1874)
- Headquarters - Bern, Switzerland
- Function -
  - » Coordinates postal policies among member nations
  - » Sets rules for intl. mail exchanges
  - » Has an advisory/mediating/liaison role
- Member States - 192 (India joined in 1876)

UPU is the 2nd oldest intl. organization worldwide after ITU (estd. 1865)

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UN High Seas Treaty

UN HIGH SEAS TREATY
aka BBNJ (Biodiversity Beyond National Jurisdiction) Agreement

For the first time, UN members have agreed on a unified (legally-binding) treaty to protect biodiversity in the high seas

High Seas (HS)
All the saltwater bodies across Earth that aren't part of territorial sea/internal waters of a state

Background of Treaty
Demand for an updated framework to protect marine life in the High Seas, is about 20 years-old

Need to Protect HS
- Only 1.2% of HSs are currently protected
- 10% of global marine species at risk of extinction
- High exploitation due to commercial fishing, mining, acidification, pollution

The last int'l agreement on ocean protection was UNCLOS signed in 1982

This treaty is the 3rd "implementing agreement" under UNCLOS

KEY FEATURES
- Create a new body to manage conservation of ocean life and establish marine protected areas in the high seas
- Estd. ground rules for conducting EIAs for commercial activities in oceans

KEY PLAYERS
EU, US, UK and China (in brokering the deal)

SIGNIFICANCE
- Achieving the 30x30 Target set at UN CBD COP15
- Legal protection of 2/3rd of the ocean (+ livelihoods of coastal communities)
- Comprehensive protection of endangered species/habitats on >40% of Earth's surface

ROADBLOCK
How to fairly share marine genetic resources (MGR) & eventual profits among developed/developing nations

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Ocean ecosystems produce half the oxygen we breathe, represent 95% of the planet's biosphere and soak up CO_2 (world's largest carbon sink)

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UN Specialised Agencies: AO, UNIDO and ICAO

UN SPECIALISED AGENCIES

Part I
FAO, UNIDO and ICAO

UNSAs are 15 autonomous international organizations working with the UN

FAO

- Estd. - 16th October 1945 (World Food Day)
- Headquarters - Rome, Italy
- Members - 194 countries (incl. India) + EU
- Sister Bodies - World Food Programme (WFP), IFAD

- FAO v/s WFP v/s IFAD:
  » FAO is a knowledge org.; lead UN agency for technical expertise in food security, agriculture, forestry, fisheries etc.
  » WFP is a humanitarian org.; provides food aid and logistical operations to save lives in crisis situations
  » IFAD is a financial institution; funds rural development projects to improve nutritional level

- 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)

- FAO's Globally Important Agricultural Heritage Systems (GIAHS) in India:
  » Kuttanad Below Sea Level Farming System, Kerala
  » Koraput Traditional Agriculture, Odisha
  » Pampore Saffron Heritage, Kashmir

UN Industrial Development Organisation

- Estd. - 1966 (transformed into UNSA in 1985)
- Headquarters - Vienna, Austria
- Member States - 171 (India one of the founders)
- Functions - Tech-cooperation, advisory services and fostering partnerships
- Imp. Declarations - Lima Declaration (2013), Abu Dhabi Declaration (2019)

UNIDO is a custodian agency for 6 industry-related indicators under SDG 9

ICAO

- Estd. - 1944 (by Chicago Convention)
- Function - Set standards/procedures for peaceful global air navigation
- Headquarters - Montreal, Canada
- Members - 193 (incl. India)

ICAO is not an international aviation regulator; it can't arbitrarily close/restrict a country's airspace, shut down routes or condemn airports/airlines

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Conference of Global Intelligence Chiefs

Why in News?

On March 1, India held the second conference of intelligence and security chiefs from 26 countries around the world.

➢ The conference was held for the first time in April 2022, a day before the start of the Raisina Dialogue. It was addressed by the PM of India and **National Security Advisor (NSA).**

What is the Highlight of the Conference?

➢ **About:** As part of Raisina Dialogue, the security conference is **organised by the country's external intelligence agency**, the Research and Analysis Wing (R&AW) and the National Security Council Secretariat (NSCS) that reports to NSA.

➢ **Objective:** To discuss the ongoing geopolitical tensions, provided an opportunity for participants to exchange views on **how to address this crisis and other geopolitical tensions.** However, the meeting focused on the **Russia-Ukraine conflict.**

➢ **Nature of Meeting:** It is modelled on the lines of the Munich Security Conference and Singapore's Shangri-La Dialogue.
   ○ It was coincided with the **G20** Foreign Ministers meeting and the Raisina Dialogue. India chairs both G20 and the **Shanghai Cooperation Organisation (SCO)** in 2023.
   ○ While the U.S. was absent, intelligence chiefs from the U.K., France, Japan and Bahrain were among those present.

What is Raisina Dialogue?

➢ The Raisina Dialogue is India's premier **conference on geopolitics and geoeconomics** committed to addressing the most challenging issues facing the global community.
   ○ The conference is **hosted by the Observer Research Foundation** in partnership **with** the **Ministry of External Affairs**, Government of India.

➢ **In 2023,** it seeks to capture the state of the world through **its theme of "Provocation, Uncertainty, Turbulence: Lighthouse in the Tempest?"**

➢ The Dialogue is structured as **a multi-stakeholder, cross-sectoral discussion, involving heads of state, cabinet ministers and local government officials,** who are joined by thought leaders from the private sector, media and academia.

What is Observer Research Foundation?

➢ It is an **independent think tank** based in **New Delhi** with three centres in Mumbai, Chennai and Kolkata.

➢ It seeks to lead and aid policy thinking towards building a strong and prosperous India in a fair and equitable world and helps discover and inform India's choices. It carries Indian voices and ideas to forums shaping global debates.

➢ It provides **non-partisan, independent, well-researched analyses and inputs** to diverse decision-makers in governments, business communities, and academia and civil society around the world.

India Denmark Cooperation

Why in News?

Union Minister for Environment, Forest and Climate Change expressed that India and Denmark can jointly demonstrate the feasibility of achieving ambitious climate and sustainable energy goals during the **'India-Denmark: Partners for Green and Sustainable Progress Conference'** in New Delhi.

➢ Since the launch of the **Green Strategic Partnership** in 2020, the bilateral cooperation is focused on promoting green and sustainable development.

Note:

What is Green Strategy Partnership?

➢ The **Green Strategic Partnership** is a mutually beneficial arrangement **to advance political cooperation, expand economic relations and green growth, create jobs, and strengthen cooperation on addressing global challenges** and opportunities; with a focus on an ambitious implementation of the **Paris Agreement** and the **United Nations Sustainable Development Goals.**

➢ Danish companies with niche technologies and expertise have offered to help India in meeting its **air pollution** control targets, including in the key area of tackling the problem of **burning crop stubble.**

➢ Other key points under the partnership include dealing with the **Covid-19** pandemic and **cooperation in water efficiency and water loss.**

➢ The creation of **India-Denmark energy parks** in areas with large numbers of Danish firms and an **India-Denmark skill institute** to train Indian manpower has been proposed.

➢ The Green Strategic Partnership will build on an existing **Joint Commission for Cooperation** and existing **joint working groups.**

What is the State of India Denmark Cooperation?

➢ **Background:**

  ○ The diplomatic relations between **India and Denmark**, established in September 1949, are marked by **regular high-level exchanges**.

  ○ Both countries **share historical links**, **common democratic traditions and a shared desire for regional,** as well as international peace and stability.

  ○ Bilateral relations were elevated to the level of **"Green Strategic Partnership"** during the Virtual Summit held in 2020.

➢ **Commercial and Economic Relations**:

  ○ Bilateral trade in goods and services between India and Denmark has grown by 78%, from USD 2.8 billion in 2016 to **USD 5 billion in 2021.**

  ○ The **major export items from India** to Denmark are textiles, apparels and yarns related, vehicles and components, metal goods, iron and steel, footwear, and travel goods.

  ○ Major **Danish exports to India** are medicinal/pharmaceutical goods, power generating machinery, industrial machinery, metal waste and ore, and organic chemicals.

➢ **Cultural Exchange:**

  ○ India's 75th Independence Day was celebrated in Copenhagen with a great enthusiasm with a flag hoisting ceremony and vibrant **Azadi Ka Amrit Mahotsav celebrations, attended by a large number of the diaspora.**

  ○ Important streets and public places have been named after Indian leaders which include the **Gandhi Plaene (Gandhi Park)**, Copenhagen and a **Nehru Road** near Aarhu University in Aarhus.

➢ **Intellectual Property Cooperation:**

  ○ The MoU signed in 2020 aims at increasing IP co-operation between the two countries by way of, exchange of information and best practices on processes for disposal of applications for patents, trademarks, industrial designs, and **Geographical Indications**, and cooperation in the field of protection of Traditional Knowledge.

  ○ It will be a landmark step forward in India's journey towards becoming a major player in global innovation and further the objectives of the **National Intellectual Property Rights Policy, 2016.**

Japan's Asia Energy Transition Initiative

Why in News?

Japan looks forward to supporting **India's clean energy transition** by including India **in the Asia Energy Transition Initiative (AETI).**

➢ **Japan's AETI**, launched in 2021, **initially supported the Association of South East Asian Nations (ASEAN) countries** towards achieving **net zero emissions**, including financial assistance of USD 10 billion for **renewable energy**.

What is Asia Energy Transition Initiative?

The Government of Japan announced the "Asia Energy Transition Initiative (AETI)", which includes a variety of support for realising energy transitions in Asia.

1. Support drawing roadmaps for energy transitions
2. Asian version of transition finance
3. US$10 billion finance support
   (e.g.) renewable energy, energy efficiency, LNG etc.
4. Technology development and deployment, utilizing the achievement of 2 trillion yen fund
   (e.g.) Offshore wind power generation, Fuel-ammonia, Hydrogen etc.
5. Capacity building of decarbonisation technologies, and knowledge sharing through Asia CCUS network
   ➢ Capacity building of decarbonisation technologies for 1,000 people in Asian countries
   ➢ Workshops and Seminars on energy transitions

What are the Major Highlights of India Japan Clean Energy Cooperation?

- The **Clean Energy Partnership** between India and Japan was published in **March 2022**.
  - ○ It would work on the agenda covered in the **India-Japan Energy Dialogue** 2007 and will subsequently expand into areas of mutual benefit.
- **India and Japan** have taken over the presidentship of **G20** and **G7**, respectively.
  - ○ In the context of **environmental sustainability**, India's **Lifestyle for Environment (LiFE)** is one of the most important priorities during the **G20 presidency**.
  - ○ Also, the **Feed-in Premium (FiP) scheme** by the government of Japan was implemented in **April 2022** and is expected to **improve the country's energy transition**.
- Japan has set a goal of **becoming net-zero by 2050**, and the government issued an interim report on **Clean Energy Strategy in May 2022**.
  - ○ India has also set an ambitious target of achieving **net-zero emissions by 2070.**
- The Indian subcontinent's massive **renewable energy potential** can **boost green hydrogen** (GH2) **production** and immense potential for a **GH2 economy**.
  - ○ **Nepal and Bhutan** also have **surplus hydropower potential**, and **green hydrogen electrolyzers** can tap this in countries like **India and Bangladesh**.
- Events like the **India-Japan Environment week** would help create a roadmap to integrate variable renewable energy into the system through **technological, institutional, and personnel cooperation**.

What is Clean Energy Transition?
- **About:**
  - ○ Clean energy transition refers to the **shift from traditional, fossil fuel-based energy sources** (such as coal, oil, and natural gas) to cleaner, more **sustainable sources of energy** that have a lower impact on the environment.
  - ○ This transition is driven by the **need to reduce greenhouse gas emissions,** mitigate the **effects of climate change**, and address other environmental and **public health concerns** associated with the use of fossil fuels.

- **Clean Energy Sources:**
  - ○ Clean energy sources include **renewable energy sources like solar, wind, hydro, geothermal, and biomass energy**, as well as energy storage technologies like batteries and hydrogen fuel cells.

What is the Status of India -Japan Bilateral Relations?

- **Defense Ties: India-Japan Defence and Security partnership** has evolved over the years from bilateral and multilateral exercises including **Dharma Guardian and Malabar** respectively. And welcoming the participation of Japan for the first time in the **MILAN exercise**.
- **Health-Care:** In view of the similarities and synergies between the goals and objectives of **India's AYUSHMAN Bharat Programme** and Japan's AHWIN, both sides had been consulting with each other to identify projects to build the narrative of **AHWIN for AYUSHMAN Bharat**.
- **Investment and ODA:** India has been the largest recipient of the **Japanese Official Development Assistance(ODA)** Loan for the past decades. **Delhi Metro** is one of the most successful examples of Japanese cooperation through the utilization of ODA.
  - ○ **India's Western Dedicated Freight Corridor (DFC)** project is funded by a soft loan provided by **Japan International Cooperation Agency** under **Special terms for economic partnership (STEP).**

Note:

G-20 and Need for Multilateralism

Why in News?

India's **G-20 Presidency** places multilateral reform as one of its top presidential priorities as India stated that its agenda would be **inclusive, ambitious, action-oriented, and decisive.**

➢ India also said that its primary objectives are to build **global consensus over critical development** and security issues and deliver global goods.

What is the Need for Multilateralism?

➢ Due to persistent deadlocks, multilateralism has **lost the majority's trust.** Multilateralism is facing a **utility crisis**, where powerful member-states think it i**s no longer useful** for them.

➢ Moreover, increasing **great-power tensions, de-globalisation, populist nationalism**, the pandemic, and climate emergencies added to the hardships.

➢ This impasse led states to seek other arenas, including bilateral, plurilateral and Mini lateral groupings, which subsequently contributed to further polarization of global politics.

➢ However, cooperation and multilateral reform is the need of the hour. Most of the challenges nations face today are **global in nature and require global solutions.**

➢ Pressing global issues such as conflicts, **climate change**, **migration**, macroeconomic instability, and **cybersecurity** ca**n indeed only be solved collectively.**

➢ Furthermore, disruptions such as the **Covid-19 pandemic** have r**eversed the social and economic progress that global society made in the past** couple of decades.

What are the Roadblocks to the Reforms?

➢ **Global Power Politics:**
  ○ Multilateralism is deeply entrenched in global power politics. As a result, any action in reforming multilateral institutions and frameworks automatically transforms into a move that seeks changes in the current distribution of power.
  ○ Modifications in the distribution of power in the global **order are neither easy nor normal.**

Moreover, it may have **adverse implications if not done cautiously.**

➢ **Considers a Zero-Sum Game:**
  ○ The status quo powers see multilateral reforms as a zero-sum game. For instance, in the context of the Bretton Woods system, the U.S. and Europe believed **reform would reduce their influence and dominance.**
  ○ This makes decisions about reform in these institutions, by consensus or voting, hard.

➢ **Multiplex Global Order:**
  ○ Multilateralism **appears at odds with the realities** of the emerging multiplex global order.
  ○ The emerging order seems **more multipolar and multi-centred.**
  ○ Such a situation facilitates the formation of **new clubs, concerts and coalitions of the like-minded,** which makes the **reform of older institutions and frameworks more challenging.**

How can G-20 and India Promote Multilateralism?

➢ **Constitution of Engagement Group:**
  ○ Currently, the multilateralism reform narrative **lives only in elite circles and some national capitals,** particularly the emerging powers.
  ○ Therefore, the G-20 should first focus on **setting proper narratives of multilateral reform.**
  ○ G-20 may constitute an engagement group **dedicated to bringing the narrative to the forefront of global discourse**.
  ○ India should also urge the upcoming chairs of the grouping, **Brazil and South Africa, to place multilateral reforms as their presidential priorities**. Since both have global high-table ambitions, it would be an easier task for India.

➢ **Encouraging Minilateral Groupings:**
  ○ While supporting multilateral cooperation, G-20 should continue **encouraging minilateral groupings as a new form of multilateralism.**
  ○ Creating networks of issue-based minilateralism, particularly in areas related to the **governance of the global commons** will be helpful in preventing competitive coalitions where other actors play the same game to their advantage, leading to a more fragmented world order.

Note:

➢ **Being More Inclusive:**

○ The group needs to be more inclusive without sacrificing efficiency. For example, **including the African Union as a permanent member** and the UN Secretary-General and General Assembly President as permanent invitees would be **helpful to enhance its legitimacy.**

○ Similarly, to address the crisis of trust and utility, G-20 should put all its efforts into solving one or two pressing global issues and showcase it as the model of new multilateralism.

● Food, fuel and fertilizer security can be one such issue. On the one hand, it falls under the 'low politics of world politics, so cooperation is more achievable.

India-Australia Relations

Why in News?

Australian Prime Minister is visiting India for **India-Australia Summit** in March 2023, seeking to strengthen the new momentum in ties between the two countries through deeper trade, investment and defence relations.

How have been the India- Australia Relations so far?

➢ **Historical Perspective:**

○ Australia and India for the first time established diplomatic relations in the pre-Independence period, when the **Consulate General of India was first opened as a Trade Office in Sydney in 1941.**

○ India-Australia relations touched a **historic low** when the **Australian Government condemned India's 1998 nuclear tests.**

○ In 2014, Australia signed a **Uranium supply deal** with India, the first of its kind with a country that is a **non-signatory to the Nuclear Non-Proliferation Treaty**, in recognition of India's "impeccable" non-proliferation record.

➢ **Shared Values:**

○ Shared values of **pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement, and increasing high-level interactio**n have underpinned the India-Australia bilateral relationship.

○ Common traits, including **strong, vibrant, secular, and multicultural democracies, a free press, an independent judicial system**, and English language, serve as the foundation for closer co-operation.

➢ **People-to-people Ties:**

○ India is one of the top sources of skilled immigrants to Australia. As per the 2021 Census, around **9.76 lakh people in Australia reported their ancestry as Indian origin**, making them the second largest group of overseas-born residents in Australia.

➢ **Strategic Ties:**

○ In 2020,Prime ministers of both the countries elevated bilateral relationship from Strategic Partnership to **Comprehensive strategic Partnership** during **India-Australia Leaders' Virtual Summit.**

○ In 2021, the prime ministers of both the countries **met during COP26 at Glasgow.**

○ In 2022, there has been a **series of high-level engagements** and exchange of ministerial visits in 2022 and in 2023 including India-Australia virtual summit and Foreign Ministers meet. Several key announcements were made during **2nd India-Australia Virtual Summit** including:

● **A Letter of Intent on Migration and Mobility Partnership Arrangement** to foster the exchange of skills.

➢ **Defence Cooperation:**

○ The **2+2 Ministerial Dialogue** took place in September 2021, and the Deputy Prime Minister and Defence Minister of Australia visited India in June 2022.

○ The **Mutual Logistics Support Agreement (MLSA)** was signed during the Virtual Summit in June 2020 to enhance defence cooperation.

○ **Joint military exercises:**

Note:

- Australia will host the **"Malabar" exercises** in August 2023, with participation from India, Japan, and the US.
- India has been invited to join the **Talisman Sabre exercises** in 2023.

➢ **China Factor:**
○ Australia-China ties became strained due to several reasons including Australia **banning Huawei from 5G network, call for enquiry into the origins of Covid-19 and Slamming china's human rights violations in Xinjiang and Hongkong.**
- China responded by imposing trade barriers on Australian exports, and by cutting off all ministerial contact.
○ India is facing Chinese aggression along the border which has been highlighted by incidents such as **Galwan valley clash.**
○ Both Australia and India support a **rules-based international order** and they are seeking to forge regional institutions in the Indo-Pacific which are inclusive, promote further economic integration.
- The countries' participation in **Quad** (India, Australia, US, Japan) is an example of their convergence of interests, based on shared concerns.

➢ **Multilateral Cooperation:**
○ Both are members of the **Quad**, Commonwealth, **Indian Ocean Rim Association (IORA)**, **ASEAN Regional Forum**, Asia Pacific Partnership on Climate and Clean Development, and have participated in the **East Asia Summits.**
○ Both countries have also been cooperating as members of the Five Interested Parties (FIP) in the **World Trade Organization** context.
○ Australia is an important player in **Asia Pacific Economic Cooperation (APEC)** and supports India's membership of the organisation.

➢ **Economic Cooperation:**
○ **Economic Cooperation Trade Agreement (ECTA):**
- It is the first free trade agreement signed by India with a developed country in a decade which entered into force in December 2022.
○ **Reduction in Duties:**
- It has resulted in an **immediate reduction of duty to zero on 96% of Indian exports to Australia** in value (that is 98% of the tariff lines)

and **zero duty on 85% of Australia's exports (in value) to India**.
○ **Supply Chain Resilience Initiative (SCRI):**
- India and Australia are partners in the trilateral arrangement along with Japan which seeks to enhance the resilience of supply chains in the **Indo-Pacific Region.**
○ **Bilateral trade:**
- Australia is the **17th largest trading partner of India** and India is Australia's 9th largest trading partner.
- Bilateral trade between India and Australia was **US$ 27.5 billion in 2021,** there is potential for it to reach around **US$ 50 billion in five years.**

➢ **Cooperation in Education Sector:**
○ The Mechanism for **Mutual Recognition of Educational Qualifications (MREQ)** was signed in March 2023. This will facilitate mobility of students between India and Australia.
- Deakin University and University of Wollongong are planning to open campuses in India.
- **More than 1 lakh Indian students are pursuing higher education degrees in Australian universities**, making Indian students the second largest cohort of foreign students in Australia.

➢ **Cooperation on Clean Energy:**
○ In February 2022, countries signed a **Letter of Intent on New and Renewable Energy** for cooperation to reduce the cost of renewable energy technologies, including ultra low-cost solar and clean hydrogen.
○ India announced Australian Dollars(AUD) 10 million for Pacific Island Countries under the **International Solar Alliance (ISA)**.
○ Both the countries committed to USD 5.8 million to the **three-year India-Australia Critical Minerals Investment Partnership**.

What are the Challenges in India-Australia Relations?

➢ **Adani coal mine controversy:**
○ There was controversy over the Adani coal mine project in Australia, with some activists protesting against it, which created a strain in the relationship between the two countries.
➢ **Visa issues:**

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○ There have been concerns over visa restrictions for Indian students and professionals seeking to work in Australia.

➤ **Violence with Indian Diaspora:**

○ Attacks on Indian Diaspora and temples in the recent past by Khalistan supporters have been a issue of strain.

IBSA and Digital Governance Reform

Why in News?

According to the **Geneva-based DiploFoundation, India, Brazil, and South Africa,** which have together formed the tripartite **IBSA Forum,** may play a prominent role in the **process of reforming digital governance**.

What is IBSA?
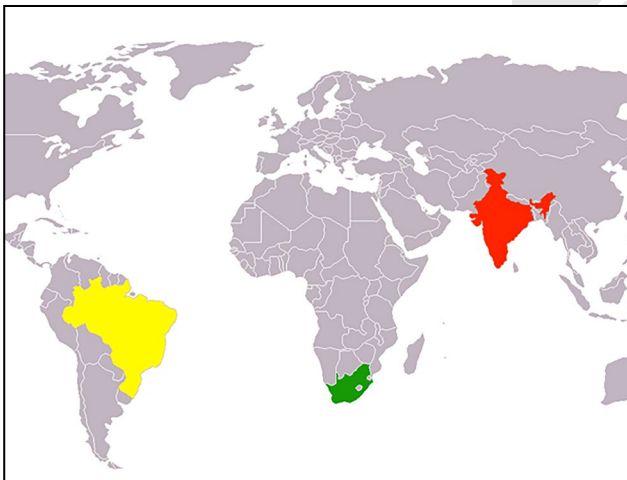
➤ **About:**

○ The IBSA is a trilateral, developmental initiative between **India, Brazil and South Africa** to promote **South-South cooperation** and exchange.

➤ **Formation:**

○ The grouping was formalised and named the **IBSA Dialogue Forum** when the Foreign Ministers of the three countries met in **Brasilia (Brazil) on 6th June 2003** and issued the **Brasilia Declaration.**

➤ **Collaboration:**

○ **Joint Naval Exercise:**

● **IBSAMAR (IBSA Maritime Exercise)** is an important part of IBSA trilateral defence cooperation.

○ **IBSA Fund:**

● Established in 2004, **IBSA Fund (India, Brazil and South Africa Facility for Poverty and Hunger Alleviation)** is a unique Fund through which development projects are executed with IBSA funding in fellow developing countries.

● The fund is managed by the **United Nations (UN) Office for South-South Cooperation (UNOSSC).**

How can IBSA Contribute to Global Digital Governance?

➤ **Potential of IBSA:**

○ **Digital inclusion:**

● **Digitalisation is driving growth in the IBSA economies.**

● The **three countries have spearheaded digital inclusion by prioritising affordable access to citizens**, supporting training for digital skills, and creating a legal framework for the growth of small digital enterprises. India leads the way, with a vibrant digital economy.

○ **Data Governance:**

● **India's G-20 presidency** aims to take strategic leadership with practical initiatives, such as a **self-evaluation of nations' data governance architecture**, modernisation of national data systems to regularly incorporate citizen voices and preferences, and transparency principles for governing data.

● With a big population, **IBSA countries** also see data as a **national resource**.

➤ **Issues:**

○ **Geopolitical Rivalry:**

● **Satellite collisions, cyber-resilience and security of space services, exploration of space resources** has increased competition between countries with a potential of **weaponization of outer space.**

■ Also, **semiconductors** are at the centre of the geopolitical battle between the US and China.

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○ **Sovereignty vs Integration:**
   ● The Foundation observes that **many countries will have to balance data sovereignty and integration** in the global economy.
   ● Free flow of data will b**e essential for small and export-oriented economies.**

What is India's Progress in Digital Governance?

➢ **Aadhar:** India's Aadhaar biometric ID system is seen by many as a leading digital identity initiative, inspiring similar systems in other countries.

➢ **MyGov Platform:** It has laid the **robust foundation for citizen engagement and participatory governance in the country** by providing a **common digital platform**, where citizens can share their views on government programmes and schemes.

➢ **Unified Payments Interface (UPI):** Launched in 2016, **UPI is a real-time payment system** that enables instant money transfers between bank accounts using a mobile device.
   ○ UPI has **transformed the way payments are made in India**, making it faster, more convenient, and more secure. **UPI's success has inspired other countries** to tie up with India and adopt similar payment systems.

➢ **Digital India Act:** Government of India has proposed to come up with Digital India Act 2023 that envisages to act as **catalysts for Indian economy by enabling more innovation, more startups**, and at the same time protecting the citizens of India in terms of safety, trust, and accountability.

Saudi, Iran Agree to Restore Diplomatic Ties

Why in News?

Recently, **Saudi and Iranian officials held bilateral talks** that concluded with an agreement **to restore diplomatic ties** which have been severed since 2016. The **major diplomatic breakthrough negotiated by China** in Beijing.

➢ It comes as diplomats have been trying to end a **long war in Yemen**, a conflict in which both **Iran and Saudi Arabia** are deeply entrenched.

NEW BATTLE LINES
- Pro-Iran Front
- Anti-Iran Front
- Wildcards
- Flashpoints
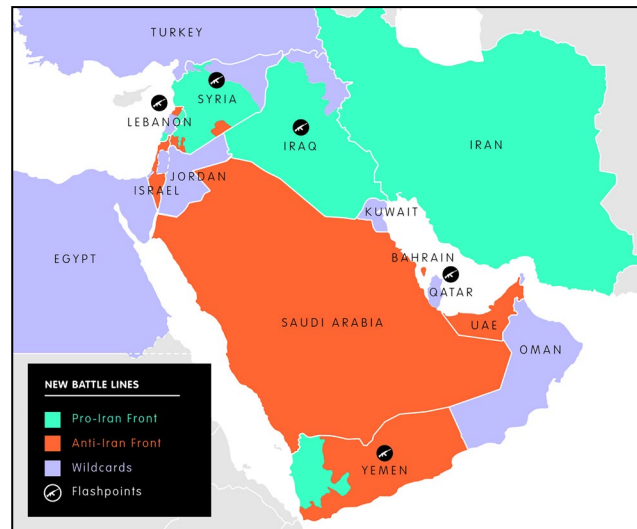
What are the Key Outcomes of the Talks?

➢ The two countries **plan to reopen their respective embassies in Tehran and Riyadh.**

➢ They also vowed to **respect countries' sovereignty and not interfere in internal affairs.**

➢ They also **agreed to activate a 2001 security cooperation agreement**, as well as a **general economy, trade and investment agreement** signed in 1998.

What is the Conflict between Iran and Saudi Arabia?

➢ **Religious Factor:**
   ○ **Saudi Arabia broke off ties with Iran in 2016** after protesters invaded Saudi diplomatic posts after Saudi Arabia had executed a prominent Shiite cleric days earlier.
   ○ **Saudi Arabia has long portrayed itself as the world's leading Sunni nation** while **Iran views itself as the protector of the Islam's Shiite minority**.

➢ **Attacks on Saudi Arabia:**
   ○ Since US's withdrawal from **Iran's Nuclear deal**, Iran was blamed for a series of attacks including one targeting the heart of Saudi Arabia's oil industry in 2019.
      ● Western nations and experts have blamed the attack on Iran though the latter has denied launching the attack.

➢ **Regional Cold War:** Saudi Arabia and Iran - two powerful neighbours - are locked in a fierce struggle for regional dominance.
   ○ Uprisings across the Arab world (after the **Arab Spring in 2011**) caused political instability throughout the region.

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○ Iran and Saudi Arabia exploited these upheavals to expand their influence, notably in Syria, Bahrain and Yemen, further heightening mutual suspicions.

○ Moreover, external powers like the US and Israel have a major role in exacerbating conflict between Saudi Arabia and Iran.

➢ **Proxy Wars:** Iran and Saudi Arabia are not directly fighting but they are engaged in a variety of proxy wars (conflicts where they support rival sides and militias) around the region.

○ For Example, **Houthi rebels in Yemen**. These groups can acquire greater capabilities which can cause further instability in the region. Saudi Arabia accuses Iran of supporting them.

➢ **Leader of Islamic World:** Historically, Saudi Arabia, a monarchy and home to the birthplace of Islam, saw itself as the leader of the Muslim world.

○ However, this was challenged in **1979 by the Islamic revolution** in Iran which created a new type of state in the region - a kind of revolutionary theocracy - that had an explicit goal of exporting this model beyond its own borders.

What can be the Global Implications?

➢ The deal may have **implications for a US-led effort to isolate Iran** economically through sanctions as the deal **may facilitate possible Saudi investment inside Iran**.

➢ In Yemen, the Saudis have been backing the internationally recognised government in an eight-year civil war against Iranian-backed Houthi rebels but have been **looking for a way to end the war by conducting private talks in Oman with the Houthis**.

○ **Saudi Arabia will hope** that Iran will halt Houthi drone and missile strikes on the kingdom, and **that Iran will help with Saudi talks with the Houthis**.

➢ The deal will cause **concern among many Israeli politicians who have sought global isolation for its arch-enemy Iran.** Israel described the pact as a "serious and dangerous" development.

What can be the Implications for India?

➢ **Energy Security:**

○ Iran and Saudi Arabia are **two major oil producers** in the world, and **any conflict between them can lead to oil price spikes** that can have a significant impact on India's energy security.

○ Normalizing ties between these two countries could **help stabilize global oil prices** and ensure a consistent supply of oil to India.

➢ **Trade:**

○ Both Iran and Saudi Arabia are **important trading partners for India**. Normalizing ties between them could open up new avenues for trade and investment, leading to increased economic opportunities for India.

➢ **Regional Stability:**

○ India has strong economic and strategic interests in the Middle East including **International North-South Transport Corridor (INSTC).**

○ Iran is part of India's **extended neighbourhood**. Any instability in the region can have far-reaching consequences for India. Normalizing ties between Iran and Saudi Arabia could contribute to greater stability in the region, reducing the risk of conflict and terrorism.

➢ **Geopolitics:**

○ India maintains **cordial relations with both Iran and Saudi Arabia** and plays a role in maintaining peace and stability in the region. Normalizing ties between these two countries could help India in its efforts to promote peace and security in the region.

○ However, Chinese mediation between Iran and Saudi will create **challenges for India as it will contribute to increasing Chinese influence in the region**.

India-US Commercial Dialogue

Why in News?

Recently, India and the US have launched Joint Statement on their 5th Ministerial level Commercial Dialogue, discussing **supply chain issues and agreeing on a semiconductor partnership initiative.**

➢ In January 2023, the Union Minister of Commerce and Industry of India and the US Trade Representative Ambassador co-chaired the **13th Ministerial-level meeting** of **India – US Trade Policy Forum (TPF)** in Washington D.C.

What are the Key Highlights of the Joint Statement?

➢ **India-US Strategic Partnership:**
  ○ **Both discussed India-US strategic partnership**, as well as economic and commercial engagement between the two countries, including through the **Initiative on Critical and Emerging Technology (iCET)** and th**e Indo-Pacific Economic Framework (IPEF).**

➢ **MoU on Semiconductor Supply Chain:**
  ○ Both countries signed a Memorandum of Understanding (MoU) on **semiconductor** supply chain and innovation partnership to promote cooperation in the segment.

➢ **Talent, Innovation and Inclusive Growth:**
  ○ Both countries recognized that small businesses and entrepreneurs are the lifeblood of the US and Indian economies and **there is a need to facilitate collaboration between the SMEs of the two countries** and to foster innovation ecosystems.
  ○ In this context, both sides announced the launch of a **new Working Group on Talent, Innovation and Inclusive Growth** under the Commercial Dialogue.

➢ **Travel and Tourism Working Group:**
  ○ They re-launched the Travel and Tourism Working Group to continue the progress from before the pandemic and to **also address the many new challenges and opportunities to create a stronger travel** and tourism sector.

➢ **Standards and Conformance Cooperation Program:**
  ○ Both countries also launched the Standards and Conformance Cooperation Program that will be carried out in partnership **between US's American National Standard Institute (ANSI) and India's Bureau of Indian Standards (BIS)** towards standards cooperation.

➢ **Strategic Trade Dialogue:**
  ○ It will address export controls, explore ways of enhancing high technology commerce, and facilitate technology transfer between the two countries.

➢ **Environmental Technology Business Development Mission:**
  ○ Also, the US will send a senior government official-led Clean Energy and Environmental Technology Business Development Mission to India in 2024.
  ○ The trade mission would be an opportunity to further foster US-Indian business **partnerships in grid modernization and smart grid solutions**, **renewable energy**, energy storage, hydrogen, liquefied natural gas, and environmental technology solutions.

➢ **Global Biofuels Alliance:**
  ○ Both sides also pledged to work together in the Global Biofuels Alliance and in the development and deployment of hydrogen technologies.

➢ **US-India Energy Industry Network:**
  ○ The two sides made an announcement regarding US-India Energy Industry Network (EIN) as a broad platform **for facilitating US industry involvement in the Clean EDGE Asia initiative,** the US government's signature initiative to grow sustainable and secure clean energy markets throughout the **Indo-Pacific region.**

➢ **Telecommunications:**
  ○ Both sides expressed interest in working together in developing next generation standards in telecommunications, including **6G.**

How are India's Trade Ties with the US?

➢ India-US bilateral partnership today encompasses a whole host of issues including the response to

Note:

Covid-19, economic recovery post-pandemic, the **climate crisis** and **sustainable development**, critical and emerging technologies, **supply chain resilience,** education, the **diaspora**, and **defence and security.**

➢ The bilateral goods and services trade between the two countries has almost doubled since 2014, exceeding US USD 191 billion in 2022.

➢ The United States has become **India's largest trading partner in 2022**.

➢ The **US is India's largest exporter and trade partner**, while India is the **9th largest trading partner** for the US.

➢ Both nations aim to achieve bilateral trade of USD 500 billion by 2025.

➢ The US is **also the third biggest investor in India with a cumulative Foreign Direct Investment (FDI)** inflow of USD 56,753 million from April 2000 to September 2022.

CJI Urges SCO Member States to Strive for Judicial Cooperation

Why in News?

The **Chief Justice of India (CJI)** recently addressed the **18th meeting of the Chief Justices/Chairpersons of the Supreme Courts** of the **Shanghai Cooperation Organisation (SCO)** member states.

➢ The conference provided an opportunity for member and observer states to reflect upon the **challenges that are common to their jurisdictions** and emphasised the need for **mutual cooperation and sharing of experiences** and wisdom gathered.

What are the Major Highlights of the Meeting?

➢ **Smart and Accessible Judiciary:**
  ○ The CJI highlighted the **need for judicial cooperation** and adoption of new mechanisms to simplify and **make the court processes more smart and accessible** to the common people.

➢ **Importance of Technology in Judiciary:**
  ○ The CJI also stressed the **importance of technology in bridging the gap between citizens and the justice system**.
  ○ The CJI shared recent endeavours made by the **Supreme Court of India,** such as **launching an**

e-version of Supreme Court reports, **artificial intelligence-based live transcription of court proceedings**, and translation of judgments in **multiple regional languages**, among others.

➢ **Issues Highlighted:**
  ○ Also, various issues such as the **overly populated prisons,** access to quality legal representation, **modern public judicial services**, court work overload, **limited judicial resources, high** pendency of cases, and the need for adequate infrastructure facilities were highlighted.

What is SCO?

➢ **About:**
  ○ The **SCO** is a regional **intergovernmental organisation** that promotes cooperation between its member states in the areas of **security, economy, and culture.**

➢ **Genesis:**
  ○ Prior to the creation of SCO in 2001, **Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan** were members of the **Shanghai Five.**
    ● Following the **accession of Uzbekistan to the organisation in 2001**, the **Shanghai Five was renamed the SCO.**
  ○ **India and Pakistan** became members in **2017.**
  ○ **Observer States:** Iran and Belarus
    ● Iran will be the **newest member of the largest regional organisation**- the **SCO,** when it joins the forum in **April 2023** under the chairmanship of India.

➢ **Structure:**
  ○ **Heads of State Council:** The Supreme SCO body which decides its internal functioning and its interaction with other States & international organisations, and considers international issues.
  ○ **Heads of Government Council**: Approves the budget, considers and decides upon issues related to **economic spheres of interaction** within SCO.
  ○ **Council of Ministers of Foreign Affairs**: Considers issues related to day-to-day activities.
  ○ **Regional Anti-Terrorist Structure (RATS)**: Established to **combat terrorism, separatism and extremism.**

➢ **Official language:**
  ○ The official working language of the SCO Secretariat is **Russian and Chinese.**

Note:

Social Issues

Highlights

- Evolution of Women's Movements in India
- India's Internal Migration
- Social Protection for Children: ILO-UNICEF
- Women, Business and the Law 2023 Report
- International Women's Day: Women in Armed Forces
- Migrant Issues and Safeguards
- Centre Opposes Same-Sex Marriage
- Doha Political Declaration on LDCs

Evolution of Women's Movements in India

Why in News?

According to the **Economic Survey 2022-23,** there are about **1.2 crore Self Help Groups** (SHG) in India, most of which are **all-women**. The **Indian women's movement** has been recognized globally for its vibrancy. However, the **evolution of the movement has received less attention.**

How the Women's Movement Evolved in India?

- **Evolution:**
  - The movement has **transformed over time from serving as a beacon for the nationalist movement to a rights-based civil society** movement to a **state-led movement for economic empowerment.**
- **Three Phases:**
  - **Nationalist Movement (1936-1970s)**
    - Women were the **face of the nationalist movement.** The clarion call by **Mahatma Gandhi to the 1936 All India Women's Conference** was the hallmark of a nationalist movement that relied on women to serve as its face.
    - The movement aimed to give women political power. The political history of the Indian women's movement was observed when **women satyagrahis were arrested during the salt satyagraha** and the **Quit India movement.**

- These movements set the stage for women's leadership in politics.
  - **Rights-Based Civil Society Movement (1970s-2000s)**
    - Women's groups were mobilised to sensitize women about their rights.
      - The greatest success of this mobilisation came when the **73rd Amendment to the Constitution** was passed, reserving one-third of seats in panchayat and leadership positions in local bodies for women.
    - **Chipko,** one of the earliest ecofeminist movements in the world broadcasting pictures of women clinging to trees to protest logging.
      - It was a non-violent agitation which originated in Uttar Pradesh's Chamoli district (now Uttarakhand) in 1973.
    - Also, **Self Employed Women's Association** began to **unionise women** in the informal sector leading the advocacy for reforms in legal and social protection for women workers.
  - **State-Led Movement for Economic Empowerment (2000s-present)**
    - The government invested heavily in **building and supporting SHGs.**
    - SHGs **function mainly as thrift and credit institutions.**
    - The movement aimed to enhance women's access to income-generating activities.
    - The movement seeks to address the **deficiency of vocational skills** and **entrepreneurship among women.**

Note:

What are Self Help Groups?
➢ **About:**
  ❍ **SHGs** are informal associations of people who choose to come together to find ways to improve their living conditions.
  ❍ It can be defined as a **self-governed, peer-controlled information group** of people with similar socio-economic backgrounds and having a desire to collectively perform a common purpose.
➢ **Objectives:**
  ❍ SHG relies on the notion of "Self Help" to encourage **self-employment and poverty alleviation.**
  ❍ To build the **functional capacity of the poor and the marginalized** in the field of employment and income generating activities.
  ❍ To **resolve conflicts through collective leadership** and mutual discussion.
  ❍ To **provide collateral free loans** with terms decided by the group at the market driven rates.
  ❍ To work as a collective guarantee system for members who propose to **borrow from organised sources.**

Conclusion

The women's movement in India has evolved over time, with each phase addressing different aspects of women's lives. The future of the women's movement in India depends on **how effectively the state-led movement can transform women's lives** by taking **economic empowerment programs to scale.**

India's Internal Migration

Why in News?

There is **concern in Tamil Nadu over a possible exodus of migrant workers** after videos showed purported attacks on Hindi-speaking men.
➢ Almost **a million migrants are estimated to work in Tamil Nadu**, and industry bodies fear the state's industrial and manufacturing sector would be severely impacted by an exodus.

What is Migration?
➢ **About Migration:**
  ❍ The **International Organization for Migration** defines a migrant as any person **who is moving or has moved across an international border or within a state** away from his/her habitual place of residence.
  ❍ Examining the migration shifts in scale, direction, demography and frequency can lead to effective policies, programmes and operational responses on the ground.
➢ **Factors Determining Migration:**
  ❍ It can be **either voluntary or forced movements** as a consequence of the increased magnitude or frequency of disasters, economic challenges and extreme poverty or conflict situations.
  ❍ In more recent years, the **Covid-19 pandemic is also one of the major causes of Migration.**
➢ **Push and Pull Factors of Migration**:
  ❍ **Push factors are those that compel a person** to leave a place of origin (out-migration) and migrate to some other place such as - **economic reasons, social reasons, lack of development of a particular place.**
  ❍ **Pull factors indicate the factors which attract migrants** (in-migration) to an area (destination) such as **job opportunities, better living conditions, availability of basic or high-level facilities etc.**

What are the Statistics about Migration?

➢ **2011 Census:**
  ❍ Number of **internal migrants** (both inter-state and within state) in India at 45.36 crore, making up **37% of the country's population.**
  ❍ The **annual net migrant flows** amounted to about **1% of the working age population.**
  ❍ India's **workforce was 48.2 crores** strong. This figure is estimated to have exceeded 50 crores in 2016.
➢ **Report of the Working Group on Migration, 2017:**
  ❍ Report under the **Ministry of Housing and Urban Poverty Alleviation** stated that **17 districts** accounted for the **top 25% of India's total male out-migration**.
    ● Ten of these districts are in **UP**, six in **Bihar**, and one in **Odisha**.

SHARE OF MIGRANT WORKERS AMONG TOTAL WORKERS BY MAJOR SECTORS

Sector	RURAL		URBAN	
	Male	Female	Male	Female
Primary	4%	75%	20%	65%
Manufacturing	13%	59%	38%	51%
Public Services	16%	69%	40%	56%
Construction	8%	73%	32%	67%
Traditional Services	10%	65%	29%	55%
Modern Services	16%	66%	40%	52%
Total	6%	73%	33%	56%

Source: NSS 2007-08, Report of the Working Group in Migration, 2017

➢ **Economic Survey 2016-17:**
   ○ Relatively **less developed states** such as **Bihar and Uttar Pradesh** have **high net out-migration**.
   ○ Relatively **more developed states** such as **Goa, Delhi, Maharashtra, Gujarat, Tamil Nadu, Kerala and Karnataka** reflect net immigration.
   ○ The **largest recipient was the Delhi region**, which **accounted for more than half of migration in 2015-16.**
   ○ While **Uttar Pradesh and Bihar** taken together **account for half of total out-migrants.**

➢ **Migration in India Report 2020-21:**
   ○ The report released by **Ministry of Statistics and Program Implementation in June 2022,** collated numbers for temporary visitors and migrants.
   ○ **0.7% of the country's population** was recorded as a **'temporary visitor'** during the July 2020-June 2021 period.
      ● Temporary visitors were defined as those who arrived in households after March 2020 and **stayed continuously for a period of 15 days or more but less than 6 months.**
      ● **Over 84% of these 0.7% temporary visitors moved places due to pandemic.**
   ○ **The all-India migration rate was 28.9%** for July 2020-June 2021, with a **26.5 % migration rate in rural areas and 34.9% in urban areas.**
      ● **Females recorded a higher share of migration rate** of 47.9%; 48% in rural and 47.8% in urban areas.
      ● **Migration rate for males was 10.7%**, with 5.9% in rural and 22.5% in urban areas.

   ○ 86.8% **females migrated for marriage** while 49.6% of the **males migrated in search of employment**.

What is the Significance of Migration and Migrants?

➢ **Labour Demand and Supply:** Migration **fills gaps in demand for and supply of labor,** efficiently allocates skilled labor, unskilled labor, and cheap labor.
➢ **Skill Development:** Migration enhances the knowledge and skills of migrants through **exposure and interaction with the outside world.**
➢ **Quality of Life:** Migration **enhances chances of employment** and economic prosperity which in turn improves quality of life.
➢ **Economic Remittances:** The migrants also send extra income and remittance back home, thereby **positively impacting their native place.**
➢ **Social Remittances:** Migration helps to improve the social life of migrants, as they **learn about new cultures, customs, and languages** which helps to **improve brotherhood among people** and ensures **greater equality** and tolerance.

What are the Challenges Related to Migration?

➢ **Issues faced by Marginalised Sections**:
   ○ Whereas the people who are poor or belong to a **marginalised section do not find it easy to** mix up.
➢ **Social and Psychological Aspects:**
   ○ Many times, migrants are **not easily accepted** by the host place and they always **remain as a second-class citizen**.
   ○ Any person migrating to a new country faces **multiple challenges, from cultural adaptation and language barriers** to homesickness and loneliness.
➢ **Exclusion from Political Rights and Social Benefits:**
   ○ Migrant workers are **deprived of many opportunities** to exercise their political rights like the **right to vote.**
   ○ Moreover, the need to provide **proof of address, Voter IDs and Aadhaar cards**, which is difficult due to the fluidity of their lives, deprive them from accessing welfare schemes and policies.

What are the Government Initiatives Related to Migration?

➢ In 2021, **NITI Aayog**, along with a working subgroup of officials and members of civil society, has prepared a **draft National Migrant Labour policy.**

Note:

drishti

➤ The ramping up of **One Nation One Ration Card (ONORC)** project and introduction of the **Affordable Rental Housing Complexes (ARHC), PM Garib Kalyan Yojna scheme** and **e-Shram portal** reflected a ray of hope.

     ❍ However, the story of migrants is still **a tale of distress** in India.

Social Protection for Children: ILO-UNICEF

Why in News?

Recently, **ILO (International Labour Organization)** and **UNICEF (United Nations Children's Fund)** has released a report titled- "**More than a billion reasons: The urgent need to build universal social protection for children**", which states that just 1 in 4 children are shielded by social protection, leaving others exposed to poverty, exclusion and multidimensional deprivations.

What is the Need for Social Protection?

➤ Social protection is a universal human right and a precondition for a world **free from poverty.**

➤ It is also a vital foundation **to help the world's most vulnerable children fulfill their potential.**

➤ Social protection **helps increase access to food, nutrition, education and healthcare.**

➤ It can help prevent **child labour** and **child marriage and** address the drivers of gender inequality and exclusion.

➤ It can also **reduce stress and even domestic violence**, while supporting household livelihoods.

➤ And by tackling monetary poverty directly, it can also **mitigate the stigma and exclusion so many children living in poverty experienc**e – and the pain that a childhood feeling "less than" can produce.

What are the Findings of the Report?

➤ **Global Scenario:**

     ❍ 1.77 billion children aged 0-18 years lack access to a child or family cash benefit, a fundamental pillar of a social protection system.

     ❍ Children are **twice as likely to live in extreme poverty as adults.**

        ● Approximately 800 million children are subsisting below the poverty line of USD 3.20

a day, and 1 billion children are experiencing multidimensional poverty.

     ❍ Only 26.4% of children aged 0-15 years are shielded by social protection, leaving the remaining 73.6% exposed to poverty, exclusion and multidimensional deprivations.

     ❍ Globally, all 2.4 billion children need social protection to be healthy and happy.

➤ **Social Protection Coverage:**

     ❍ Child and family social protection coverage **rates fell or stagnated in every region in the world** between 2016 and 2020, leaving no country on track to achieve the **Sustainable Development Goals (SDG)** of achieving substantial social protection coverage by 2030.

        ● In Latin America and the Caribbean, **coverage fell significantly from approximately 51% to 42 %.**

        ● In many other regions, coverage has stalled and remains low.

➤ **Risk:**

     ❍ Multiple crises are likely **to push more children into poverty,** necessitating an immediate increase in social protection measures.

     ❍ The impacts of lack of social protection for children are **both immediate and lifelong,** heightening **rights violations such as child labour and child marriage,** and diminishing children's aspirations and opportunities.

     ❍ And this unrealized human potential **has inevitable adverse and long-term implications for communities**, societies and economies more broadly.

➤ **Significance of Social Protection:**

     ❍ Before the **Covid-19 pandemic**, children were more than twice as likely to be living in extreme poverty than adults.

     ❍ One billion children **live in multidimensional poverty without access to education, health**, housing, nutrition, sanitation or water.

     ❍ The Covid-19 pandemic highlighted that **social protection is a critical response in times of crisis.**

     ❍ Nearly every government in the world either rapidly adapted existing schemes or introduced **new social protection programmes** to support children and families.

Note:

- In 2022, South Africa introduced a welfare scheme, Child Support Grant (CSG) Top-Up, aiming to increase the **CSG amount for orphans and children heading** or living in child-headed households.
- **31 states in India had implemented the national 'PM CARES for Children'** scheme, a package of measures for 10,793 full orphans and 151,322 half-orphans. So far, **4,302 children have received support from the scheme.**

What are the Recommendations?

➢ Policymakers should **take action towards universal social protection for all children,** including investments in benefits that offer proven and cost-effective ways to combat child poverty.

➢ Authorities are also advised **to provide child benefits through national social protection systems** that also connect families to crucial health and social services, such as free or affordable quality childcare.

➢ There is a need for securing **sustainable financing for schemes by mobilizing domestic resources,** increasing budget allocation for children, strengthening social protection for parents and caregivers and guaranteeing access to decent work and adequate employee benefits.

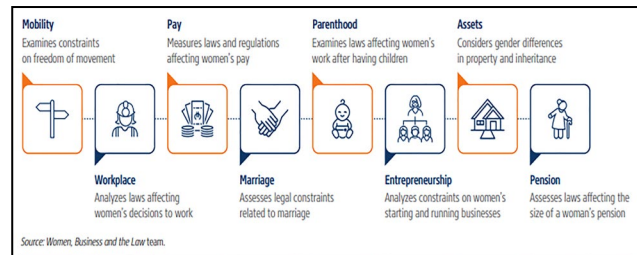# Women, Business and the Law 2023 Report

Why in News?

India scored above the regional average in the **World Bank's Women, Business and the Law 2023 report.** For India, report used data on laws and regulations in Mumbai, India's main business city.

➢ India received **a perfect score for laws related to freedom of movement, women's work decisions,** and marriage constraints.

What is Women, Business and the Law 2023 Report?

➢ **About:** Women, Business and the Law 2023 is the 9th in a series of annual reports that analyze laws and regulations affecting women's economic opportunity in **190 economies.**

○ Women, Business and the Law data is available for the period from 1971 to 2023 (calendar years 1970 to 2022)

➢ **Indicators: It has eight indicators**- Mobility, Workplace, Pay, Marriage, Parenthood, Entrepreneurship, Assets, and Pension.

Mobility	Pay	Parenthood	Assets
Examines constraints on freedom of movement	Measures laws and regulations affecting women's pay	Examines laws affecting women's work after having children	Considers gender differences in property and inheritance
Workplace	**Marriage**	**Entrepreneurship**	**Pension**
Analyzes laws affecting women's decisions to work	Assesses legal constraints related to marriage	Analyzes constraints on women's starting and running businesses	Assesses laws affecting the size of a woman's pension

Source: Women, Business and the Law team.

➢ **Uses:** Data and indicators in Women, Business and the Law 2023*,* used **to build evidence of the relationship between legal gender equality and women's entrepreneurship and employment.**

○ Since 2009, Women, Business and the Law has been enhancing the study of gender equality and informing discussions on **improving women's economic opportunities and empowerment.**

What are Findings of the Report?

➢ **India:**

○ India as Lower middle Income group country with WBL index score is 74.4 out of 100.

- 100 representing the highest possible score.

○ The **overall score for India is higher than the regional average** observed across South Asia (63.7). Within the South Asia region, **the maximum score observed is 80.6 (Nepal).**

○ In India, a thriving civil society also contributed to identifying gaps, drafting legislation, and organizing public opinion through campaigns, discussions, and protests, leading to enactment of the **2005 Domestic Violence Act.**

India - Scores for *Women, Business and the Law 2023*

Mobility	Workplace	Pay	Marriage	Parenthood	Entrepreneur-ship	Assets	Pension	WBL 2023 Index Score
100	100	25	100	40	75	80	75	74.4
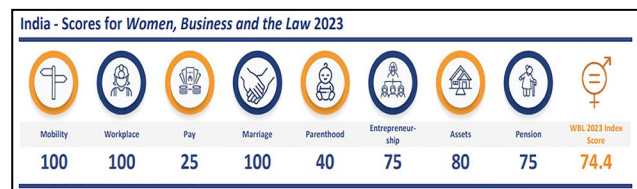
➢ **Globally:**

○ **Only 14 scored a perfect 100**: Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Latvia, Luxemburg, The Netherlands, Portugal, Spain and Sweden.

Note:

○ In 2022, the **global average score is 76.5 out of 100.**

○ Nearly **2.4 billion women of working age around the world live in economies** that do not grant them the same rights as men.

○ At the current pace of reform, it would take at least 50 years to approach legal gender equality everywhere.

○ Progress toward equal treatment for women has fallen to its weakest pace in 20 years.

● Most reforms focused on increasing paid leave for parents and fathers, removing restrictions on women's work, and mandating equal pay.

● Progress across the areas measured has also been uneven, with most reforms in Workplace and Parenthood.

What are the Areas India needs to Focus on?

➢ **Laws affecting pay, pension, inheritance and property rights**. The laws affecting the Indian working woman's pay and pension do not provide for equality with Indian men.

○ To improve on the Pay indicator, **India should mandate equal remuneration for work of equal value,** allowing women to work at night, and allowing women to work in an industrial job in the same way as men.

➢ In India laws affecting women's pay, laws affecting women's work after having children, constraints on women starting and running a business, gender differences in property and inheritance, and laws affecting the size of a woman's pension, India could consider reforms to improve legal equality for women.

○ For example, **one of the lowest scores for India is on the indicator measuring laws affecting women's pay** (the WBL2023 Pay indicator).

○ Globally, on average, women enjoy only 77 percent of the legal rights that men do.

International Women's Day: Women in Armed Forces

Why in News?

Recently, on the occasion of **International Women's Day**, Group Captain Shaliza Dhami has been selected to take over the command of a **frontline combat unit in the Western sector** (facing Pakistan).

➢ She will be the **first woman officer in the IAF to command a missile squadron in the Western sector.**

What are the Key Points about International Women's Day?

➢ **About:** It is celebrated **annually on 8ᵗʰ March.** It includes:

○ Celebration of women's achievements,

○ raising awareness about women's equality,

○ lobbying for accelerated gender parity,

○ fundraising for female-focused charities, etc.

➢ **Brief History:**

○ Women's Day was **first celebrated back in 1911 by Clara Zetkin,** who was a German. The **roots of the celebration had been in the labour movement across Europe and North America.**

● However, it was only **in 1913 that the celebrations were shifted to 8th March,** and it has remained that way ever since.

○ International Women's Day was **celebrated for the first time by the United Nations in 1975.**

● In December 1977, the UN General Assembly adopted a resolution proclaiming a **United Nations Day for Women's Rights and International Peace** to be observed on any day of the year by Member States, in accordance with their historical and national traditions.

➢ **Theme:**

○ The theme for International Women's Day, 2023, according to the United Nations is **"DigitALL: Innovation and technology for gender equality"** and it aims to emphasize the importance of technology in bringing gender issues to light.

What is the Status of Women in Armed Forces?

➢ **Background:**

○ The **Indian Air Force started inducting women fighter pilots in 2016**. The first batch had three women fighter pilots who currently fly the **MiG-21**, **Su-30MKI** and **Rafale**.

○ Women officers have started taking command of **various Army units** in arms and services including **Engineers, Signals, Army Air Defence, Intelligence Corps, Army Service Corps, Army Ordnance Corps and Electronics and Mechanical Engineers.**

- ➢ **Current Statistics:**
  - ○ There are **10,493 women officers serving in the armed forces**, the majority in the medical services.
  - ○ The **Indian Army**, being the largest of the three services, **has the largest number of women officers at 1,705, followed by 1,640 women officers in the Indian Air Force, and 559 in the Indian Navy.**
  - ○ In January 2023, the army deployed **a woman officer**, **Captain Shiva Chouhan, on the Siachen glacier for the first time**.
  - ○ In **February 2023, the army began assigning women officers to command roles outside of the medical stream for the first time.**
    - ● Around **50 of them are set to head units in operational areas under the Northern and Eastern Commands** responsible for guarding India's borders with China.
  - ○ The **Navy has also started inducting women officers on frontline ships**, **earlier a no-go zone** for women officers.
    - ● Many of them have been posted in the **sensitive northern and eastern commands of the Army**.

What are the Concerns Related to Gender Equality?

- ➢ **Global:**
  - ○ UN Secretary General stated that **Gender equality is growing more distant.** On the current track, **UN Women puts it 300 years away.**
  - ○ According to the UN, **legal restrictions have kept 2.7 billion women from accessing the same choice of jobs as men.**
    - ● As of 2019, **less than 25% of parliamentarians were women.**
    - ● **One in three women** experience **gender-based violence.**
- ➢ **India Specific:**
  - ○ According to **CMIE data**, as of **December 2021**, while the male LFPR was 67.4%, the **female LFPR was as low as 9.4%.**
  - ○ Even if one sources data from the **World Bank,** India's female labor force participation rate is around 25% when the global average is 47%.

- ○ In the **Global gender gap index** (which measures progress towards gender parity), **India slipped to 135th place in 2022.**
  - ● However, recently the **WEF has agreed to make changes in criteria for Global Gender Gap Reports** by **taking into account the participation of women at panchayat level** to rank countries in its future reports. **It will better India's position at the global level.**
- ○ As per the data compiled by the **Inter-Parliamentary Union** (IPU), of which India is a member, **women represent just 14.44% of the total members of the Lok Sabha**.
- ○ According to a 2018 study by the **International Labour Organization** (ILO), **more than 95% of India's working women are informal workers** who work in labour-intensive, low-paying, highly precarious jobs/conditions, and **with no social protection.**

What are the Challenges for Women in Armed Forces?

- ➢ **Societal Issues:**
  - ○ Composition of male officers, predominantly drawn from a rural background, with **prevailing societal norms,** troops are not yet mentally schooled to accept women officers in command of units.
  - ○ **Society has low acceptance for the women officer** who had been **caught as a prisoner of war** by an enemy country.
- ➢ **Physiological Challenges:**
  - ○ **Motherhood, childcare, psychological limitations** are vital factors, which have a bearing on the employment of women officers in the Army.
  - ○ It is a challenge for women to meet these hazards of service owing to **prolonged absence during pregnancy**, motherhood and domestic obligations towards their children and families especially when both husband and wife happen to be service officers.
- ➢ **Family Issues:**
  - ○ **Armed forces require sacrifices and commitment beyond the call of duty** by the entire family of service personnel involving **separation and frequent transfers, affecting the education of children and career prospects of the spouse.**

Note:

Migrant Issues and Safeguards

Why in News?

Tamil Nadu's industrial and manufacturing sectors are concerned about possibility of migrant worker exodus after purported attacks on Hindi-speaking men.

➢ The state's industries heavily rely on the estimated one million migrant workers.

What are the Issues Faced by Migrant Workers?

➢ **Social and Psychological Aspects:**
  ○ Many times, migrants are **not easily accepted** by the host place, and they always **remain as a second-class citizen**.
  ○ Any person migrating to a new culture faces **multiple challenges, from cultural adaptation and language barriers** to homesickness and loneliness.

➢ **Exclusion from Political Rights and Social Benefits:**
  ○ Migrant workers are **deprived of many opportunities** to exercise their political rights like the **right to vote.**
  ○ Moreover, the need to provide **proof of address, Voter IDs and Aadhaar cards**, which is difficult due to the fluidity of their lives, deprive them from accessing welfare schemes and policies.

➢ **Issues faced by Marginalised Sections**:
  ○ Whereas the people who are poor or belong to a **marginalised section do not find it easy to** mix up.

SHARE OF MIGRANT WORKERS AMONG TOTAL WORKERS BY MAJOR SECTORS

Sector	RURAL		URBAN	
	Male	Female	Male	Female
Primary	4%	75%	20%	65%
Manufacturing	13%	59%	38%	51%
Public Services	16%	69%	40%	56%
Construction	8%	73%	32%	67%
Traditional Services	10%	65%	29%	55%
Modern Services	16%	66%	40%	52%
Total	6%	73%	33%	56%

What is the Legal Framework for Migrant Labour Welfare?

➢ The **legal framework** for migrant labour welfare in India is provided by the **Inter-State Migrant Workmen Act, 1979.**
  ○ The Act **mandates the registration of establishments that employ migrant workers** and requires contractors to obtain licenses from both the home and host states. However, the Act has not been fully implemented in practice.
  ○ The Act has been subsumed into four broader labor codes, which are:
    ● **The Code on Wages,2018**
    ● **The Industrial Relations Code,2020**
    ● **The Code on Social Security,2020**
    ● **The Occupational Safety, Health and Working Conditions Code,2020**

➢ The **implementation process is delayed** as states are yet to finalise their rules under these codes.

What are the Issues with Legal Framework for Migrant Workers?

➢ Inter-State Migrant Workmen Act, 1979 has **not been fully implemented** in states.

➢ **Small Startups and Informal Sector Left out From Social Security Coverage.** There are no specific provisions for social security of employees in small startups, **Micro, Small and Medium Enterprises** or workers in small establishments having less than 300 workers.

➢ **Migrant workers, self-employed workers, home-based workers, and other vulnerable groups** in rural areas are not covered under social security benefits.
  ○ This would enable companies to introduce arbitrary service conditions for their workers.

What are the Steps taken by Government for Migrant Welfare?

➢ **Central Government's Steps:**
  ○ The Union Government has approved the proposal for the continuation of the 7 existing sub-schemes under the **"Relief and Rehabilitation of Migrants and Repatriates"** scheme.
  ○ In 2021, **NITI Aayog**, along with a working subgroup of officials and members of civil society, has prepared a **draft National Migrant Labour policy.**
  ○ The ramping up of **One Nation One Ration Card (ONORC)** project and introduction of the **Affordable Rental Housing Complexes (ARHC),** PM Garib

Kalyan Yojna scheme and **e-Shram portal** reflected a ray of hope for migrants.

➢ **State Governments' Steps:**

○ In 2012, with the help of the **International Labour Organisation**, an **MoU was signed between Odisha and Andhra Pradesh** to track labourers migrating from 11 districts of Odisha to work in brick kilns in then-united Andhra Pradesh.

○ **Kerala has set up facilitation centres for migrant workers** to maintain data regarding migrant workers arriving in Kerala as well as help migrant workers navigate any problems they might face.

○ Jharkhand has started the **Safe and Responsible Migration Initiative (SRMI)** in 2021, which aims at enabling systemic registration of migrant workers for monitoring and analysis in the source as well as the destination districts.

○ **Jharkhand government will have help desks** which will be known as **'labour consulates'** in various states.

Centre Opposes Same-Sex Marriage

Why in News?

The Centre has opposed **same-sex marriage** in the **Supreme Court,** stating that **marriage between a biological man and woman is a holy union**, a sacrament, and a sanskar in India.

➢ A Bench led by **Chief Justice of India** refers petitions to legally recognise same-sex marriages to a **Constitution Bench** of **five judges of the Supreme Court**

## What is the Stand of Government Regarding Same Sex Marriage?

➢ The government argued that the Court had **only decriminalised sexual intercourse between same-sex persons** in its 2018 judgement in *Navtej Singh Johar v. Union of India,* and not legitimised this "conduct".

○ The court, **while decriminalising homosexuality,** did not accept same-sex marriage as part of the **fundamental right to life and dignity** under **Article 21 of the Constitution.**

➢ The government argues tha**t marriage depends on customs**, rituals, practices, cultural ethos, and societal values.

○ **Same-sex marriage cannot be compared to a man and woman living as a family** with children born out of the union.

➢ The **Parliament** has **designed and framed the marriage laws** in the country to recognise only the union of a man and a woman.

○ Registration of marriage of same-sex persons would result in a **violation of existing personal as well as codified law** provisions.

● The **Special Marriage Act of 1954** provides a civil form of marriage for couples who cannot marry under their personal law.

➢ The government argued that **any deviation from this norm can only be made through the legislature,** and not the Supreme Court.

What are the Aruguments in Favour of Same Sex Marriage?

➢ **Equal Rights and Protection Under the Law**: All individuals, regardless of their sexual orientation, have the right to marry and form a family.

○ Same-sex couples should have the **same legal rights** and protections as opposite-sex couples.

○ Non-recognition of same-sex marriage **amounted to discrimination that struck at the root of the dignity** and self-fulfillment of **LBTQIA+ couples.**

➢ **Strengthening Families and Communities:** Marriage provides social and economic benefits to couples and their families. Allowing same-sex couples to marry **strengthens families and communities by promoting stability and security.**

➢ **Global Acceptance:** Same-sex marriage is legal in many countries around the world, and denying this right to individuals in a democratic society goes **against the global principles.**

○ In 133 countries homosexuality decriminalised, but only in **32 of them same-sex marriage is legal**. **Countries legalised same sex marriage:**
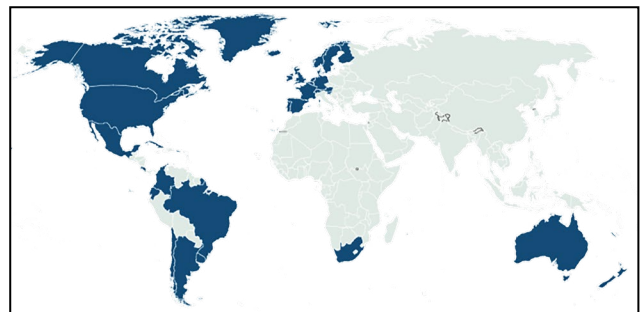
What are the Aruguments Against Same Sex Marriage?

➢ **Religious and Cultural Beliefs:** Many religious and cultural groups believe that **marriage should only be between a man and a woman.**

   ❍ They argue that **changing the traditional definition of marriage** would go against the **fundamental principles** of their beliefs and values.

➢ **Procreation:** Some people argue that the primary purpose of marriage is **procreation**, and that same-sex couples cannot have **biological children.**

   ❍ Therefore, they believe that same-sex marriage should not be allowed because it goes **against the natural order of things.**

➢ **Legal issues:** There are concerns that allowing same-sex marriage will create legal problems, such as issues with **inheritance, tax, and property rights.**

   ❍ Some people argue that it would be too difficult to **change all the laws and regulations to accommodate same-sex marriage.**

Doha Political Declaration on LDCs

Why in News?

The **5th United Nations** Conference on the **Least Developed Countries (LDC5)** concluded with adoption of the **'Doha Political Declaration'** by the world leaders.

➢ The declaration is a key outcome of the **second part of LDC5 conferenc**e held under the **theme "From Potential to Prosperity"** in Qatar.

What are the Key Highlights of the Declaration?

➢ **Doha Programme of Action:**

   ❍ It focuses on implementing the **Doha Programme of Action (DPoA)**, the 10-year plan to put the **world's 46 most vulnerable countries back on track** to achieving the **Sustainable Development Goals (SDG).**

      ● DPoA for the Decade (2022-2031) was agreed upon during the first part of the LDC5 conference in March 2022 in New York, the US.

   ❍ DPoA (2022-2031) consisted of **Six Key Focus Areas,**

      ● Eradicating **Poverty**

● Leveraging the potential of science and technology to fight against multidimensional vulnerabilities and to achieve the SDGs

● Addressing **Climate Change**

● Environmental Degradation

● Recovering from **Covid-19** and building resilience against future shocks for risk-informed sustainable development.

➢ **Need for the Declaration:**

   ❍ The 46 LDCs are being hit the hardest by multiple crises including the **Covid-19 Pandemic, Climate Crisis,** growing Inequalities, rising Debt Burdens and economic shocks.

   ❍ They have contributed **minimally to Carbon Dioxide Emissions**, but disproportionately **bear the burden of climate change impact**s.

   ❍ These countries, which include 33 African nations, face the challenge of high **debt costs while having inadequate liquidity** to provide essential services.

   ❍ The LDCs are the **worst performers on the progress made towards achieving SDGs**, according to the **Sustainable Development Report 2022.**

What are LDCs?

➢ LDCs are a group of countries identified by the United Nations as having the **lowest indicators of socioeconomic development.** These countries are characterized by high levels of poverty, low levels of human capital, and limited access to basic services, such as healthcare and education.

➢ Currently, **there are 46 countries** on the United Nations' list of LDCs.

   ❍ Africa (33);

   ❍ Asia (9);

   ❍ Caribbean (1): Haiti;

   ❍ Pacific (3): Kiribati, Solomon Islands and Tuvalu.

➢ The list of LDCs is reviewed **every three years by the Committee for Development Policy (CDP)**, a group of independent experts that report to the **Economic and Social Council (ECOSOC)** of the United Nations.

➢ Following a triennial review of the list, the CDP may recommend, in its report to ECOSOC, countries for addition to the list or graduation from LDC status.

Note:

Science & Technology

Highlights

- Japanese Encephalitis
- Glow Scope
- Use of Antibiotics on Livestock
- India's Third Moon Mission
- NASA's Imaging X-ray Polarimetry Explorer
- India's First DNA Vaccine for Dengue
- E- pharmacy in India
- Proton Beam Therapy
- QR-Code Based Coin Vending Machine
- Protecting Earth's Orbit from Space Debris
- Megha-Tropiques-1 Satellite
- Organoid Intelligence and Bio-Computers

Japanese Encephalitis

Why in News?

A study conducted in **Gorakhpur district, India,** involving 266 children vaccinated with the **Chinese SA-14-14-2 vaccine (a live, attenuated vaccine)** for **Japanese encephalitis,** found very low levels of **neutralising antibodies IgG** at different time points after vaccination.

➤ However, the study did not measure **cell-mediated immune responses (T-cell immune responses)**

What does the Study on Vaccine for Japanese Encephalitis Suggest?

➤ **About:**
  - The study found that **seroprotection** against the virus decreased in the vaccinated children.
    - **Seroprotection** is an antibody response capable of preventing infection, e.g., after a vaccination or a previous infection with a microorganism.
  - Nearly **98% of the children who received the vaccine did not have any IgG antibodies** against the virus.
  - **Similar results were seen in a study carried out in Bangladesh,** where children were immunised with the Chinese vaccine.
➤ **Comparison with Other Vaccine:**
  - In contrast, a trial carried out using an **inactivated vaccine (Jenvac),** developed by **Bharat Biotech** in collaboration with NIV Pune has **found superior protection** at the end of two years even with a single dose.

  - Jenvac has been approved as a **single-dose vaccine.**
    - The **November 2020** trial found that **two doses of Jenvac** produced more antibodies than two doses of the Chinese vaccine.

What is Japanese Encephalitis?

➤ **About:**
  - **Japanese Encephalitis (JE)** is a **viral infection** that can cause inflammation in the **brain.**
    - It is caused by a flavivirus that **belongs to the same genus as dengue, yellow fever and West Nile viruses.**
  - Japanese encephalitis virus (JEV) is also a major cause of **Acute Encephalitis Syndrome (AES)** in India.
➤ **Transmission:**
  - The disease is transmitted to humans through bites from **infected mosquitoes** of the **Culex species.**
  - These mosquitoes breed mainly in **rice fields** and large water bodies rich in **aquatic vegetation.**
➤ **Treatment:**
  - There is **no antiviral treatment for patients** with JE.
    - Treatment, available, is **supportive to relieve symptoms** and stabilise the patient.
➤ **Prevention:**
  - **Safe and effective JE vaccines** are available to prevent the disease.
    - **JE vaccination** is also included under the **Universal Immunisation Program** of the Government of India.

Note:

What are Antibodies?

➢ **About:** An **antibody is a protein produced by the body's immune system** when it detects harmful substances, called antigens.

➢ **Types:** There are **5 types of heavy chain constant regions** in antibodies (immunoglobulin) and according to these types, they are classified into IgG, IgM, IgA, IgD, and IgE.

  ○ **IgG is the main antibody in blood and it has a powerful ability to bind to bacteria and toxins**, and thus it takes on an important role in the biological defense system. It is the only isotype that can pass through the placenta, and **IgG transferred from the mother's body protects a newborn.**

5 Types of Antibodies

Antibodies or immunoglobulins (Ig) are Y-shaped proteins that recognize unique markers (antigens) on pathogens.

| IgA	IgD	IgE	IgG	IgM
Secreted into mucous, saliva, tears, colostrum. Tags pathogens for destruction.	B-cell receptor. Stimulates release of IgM.	Binds to mast cells and basophils. Allergy and antiparasitic activity.	Binds to phagocytes. Main blood antibody for secondary responses. Crosses placenta.	Fixes complement. Main antibody of primary responses. B-cell receptor. Immune system memory.

Glow Scope

Why in News?

Researchers at Winona State University, Minnesota, have created a design for a **Glow Scope, a Fluorescence Microscope.**

➢ With this setup, they were able to **image the creatures' brain, spinal cord, heart, and head and jaw bones.**

➢ They were able to zoom in and out using the smartphone camera and the clip-on lens.

What is Fluorescence Microscopy?

➢ **About:**

  ○ An **optical microscope** views an object by studying how it **absorbs, reflects or scatters visible light.**

  ○ A fluorescent microscope views an object by **studying how it reemits light that it has absorbed,** i.e., how it fluoresces. This is its **basic principle.**

○ The object is illuminated with light of a specific wavelength. Particles in the object absorb this light and reemit it at a higher wavelength. These particles are called **fluorophores; the object is infused with them before being placed under the microscope.**
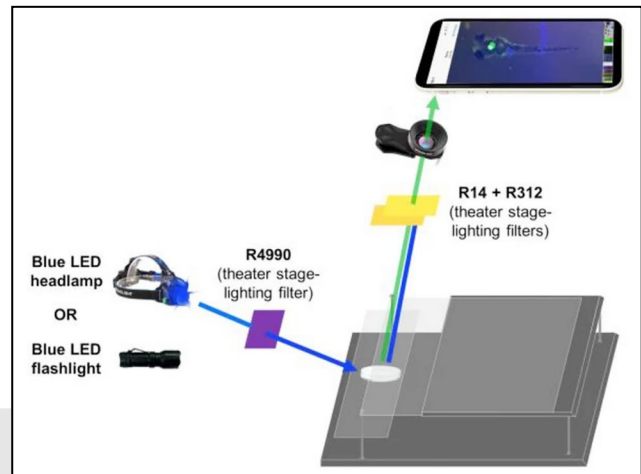
Is the Glowscope Accessible?

➢ Using a 'glowscope' still requires **access to fluorophores, suitable biological samples, the know-how to combine the two**, and some knowledge of physics to work out which LED flashlight to buy.

➢ The Foldscope was truly remarkable **because all its required components were simple to understand.**

  ○ **In 2014**, a group of scientists at Stanford University released Foldscope, a handheld microscope made almost entirely out of paper, which **takes 30 minutes to put together, and which could capture images of cells.**

➢ However, the fact that a simple fluorescent microscope can be set up for a few thousand rupees means, instead of being entirely out of reach, researchers can prepare samples and take them to schools, where students can observe them.

Use of Antibiotics on Livestock

Why in News?

Recently, a team of Researchers in the **Indian Institute of Science (IISc)**, has found that grazing by livestock leads to **lower carbon storage in soil** compared to grazing by wild herbivores.

Note:

➢ Livestock are the most abundant large mammals on earth. If the carbon stored in soil under livestock can be increased by even a small amount, then it can have a big impact on climate mitigation.

What are the Highlights of the Study?

➢ In a previous study, it was observed that **herbivores play a key role in stabilizing the pool of soil carbon** and the recent study showcases the difference as to how they affect the soil carbon stocks between livestock such as sheep and cattle compared to their wild herbivores such as the yak and ibex.

➢ **Impact of Antibiotics:** The use of veterinary **antibiotics** such as tetracycline on livestock is making carbon storage lower in soil as compared to other grazing herbivores.

○ These **antibiotics,** when released into the soil through dung and urine, alter **the microbial communities** in soil in ways that are detrimental for **sequestering carbon.**

○ Antibiotics such as **tetracycline are long-lived** and can **linger in the soil for decades resulting in ecological imbalance.**

➢ **Difference in CUE:** Although soils from the wild and livestock areas had many similarities, they differed in one key parameter called carbon use efficiency (CUE), which determines the ability of microbes to store carbon in the soil.

○ CUE is defined as the ratio of net carbon gain to gross carbon assimilation during a period.

○ The soil in the **livestock areas had 19% lower CUE.**

What are Antibiotics?

➢ Antibiotics are **remarkable drugs capable of killing biological organisms** in one's body without harming the body.

➢ These are used for everything **from preventing infections during surgeries to protecting cancer patients** undergoing chemotherapy.

○ India is the world's largest consumer of antibiotics. India's excessive antibiotic usage is **leading to a powerful never before seen mutation** within bacteria.

India's Third Moon Mission

Why in News?

Recently, the **Indian Space Research Organisation (ISRO) has successfully conducted the flight acceptance** **hot test of the CE-20 cryogenic engine** that will power the **cryogenic** upper stage of the launch vehicle for the **Chandrayaan-3 mission**.

➢ The test was **successfully conducted at the ISRO Propulsion Complex, Mahendragiri in Tamil Nadu**.

What are the Highlights of the Test?

➢ The hot test was carried out **for a planned duration at the High Altitude Test Facility**.

➢ All the propulsion parameters during the test **were found satisfactory and closely matched with predictions**.

➢ The cryogenic engine will be further integrated with the propellant tanks, stage structures and associated fluid lines **to realise the fully integrated flight cryogenic stage**.

What is the Chandrayaan-3 Mission?

➢ Chandrayaan-3 is **India's third moon mission and is a follow-up of Chandrayaan-2 of July 2019**, which aimed to land a rover on the lunar South Pole.

○ The mission is **scheduled to be launched later in 2023 by Launch Vehicle Mark 3 (LVM3)** from the Satish Dhawan Space Centre at Sriharikota.

➢ The **subsequent failure of the Vikram lander led to the pursuit of another mission to demonstrate the landing capabilities needed for the Lunar Polar Exploration Mission** proposed in partnership with Japan for 2024.

➢ **The Mission will have three major modules-** the Propulsion module, Lander module and Rover.

○ The propulsion module **will carry the lander and rover configuration till 100 km lunar orbit**.

○ The Lander **will have the capability to soft land at a specified lunar site and deploy the Rover which will carry out in-situ chemical analysis** of the lunar surface during the course of its mobility.

NASA's Imaging X-ray Polarimetry Explorer

Why in News?

Recently, researchers studied a **supernova explosion** that occurred over **450 years ago** using **NASA's Imaging X-ray Polarimetry Explorer (IXPE).**

➢ **The explosion, called Tycho**, was visible to people on **Earth in 1572**, and the shock wave from the blast is still propagating through the cosmos.

What is Tycho?

➢ Tycho is classified as a **Type Ia supernova,** which occurs **when a white dwarf star shreds its companion star,** triggering a violent explosion and sending debris hurtling into space at tremendous speeds.

  ○ **Tycho released as much energy as the Sun** would emit over **ten billion years** and blasted particles out into space near the speed of light.

➢ Researchers used IXPE to **reveal the magnetic field geometry close to Tycho's** shock wave to investigate further how particles are accelerated there and **to study polarised X-rays from the supernova remnant.**

What is Imaging X-ray Polarimetry Explorer?

➢ **About:**
  ○ **IXPE Space Observatory is a joint effort of NASA** and the **Italian Space Agency.**
  ○ It studies "the **most extreme and mysterious objects in the universe – supernova remnants, supermassive black holes, and dozens of other high-**energy **objects**."

➢ **Significance:**
  ○ It will help **observe polarised X-rays from neutron stars and supermassive black holes**.
    ● Measuring the polarization of X-rays traces the story of where the light came from, including the **geometry and inner workings of its source**.
  ○ It will help scientists understand how black holes spin and their location in the past and also **unravel how pulsars shine so brightly in X-rays.**

India's First DNA Vaccine for Dengue

Why in News?

Researchers at **India's National Centre for Biological Sciences,** in collaboration with nine other institutions in India, Africa, and the US, have developed **India's first and only DNA vaccine candidate for dengue fever.**

➢ In preliminary trials on mice, the **candidate generated a robust immune response** and improved survival rates after exposure to the disease.

What is DNA Vaccine?

➢ A **DNA vaccine is a type of vaccine that uses a small piece of DNA** that codes for a specific antigen **(a molecule that triggers an immune response)** from a pathogen, such as a virus or bacterium, to stimulate an immune response.

➢ The **DNA is injected directly into the body's cells,** where it instructs the cells to produce the antigen.

  ○ The **immune system then recognizes the antigen as foreign** and **mounts an immune response against it,** which helps to develop immunity to the pathogen.

➢ DNA vaccines are **third-generation vaccines.**

➢ The **ZyCoV-D** is the **world's first and India's indigenously developed DNA based vaccine** for **COVID-19.**

What is Dengue?

➢ **About:**
  ○ Dengue is a **mosquito-borne tropical disease** caused by the dengue virus (**Genus Flavivirus**), transmitted by several species of mosquito within the genus **Aedes, principally Aedes aegypti.**
    ● This mosquito also transmits **chikungunya and Zika infection.**

➢ **Serotypes of Dengue:**
  ○ There are 4 distinct, but closely related, serotypes (separate groups within a species of microorganisms that all share a similar characteristic) of the virus that cause dengue **(DEN-1, DEN-2, DEN-3 and DEN-4).**

➢ **Symptoms:**
  ○ Sudden high fever, severe headaches, pain behind the eyes, severe bone, joint, and muscle pain, etc.

➢ **Dengue Vaccine:**
  ○ 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.**
    ● **Dengvaxia** is basically **a live, attenuated dengue virus** which has to be administered in people of ages **9 to 16** who have laboratory-confirmed previous dengue infection and who live in endemic areas.

➢ **Challenges in Vaccine Development:**

Note:

○ Developing an **effective vaccine against dengue is tricky** because it is caused by four closely related virus serotypes.

• **Each one interacts differently with antibodies in human blood**. A person infected with DEN-1 is then protected against it for life, but not against the other three serotypes.

  ▪ An ideal vaccine must target all serotypes.

○ Also, vaccines trigger **production of antibodies** that prevent the virus from binding to cells at later exposure. But with dengue, **antibodies help the virus replicate** and cause severe disease.

E- pharmacy in India

Why in News?

In **February 2023,** the **Ministry of Health** issued **show cause notices** to at least **20 companies,** including **Tata-1mg, Flipkart, Apollo, PharmEasy, Amazon, and Reliance Netmeds** for **selling medicines online.**

What is the Current Status of E-pharmacy in India?

➢ **About:**

○ The growth of **e-pharmacy in India** has been significant in recent years and is expected to grow at a robust growth rate of **21.28% compound annual growth rate during 2021-2027.**

○ The main factors driving this growth include **increasing internet and smartphone penetration, rising healthcare costs**, and a growing demand for **convenience and accessibility.**

➢ **E-Pharmacies' Growth:**

○ The acute need for doorstep delivery of drugs was felt during **Covid-19. Nearly 8.8 million households** used home delivery services during the lockdown.

• **E-pharmacies call themselves facilitators of doorstep delivery** and claim tie-ups with retail chemists for vending medicines.

➢ **Concerns:**

○ **Impact on Quality of Drugs:**

• The **sale, stock, offer for sale or distribution of drugs through online, internet or other electronic platforms without a licence** have potential impact on quality of drugs and pose risk to public health.

• As there arises a cope of **misuse of drugs through self-medication** and indiscriminate use of the drugs.

○ **No Statutory Backing:**

• The **Drugs and Cosmetics Act, 1940** regulates the import, manufacturing and distribution of drugs in India.

  ▪ However, there is **no statutory definition of "e-pharmacy"** either under the **Drugs and Cosmetics Act, 1940** or the **Pharmacy Act, 1948.**

• However, the electronic sale of physician-prescribed drugs from online drug store sites is expressed **under the IT Act, 2000.**

➢ **Regulation of E-Pharmacies:**

○ The **Draft e-pharmacy rules were floated by the Ministry of Health in 2018.**

• Multiple court orders, including those from **Bombay, Madras, Delhi, and Patna High Court**, have called for regulating e-pharmacies.

○ The **172nd Parliamentary Standing Committee** report released in June 2022, deemed it "appalling" that e-pharmacy rules had not been notified.
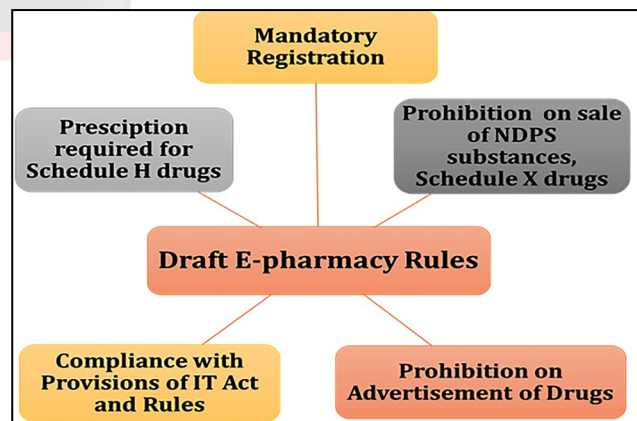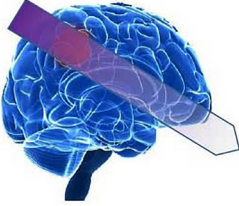

Proton Beam Therapy

Why in News?

Currently, there are **no government facilities** that offer **proton beam therapy** treatment in India. The treatment is considered a viable alternative to radiation for treating **solid tumours**, especially for **head and neck cancers.**

Note:

COMPARING X-RAY THERAPY WITH PROTON BEAM THERAPY

The X-Ray radiation targeting the tumour is high dose at entry and reduces as it goes through the brain. This can affect healthy cells before and after the tumour.

Protons are accelerated to 70% of the speed of light. They slow down as the beam enters the target area and release their energy into the tumour, but do not go beyond the tumour.

What is Proton Beam Therapy (PBT)?

➤ **About:**
  ○ PBT is a type of cancer treatment that uses a **beam of high-energy protons** to **destroy cancer cells.**
    ● A proton is a positively charged elementary particle that is a fundamental constituent of all atomic nuclei.
  ○ Unlike traditional radiation therapy, which uses **X-rays, PBT can precisely target the tumour** while minimising radiation exposure to surrounding healthy tissue.
  ○ PBT is typically delivered via a **large, complex machine called a cyclotron**, which accelerates protons to high speeds and delivers them to the tumour site.

➤ **Problems Associated with Proton Beam Therapy:**
  ○ Setting up a PBT centre is fraught with **infrastructural and regulatory challenges** stemming from safety concerns from the **Department of Atomic Energy.**
    ● There are concerns about **safety since hydrogen is a highly volatile element,** and daily checks are required to prevent leaks.
  ○ A PBT machine is a huge contraption, up to three storeys tall and costs nearly **₹500 crore.**

➤ **PBT in India:**
  ○ **Apollo Hospital in Chennai is the only centre in South and West Asia** that **offers PBT.**
  ○ The hospital has treated up to 900 patients, and **47% of cases were brain tumours.**
    ● **Prostate, ovaries, breast, lungs, bones, and soft tissues cancer patients** have also seen promising results through PBT.

Way Forward

There is a huge unmet need for **access to PBT treatment in India**. The government should **focus on setting up PBT centres in various parts of the country to provide more cancer patients with access to the treatment**. While setting up the PBT centre, it is important to address safety concerns, infrastructural and regulatory challenges. The success of **PBT in Apollo Hospital Chennai can be an inspiration** for other healthcare providers to invest in this technology.

QR-Code Based Coin Vending Machine

Why in News?

RBI (Reserve Bank of India) is about to launch a pilot project to assess the functioning of a **QR-code Based Coin Vending Machine (QCVM).**

➤ The pilot is **initially planned to be rolled out at 19 locations in 12 cities** across the country. With particular focus on ease and accessibility, the machines are intended to be installed at public places such as railway stations, shopping malls and marketplaces.

What is QCVM?

➤ QCVM is a cashless coin dispensation machine **which would dispense coins against a debit to the customer's bank account** using **UPI (Unified Payment Interface).**

➤ Customers would be endowed the option of withdrawing coins in required quantities and denominations.

➤ It will **ease the accessibility to coins.**

➤ Unlike a cash-based traditional Coin Vending Machine, the QCVM would **eliminate the need for physical tendering of banknotes** and their authentication.

What is the Need QCVM?

➤ There were problems with the earlier machines wherein **some fake currencies used to be fed to fetch coins.**

➤ The supply of coins is very high, but it is not getting properly distributed and at the same time **there is demand in pockets.**
  ○ As per the latest RBI bulletin, the total value of circulation of rupee coins stood at Rs 28,857 crore as of December 30, 2022, an **increase of 7.2% from the year-ago period.**

Note:

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○ For perspective, coins in India are issued in **denominations of 50 paise, one rupee, two rupees, five rupees, ten rupees and twenty rupees.** Coins of up to 50 paise are called **small coins** while those of one rupee and above are called **rupee coins.**

➢ So, by making coins available in places where there is demand, **supply can be absorbed.**

➢ Currently, to obtain coins **a person needs to visit a bank branch** and offer currency notes in exchange for coins.

➢ But in the case of QCVM, coins can be withdrawn using a UPI QR code and the amount will be debited from **the bank account of the person who withdraws.**

Protecting Earth's Orbit from Space Debris

Why in News?

Since, **United Nations** agreed **on a treaty to conserve and sustainably use the high seas** beyond national boundaries, scientists are calling for a **legally-binding agreement to protect the Earth's orbit** from space debris.

➢ The **United Nations Committee on the Peaceful Uses of Outer Space** has laid out guidelines to **mitigate space debris**, but there is **no international treaty** that seeks to minimise it.

What is Space Debris?

➢ **About:**
   ○ Space debris refers to the **collection of artificial objects in orbit around the Earth** that have lost their utility or are no longer in use.
      ● These objects include **non-functional spacecraft, abandoned launch vehicle stages, mission-related debris**, and fragmentation debris.

➢ **Concern:**
   ○ The **number of satellites orbiting Earth** is expected to reach **60,000 by 2030**, up from the current **9,000,** and the amount of untracked debris is a cause for concern.
   ○ **Around 27,000 pieces of "space junk" are being tracked by NASA but** over **100 trillion untracked pieces of old satellites circle the planet.**
   ○ Currently, **companies are not incentivised to clean up orbits** or to include de-orbiting functions in satellites.

● **De-orbiting** means bringing dead satellites back to Earth.
   ○ The **current Outer Space Treaty** is hindered by ever-changing geopolitics, technology and commercial gain.

➢ **Initiatives to Curb Space Debris:**
   ○ **India:**
      ● In 2022, ISRO set up the **System for Safe and Sustainable Operations Management (IS 4 OM) to continually monitor objects posing collision threats.**
      ● **'Project NETRA'** is also an early warning system in space to detect debris and other hazards to Indian satellites.
   ○ **Global:**
      ● **Inter-Agency Space Debris Coordination Committee (IADC)**
      ● **Clean Space Initiative of European Space Agency (ESA)**

How Space Debris Can be Tackled?

➢ **Space Treaty with Extended Producer Responsibility:** A legally binding agreement is necessary to protect the Earth's orbit from space debris.
   ○ The treaty should ensure that **producers and users take responsibility for their satellites and debris and** enforce **collective international legislation** with fines and other incentives to make countries and companies accountable for their actions.

➢ **Incentivisation:** Countries using the Earth's orbit should commit to **global cooperation**, and **companies should be incentivized to clean up orbits** and include de-orbiting functions in satellites.

➢ **Reusable Launch Vehicles:** Using reusable launch vehicles instead o**f single-use rockets** can help reduce the number of new debris generated from launches.

Megha-Tropiques-1 Satellite

Why in News?

Recently, the **Indian Space Research Organisation (ISRO)** has successfully carried out the controlled Re-Entry experiment for the decommissioned **Megha-Tropiques-1 (MT-1) Satellite.**

Note:

- ➤ An uninhabited area in the **Pacific Ocean between 5°S to 14°S latitude and 119°W to 100°W longitude** was identified as the targeted re-entry zone for MT1.

What is Controlled Re-entry?

- ➤ Controlled re-entries involve **de-orbiting to very low altitudes** to ensure the impact occurs within a targeted safe zone.
- ➤ Usually, large satellites or rocket bodies, which are likely to survive aero-thermal fragmentation upon re-entry, are **made to undergo controlled re-entry to limit ground casualty risk**.
  - ○ Aero-Thermal Fragmentation is a process in which an object traveling through the Earth's atmosphere at high-speed experiences extreme heat and pressure, causing it to break apart or fragment.
- ➤ However, all **such satellites are specifically designed to undergo controlled re-entry** at end-of-life.

What are the Key points of the MT-1 Satellite?

- ➤ **About:**
  - ○ It is an **Indo-French Earth Observation Satellite**, which was launched in October 2011 for carrying out tropical weather and climate studies
  - ○ The main objective of this mission is to **understand the life cycle of convective systems that influence the tropical weather and climate** and their role in the associated energy and moisture budget of the atmosphere in tropical regions.
  - ○ With its circular orbit **inclined 20° to the equator**, it is a unique satellite for climate **research that aided scientists seeking to refine** prediction models.
- ➤ **Payloads:**
  - ○ **Microwave Analysis and Detection of Rain and Atmospheric Structures (MADRAS)**, an Imaging Radiometer developed jointly by CNES (Centre National d'études Spatiales), France and ISRO;
  - ○ **Sounder for Probing Vertical Profiles of Humidity (SAPHIR)**, from CNES;
  - ○ **Scanner for Radiation Budget (ScaRaB)**, from CNES;
  - ○ **Radio Occultation Sensor for Vertical Profiling of Temperature and Humidity (ROSA),** procured from Italy.

Organoid Intelligence and Bio-Computers

Why in News?

Recently, Scientists have outlined a plan for a **potentially revolutionary new area of research called "organoid intelligence"**, which aims to create "biocomputers", where **3D brain cultures grown in the lab are coupled to real-world sensors** and input/output devices.

- ➤ Technology is **expected to harness the processing power of the brain** and understand the biological basis of human cognition, learning, and various neurological disorders.

What is this Technology?

- ➤ These **"mini-brains"** (with a size of up to 4 mm) are **built using human stem cells** and **capture many structural and functional features of a developing human brain**. It is used to study human brain development and test drugs to see how they respond.
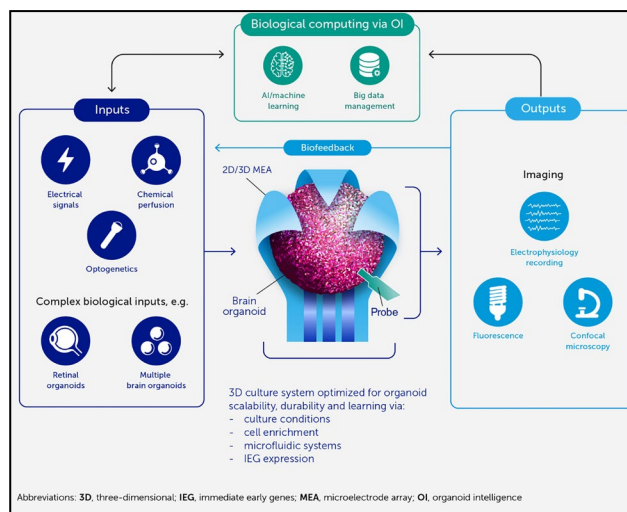
Note:

○ However, Brain organoids developed in the lab are **not advanced enough** as they **lack the required sensory inputs and blood circulation** that are necessary for the development of a complex organ like the human brain.

➤ Moreover, Scientists **transplanted human brain organoid cultures into rat brains** and observed that they formed connections with the rat brain and **showed functional activity.**

○ This system could provide a **way to study brain diseases** in a human context.

○ However, the organoids are still in the rat-brain microenvironment, which **may not be representative of the human brain.**

What is the New 'Bio-computer'?

➤ Researchers plan to **combine brain organoids with modern computing methods using machine learning** to create "bio-computers".

➤ They will **grow organoids inside structures with multiple electrodes** that can record the firing patterns of neurons and mimic sensory stimuli.

➤ Machine-learning techniques will then be used **to analyse the effect of neuron response patterns on human behavior** or biology.

➤ Scientists have already grown human neurons on a microelectrode array and trained them to generate electrical activity similar to what electrons would generate while playing table tennis.

What are the Opportunities for 'Bio-Computers'?

➤ **Brain organoids developed using stem cells from individuals** with diseases like Parkinson's disease and microcephaly can aid drug development for these conditions.

➤ These organoids **can provide insights into the biological basis of human cognition**, learning, and memory by comparing the data on brain structure, connections, and signaling between healthy and patient-derived organoids.

➤ While **human brains** are slower than computers at simple arithmetic, they **outshine machines at processing complex information**.
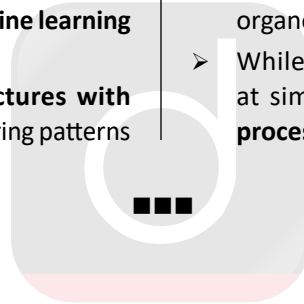
Note:

Environment & Ecology

Highlights

- *Synchronised Survey of Vultures*
- *CEA Regulations for Great Indian Bustard Area*
- *Great Seahorse Migration*
- *Karnataka Tops at Clean Energy Transition*
- *Myanmar Teak Trade: Dodgy and Conflict Wood*
- *Peak Plastics: Bending the Consumption Curve*

- *UN Treaty on the High Seas*
- *Committee to Oversee Transfer/Import of Wild Animals in India*
- *World Air Quality Report*
- *Carbon Footprint of Marine Fisheries Lower than Global Average*
- *Landfill Fires and Mitigation*

Synchronised Survey of Vultures

Why in News?

There are 246 vultures spread across Tamil Nadu, Karnataka and Kerala, **according to the first-ever synchronised census** on the bird carried out in February 2023.

➤ The survey was conducted by the Kerala Forest and Wildlife department along with its counterparts in Tamil Nadu and Karnataka in the **select regions of the Western Ghats.**

What are the Key Highlights of the Survey?

➤ The survey was carried out in the **Mudumalai Tiger Reserve (MTR)** and the adjoining landscape consisting of Sathyamangalam Tiger Reserve (STR) in Tamil Nadu, **Wayanad Wildlife Sanctuary (WWS)** in Kerala, **Bandipur Tiger Reserve (BTR)** and **Nagerhole Tiger Reserve (NTR)** in Karnataka.

  ❍ A total of 98 vultures were seen in MTR, two in STR, 52 in WWS, 73 in BTR, and 23 in NTR.

➤ Volunteers sighted **White-rumped vultures (183), Long-billed vultures (30),** Red-headed vultures (28), Egyptian vultures (3), Himalayan Griffon (1), and Cinereous vultures (1).
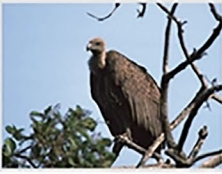
➤ Vultures are witnessing a catastrophic decline **from the 2000s as these species are being exposed to diclofenac drug** which is mainly used as a painkiller for cattle and experts believe that increasing wild carcass availability was one of the major steps needed to help vultures thrive.

What are Vultures?

➤ **About:**

  ❍ It is one of the **22 species of large carrion-eating birds** that live predominantly in the tropics and subtropics.

  ❍ They act an **important function as nature's garbage collectors** and help to keep the environment clean of waste.

    ● Vultures also play a valuable role in keeping wildlife diseases in check.

  ❍ India is home to **9 species of Vulture** namely the Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon.

    ● Most of these **9 species face dangers of extinction.**

      ■ Bearded, Long-billed, Slender-billed, Oriental white-backed are protected in the Schedule-1 of the **Wildlife Protection Act 1972.** Rest are protected under **'Schedule IV'.**

➤ **International Union for Conservation of Nature (IUCN):**

Note:

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Sr. No.	Name of the Vulture Species	IUCN status	Pictorial Representation
1.	Oriental White-backed Vulture (Gyps Bengalensis)	Critically Endangered	
2.	Slender-billed Vulture (Gyps Tenuirostris)	Critically Endangered	
3.	Long-billed Vulture (Gyps Indicus)	Critically Endangered	
4.	Egyptian Vulture (Neophron Percnopterus)	Endangered	
5.	Red-Headed Vulture (Sarcogyps Calvus)	Critically Endangered	
6.	Indian Griffon Vulture (Gyps Fulvus)	Least Concerned	
7.	Himalayan Griffon (Gyps Himalayensis)	Near Threatened	
8.	Cinereous Vulture (Aegypius Monachus)	Near Threatened	
9.	Bearded Vulture or Lammergeier (Gypaetus Barbatus)	Near Threatened	

➢ **Threats:**
   ○ Loss of Natural Habitats due to anthropogenic activities.
   ○ Food Dearth and Contaminated Food.
   ○ Electrocution by Power lines.
➢ **Conservation Efforts:**
   ○ Recently, the Ministry for Environment, Forests and Climate Change launched a **Vulture Action Plan 2020-25** for the conservation of vultures in the country.
      ● It will ensure **minimum use of Diclofenac and prevent the poisoning of the principal food of vultures, the cattle carcasses.**
   ○ To study the cause of deaths of vultures in India, a **Vulture Care Centre (VCC) was set up at Pinjore, Haryana in 2001.**
   ○ Later in 2004, the VCC was upgraded to being the **first Vulture Conservation and Breeding Centre (VCBC) in India.**
      ● At present, there are **nine Vulture Conservation and Breeding Centres (VCBC) in India,** of which three are directly administered by the Bombay Natural History Society (BNHS).

CEA Regulations for Great Indian Bustard Area

Why in News?

The **Central Electricity Authority (CEA)** has issued Draft Central Electricity Authority (Construction of Electric Lines in Great Indian Bustard Area) Regulations, 2023, making

Note:

mandatory for electric lines to be underground or overhead through the **'Great Indian Bustard (GIB) Area'**.

➢ The regulations came in light of a case in the **Supreme Court (SC)** on the issue of **threat to the endangered Great Indian Bustards.**

➢ As per the regulations, all electric lines of 33 kV and below passing through the 'Great Indian Bustard Area' will be underground, while those above 33KV will be overhead lines installed with bird flight diverters.

➢ These diverters are aimed at improving power line visibility for birds and reducing the risk of collision.

What is GIB?

➢ **About:**
  ❍ The **Great Indian Bustard** *(Ardeotis nigriceps)*, the **State bird of Rajasthan**, is considered India's **most critically endangered bird.**

  ❍ It is considered the **flagship grassland species**, representing the health of the grassland ecology.

  ❍ Its population is confined mostly to Rajasthan and Gujarat. Small populations occur in Maharashtra, Karnataka and Andhra Pradesh.

➢ **Vulnerability:**
  ❍ The bird is under **constant threats due to collision/ electrocution with power transmission lines**, hunting (still prevalent in Pakistan), habitat loss and alteration as a result of widespread agricultural expansion, etc.

➢ **Protection Status:**
  ❍ **IUCN red List:** Critically Endangered
  ❍ **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):** Appendix1
  ❍ **Convention on Migratory Species (CMS):** Appendix I
  ❍ **Wildlife (Protection) Act, 1972:** Schedule I

What are the Measures to Protect GIB?
➢ **Species Recovery Programme:**
  ❍ It is kept under the species recovery programme under the **Integrated evelopment of Wildlife Habitats** of the Ministry of Environment, Forests and Climate Change (MoEFCC).
➢ **National Bustard Recovery Plans:**
  ❍ It is currently being implemented by conservation agencies.

➢ **Conservation Breeding Facility:**
  ❍ MoEF&CC, Rajasthan government and Wildlife Institute of India (WII) have also established a conservation breeding facility in Desert National Park at Jaisalmer in June 2019.

➢ **Project Great Indian Bustard:**
  ❍ It has been launched by the Rajasthan government with an aim of constructing breeding enclosures for the species and developing infrastructure to reduce human pressure on its habitats.

➢ **Eco-Friendly Measures:**
  ❍ Task Force for suggesting eco-friendly measures to mitigate impacts of power transmission lines and other power transmission infrastructures on wildlife including the Great Indian Bustard.

Great Seahorse Migration

Why in News?

A study indicated that **extensive fishing off the Coromandel coast could be forcing the great seahorse to migrate towards Odisha.**

➢ Though, fishing is less intense off the Odisha coastline but **still it may not be the new comfort zone for the Seahorse due to lack of suitable habitat.**

What are the Key Facts about Seahorse?

➢ **About:**
  ❍ Sea horses are **tiny fish that are named for the shape of their head,** which looks like the head of a tiny horse. They are classified as fish, in the **genus Hippocampus.**

  ❍ There are **46 species** of seahorses reported **worldwide**. The coastal ecosystems of **India house 9 out of 12 species found in the Indo-Pacific**.

  ❍ They are found in **shallow coastal waters** in latitudes from about **52° N to 45°S**.

  ❍ Seahorse populations in India are **distributed across diverse ecosystems** such as **seagrass, mangroves, macroalgal beds, and coral reefs.**

➢ **Distribution in India:**

Note:

○ These 9 species are **distributed along the coasts of eight States and five Union Territories from Gujarat to Odisha, apart from Lakshadweep and the Andaman and Nicobar Islands.**

➢ **Slow Swimmers:**
○ When swimming they maintain a vertical position and propel themselves forward using a soft-rayed dorsal fin.
○ They **migrate by rafting, clinging to floating substrata** such as macroalgae or plastic debris for dispersal by ocean currents.

➢ **Unique Reproductive Habits:**
○ The **male gives birth to child** as the female uses an ovipositor (egg duct) to place her eggs into a brood pouch located at the base of the male's tail where the eggs are later fertilized.

➢ **Conservation Status:**
○ **IUCN status**-Vulnerable
○ CITES: Appendix II

What are the Reasons for Decline and Migration?

➢ The population of the Great seahorse is declining due to its **Overexploitation** for
○ Traditional Chinese medicines
○ Ornamental fish
○ General destructive fishing
○ Fisheries bycatch.

➢ This **creates immense pressure on the seahorse populations** that have a **high dependency on local habitats** to maintain their extensive and long-life history traits.

➢ The **1,300 km northward migration** of the great seahorse from Palk Bay and the Gulf of Mannar to Odisha is **likely a response to extensive fishing activities** around the southern coast of India.
○ Around **13 million individuals are caught per year** on Coromandel coast.

What are the Challenges with Migration?

➢ **Lack of Suitable Habitats:** Odisha coast **does not have coral reefs or seagrass meadows** to make a suitable habitat, except within the Chilika region.
○ Thus, it is going to be **difficult for the species, unless the fishing nets that catch them are banned** or the fishing practices such as **Bottom trawling** are stopped.

➢ **Lack of Conservation Measures:** This highlights the lack of monitoring of the coastal ecosystems of India on the east coast and reaffirms the need better conservation and management of the remaining seahorse populations.

Karnataka Tops at Clean Energy Transition

Why in News?

According to a report from Institute for Energy Economics and Financial Analysis (IEEFA) and Ember, **Karnataka and Gujarat have emerged as India's frontrunners** in the transition to clean electricity.

➢ Ember is an independent, **not-for-profit climate and energy think tank** while the IEEFA examines issues related to energy markets, trends, and policies.

What are the Highlights of the Report?

➢ **Methodology of Assessment:**
○ The report 'Indian States' Energy Transition' prepared a scoring system for 16 States (account for 90% of electricity production in India), and their performances are assessed on **four broad parameters** namely:
● Decarbonisation
● Performance of the Power System
● Readiness of the Power ecosystem
● Policies and Political commitments

POWER PERFORMANCE ON STATE ELECTRICITY TRANSITION MODULE

1. Decarbonisation: Preparedness to shift away from fossil fuel-based power
2. Performance of power system: To create effective greener market pulls
3. Readiness of power ecosystem: To transform power systems while ensuring reliable supply
4. Policies and political commitments: Proactiveness in promoting innovative policies
* Quartile 1 signifying the most efficient, and Quartile 4 the least   Source: IEEFA & EMBER ANALYSIS

➢ **Assessment:**
○ Karnataka is the **only state among the 16 analysed** that scored well across all four dimensions of clean electricity transition.

Note:

- The State also **exceeded its target of segregating** feeders by 16% and achieved 100% **of its target of installing smart meter**s.
  ○ **Gujarat was a little behind Karnataka** in terms of decarbonising its electricity sector. Haryana and Punjab have shown promising preparations and implementations for electricity transition
  ○ States like **West Bengal, Bihar and UP are lagging far behind** in the field.
    - West Bengal scored **low across all the parameters and its outstanding payments to generators have increased by 500%** from March 2018 to March 2022.
  ○ **Rajasthan and Tamil Nadu** need to improve their power system readiness.
- **Suggestions:**
  ○ Apart from boosting renewable energy capacity and storage, it is suggested that states take a **multi-dimensional approach towards clean electricity transition**, which includes efforts on the demand side.
  ○ Innovative bilateral financial markets mechanisms like virtual power purchase agreements (VPPAs) and contracts for difference (CfD) have **huge potential to open up the market and give buyers and regulators t**he required assurance on handling intermittent renewable energy generation.
  ○ To monitor progress effectively and course correct when necessary, it called for data availability and transparency improvement.

What is India's Clean Energy Target?

- As part of its international obligations, India has committed to generating about half of its electricity from non-fossil fuel sources and reducing the emissions intensity of its **Gross Domestic Product (GDP) by 45% by 2030**.
- Achieving this is predicated on States tweaking their infrastructure, used to deliver electricity, to efficiently accommodate inputs from multiple power sources such as solar, wind, hydropower as well as existing fossil fuel sources.
- India's **revised Nationally Determined Contribution (NDC)** targets have put the country on the right path for transitioning its electricity sector.

INDIA'S CLIMATE TARGETS: EXISTING AND NEW

Target (for 2030)	Existing: First NDC (2015)	New: Updated NDC (2022)	Progress
Emission intensity reduction	33-35 per cent from 2005 levels	45 per cent from 2005 levels	24 per cent reduction achieved in 2016 itself. Estimated to have reached 30 per cent
Share of non-fossil fuels in installed electricity capacity	40 per cent	50 per cent	41.5 per cent achieved by the end of June this year
Carbon sink	Creation of 2.5 to 3 billion tonnes of additional sink through afforestation	Same as earlier	Not clear.

What are the Efforts in Clean Energy Transition?
- **Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)**
- **Green Energy Corridor (GEC)**
- **National Smart Grid Mission (NSGM) and Smart Meter National Programme**
- **Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME)**
- **International Solar Alliance (ISA)**

Myanmar Teak Trade: Dodgy and Conflict Wood

Why in News?

Recent investigation by International Consortium of Investigative Journalists (ICIJ) revealed that **India has become the second largest importer of "conflict wood" from Myanmar,** after China. India hasn't banned the import of teak from Myanmar, which is being exported to the US & **EU.**

- These supplies of teak not only chip away at the Myanmar's forest cover but also **provide sustenance to the military regime of Myanmar**.

Why is Teak Imported from Myanmar Described as "Conflict Wood"?

- Following the **military coup in Myanmar** in February 2021, **the military junta** took over Myanma Timber Enterprises (MTE), **with exclusive control over the country's valuable timber and teak trade.** The sales of this "conflict" wood **are a crucial source of income for the military regime.**
- After Western sanctions on timber trade, **India has become a popular stop for illegal timber trade.**

Note:

drishti

➤ As per Forest Watch, between February 2021 and April 2022, **Indian companies imported over USD 10 millions of teak.**

○ India is both the **largest importer of teak, and the largest exporter** of processed teak wood products in the world.

What's so Special about Myanmar Teak?

➤ **About:**

○ Teak wood from Myanmar's deciduous and evergreen forests is **highly valued for its durability, resistance to water and termites,** and is commonly used for high-end furniture, veneers, and ship-decking, especially in the luxury yacht industry. However, the forest cover and teak reserves in Myanmar are shrinking, which ironically increases the wood's value.

○ According to Global Forest Watch, **Myanmar has lost forest cover equivalent to Switzerland's size** over the last twenty years.

➤ **Status of Myanmar Teak:**

➤ Teak (Tectona grandis) also known as sagon, sagwan, Indian oak, and teca. Its production covers **1% of global annual timber demand.**

○ Teak, is a large **deciduous tree native to India, Myanmar, Laos and Thailand.** Teak is highly tolerant of a range of climate conditions and can be found from very dry to very moist regions. It is high resistance to decay and insect damage, and the heartwood changes from olive green to golden brown after exposure.

○ This wood species is **listed in the IUCN Red List of Threatened Species as endangered, but not listed in the CITES.**

● **African teak** *(Pericopsis elata), a*lso known as Afrormosia, Kokrodua and Assamela, has brown, green or yellow-brown bark. **The African teak is classified as Endangered on the IUCN Red List 2004, and** is listed on **Appendix II of CITES.**

What are the Steps taken to Check Illegal Harvesting of Teak from Myanmar?

➤ **Steps Taken:**

○ In 2013, the **EU brought regulations, to prevent illegal timber from entering their markets** (over 70% of the logs exported from Myanmar between 2000-2013 were illegally harvested).

○ After the military coup in February 2021**, the EU and US imposed sanctions on all timber trade with Myanmar.**

➤ **Impact of these Sanctions:**

○ Teak from Myanmar continues to flow into the US and some EU countries, while imports into countries like Italy, Croatia, and Greece have increased.

○ Traders in Myanmar and India face two challenges: **the conflict on the ground and frequent changes in regulations by Myanmarese authorities.**

○ After the ban on export of whole logs, a new regulation allowed only teak in "sizes" to be exported.

➤ **Loopholes needs to be Plugged:**

○ Timber traders suggest that buyers could conduct DNA testing to trace the origin of teak from Myanmar, despite sanctions in place. However, **DNA testing is a relatively new concept and not yet commonly used in India.**

○ Loopholes have been found in the regulations for exporting teak to EU countries, with **some Indian companies not specifying the origin of the wood or using vague language in transit passes.** These loopholes could be addressed to improve regulation.

What Steps can be Taken to Tackle Illegal Trade for Teak?

➤ **Use of science to tackle illegal timber trade, like:**

○ **Digital Microscopes:** In Brazil, for, the law enforcement staff has been trained to take macroscopic anatomical photographs of timber shipments they stop. **Reporting Logging:** The logging detection system can track activity in real time and report the data to local authorities or to anyone else in the world.

○ **DNA Profiling:** All trees have a unique genetic fingerprint, allowing us to match sawn wood to its parent tree through DNA profiling.

○ **Isotope analysis:** To identify wood's geographic origin (climate, geology and biology), making them unique to an area.

○ **Near Infrared Spectroscopy:** By exposing wood to near infrared electromagnetic energy, scientists can use spectroscopy to detect its traits and properties.

➤ **Bridging** international and national **regulatory gap** by effective and objective collaboration, like **list this species in the CITES.**

Note:

➢ Bring scientific solution to the wood's replacement by other artificial materials.

➢ Develop genetically modified teak for bridging the demand and supply gap and lower cost in the illegal market.

Peak Plastics: Bending the Consumption Curve

Why in News?

A new report suggests that **plastic consumption in G20 countries will almost double by 2050,** with the volume of plastic consumption rising to **451 million tonnes from 261 million tonnes in 2019.**

➢ The report, **"Peak Plastics: Bending the Consumption Curve,"** explores the potential impact of policies being considered by the **United Nations'** plastic treaty negotiators.

What does the Report on Plastic Consumption Suggest?

➢ The report examined the potential impact of three key policies that cover the entire lifecycle of plastic, from **production to disposal**.

   ○ These policies include **a ban on problematic single-use plastic,** a polluter pays **extended producer responsibility scheme** for full end-of-life costs, and a **tax on virgin plastic production.**

➢ The study found that a combination of these policies and bolder action, including **possible restrictions on virgin plastic production**, will bring about peak plastic and see consumption slow in the future.

   ○ The researchers described **peak plastic consumption as the point and volume at which global plastic consumption stops growing** and begins to recede.

➢ The analysis is focused on the **19 countries of the G20** — Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, and the United States.

➢ The report warned that **extended producer responsibility schemes will have a minimal effect** on the consumption of single-use plastic products.

   ○ A global **ban on unnecessary single-use plastic items** will be the most effective policy. **South Korea was the first to do so nationally for selected products in 2019,** later expanding the ban to other items. **India, France, Germany, Italy, Canada and China** have also imposed nationwide bans.

What is the Significance of Plastic?

➢ **Resistant, inert, and lightweight,** plastic offers many benefits to companies, consumers, and other links in society. This is all because of its low-cost and versatile nature.

   ○ In the **medical industry,** plastics are used to **keep things sterile.** Syringes and surgical implements are all plastic and single use.

   ○ In the **automotive industry**, it has allowed a significant reduction in vehicle weight, **reducing fuel consumption** and, consequently, the environmental impact of automobiles.

What are the Issues Associated with Plastic?

➢ **Single Use Plastic:**

   ○ Plastics are **primarily produced from crude oil, gas, or coal**, and **40% of total plastic** is discarded after a single use.

     ● Our relationship with plastic is short-term focused. Many of these products, such as **plastic bags and food wrappers,** have a lifespan of mere minutes to hours, yet they may persist in the environment for hundreds of years.

➢ **Microplastics:**

   ○ Sea, sunlight, wind, and wave action break down plastic waste into small particles, often **less than one-fifth of an inch** across called **microplastics.** Spread throughout the water column and have been found in every corner of the globe.

     ● **Microplastics** are breaking down further into smaller and smaller pieces- **Plastic microfibers.** They have been found in **municipal drinking water systems** and drifting through the air.

➢ **Other Issues:**

   ○ **Upsets the Food Chain:**

     ● **Polluting plastics** can affect the **world's tiniest organisms**, such as **plankton**. When these organisms become **poisoned due to plastic ingestion**, this causes problems for the larger animals that depend on them for food.

       ■ Larger items, such as plastic bags and straws, **can choke and starve marine life.**

○ **Impact on Human Health:**

- The **World Health Organisation** published shocking research in 2018 that exposed the presence of microplastics in **90% of bottled water.**
  - We absorb plastic through our clothes, **70% of which are synthetic** and the worst fabric for the skin.

What are the Initiatives Related to Plastic Waste Management?

➢ **Indian Initiatives:**

○ **National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management**

○ **Plastic Waste Management Amendment Rules, 2022**

○ **Project REPLAN**

➢ **Global:**

○ **The Plastic Waste Partnership is established by the Conference of the Parties to the Basel Convention in May 2019** to mobilise business, government, academic and civil society resources, interests and expertise to improve and **promote the environmentally sound management (ESM) of plastic waste at the global, regional and national levels** and to prevent and minimize its generation.

UN Treaty on the High Seas

Why in News?

Recently, the **UN (United Nations)** members agreed on a **High Seas Treaty** to ensure the protection and sustainable use of marine biodiversity of areas beyond national jurisdiction.

➢ It was agreed during talks led by the UN during the **Intergovernmental Conference (IGC) on Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ)** in New York, the US.

➢ The treaty is **yet to be formally adopted as members** are yet to ratify it. Once adopted, the treaty will be **legally binding.**

What are High Seas?

➢ **About:**

○ According to the **1958 Geneva Convention** on the **High Seas,** parts of the sea that are **not included**

in the territorial waters or the internal waters of a country are known as the high seas.

○ It is the area beyond a **country's Exclusive Economic Zone** (that extends up to **200 nautical miles (370 km) from the coastline**) and till where a nation has jurisdiction over living and non-living resources.

○ No country is responsible **for the management and protection of resources on the high seas.**

➢ **Significance:**

○ The high seas **account for more than 60% of the world's ocean area** and cover about **half of the Earth's surface**, which makes them a hub of marine life.

○ They are home to **around 2.7 lakh known species**, many of which are yet to be discovered.

○ They regulate the climate by playing a **fundamental role in planetary stability** by **mitigating the effects of climate change** through its **absorption of carbon** and by **storing solar radiation** and distributing heat around the globe.

- Therefore, they are fundamental to human survival and well-being.

○ Moreover, the ocean **provides a wealth of resources and services**, including seafood and raw materials, genetic and medicinal resources, air purification, climate regulation, and aesthetic, scientific and cultural services.

➢ **Threats:**

○ They absorb heat from the atmosphere, are affected by phenomena like the **El Nino**, and are also undergoing **acidification** — all of which endanger **marine flora and fauna.**

- Several thousand marine species are at risk of extinction by 2100 if current warming and acidification trends continue.

○ Anthropogenic pressures on the high seas include **seabed mining, noise pollution, chemical and oil spills and fires, disposal of untreated waste** (including antibiotics), overfishing, introduction of invasive species, and coastal pollution.

○ Despite the alarming situation, **the high seas remain as one of the least-protected areas, with only about 1% of** it under protection.

What is the High Seas Treaty?

➢ **Background:**

Note:

○ In 1982, the **United Nations Convention on the Law of the Sea (UNCLOS),** was adopted, which delineated rules to govern the oceans and the use of its resources.

● However, there was **no comprehensive legal framework that covered** the high seas.

○ As climate change and global warming emerged as global concerns, a need was felt for **an international legal framework to protect oceans** and marine life.

○ The **UNGA (United Nations General Assembly)** decided in 2015 to develop a legally binding instrument within the framework of UNCLOS.

● Subsequently, the **IGC was convened to frame a legal instrument** on BBNJ.

○ There were several hold-ups due to the **Covid-19 pandemic**, hampering a timely global response. In 2022, the European Union launched the High Ambition Coalition on BBNJ to finalize the agreement at the earliest.

➢ **Key Features:**

○ **Access and Benefit-sharing Committee:**

● It will set up an access- and benefit-sharing committee to frame guidelines.

● The activities concerning marine genetic resources of areas on high seas will be in the interests of **all States and for the benefit of humanity.**

● They have to be **carried out exclusively for peaceful purposes.**

○ **Environmental Impact Assessments:**

● Signatories will have to conduct **environmental impact assessments before the exploitation** of marine resources.

● Before carrying out a planned activity, the member will have to undertake processes of screening, scoping, carrying out an impact assessment of the marine environment likely to be affected, identifying prevention, and management of potential adverse effects.

○ **Consent from Indigenous Community:**

● Marine resources in areas beyond national jurisdiction that are held by indigenous people and local communities can only be accessed with their "free, prior and informed consent or approval and involvement".

● **No State can claim its right over marine genetic resources** of areas beyond national jurisdiction.

○ **Clearing-House Mechanism:**

● Members will have to provide the Clearing-House Mechanism (CHM), established as part of the treaty, with details like the objective of the research, geographical area of collection, names of sponsors, etc.

○ **Funding:**

● A special fund will be established as part of the pact which will be fixed by the conference of parties (COP). The COP will also oversee the functioning of the treaty.

➢ **Significance:**

○ The treaty is significant in achieving the 30x30 target set at **UN CBD (Convention on Biological Diversity) COP15** under which the countries agreed to protect 30% of oceans by 2030.

What are the Other Conventions related to Seas?

➢ **Convention on Continental Shelf 1964:**

○ It defines and **delimits the rights of States to explore and exploit** the natural resources of the continental shelf.

➢ **Convention on Fishing and Conservation of Living Resources of the High Seas 1966:**

○ It was designed to solve the problems involved in the conservation of living resources of the high seas, considering that because of the development of modern technology some of these resources are in danger of being overexploited.

➢ **London convention 1972:**

○ Its objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matters.

➢ **MARPOL Convention (1973):**

○ It covers pollution of the **marine environment by ships** from operational or accidental causes.

○ It lists various forms of marine pollution caused by oil, noxious liquid substances, harmful substances in packaged form, sewage and garbage from ships, etc.

Note:

Committee to Oversee Transfer/Import of Wild Animals in India

Why in News?

The **Supreme Court** has increased the **jurisdiction and powers of a high-powered committee** led by its former judge, **Justice Deepak Verma**, to conduct necessary checks concerning the **import, transfer, procurement, rescue and rehabilitation of wild animals,** including those in captivity, across **India.**

➢ Before, the **committee's powers were only limited to Tripura and Gujarat**, but now it has been extended to cover the whole of India.

What are the Major Changes in the Jurisdiction of the Committee?

➢ **State Chief Wildlife Wardens** will also be part of the committee, and it will handle all present and future complaints regarding the issue.

➢ The committee can also consider requests for **approval, dispute, or grievance** regarding the welfare of wild animals by **rescue centres or zoos across India.**

➢ The Supreme court ordered **Central and State authorities** to **report the seizure of wild animals or abandonment of captive** wild animals to the committee.

What are the Major Issues Related to Captive Wild Animals in India?

➢ **Lack of Adequate Facilities:** Many zoos and rescue centres in India are **not equipped with the necessary facilities** and resources to provide proper care for captive animals.

  ○ Besides food poisoning, zoo animals also suffer due to **animal-human conflict** and lack of veterinary care for diseases like hepatitis, tick fever etc.

    ● According to **CAG audit report 2020 reveals glaring gaps in animal health** care in **Bengaluru and other state zoos**. The **Delhi Zoo** alone has lost around 450 animals, including tigers and lions due to health reasons.

➢ **Illegal Trade**: There is a **thriving illegal trade in wild animals in India**, with many animals being captured and sold for their **fur, skin, or for use in traditional medicine**.

  ○ This has led to a decline in many species, and many captive animals are believed to have been illegally acquired.

  ○ **Examples:** **Pangolins** and **Indian star tortoises** are illegally traded in India for their **meat, skin, or as pets,** contributing to the decline of their populations.

➢ **Inadequate Rehabilitation**: Many rescued animals are **not properly rehabilitated** before being released back into the wild. This can lead to problems with their **survival and adaptation to their natural habitat.**

World Air Quality Report

Why in News?

According to the **World Air Quality Report** prepared by IQAir, **Delhi ranked 4th out of 50 of the world's most polluted cities** in terms of **PM2.5 levels** in 2022.

➢ Out of 131 countries, India ranked 8th with a population weighted average PM2.5 level of **53.3 µg/m3 in 2022.**

What are the Key Findings of the Report?

➢ **About:**

  ○ IQAir, a Swiss air quality technology company, prepares the **annual world air quality reports** based on **data from monitoring stations** operated by governments and other institutions and organisations across the world.

    ● The 2022 report is based on PM2.5 data **from 7,323 cities and 131 countries.**

➢ **Findings:**

  ○ **Chad, Iraq, Pakistan, Bahrain, Bangladesh** are the 5 most polluted countries in 2022.

  ○ **Delhi** had an average **PM2.5 level of 92.6 µg/m3 in 2022**, a little below the average of **96.4 µg/m3 in 2021**.

    ● The report makes a distinction between New Delhi and Delhi, with New Delhi having an annual average PM2.5 level of 89.1 µg/m3.

    ● The **WHO guideline** for annual PM2.5 levels is **5 µg/m3**.

  ○ **Lahore** was the most polluted city in the world, followed by **Hotan in China**, and **Bhiwadi in Rajasthan.**

  ○ **New Delhi is the second most polluted capital** city in the world, with N'Djamena in **Chad** topping the list.

Note:

○ A total of **39 Indian cities (including 'Delhi' and 'New Delhi')** are on the list of 50 of the world's most polluted cities based on annual average **PM2.5 levels in 2022.**

> **What is PM 2.5?**
> ➢ PM 2.5 is an **atmospheric particulate matter** of diameter of fewer than **2.5 micrometres**, which is around 3% the diameter of a human hair.
> ➢ PM 2.5 particles are small enough to **penetrate deep into the lungs** and even enter the bloodstream, and long-term exposure to PM 2.5 can lead to **lung cancer, heart disease, stroke,** and other chronic health conditions.

What are Initiatives taken by India for Controlling Air Pollution?

➢ **System of Air Quality and Weather Forecasting and Research (SAFAR) Portal**
➢ **Air Quality Index**
➢ **Push for Electric Vehicles (EVs)**
➢ **Commission for Air Quality Management**
➢ **Turbo Happy Seeder (THS) Machine**

How Air Quality Can be Enhanced in India?

➢ **Link Zero Emissions with Human Rights:** Air pollution needs to be **recognized more as a human right** issue rather than merely as an environmental challenge, and should be linked with the mission of **net zero emission** (by 2070).
  ○ The **UN General Assembly (UNGA)** has also passed a resolution recognizing the **right to a clean, healthy, and sustainable environment as a human right.**
➢ **Green-Transition Finance:** There is a need to create a financial architecture that can mobilise private finance for clean-air solutions in India. **Green sectors** such as clean energy and e-mobility offer tangible solutions to improve air quality.
➢ **Bio Enzyme-PUSA**: A **bio-enzyme called PUSA** has been developed by the **Indian Agriculture Research Institute** as a solution to stubble burning.
  ○ As soon as it is sprayed, this enzyme starts decomposing the stubble in **20-25** days, turning it into manure, which further improves the soil.
➢ **Ready-Made Concrete for Construction**: Construction dust is a major contributor to pollutants in air in expanding cities.

○ To deal with this situation, **Niti Aayog** has suggested the use of **ready-made concrete** that can minimise environmental impacts of building activities.

Carbon Footprint of Marine Fisheries Lower than Global Average

Why in News?

According to **Central Marine Fisheries Research Institute (CMFRI),** India's marine fisheries produced 1.32 tonnes of carbon dioxide (CO_2) to produce one kilogram of fish in 2016 during entire value chain (from the construction of boats to retail) **lower than the global average of 2 tonnes.**

What are the Key Findings of CMFRI?

➢ **About:**
  ○ The findings were discussed at a r**eview meeting of the fisheries component of the National Innovations in Climate Resilient Agriculture (NICRA)**, a research project launched in 2011.
➢ **Findings:**
  ○ **Active fishing** consumes more than **90% of the fuel used in the sector**, contributing 4,934 million kilograms of CO_2 emissions annually.
  ○ The country's carbon emissions from the marine mechanized fisheries sector is **16.3%, lower than the global level**.
  ○ While the **use of fossil fuels has increased the availability of fish to fisheries**, the dependence of the fishing sector on fossil fuels **raises concerns related to climate change.**
➢ **Reasons for Low Carbon Footprint:**
  ○ The carbon footprint from Indian marine fisheries is **smaller because they depend largely on human force.**
  ○ Large **mechanised fishing boats** were introduced in India in the late 1950s, but the **fleet size is growing**. Their number increased to 72,559 in 2010 from 6,708 in 1961.

What are the Impacts of Increasing Carbon Footprint on Marine Ecosystems?

➢ **Ocean Acidification**:

Note:

○ When carbon dioxide dissolves in seawater, it forms carbonic acid, which **lowers the pH of the water**.

○ This can make it **difficult for many marine organisms** to build and **maintain their shells and skeletons**, which can have serious consequences for their survival.

➤ **Changes in Marine Food Webs:**

○ Increasing carbon footprint can lead to **changes in the distribution and abundance of plankton**, which form the base of the marine food web.

○ This can affect the growth and survival of fish, marine mammals, and other species.

➤ **Coral Bleaching:**

○ Coral reefs are **highly sensitive to changes in water temperature** and chemistry, and increasing carbon footprint can cause widespread coral bleaching.

➤ **Changes in Species Diversity:**

○ Marine ecosystems are changing due to an **increase in the intensity of cyclones, sea-level rise and the warming of the Indian Ocean**.

○ The **diversity of species is changing**. For example, during coral bleaching, reef-associated fish deplete.

What are the Initiatives to Reduce Carbon Emissions from Fishing Sector?

➤ **Promotion of Green Fishing Practices:**

○ The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** scheme includes developing **Integrated Modern Coastal Fishing Villages** with an investment of Rs. 750 crores to promote sustainable fishing practices and leverage the **blue economy** for maximizing benefits to coastal fishers.

○ The government is promoting the use of renewable energy in the fishing sector, such as **solar-powered boats** and wind turbines.

➤ **Encouraging Alternative Livelihoods:**

○ The government is promoting alternative livelihoods for fishermen and women to reduce overfishing and pressure on marine resources.

➤ **Introducing Fuel Efficiency Measures:**

○ The government has introduced measures to improve fuel efficiency in fishing vessels, such as **mandating the use of high-efficiency propulsion systems and reducing idling time**.

➤ **Monitoring Fishing Vessels:**

○ The government has implemented a vessel monitoring system(**ReALCraft: Registration and Licensing of Fishing Craft**) to monitor fishing activities and reduce illegal fishing.

○ The system allows authorities to **track the location and movement of fishing vessels,** ensuring that they adhere to sustainable fishing practices.

➤ **CMFRI Initiatives:**

○ CMFRI is **developing a climate-smart value chain**, which will use science to decide where interventions are needed.

○ Further, the institute is also developing a **Coastal Climate Risk Atlas** to identify vulnerable areas in the coastal districts of India.

○ CMFRI is working at **greener fishing methods** to reduce carbon emissions. This includes **optimising fuel usage** and reducing fuel wastage.

What is Central Marine Fisheries Research Institute?

➤ The **CMFRI** was established by **Government of India in 1947** under the **Ministry of Agriculture and Farmers Welfare** and later it joined the **Indian Council of Agricultural Research (ICAR) in 1967.**

○ ICAR is the largest network of agricultural research and education institutes in the world functioning under the Department of Agricultural Research and Education, Ministry of Agriculture & Farmers' Welfare.

Landfill Fires and Mitigation

Why in News?

The **Kochi landfill site around Brahmapuram, Kerala that recently caught fire** is a stark reminder that Indian cities need to be prepared for more such incidents as summer approaches.

➤ Landfills are **sites where waste materials are deposited, compacted,** and covered with soil for long-term storage. These sites are designed **to prevent contamination of the surrounding environment** by isolating the waste from **groundwater**, surface water, and air.

Why do Landfills Catch Fire?

➤ **Unprocessed Waste:**

○ It is expected to process the wet and dry waste separately and to have the recovered by-products recycled. But the **rate of processing in India's cities**

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is far lower than the rate of waste generation, so unprocessed waste remains in open landfills for long periods.

- India's municipalities have been collecting more than 95% of the waste generated in cities but the efficiency of waste-processing **is 30-40% at bes**t.

➢ **High Calorific Value:**

○ The openly disposed waste **includes flammable material like low-quality plastics,** which have a relatively higher calorific value, and rags and clothes.

○ In summer, the biodegradable fraction **composts much faster, increasing the temperature of the heap** to beyond 70-80° C.

- Indian municipal solid waste consists of about 60% biodegradable material, 25% non-biodegradable material and **15% inert materials, like silt and stone.**

○ Higher temperature + flammable material = a chance for the landfill to catch fire. Some fires have been known to go on for months.

➢ **Hot Weather:**

○ In hot and dry weather conditions, **waste materials can become dry** and more flammable, increasing the risk of a fire.

What can be the Impact of Landfill Fires?

➢ **Air Pollution:** When a landfill fire burns, it releases harmful gases and **particles into the air, including carbon monoxide**, sulfur dioxide, nitrogen oxides, and volatile organic compounds (VOCs). These pollutants can cause respiratory problems, **exacerbate asthma and other lung conditions**, and contribute to smog and acid rain.

➢ **Groundwater Contamination:** Landfill fires can release **toxic chemicals and heavy metals into the groundwater,** which can contaminate nearby water sources and potentially harm aquatic ecosystems.

➢ **Soil Contamination:** Landfill fires can also release harmful chemicals and heavy metals **into the soil, which can harm plant growth** and contaminate crops.

➢ **Economic Impact:** Landfill fires can result in **significant cleanup costs for local governments,** as well as economic losses for nearby businesses and property owners.

How can the Landfill Fires be Managed?

➢ **Permanent Solution:**

○ **Capping and Closing Landfills:**

- Completely cap the material using soil and close landfills in a scientific manner.

- This solution is **unsuitable in the Indian context as the land can't be used again** for other purposes.

- Closed landfills have specific standard operating procedures, including managing the methane emissions.

○ **Bioremediation:**

- Clear the piles of waste through **Bioremediation**.
  - Bioremediation is the use of either naturally occurring or deliberately introduced **microorganisms to consume and break down environmental pollutants**, in order to clean a polluted site.

- However, implementing **a bioremediation project usually takes up to two or three years,** necessitating a short-term solution for landfill fires in the summer.

➢ **Immediate Solution:**

○ The first immediate action is to divide a **site into blocks depending on the nature of the waste.**

○ At each site, blocks with fresh waste should be separated from blocks with flammable material.

- Blocks that have been **capped using soil are less likely to catch fire**, so portions like these should also be separated out.

- The different blocks should ideally be separated using a drain or soil bund and a layer of soil should cap each block.

- This reduces the chance of fires spreading across blocks within the same landfill.

○ Next, the **most vulnerable part of the landfill**, the portion with lots of plastics and cloth, should be capped with soil.

- The fresh waste block shouldn't be capped but enough moisture should be provided by sprinkling water which will help cool the waste heap.

○ Once a site has been **divided into blocks, the landfill operator should classify incoming waste on arrival to the site** and dispose of it in designated blocks rather than dumping mixed fractions.

○ Already segregated non-recyclable and non-biodegradable waste should be sent to cement kilns instead of being allowed to accumulate.

- Dry grass material and dry trees from the site should also be cleared immediately.

Note:

Security

India's Arms Imports: SIPRI

Why in News?

According to **Stockholm International Peace Research Institute's (SIPRI)** **Trends in International Arms Transfers 2022 report**, India remained the world's largest arms importer from 2018 to 2022 followed by Saudi Arabia and Ukraine.

What are the Key Highlights of the Report?

➢ **Global Arms Transfer:**
  ○ While the global level of international arms transfers decreased by 5.1%, imports of major arms by **European states increased by 47% between 2013–17 and 2018–22 in the backdrop** of the **war in Ukraine.**
  ○ The U.S. share of global arms exports **increased from 33% to 40%** while Russia's fell from 22% to 16%.
  ○ Arms imports by Pakistan increased by **14% between 2013–17 and 2018–22** and accounted for 3.7% of the global total with China supplying 77% of Pakistan's arms imports in 2018–22.

➢ **India's Arms Import Outlook:**
  ○ With an 11% share of total global arms imports, India was the **world's biggest importer of major arms in 2018–22**, a position it has held for the period 1993–2022.
  ○ India remained the top importer despite an 11% drop in its arms import between 2013-17 and 2018-22.

➢ **Arms Suppliers to India:**
  ○ **Russia was India's largest arms supplier** in the periods between 2013-17 and 2018-22, but its share of arms imports to India fell from 64% to 45% while **France emerged as the second-largest arms supplier to India** between 2018-22 at 29%, followed by the US at 11%.
    ● Russia's position as India's main arms supplier is under pressure owing to strong competition from other supplier states, increased Indian arms production, and, since 2022, constraints on Russia's arms exports related to its invasion of Ukraine.
  ○ India also imported arms during this five-year period from **Israel, South Korea, and South Africa** which are among the **top arms exporters globally.**

➢ **Factors Driving Arm Imports:**
  ○ India's tensions with Pakistan and China largely drive its demand for arms imports.

➢ **Reason for Drop in Arm Imports:**
  ○ The drop in arms imports can be attributed to **several factors including India's slow and complex arms procurement process**, and efforts to diversify its arms suppliers, among others.

➢ **Arm Supply from India:**
  ○ India was the **third-largest arms supplier to Myanmar** during this period after Russia and China and comprised 14% of its imports.
    ● 77% of Pakistan's arms supply in 2018-22 came from China.

What is SIPRI?

➢ It is an **independent international institute** dedicated to research into conflict, armaments, arms control and disarmament.

➢ It was **established in 1966 in Stockholm (Sweden).**

➢ It **provides data, analysis and recommendations**, based on open sources, to policymakers, researchers, media and the interested public.

Note:

Manipur Government Withdraws from SoO Agreement

Why in News?

On **March 10,2023** the Manipur government decided to withdraw from the **Suspension of Operations (SoO) agreement** with two militant groups, **Kuki National Army (KNA) and Zomi Revolutionary Army (ZRA)**, alleging their involvement in inciting agitation among **forest encroachers**.

What is Kuki Insurgency?

➢ The **Kuki insurgency began after ethnic clashes** with the **Nagas of Manipur in the early 1990s**, with the **Kukis** arming themselves against Naga aggression.

➢ The major reason for clashes is the land claimed by the Kukis as their **"homeland" in the Manipur hills overlaps with the imagined Naga homeland** of Greater Nagaland or Nagalim.

➢ Nearly 30 Kuki insurgent groups operate in Manipur, of which **25 are under tripartite SoO** with the **Government of India and the state**.

  ○ As many as 17 are under the **umbrella group Kuki National Organisation (KNO),** and 8 are under the **United People's Front (UPF).**

➢ The Kuki outfits initially demanded a **separate Kuki state** but now seek a **'Kukiland territorial council.'**

What is the Zomi Revolutionary Army (ZRA)?

➢ The **ZRA** is a militant group operating in the northeastern Indian state of Manipur.

  ○ The group was formed in 1996 with the aim of **securing greater autonomy** for the Zomi people, an indigenous community living in the region.

➢ The ZRA is believed to be a splinter group of the larger **Zomi Nationalist Movement (ZNM),** which was active in the 1980s and 1990s.

What is the Suspension of Operations (SoO) Pact?

➢ **About:**

  ○ The **SoO agreement with Kuki was signed in 2008** as a **ceasefire agreement between the Indian government and various Kuki militant groups** operating in the northeastern states of Manipur and Nagaland.

  ○ Under the agreement, th**e Kuki militant groups agreed to stop carrying out violent activities** and come to designated camps to be monitored by security forces.

    ● In return, the **Indian government agreed to suspend its operations** against the Kuki groups.

➢ **Terms of SoO Pact:**

  ○ The **Joint Monitoring Group (JMG)** oversees the effective implementation of the pact.

    ● Security forces, including **state and central forces**, cannot launch operations, nor can the underground groups.

  ○ Signatories of **UPF and KNO abide by the Constitution of India,** laws of the land, and territorial integrity of Manipur.

    ● They are prohibited from **committing atrocities and extortion.**

    ● The militant cadres are confined to designated camps, with arms deposited in a safe room under a double-locking system.

    ● The groups are given arms only to **guard their camps and protect their leaders.**

■■■

Note:

Art and Culture

Menace of Missing Antiquities in India

Why in News?

There is a formidable gap between **artefact** that has been **"officially" declared missing** and what is **surfacing in global markets** or being found in museum shelves and catalogues.

➢ Since Independence, **486 antiquities have been reported as missing** from the **3,696 monuments** protected and maintained by the **Archaeological Survey of India (ASI).**

What are the Issues Highlighted Regarding Missing Artefacts?

➢ According to ASI, **292 antiquities have been brought back to India** from abroad since 2014 and 13 between 1976 and 2013.

  ○ The ASI's list of missing antiquities covers 17 states and two Union Territories. It includes **139** from Madhya Pradesh, **95** from Rajasthan and **86** from Uttar Pradesh.

➢ The Parliament committee flagged that **"number of antiquities retrieved"** by the ASI from abroad "are not **even the tip of the iceberg in comparison to the huge number of antiques smuggled** out from the country".

➢ Monuments and sites maintained by the ASI is only a **"small percentage" of the total number of archaeological sites** and monuments across the country.

➢ The menace of **missing antiquities is also illustrated by UNESCO.** It estimates that "**more than 50,000 art objects** have been **smuggled out of India till 1989**".

What is Antiquity?

➢ **About:**

  ○ The **Antiquities and Art Treasures Act of 1972**, which came into effect on April 1, 1976, defines an **"antiquity" as any object or work of art that has been in existence for at least 100 years.**

    • This includes **coins, sculptures, paintings, epigraphs, detached articles**, and other items that reflect science, art, literature, religion, customs, morals, or politics from a bygone era.

  ○ For "manuscript, record or other document which is of scientific, historical, literary or aesthetic value", this duration is "**not less than 75 years.**"

➢ **Protection Initiative:**

  ○ **Indian:**

    • In India, Item-67 of the **Union List**, Item-12 of the **State List**, and Item-40 of the **Concurrent List of the Constitution** deal with the country's heritage.

    • Before Independence, the **Antiquities (Export Control) Act** was passed in April 1947 to ensure that no antiquity could be exported without a license.

    • The **Ancient Monuments and Archaeological Sites and Remains Act was enacted in 1958** to protect ancient monuments and archaeological sites from destruction and misuse.

  ○ **Global:**

    • **UNESCO** formulated the 1970 **Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property.**

    • The **United Nations Security Council** also passed resolutions in 2015 and 2016 calling for the **protection of cultural heritage sites in conflict zones**.

Note:

What is 'Provenance' of Antiquity?

➢ **Provenance** includes the list of all owners from the time the object left its maker's possession to the time it was acquired by the current owner.

What is the Procedure of Bringing Back the Antiquities?

➢ **Categories:**
   ○ **Antiquities taken out of India pre-independence;**
   ○ Antiquities which were taken out **since independence until March 1976;**
   ○ **Antiquities have been taken out of the country since April 1976.**

➢ For **Antiquities taken out of India before independence,** requests for their retrieval must be raised bilaterally or on international fora.
   ○ For example, in **November 2022,** the **Maharashtra government** announced that it was working to bring back the **sword of Chhatrapati Shivaji Maharaj from London.**

➢ Antiquities in the **second and third categories** can be retrieved easily by **raising an issue bilaterally with proof of ownership** and with the help of the **UNESCO** convention.

■■■

Note:

History

Highlights

- *Buddhism*
- *Menace of Missing Antiquities in India*

Buddhism

BUDDHISM

Drishti IAS

ORIGIN
- 6th century BC, based on the teachings of Gautam Buddha

MAIN FEATURES
- Essence - Attainment of enlightenment (Nibbana)
- Supreme Deity - None

PRINCIPLES
- Avoid the extremes; follow Madhyam Marg (middle path)
- Individualistic component (everyone is responsible for their own happiness)
- 4 Noble Truths:
  - Dukkha (suffering)
  - Samudya (cause of suffering)
  - Nirodha (suffering could be ended)
  - Atthanga Magga (8-fold path to achieve this)
- 8-Fold Path:
  - Right - view, intention, speech, action, livelihood, mindfulness, effort and concentration

BUDDHISM REJECTS
- Authenticity of Vedas
- Concept of soul (atman) (unlike Jainism)

MAJOR BUDDHIST TEXTS
- Sutta Pitaka (main teachings of Buddha - Dhamma)
- Vinaya Pitaka (rules of conduct for monks/nuns)
- Abhidhamma Pitaka (philosophical analysis)
- Other imp texts - Divyavadana, Dipavamsa, Mahavamsa, Milind Panha

Budhha's teachings were rehearsed, authenticated & divided in 3 Pitakas at the 1st Buddhist Council

These teachings were written down c. 25 BC in Pali

4 BUDDHIST COUNCILS

Buddhist Council	Patron	Venue	Chairman	Year
First	Ajatashatru	Rajgriha	Mahakashyapa	483 BC
Second	Kalashoka	Vaishali	Sabbakami	383 BC
Third	Ashoka	Patliputra	Mogaliputra	250 BC
Fourth	Kanishka	Kundalban (Kashmir)	Vasumitra	72 AD

Note:

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Note:

drishti

Geography

States Demand to Declare Lightning as a Natural Disaster

Why in the News?

Recently few States have demanded that "**lightning**" be declared as a "**natural disaster**" because deaths caused by it surpass any other disaster in India.

➢ According to present norms, **cyclone,** drought, **earthquake**, fire, flood, tsunami, hailstorm, **landslide**, avalanche, cloudburst, pest attack, frost and **cold waves** are considered as disasters that are covered under the **State Disaster Response Fund (SDRF)**, 75% of which is funded by the Centre.

What is Lightning?

➢ **About:**
  ○ It is the natural process of "**an electrical discharge of very little duration and high voltage** between a cloud and the ground or within a cloud," accompanied by a bright flash, a loud sound, and occasionally thunderstorms.
  ○ **Cloud-to-ground (CG) lightning is dangerous** because it can electrocute people due to its high electric voltage and current. **Inter- or intra-cloud lightning** is visible and safe.

➢ **Process of Lightning:**
  ○ Lightning is **caused by a difference in electrical charge** between the top and bottom of a cloud, which generates a huge current of electricity.
  ○ Water vapor in the cloud condenses and rises, generating heat and pushing **water molecules further up until they become ice crystals**. Collisions between the ice crystals trigger the release of electrons, leading to a chain reaction that results in a positively charged top layer and negatively charged middle layer in the cloud.
  ○ When the difference in charge becomes large enough, **a huge current of electricity flows between the layers**, producing heat that causes the air column to expand and produce shock waves that create thunder sounds.
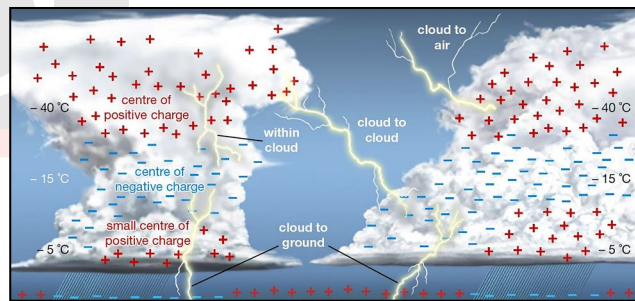
➢ **Lightning and the Climate Change:**
  ○ In a 2015 study from California University, the university cautioned that **a rise in one degree Celsius would result in a 12% increase in the frequency of lightning strikes.**
  ○ Another study that was released in Geophysical Research Letters in March 2021 found connections between climate change and an increase in lightning strikes in the Arctic.

➢ **Lightning Strikes in India:**
  ○ According to a newly published yearly report on lightning from the **Lightning Resilient India Campaign (LRIC)**, India may have seen up to 18.5 million lightning strikes between April 2020 and March 2021.
  ○ Each year, lightning claims the lives of more than 2,500 Indians.

Note:

- ❍ According to a study by the Delhi-based RMSI, a global leader in geospatial and engineering solutions, **Odisha, Madhya Pradesh, Chhattisgarh, West Bengal, and Jharkhand** have witnessed the maximum lightning strikes in recent years.

- ❍ According to government statistics, **more than 100,000 individuals** have died in the nation as a result of lightning strikes **between 1967 and 2019.** This represents more than a third of the deaths brought on by natural disasters throughout this time.

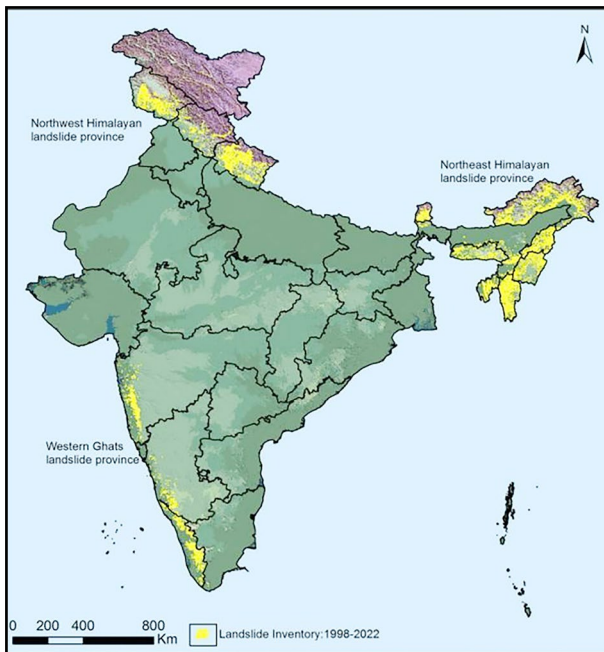# Landslide Atlas of India

Why in News?

Recently, **National Remote Sensing Centre (NRSC)** under the **Indian Space Research Organisation (ISRO)** has released the **Landslide Atlas of India**, a detailed guide **identifying Landslide Hotspots in the country.**

➢ NRSC has the **mandate for** remote sensing satellite data acquisition, processing, archiving, and dissemination to various users.

How was the Atlas Prepared?

➢ For the first time, scientists **did a risk assessment on the basis of 80,000 landslides** recorded between **1998 and 2022** in 147 districts in 17 states and two **Union Territories** to build a "Landslide Atlas" of the country.

➢ The atlas used satellite data of **ISRO to map all seasonal and event-based landslides like the Kedarnath disaster in 2013** and landslides triggered due to the Sikkim earthquake in 2011.

➢ The pan-India landslide database classifies landslides into – seasonal (2014, 2017 monsoon seasons), event-based and route-based (2000 – 2017).

What are the Key Highlights?

➢ Uttarakhand, Kerala, Jammu and Kashmir, Mizoram, Tripura, Nagaland and Arunachal Pradesh reported the **highest number of landslides during 1998 – 2022.**

➢ Mizoram topped the list, recording 12,385 landslide events in the past 25 years, of which 8,926 were recorded in 2017 alone.

➢ Mizoram is followed by Uttarakhand (11,219) and Kerala.
- ❍ Uttarakhand's fragility was recently exposed during the **land subsidence** events reported from Joshimath.

➢ The number of **districts with the maximum landslide exposure** are in Arunachal Pradesh (16), Kerala (14), Uttarakhand and Jammu and Kashmir (13 each), Himachal Pradesh, Assam and Maharashtra (11 each), Mizoram (8) and Nagaland (7).
- ❍ Rudraprayag and Tehri Garhwal districts of Uttarakhand have the **highest landslide density and landslide risk exposure** in the country.

How Vulnerable India is to Landslides?

➢ India is considered **among the top five landslide-prone countries globally**, where at least **one death per 100 sq km is reported in a year** due to a landslide event.
- ❍ **Rainfall variability** pattern is the **single biggest cause for landslides in the country**, with the **Himalayas** and the **Western Ghats** remaining highly vulnerable.

➢ Excluding snow covered areas, approximately 12.6 % of the country's geographical land area is prone to landslides. As many as 66.5 % of the landslides are reported from the **North-western Himalayas**, about 18.8 % from the North-eastern Himalayas, and about 14.7 % from the Western Ghats.

➢ In the Western Ghats, **despite fewer events**, landslides were found to be making **inhabitants significantly vulnerable** to fatalities, especially in Kerala.

Note:

What causes landslides?

➤ **About:**

○ Landslides are **natural disasters occurring mainly in mountainous terrains** where there are conducive conditions of soil, rock, geology and slope.

○ A **sudden movement of rock, boulders, earth or debris down a slope** is termed a landslide.

➤ **Causes:**

○ Natural causes that trigger it include **heavy rainfall, earthquakes, snow melting and undercutting of slope**s due to flooding.

○ They can also be caused by **anthropogenic activities such as excavation, cutting of hills and trees**, excessive infrastructure development, and overgrazing by cattle.

○ Some of the main factors that influence landslides are **lithology, geological structures like faults, hill slopes, drainage, geomorphology**, land use and land cover, soil texture and depth, and weathering of rocks.

○ All these are factored in when a **landslide susceptibility zone is earmarked for planning and making predictions.**
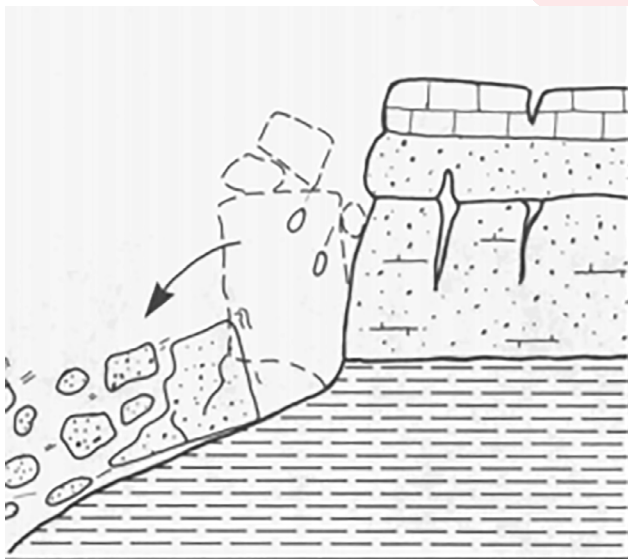
Glacial Retreat

Why in News?

Recent studies on Himalayan glaciers show that the **variability in retreat rate and mass balance** in different sectors of the mountain range is primarily linked to **topography** and **climate**.

➤ However, **variable retreat rates of glaciers** and inadequate supporting field data make it **challenging to develop a coherent picture of climate change impact.**

What are the Factors Influence Glacial Dynamics?

➤ A team from **Wadia Institute of Himalayan Geology** (Uttarakhand) studied two glaciers with different characteristics, the **Pensilungpa Glacier (Ladakh) and the Durung-Drung Glacier, (Ladakh)** for a comparative study of glacier fluctuations between **1971 and 2019**.

○ They quantitatively evaluated the influence of the **debris cover on the loss of ice mass** in summer and on the terminal recession of glaciers.

➤ Their study confirms that the **glacier retreat rate is controlled by climate change** and the **topographic setting and morphology of the glacier.**

○ They also found that the **thickness of the debris cover significantly alters the glacier response** to climate forcing.

➤ Other factors such as **snout geometry, glacier size, elevation range, slope, aspect, debris cover, as well as the presence of supra and proglacial lakes** also influence the heterogeneous glacial dynamics.

What is Glacial Retreat?

➤ **About:**

○ Glacial retreat refers to the **process of a glacier shrinking or receding in size** over time due to a decrease in ice accumulation or an increase in ice melt.

➤ **Causes:**

○ This can be caused by a number of factors, including **rising global temperatures, changes in precipitation patterns,** or changes in the geography of the surrounding landscape.

➤ **Impacts:**

○ As a glacier retreats, it can lead to a number of significant environmental impacts, including **changes in water availability, alterations to local ecosystems, and increased risk of natural disasters** such as **floods** and **landslides.**

○ In addition, the **loss of glacial ice can contribute to rising sea levels,** which can have significant impacts on coastal communities and **ecosystems** around the world.

Glacier Retreat

Global Glacier Cumulative Volume Change

Glaciers have retreated at exponential rates due to the increase in global temperatures

Global temperature increase negatively affects the atmosphere.

Hazards on the Biosphere:

- Floods, landslides, avalanches have become more common, and kill about 100 people per year.
- The global sea level has risen 4 to 8 inches in the past century due to glacier retreats.
- Without glacial water, water temperatures increase causing many aquatic species to disappear and the food chain to be disrupted.
- Many animals live on glaciers. Since glaciers are melting, they are losing their habitats.
- Melting Ice in the Artic could disrupt Atlantic Ocean currents, which produces heat, and drop global temperatures by 10 to 20 degrees.

Other facts:
- Over 110 glaciers have disappeared over the last 150 years at the Montana's Glacier National Park.
- The total global ice mass lost from Greenland, Antarctica, etc. was about 4.3 trillion ton, which added 0.5 inches to the sea level. That is enough to cover the US in 1.5 feet deep in ice.

Tapping into Helium Reserves

Why in News?

Researchers propose a **new model to tap into helium reserves to address shortage issues and** a recent new study suggests that reservoirs of this gas, with **no carbon footprint**, likely exist in geological formations beneath the Earth.

➢ The helium production process comes with a high carbon footprint as **its production is related to drilled natural gas or oil.**

What is the Proposed Model to Tap Helium Reserve?

➢ The **gas can be produced and stored in crystalline basement rocks,** dense rocks that extend from the mantle to the near-surface or surface.
  ○ These rocks naturally contain **uranium and thorium**, both of which decay to form helium naturally.
➢ These rocks are **30-40 kilometre thick.** They have also existed for millions or billions of years, allowing large amounts of helium to be produced and stored.

➢ Also, these rocks could also be a source of hydrogen. The model showed that **energy generated from the radioactive decay of uranium and thorium** could split water to form hydrogen.

What is the Significance of Helium Gas?

➢ **About:**
  ○ Helium is a **noble gas and has a closed-shell electronic configuration,** making it stable and unreactive.
  ○ It has the **lowest boiling and melting points of any element** and exists only as a gas, except under extreme conditions.
➢ **Discovery of Helium:**
  ○ Helium was **first discovered in 1868 by French astronomer Jules Janssen and English astronomer Joseph Norman Lockyer,** who observed a yellow spectral line in the light emitted by the sun during a solar eclipse.
    ● Helium gets its name from the **Greek word "helios," which means sun.**
➢ **Sources and Extraction of Helium**:
  ○ Helium is the **second most abundant element in the universe,** after hydrogen. However, **it is relatively rare on Earth, with most of it being produced by the decay of radioactive elements** in the Earth's crust.
  ○ **Natural gas is the primary source of helium on Earth**.
    ● Helium is extracted from natural gas using a process called **cryogenic distillation.**
➢ **Reserves and Production:**
  ○ As of 2022, the reserves of helium in the **United States has the largest reserves of helium** globally followed by Algeria and Russia.
  ○ **India's Rajmahal volcanic basin in Jharkhand** is the **storehouse of helium** trapped for billions of years.
➢ **Uses of Helium:**
  ○ **Balloons and airships** (because it is lighter than air and does not react chemically with other elements).
  ○ **Industrial applications**, including **welding, cooling, and as a protective gas** in the production of semiconductors and fiber optic cables.
  ○ In **medical applications**, such as **magnetic resonance imaging (MRI)**, as a cooling agent for superconducting magnets.

Note:

○ It is also used in **nuclear magnetic resonance (NMR)** spectroscopy and as a carrier gas in gas chromatography.

➢ **Shortage of Helium:**

○ There is currently a shortage of helium in the world, with **demand outstripping supply.**

○ The shortage is due to a variety of factors, including the **shutdown of some helium plants, the increasing demand for helium in emerging economies**, and the lack of new helium sources.

● The shortage of helium has led to concerns about its use in balloons and airships, as well as its use in medical and industrial applications.

Hidden Mantle Layers

Why in News?

According to two new studies, the mantle, **a layer of solid rock sandwiched between the Earth's upper crust and lower core**, has been **hiding two new layers**.

What are the New Studies Suggest About Hidden Mantle Layers?

➢ The **first layer is a low viscosity zone in the upper mantle**, approximately **100 kilometres thick,** which was discovered by **studying deep earthquakes** (2018 Fiji earthquake of 8.2 magnitude) **using GPS sensors.**

➢ The **second layer is a partially molten layer that extends from 90 km to 150 kilometre**s and sits below the tectonic plates.

○ This layer was discovered by **analysing seismic waves from earthquakes** and suggests a higher temperature.

What is the Mantle Layer of Earth?

➢ **About:**

○ The Earth's mantle is a layer of solid rock that extends from the bottom of the crust to the top of the core, with a thickness of approximately **2,900 kilometres (1,800 miles).**

○ The mantle is the **largest layer of the Earth's interior, making up about 84% of the Earth's volume** and about 68% of its mass.

➢ **Composition:**

○ The mantle is **composed of silicate rocks rich in iron and magnesium**, and is divided into the upper mantle and the lower mantle.

➢ **Significance:**

○ The mantle is an important part of the Earth's structure and plays a critical role in the **geologic processes that shape the planet's surface,** such as **plate tectonics and volcanic activity.**

○ The mantle's viscous properties govern convection — the **transfer of heat between areas of different temperatures**.

● The heat generated by the core is transferred through the mantle, which **drives the motion of the tectonic plates** on the Earth's surface.
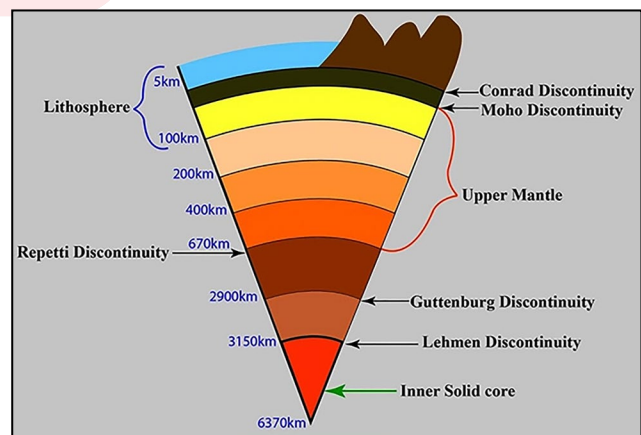
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Miscellaneous

Highlights

- World Consumer Rights Day 2023
- Dung Based Formulations for Farming
- Coronary Heart Disease
- SWAMIH Investment Fund I
- Erythritol
- Swachh Sujal Shakti Samman 2023

World Consumer Rights Day 2023

Why in News?

The **Department of Consumer Affairs** is celebrating **World Consumer Rights Day** on **March 15, 2023.** The theme for this year's celebration is "**Empowering consumers through clean energy transitions".**

➢ It is a step towards creating a more sustainable and **consumer-friendly ecosystem.** India celebrates **24th December** as **National Consumer Day** every year.

What are the Recent Initiatives Related to Consumer Rights?

➢ **Reducing Dependence on Traditional Sources**:
  - The primary focus is to **deploy technology to reduce dependence on traditional energy sources** like fossil fuels and enable a rapid transition to clean energy solutions that promote **sustainability, security, affordability, and access to consumers** in the long term.

➢ **National Consumer Helpline:**
  - **E-commerce** has become one of the most preferred mediums of shopping for consumers. However, there has been a rise in the number of e-commerce grievances registered by consumers on the **National Consumer Helpline (NCH)**.
  - Therefore, **NCH is being strengthened technologically to receive more complaints and redress common consumer grievances** of refund, replacement, and deficiency in service speedily.
  - NCH works as an **alternate dispute redressal mechanism at the pre-litigation** level. NCH is accessible in over **17 languages,** including recently added **Maithili, Kashmiri, and Santhali languages**.

➢ **E-Daakhil Portal:**
  - The **E-Daakhil Portal** has been set up to **facilitate online filing of consumer complaints.**
  - It provides a **hassle-free, speedy, and inexpensive facility** to conveniently approach the relevant consumer forum, dispensing the need to travel and be physically present to file their grievance.
  - The objective is to digitise and make it **easy for consumers to access justice** with the help of technology.

➢ **Right to Repair Portal:**
  - In line with the **LiFE (Lifestyle for environment) movement**, the Department has initiated the creation of a "**Right to Repair portal**" to protect consumers against planned obsolescence, resulting in increasing e-waste.
  - The portal is expected to address concerns regarding the **price, originality, and warranty of spare parts.**

➢ **Reducing E-Waste:**
  - The Department is planning to organise a **hackathon for designing charging solutions** that work with wearable devices, with an emphasis on **reducing electronic and electrical waste (e-waste)** and promoting a more sustainable consumer ecosystem.
  - **Wireless charging methods** are also being explored, which will help significantly in **e-waste proliferation.**

Dung Based Formulations for Farming

Why in News?

Recently, **NITI Aayog** has released a report titled- "**Production and promotion of organic and bio fertilizers with special focus on improving economic viability of**

gaushalas", recommending **Capital Assistance to Cow Shelters** to promote Dung-Based Fertilizers for Agriculture, thus promoting **Natural Farming.**

What are the Key Highlights of the Report?

➢ **Need to Promote Dung-based Formulations:**
  ○ Agriculture in India was based on an integrated approach of organic fertilizers. But after the **Green Revolution**, India could not maintain this balance and use of **chemical fertilizers brought imbalance** in the soil nutrients.
  ○ Cow shelters can **address the problem of stray cattle that damaged crops** in many parts of the country.
    ● The number of stray and abandoned cattle had risen to a **level beyond the resources available** with existing gaushalas for their upkeep and sustenance and suggested channeling the potential of such cattle wealth for promoting natural and sustainable farming.

➢ **Recommendations:**
  ○ The government can help gaushalas through capital assistance so that they c**ould market cow dung and cow urine-based formulations** for applications in agriculture.
  ○ Gaushalas can be of great help in promoting natural farming and organic farming. Thus, complementarity can be built to **promote gaushalas and natural farming.**

➢ **Significance:**
  ○ Cow dung-based organic fertilizers will have a **huge impact in fulfilling the constitutional mandate under Article 48** that the State shall take steps for preserving and improving cattle breeds, and prohibiting the slaughter of cows and calves, and other milch and draught cattle.

What is Natural Farming?

Natural farming is a method of agriculture that seeks to **create a balanced and self-sustaining ecosystem** in which crops can grow without the use of synthetic chemicals or genetically modified organisms.

○ Instead of relying on artificial inputs like synthetic fertilisers and pesticides, natural farmers rely on techniques l**ike crop rotation, intercropping, and composting** to enhance soil health and support crop growth.

➢ Natural farming methods are **often based on traditional knowledge and practices and may be adapted to local condition**s and resources.
  ○ The goal of natural farming is to **produce healthy, nutritious food i**n a way that is sustainable and environmentally friendly.

What are the Initiatives Related to Sustainable Agriculture?

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

Coronary Heart Disease

Why in News?

Cardiovascular diseases are the leading cause of death worldwide, with **coronary heart disease** being a major concern among researchers.

What is Coronary Heart Disease?

➢ **About:**
  ○ **Coronary heart disease (CHD)** is a condition in which the **blood vessels** that supply the heart with oxygen-rich blood become narrow due to the **buildup of fatty deposits (plaques) inside the arteries.**
  ○ Over time, these deposits can **harden and narrow the arteries,** reducing the flow of blood to the heart.

➢ **Causes:**
  ○ **Unhealthy lifestyles**, poor diets, physical inactivity, tobacco use, and harmful levels of alcohol consumption are the major contributors to **coronary heart disease**.
    ● Damaged heart tissue cannot be regrown in humans, and the **only option is to undergo heart transplant,** which comes with its own complications.

➢ **Recent Studies:**
  ○ A group of scientists has come up with a **solution where healthy skin cells from an adult can be converted into heart cells** using special proteins.
    ● Converting cells from one form to another, known as **cellular reprogramming**, involves

specific proteins called **transcription factors,** which alter the expression of genes within a cell and direct it to take on a new cellular identity.

○ The researchers established a **recombinant protein toolbox consisting of six potential cardiac transcription** factors: GATA4, MEF2C, TBX5, ETS2, MESP1, and HAND2.

● Each of these proteins plays a significant role in **reprogramming fibroblasts.**

○ The advantage of using recombinant proteins is that they work their miracle inside the nucleus and eventually disappear over time **without leaving behind their toxic waste**, unlike their generic counterparts.

What are the Initiatives to Promote Awareness About Cardiovascular Diseases?

Indian:

○ **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)**

○ **ST-Elevation Myocardial Infarction (STEMI) Project**

Global:

○ **World Heart Day (29th September)**

SWAMIH Investment Fund I

Why in News?

SWAMIH (Special Window for Affordable and Mid-Income Housing) Investment Fund has completed 20,557 homes since inception in 2019.

It is **India's largest social impact fund** specifically formed for completing stressed and stalled residential projects.

What is the SWAMIH Investment Fund?

➤ **About:**

○ It is a government backed fund, set up as a **Category-II AIF (Alternate Investment Fund) debt fund** registered with **SEBI (Securities and Exchange Board of India),** launched in 2019.

○ The Fund is sponsored by the **Ministry of Finance** and is managed by SBICAP Ventures Ltd. (a State Bank Group company).

➤ **Eligibility Criteria:**

○ The real estate projects must be **Real Estate (Regulation and Development) Act (RERA)-**

registered which have been stalled due to a lack of adequate funds.

● Each of these projects must be very close to completion.

○ They must also fall **under the 'Affordable and Middle-Income Project' category** (any housing projects wherein housing units do not exceed 200 sq.m.).

○ **Net-worth positive projects are also eligible for SWAMIH funding.**

● Net-worth positive projects are those projects for which the value of their receivables (debts owed to them by buyers), plus the value of their unsold inventories is greater than their completion costs and outstanding liabilities

➤ **Objective:**

○ It aims to provide financing to enable completion of stalled housing projects and ensure delivery of apartments to **homebuyers.**

○ To unlock liquidity in the real estate sector and provide a boost to **core industries** such as cement and steel.

How has the Performance so Far?

➤ It has so far provided **final approval to about 130 projects with sanctions worth over Rs 12,000 crore**.

➤ The Fund has completed 20,557 homes and aims to complete over 81,000 homes in the next three years across 30 tier 1 and 2 cities.

➤ The Fund has been able to complete construction in **26 projects and generate returns for its investors**.

➤ It has also played a critical role in the growth of many ancillary industries in real estate and infrastructure sector having successfully unlocked liquidity of **more than Rs. 35,000 crore.**

What is an Alternative Investment Fund?

➤ An AIF is a type of investment vehicle that **pools money from a variety of investors** to invest in assets beyond traditional stocks, bonds, and cash. These assets may include **private equity, hedge funds, real estate, commodities, or other non-traditional** investments.

➤ AIFs are typically marketed to **high-net-worth individuals and institutional investors** who have the knowledge and resources to invest in more complex and less liquid assets.

○ In India, Regulation 2(1)(b) of **Securities and Exchange Board of India (SEBI)** Regulations (AIFs), 2012 lays down the definition of AIFs.

➤ AIF does not include funds covered under the **SEBI (Mutual Funds) Regulations, 1996,** SEBI (Collective Investment Schemes) Regulations, 1999 or any other regulations of the Board to regulate fund management activities.

Erythritol

Why in News?

According to recent research, **Erythritol, a popular artificial sweetener, is associated with an increased risk of heart attack and stroke**.

What was the Result of the Research?

➤ Results of the research **revealed that erythritol made platelets easier to activate and form a clot**.

➤ Erythritol **activates platelets, the blood cells which cause clots when they clump together**. Such aggregation of platelets blocks blood flow in blood vessels in different parts of the body.

○ When that happens in **blood vessels supplying blood to the heart or brain, fatal or non-fatal cardiovascular events occur**.

What is Erythritol?

➤ **About:** It is a type of **sugar alcohol commonly used as a sugar substitute in foods and beverages**. Unlike traditional sugars, it **has no calories and does not raise blood sugar levels**.

○ Artificial sweeteners are **common replacements for table sugar in low-calorie, low-carbohydrate and "keto" products** (high in fat and low in carbohydrates).

➤ **Low Glycemic Index (GI):** It is also **believed to have a lower GI** than other sweeteners, **meaning it may not impact insulin levels as strongly.**

○ GI is a value **used to measure how much specific foods increase blood sugar levels**.

➤ **Uses:** Sugar-free products containing Erythritol a**re often recommended for people who have obesity, diabetes or metabolic syndrome** and are looking for options to help manage their sugar or calorie intake.

○ People with **these conditions also are at higher risk for adverse cardiovascular events like heart attack and stroke**.

Swachh Sujal Shakti Samman 2023

Why in News?

Recently, the Ministry of Jal Shakti has organized the "Swachh Sujal Shakti Samman 2023", to honor the **women champions of the rural water and sanitation sector.**

➤ The event also saw the launch of **Jal Shakti Abhiyan – Catch the Rain 2023.**

What are the Key Highlights?

➤ This event was organized in the run up to the **International Women's Day (8th March) and** to highlight and acknowledge the leadership and contribution of women at the grass-root level in the **journey towards making a 'Swachh Sujal Bharat'.**

➤ 36 women **WASH** Champions were conferred with the 'Swachh Sujal Shakti Samman 2023'.

➤ They were felicitated for thei**r exceptional and exemplary work at the grassroots level** in the implementation of S**wachh Bharat Mission – Gramin (SBM-G), Jal Jeevan Mission (JJM), Jal Shakti Abhiyan:** Catch the Rain (JSA-CTR).

➤ On this occasion, the Hon'ble President felicitated the women achievers who have contributed exceptionally in ODF Plus Model Villages, Har Ghar Jal Villages, Water Conservation, etc. under the National Flagship Missions.

What are the Key Points of Catch the Rain 2023?

➤ The President of India launched 'Catch the Rain-2023' as part of efforts to turn **conservation of water into a mass campaign** in the run-up to the **monsoon** season.

➤ **Theme 2023:** Source Sustainability for Drinking Water.

➤ Tag line: Catch the rain, where it falls, when it falls.

➤ Catch the Rain is a Jan Andolan campaign to encourage all stakeholders to create rainwater harvesting structures.

➤ The campaign is implemented by the **National Water Mission (NWM),** Ministry of Jal Shakti.

➤ The campaign takes place across the country, in both rural and urban areas.

What are the Efforts for Water Conservation?
➤ **Mahatma Gandhi National Rural Employment Guarantee Act**.
➤ **Jal Kranti Abhiyan.**
➤ **NITI Aayog's Composite Water Management Index.**
➤ **Atal Bhujal Yojana**
➤ **National Water Awards**

Note:

drishti

Rapid Fire Current Affairs

Highlights

- No More Compensation for the Victims of Bhopal Gas Tragedy: SC
- 13th edition of Exercise Bold Kurukshetra
- Nuclear-powered Attack Submarines & AUKUS
- Kalakkad–Mundanthurai Tiger Reserve (KMTR)
- Very Short Range Air Defence System (VSHORADS)
- Multilateral Exercise La Perouse
- Oscars
- Dragon Fruit
- NASA's Multi-Angle Imager for Aerosols Missions
- Indonesia's Merapi Volcano Erupted
- World's Fastest Single-shot Laser Camera
- Maritime Partnership Exercise (MPX) With French Navy
- Country's Worst Forest Fires in Odisha
- 54th CISF Raising Day
- First Woman to Lead Army Unit Near China border (Ladakh)
- Time Zone for the Moon
- Scrub Typhus
- Gene-editing: A Concern
- Lossless Energy Possibility
- Vision Screening for Drivers
- Most Landslide prone Districts of India
- H3N2 Outbreak
- Attukal Pongala
- Muggers of Rapti
- Joint Military Exercise FRINJEX-23
- International Big Cat Alliance (IBCA)
- World's First Bamboo Crash Barrier
- Bal Mitra Diwas
- INS Trikand
- Frog Species Rediscovered After 89 Years
- World Hearing Day
- Quad Meeting
- Humayun & Other Great Mughals
- Dhara Initiative
- MoMo Pregnancy: A Rare Occurrence
- World Wildlife Day
- Earth's 5th Layer
- Windsor Framework
- Adenovirus
- El Nino
- News Broadcasting and Digital Standards Authority
- Grievance Appellate Committee Portal
- World NGO Day
- Siang Unying Festival

No More Compensation for the Victims of Bhopal Gas Tragedy: SC

Recently, t**he Supreme Court of India dismissed the Centre's curative petition seeking more compensation from the Union Carbide Company (UCC)** for the victims of the gas tragedy that struck Bhopal in 1984.

On December 3, 1989, t**he highly dangerous and toxic gas, methyl isocyanate (MIC)** (Chemical formula- CH_3NCO or C_2H_3NO) leaked from the Union Carbide India Limited (UCIL) in Bhopal. **The tragedy resulted in the death of 5,295 people and injuries to almost 5,68,292 persons** besides substantial loss of livestock and property.

Read More: Bhopal Gas Tragedy

13th edition of Exercise Bold Kurukshetra

The Singapore Army and Indian Army **participated in the 13th edition of Exercise Bold Kurukshetra**, a bilateral armour exercise at Jodhpur Military Station, India. The exercise was hosted by the Indian army.

For the first time in the exercise series, **both armies participated in a command post Exercise**, which involved Battalion and Brigade level planning elements and computer wargaming.

Exercise **Bold Kurukshetra is conducted under the ambit of the bilateral arrangement for the joint Army Training and exercises between the Singapore Army and the Indian Army**. The exercise was first conducted in

Note:

2005. **Other exercise between India and Singapore includes Joint Military Training** (Air Force), **Trilateral Maritime Exercise SIMTEX** (With Thailand) and **Exercise Agni Warrior** (Army).

Read More: **India-Singapore Relations**

Nuclear-powered Attack Submarines & AUKUS

The United States, Australia and Britain unveiled details of a plan to **provide Australia with nuclear-powered attack submarines from the early 2030s to counter China's ambitions in the Indo-Pacific**.

The agreement **is included under the 2021 AUKUS partnership** as part of a shared commitment to a free-and-open Indo-Pacific region.

In September 2021, t**he US announced a new trilateral security partnership for the Indo-Pacific, between Australia, the UK and the US (AUKUS)**. The major highlight of this arrangement is the s**haring of US nuclear submarine technology to Australia**. Its Indo-pacific orientation makes it an alliance against China's assertive actions in the **South China Sea**.

Read More: **AUKUS, China's Expansion in Indo-Pacific Region**

Kalakkad–Mundanthurai Tiger Reserve (KMTR)

Researchers from Tamil Nadu **have spotted a rare moth species for the first time in India in the buffer zone of Kalakkad–Mundanthurai Tiger Reserve (KMTR)** after it was last sighted 127 years ago in Sri Lanka in 1893.

Mimeusemia ceylonica **is a moth species belonging to the subfamily Agaristinae** and family Noctuidae.

KMTR was **created in 1988 by combining the existing and contiguous Kalakkad and Mundanthurai wildlife sanctuaries**. Kalakkad – Mundanthurai was **declared as the first Tiger reserve in Tamil Nadu**.

It occupies the southern part of the Western Ghats and consists of wet evergreen forests; it is the catchment area of 14 rivers. **It is also part of the Agasthyamala Biosphere Reserve**. Apart from tigers, the forest is home to Sambar, spotted deer, elephants, leopards, wild dogs, etc., and a large number of bird species, reptiles, etc.

Read More: **Tiger Reserves of Tamil Nadu**

Note:

Very Short Range Air Defence System (VSHORADS)

Defence Research and Development Organisation (DRDO) conducted two consecutive **successful flight tests of the Very Short Range Air Defence System (VSHORADS) missile** at the Integrated Test Range, Chandipur off the coast of Odisha.

VSHORADS is a **Man Portable Air Defence System (MANPAD) meant for neutralising low-altitude aerial threats at short ranges**. It has been designed and developed indigenously by Research Centre Imarat, Hyderabad in collaboration with other DRDO laboratories and Indian Industry Partners. **The missile incorporates many novel technologies**.

Read More: Defence Research and Development Organisation (DRDO), VSHORADS & MANPAD

Multilateral Exercise La Perouse

The third edition of the multilateral exercise La Perouse **is scheduled to be conducted in the Indian Ocean Region from 13 to 14 March 2023**. This edition **will witness participation of** personnel, ships and integral helicopters of Royal Australian Navy, French Navy, Indian Navy, Japanese Maritime Self Defence Force, Royal Navy and the United States Navy.

The biennial exercise La Perouse is **conducted by the French Navy** and is aimed at enhancing maritime domain awareness and **optimising maritime coordination amongst the participating navies in the Indo-Pacific Region**.

Indigenously **built guided missile frigate INS Sahyadri and fleet tanker INS Jyoti** will be participating in this edition of the exercise. Participation of Indian Navy in the exercise **showcases the high levels of synergy, coordination and inter-operability between the friendly navies**, and their commitment to a rules-based international order in the Indo-Pacific region.

Read More: Indo-Pacific Region

Oscars

Recently, the **Naatu Naatu song has been awarded the academy award for best original song in a motion picture at the 95th oscars**. This is the **first Indian song and the second Indian-language song to win this award**. **The Elephant Whisperer won an award for the best documentary short film**.

Standing 13 1/2 inch tall and dressed in gold, **the Oscars statuette is one of the most recognised trophies in the world**. Officially named the Academy Award of Merit, the **statuette is better known as Oscar, and the nickname was officially adopted by the Academy of Motion Picture Arts and Sciences in 1939**.

Read More: Naatu Naatu Wins Golden Globe Award

Dragon Fruit

Under the **Mission for Integrated Development of Horticulture (MIDH)**, a roadmap is being prepared for the cultivation of dragon fruit in the identified potential area to increase the **production of exotic and niche area fruits. The target for area expansion under MIDH for Kamalam is 50,000 ha. in 5 years**.

Kamalam or Dragon Fruit **widely known as Pitaya, has its origin in Southern Mexico, Central America and South America**. It is widely cultivated in South-East Asia, India, US, The Caribbean Islands, **Australia throughout the tropical and sub-tropical world. It is also known as "Wondrous Fruit of the 21st century"**.

It **grows on the Hylocereus cactus, also known as the Honolulu queen**. At the moment, In India, **the cultivation of Kamalam Fruit is limited** and farmers of Karnataka, Kerala, Tamil Nadu, Maharashtra, Gujarat,

Note:

Chhattisgarh, Odisha, West Bengal, Andhra Pradesh, Andaman & Nicobar Island, Mizoram and Nagaland have taken up its cultivation.

It goes by many names, including pitaya, pitahaya, and strawberry pear. The two most common types have bright red skin with green scales that resemble a dragon. The most widely available variety has white pulp with black seeds, though a less common type with red pulp and black seeds exists as well. **The fruit is considered good for diabetic patients, low in calories and high in nutrients like iron, calcium, potassium and zinc.**

Read More: Dragon Fruit, CoE Under MIDH

NASA's Multi-Angle Imager for Aerosols Missions

National Aeronautics and Space Administration (NASA) and **Italian Space Agency** (Agenzia Spaziale Italiana :ASI) will build and **launch the Multi-Angle Imager for Aerosols (MAIA) missions before 2024**. The **three-year mission** will focus on **11 primary target areas** including New Delhi from India.

MAIA is a satellite instrument that will collect data to examine the health effects of different types of air pollution. It will use **measurements of sunlight reflecting off airborne particles to determine the abundance, size, chemical composition, and optical properties of pollutants** in the atmosphere. The data will be collected from sensors on the ground and atmospheric models. These **results will then be related to respiratory and cardiovascular diseases, adverse reproductive outcomes, human birth, death and hospitalisation** records to understand impacts of contaminated air we breathe.

The observatory will consist of the **PLATiNO-2 satellite**, which ASI will provide. The observatory's science instrument contains a **pointable spectropolarimetric camera,** which captures digital images at multiple angles in the ultraviolet, visible, near-infrared and shortwave infrared portions of the electromagnetic spectrum.

Read More: Aerosols

Indonesia's Merapi Volcano Erupted

Merapi (Mountain of Fire) is the **most active of more than 120 active volcanoes in Indonesia** and has repeatedly erupted with lava and gas clouds recently. It rises to **2,911 metres** and has steep slopes with dense vegetation on its lower sides. It is located near the centre of the island of Java and Indonesia's cultural capital, Yogyakarta.Its **last major eruption in 2010** killed 347 people and displaced 20,000 villagers.

Indonesia, an archipelago of 270 million people, is **prone to earthquakes and volcanic activity** because it sits along the **"Ring of Fire,"** a horseshoe-shaped **series of seismic fault lines around the Pacific Ocean**. An eruption in December 2021 of **Mount Semeru**, the highest volcano on Java island, left 48 people dead and 36 missing.
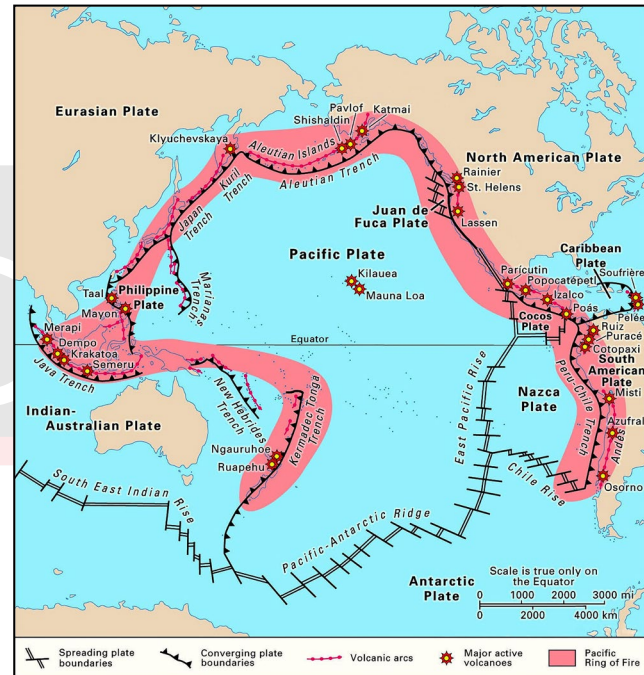
World's Fastest Single-shot Laser Camera

Scientists from **Germany and the US** have built the **world's fastest single-shot laser camera** – 1,000x faster than its predecessors at capturing extremely short-lived events. They used the camera to provide the **most precise view yet of how a hydrocarbon flame produces soot.**

The device's technique is called **laser-sheet compressed ultrafast photography (LS-CUP)** combining laser sheet imaging with compressed sensing on a standard streak camera system. It "can resolve a plane of a three-dimensional object like a flame or spray or any turbid media and can "resolve physical or chemical processes"

Note:

in space and time. It can capture images at **12.5 billion frames per second (fps)**.

Their device can also be used to photograph **shockwaves in nuclear reactors**, combustion of fine sprays, and an enigmatic process called sonoluminescence (sometimes, when excited by sound, bubbles in a liquid implode and release light at a temperature of ~10,000 K), all of which involve **processes that happen in a few nanoseconds**. However, the technology can be cost intensive.

Read More: Soot (Black Carbon)

Maritime Partnership Exercise (MPX) With French Navy

Indian Navy's **indigenously built guided missile frigate**, **INS Sahyadri** participated in a **Maritime Partnership Exercise (MPX)** with French Navy (FN) ships in the **Arabian Sea** in **March 2023.**

The exercise witnessed a wide spectrum of evolutions at sea which included cross deck landings, boarding exercises and seamanship evolutions. The seamless conduct of the exercise reaffirmed the interoperability and high level of cooperation between the two navies.

INS Sahyadri is fitted with state-of-the-art weapons and sensors, which makes it **capable of detecting and neutralising air, surface and sub-surface threats.** The ship is a part of Indian Navy's Eastern Fleet based at Visakhapatnam.

Also, India-France joint Military exercise **FRINJEX-2023** was recently conducted in **Kerala.** Theme of the FRINJEX was '**Humanitarian assistance and Disaster relief operations in contested environment.'**

Other India France Exercises include **Varuna** (Naval exercise), **Garuda** (Air exercise), **Shakti** (Army exercise), **Desert Knight-21** (Air exercise)**.**

Country's Worst Forest Fires in Odisha

According to the **Forest Survey of India (FSI)** data, forest fires **continue to rage in Odisha after the state recorded 642 large fire incidents in March 2023** — the highest in the country during the period. A sudden jump

in the incidents of fires across Odisha **resulted in a massive loss of flora and fauna in the state's forests**.

Odisha has recorded **871 large forest fires** since November 2022. This is also a national record for the season, official data showed. It was **followed by Andhra Pradesh (754), Karnataka (642), Telangana (447) and Madhya Pradesh (316)**. In 2021, 51,968 forest fire incidents occurred in the state. Massive fires **had broken out in Similipal National Park in the Mayurbhanj district, which is one of the major biospheres of Asia**.

Forest fire is also **called bush or vegetation fire or wildfire**, it can be **described as any uncontrolled and non-prescribed combustion or burning of plant**s in a natural setting such as a forest, grassland, brushland or tundra, which consumes the natural fuels and spreads based on environmental conditions (e.g., wind, topography).
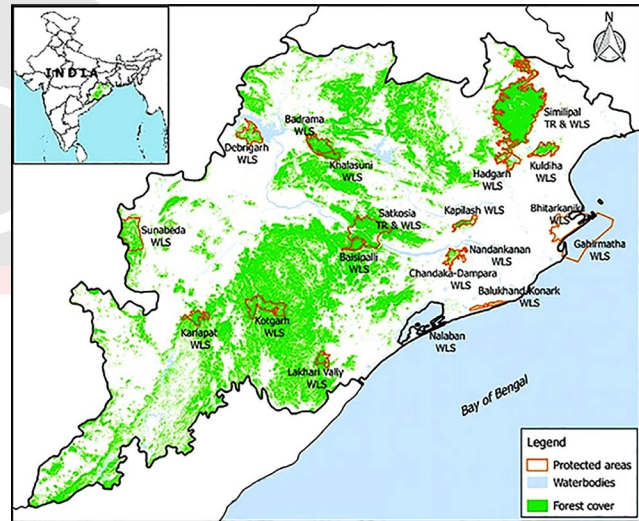
Read More: Forest Fire: Causes, Classification, Incidents in India & Measures Taken

54th CISF Raising Day

March 10 is **annually observed as the Raising Day when the Central Industrial Security Force (CISF)** was set up under the Union ministry of Home Affairs.

CISF is **one of the seven Central Armed Police Forces in India** and is responsible for providing security to various public sector undertakings, airports, and other important installations. The **CISF was set up under the act of the Parliament of India on March 10, 1969**. Since then, **CISF Raising Day is being celebrated on March 10 each year. However, in 2023, the date was revised** (12th March).

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THE SEVEN CENTRAL ARMED POLICE FORCES

AR   BSF   CISF   CRPF

ITBP   NSG   SSB

Read More: Central Armed Police Force (CAPF)

Centers of Excellence Under MIDH

Under Mission for Integrated Development of Horticulture (MIDH), **Centers of Excellence (CoEs) are being established in various States through Bilateral Cooperation or Research Institutes**. These CoEs serve as demonstration and training centres for the latest technologies in the field of horticulture. **3 CoEs that have been approved include:**

➤ **CoE for Kamlam (Dragon Fruit) at Bengaluru, Karnataka**

➤ **CoE for Mango and Vegetables at Jajpur, Odisha**

➤ **CoE for Vegetables and Flowers at Ponda, Goa**

MIDH is a **Centrally Sponsored Scheme for the holistic growth of the horticulture sector** covering fruits, vegetables and other areas. Under MIDH, **the Government contributes 60% of the total outlay for developmental programmes in all the states** (except Northeastern and Himalayan states where GOI contributes 90%) & **40% is contributed by State governments**.

Read More: Status of the Horticulture Sector in India

First Woman to Lead Army Unit Near China border (Ladakh)

Recently, a woman officer, **Colonel Geeta Rana has for the first time, taken over the command of an independent unit in the sensitive Ladakh sector** where India and China have been locked in a lingering border row.

In January 2023, **the army for the first time deployed a woman officer, Captain Shiva Chouhan, at Siachen, the world's highest and coldest battleground**. It also deployed its largest contingent of 27 women peacekeepers in Sudan's disputed region of Abyei, where they are performing security-related tasks in a challenging mission **as part of the United Nations Interim Security Force (UNISFA)**.

One of the turning points for women in the military came **in 2015 when the Indian Air Force (IAF) decided to induct them into the fighter stream for the first time**.

Read More: Representation of Women in Armed Forces

Time Zone for the Moon

With more lunar missions than ever on the horizon, **the European Space Agency (ESA) wants to give the moon its own time zone**. National Aeronautics and Space Administration (NASA) is **shooting for its first flight to the moon with astronauts in more than a half-century in 2024**, with a lunar landing as early as 2025.

For now, **a moon mission runs on the time of the country that is operating the spacecraft**. An internationally accepted lunar time zone would make it easier for everyone, especially since more governments and companies are aiming for the moon.

Clocks **run faster on the moon than on Earth**, gaining about **56 microseconds each day**. Further complicating matters, ticking occurs differently on the lunar surface than in lunar orbit. While the **space station doesn't have its own time zone, it runs on Coordinated Universal Time (UTC)**, which is meticulously based on **atomic clocks** (type of clock that uses certain resonance frequencies of atoms (usually cesium or rubidium) to keep time with extreme accuracy).

UTC is a **modern time standard defined by a series of atomic clocks and is used as a standard reference time** in many applications within transport, finance and scientific research.

Read More: India's Third Moon Mission

Scrub Typhus

Scrub typhus, **a life-threatening infection caused by *Orientia tsutsugamushi* bacteria — is a major public health threat in South and Southeast Asia**. As per

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estimates, nearly one million cases are reported from South and Southeast Asia with 10% mortality. **India is one of the hotspots with at least 25% of the disease burden**.

Scrub typhus is a major public health threat **because of the high mortality rate in patients with severe disease despite diagnosis and treatment**. It is **transmitted to humans by bites from tiny, infected larvae of mites**. Only the larval stage of the mite requires a blood meal, which is usually from rodents. **Combination therapy using both doxycycline and azithromycin is far more effective in treating severe scrub typhus** than monotherapies of either drug by itself.

The infection does not cause typical symptoms, thus making correct and early diagnosis difficult. Also, **awareness about infection and disease is very low despite the high disease burden and mortality rate**. Increasing awareness can clearly bring down the mortality rate.

Read More: Scrub Typhus

Gene-editing: A Concern

A new study warns of the **consequences of deploying technology for the birth of gene-edited twins that is still less understood**.

Deleting harmful disease-causing mutations by gene editing could be counterproductive. It could create more problems. **Since gene editing is still experimental. It could also increase the risk of other diseases**.

Gene editing **is a group of technologies that give scientists the ability to change an organism's Deoxy-Ribonucleic Acid (DNA)**. It can be divided into two classes. **One involves changing genes in human cells**. This method does not alter reproductive cells, such as sperm or eggs. It can be used to treat diseases caused by mutations. **The second method alters the genome of human embryos**.

Humans possess **two versions of a particular gene received from each parent**. If a child gets a recessive disease-causing gene from one parent and a dominant healthy version of the same gene from the other, they could still be protected.

The extensive copying of genetic information from one parent to another due to Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) **could give rise to two mutant copies of the disease-causing gene in the embryo**. This significantly increased the risk of diseases.

Read More: Gene Editing, Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)

Lossless Energy Possibility

According to US scientists, they have **produced the first commercially accessible material that eliminates the loss of energy** as electricity is conducted through a wire, a breakthrough that **could mean more efficient computers and power grids, longer-lasting batteries, improved high-speed trains, and more powerful nuclear fusion reactors**.

They have **created a new superconductor that can operate at room temperature and at a much lower pressure** than previously discovered superconducting materials. **A rare earth metal called lutetium combined with hydrogen and nitrogen can conduct electricity without resistance at 21 degrees Celsius** and around just 10,000 atmospheres of pressure.

Superconductors, which are materials that can conduct electric currents without any loss, have been **considered extremely impractical because they typically need to be cooled**, to around -195 degrees Celsius, and subjected to extreme pressure to work.

Read More: Superconductivity

Vision Screening for Drivers

Based on the **observation by the Supreme Court-appointed Committee on Road Safety that 1.5 lakh people die every year** as a result of road crashes, it has **become imperative to provide vision screenings for drivers in the National Road Safety Plan (NRSP)**.

As per the Ministry of Health and Family Welfare (MoHFW), it has been established by traffic safety research groups that **uncorrected vision issues are common among drivers, regular eye testing for vision prevents road**

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accidents and should be included for road safety and drivers' well-being.

While the MoHFW has endorsed the move, the **next step is for the Ministry of Road Transport and Highways (MoRTH) to include regular vision screening** in its road safety activities. At present, eye check-up camps organised by the MoRTH are a one-time event.

Apart from participating in **screening camps conducted by the MoRTH, Sightsavers India has been running a project called 'RAAHI - National Truckers Eye Health Programme'** at major National Highways, over the last five years.

Read More: Road Accidents in India: Impacts & Way Forward

Most Landslide prone Districts of India

According to satellite data by the Indian Space Research Organisation (ISRO), **Rudraprayag and Tehri Garhwal in Uttarakhand are the most landslide-prone districts in the country**. The recent case of Joshimath, Uttarakhand is also one of the major incidents that took place. Some of the other cases include the disaster in Kedarnath in 2013 and the landslides caused by the Sikkim earthquake in 2011.

Globally, **landslides rank third in terms of deaths among natural disasters. India is among the four major countries where the risk of landslides is the highest.** About 0.42 million square kilometres in the country a**re prone to landslides, which is 12.6% of the total land area of the country**.

Landslides recorded in Uttarakhand

Landslides between 1998 to 2022
District Boundary
0 30 60 120 Km
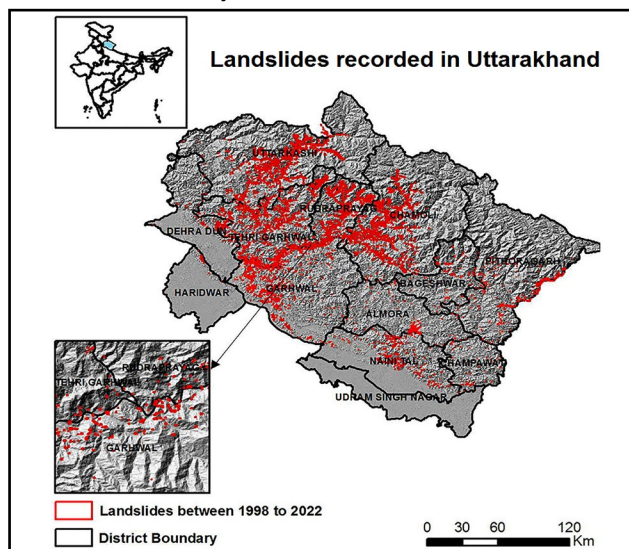
Read More: Landslide

H3N2 Outbreak

Across India, **an outbreak of a respiratory illness with symptoms of cold, sore throat and fever accompanied by fatigue has been observed** since December 2022 and January 2023.

The **Indian Council of Medical Research (ICMR) confirmed that Influenza Sub-type H3N2 has been causing this illness**. It further warned **that the virus appeared to lead to more hospitalisations than other Influenza subtypes**.

There are **four types of seasonal influenza viruses**, types A, B, C and D. **Influenza A and B viruses circulate and cause seasonal epidemics** of disease. Influenza A viruses are the only influenza **viruses known to cause flu pandemics** (i.e., global epidemics of flu disease).

In June 2009, the WHO **declared the H1N1 pandemic**. This is **also popularly referred to as the swine flu pandemic**. Before the H1N1 pandemic in 2009, the influenza A (H1N1) **virus had never been identified as a cause of infections in people**. Genetic analyses of this virus have shown that **it originated from animal influenza viruses and is unrelated to the human seasonal H1N1 viruses** that have been in general circulation among people since 1977. **In 2013, India saw a massive outbreak of swine flu**.

Read More: 2009 Swine Flu Pandemic

Attukal Pongala

Considered **one of the largest women's gatherings in the world**, around 15 lakh women participated in the annual Attukal Pongala festival of Thiruvananthapuram, Kerala. The festival i**ncludes offering Pongala, a sweet delicacy made of rice to the deity of Attukal Bhagavathy Temple** in Kerala's Thiruvananthapuram.

The highlight of the ten-day festiva**l is the mass offering that takes place on the ninth day. Women from across the state make it to the capital in huge numbers**.

In 2009, **the ritual had made it to the Guinness Book of World Records** for being the largest religious gathering of women on a single day when over 2.5 million people took part in it.

Attukal Temple is called the "Women's Sabarimala" as only women perform rituals, while it is predominantly **men who undertake the pilgrimage to the hill shrine of Lord Ayyappa at Sabarimala**.

Read More: Sabarimala Temple, Temples in India (Map)

Muggers of Rapti

As per the recent study, **anthropogenic threats like illegal fishing and sand mining pose a threat to the mugger crocodiles** (*Crocodylus plaustris*) of the Rapti river flowing along the **Chitwan National Park (CNP)** in south-central Nepal, contiguous to the **Valmiki Tiger Reserve in Bihar (only tiger reserve of the state)**.

CNP, established in 1973, was **Nepal's first National Park**. One of the last populations of single-horned Asiatic rhinoceros **lives in the park**. It is recommended **to prioritise integrating local ethnic and river-dependent communities of CNP into effective conservation and management programmes with livelihood opportunities**.

The **mugger or marsh crocodile is one of the 24 extant species of crocodilians found globally**. It is found in India, Pakistan, Nepal and Iran. The species is **listed as 'Vulnerable' in the International Union for Conservation (IUCN) of Nature's Red List**. It has been enlisted in **Appendix I of the Convention on International Trade in Endangered Species (CITES)** of Wild Fauna and Flora and **included in Schedule I of the Wildlife Protection Act, 1972**.

The Rapti river **originates in the Mahabharat Hills and lower range of the Himalayas and flows westward along the northern border of the CNP**.
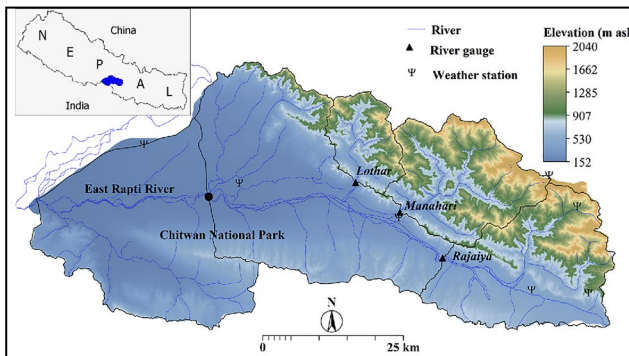
Read More: Crocodilian Species in India

Joint Military Exercise FRINJEX-23

The maiden **Joint Military Exercise FRINJEX-23 between Indian Army and French Army will be conducted in Thiruvananthapuram, Kerala**.

It is for the **first time that the armies of both nations are engaging in this format with each contingent** comprising of a Company Group each from the Thiruvananthapuram-based Indian Army troops and French 6th Light Armoured Brigade.

The **exercise is aimed at enhancing inter-operability, coordination and cooperation between both forces at the tactical level**. The Joint exercise **will further enhance the defence cooperation with France which is a key aspect of the overall Indo-France strategic partnership**.

Other military dialogues and regularly held joint exercises include Varuna (navy), Garuda (air force), and Shakti (army).

Read More: India-France Relations

International Big Cat Alliance (IBCA)

India has **proposed to launch a mega global alliance under its leadership to protect big cats and assured support over five years** with guaranteed funding of USD 100 million (over Rs 800 crore).

The **proposed International Big Cat Alliance (IBCA) will work towards the protection and conservation of the seven major big cats** — tiger, lion, leopard, snow leopard, puma, jaguar and cheetah. **Membership to the alliance will be open to 97 "range" countries**, which contain the natural habitat of these big cats, as well as other interested nations, international organisations, etc. The alliance was inspired by the arrival of cheetahs in 2022 from Namibia.

India is the **only country in the world to have tigers, lions, leopards, snow leopards and cheetahs in the wild except for the pumas and jaguars**. So, it is only befitting that India takes the lead to bring together all big cat range countries **under an UN-like organisation**.

The IBCA's **governance structure will comprise a General Assembly** consisting of all member countries, a council of at least seven but not more than **15 member countries elected by the General Assembly for a term of 5 years**, and a Secretariat. Upon the recommendation of the Council, **the General Assembly will appoint the IBCA Secretary General for a specific term**.

Read More: Reintroduction of Cheetah

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World's First Bamboo Crash Barrier

Recently, **the world's first 200-metre-long bamboo crash barrier has been installed on a Vani-Warora Highway** connecting Chandrapur and Yavatmal districts in Maharashtra.

Named 'Bahu Balli', the bamboo crash barrier underwent rigorous testing at various government-run institutions and was **rated as Class 1 during the Fire Rating Test** and it has **also been accredited by the Indian Road Congress (IRC).** This crash barrier **offers a perfect alternative to steel and addresses environmental concerns**.

IRC is the **Apex Body of Highway Engineers in the country**. The IRC was set up in 1934 on the **recommendations of the Indian Road Development Committee best known as Jayakar Committee (1927)** set up by the Government **with the objective of Road Development in India**.

Bal Mitra Diwas

Pharmaceuticals & Medical Devices Bureau of India (PMBI) **is conducting weeklong celebrations across the nation on the occasion of 5th Jan Aushadhi Diwas**. One of the day's events of Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) **were dedicated to children which was celebrated as 'Bal Mitra Diwas'.**

The aim of celebrating these events is **to increase engagement of general public including women, senior citizens, students and children so that benefits of the Pariyojana may reach each and every corner of the country**.

PMBJP is a **campaign launched by the Department of Pharmaceuticals in 2008 under the name Jan Aushadhi Campaign**. The campaign was **revamped as PMBJP in 2015-16**.

Bureau of Pharma PSUs of India (BPPI) is the implementation agency for PMBJP.

The BPPI **works under the Ministry of Chemicals & Fertilisers. BPPI has also developed the Janaushadhi Sugam Application**.

Read More: Janaushadhi Diwas

INS Trikand

INS Trikand is **participating in the International Maritime Exercise/ Cutlass Express 2023 (IMX/CE-23)** being held in the Gulf region from 26 Feb to 16 Mar 2023. Exercises will be **held with participants from over 50 nations and international maritime agencies** with the common **aim of enhancing maritime security and keeping sea lanes in the region safe for maritime commerce**.

IMX/CE-23 is **one of the largest multinational maritime exercises in the world**. While this is the **Indian Navy's maiden IMX participation**, it also **marks the second occasion where an Indian Naval ship is participating in an exercise** conducted by the **Combined Maritime Forces (CMF)**. In November 22, **INS Trikand had participated in the CMF-led Operation Sea Sword 2 in the Northwest Arabian Sea**.

Read More: Indian Navy

Frog Species Rediscovered After 89 Years

Jerdon's narrow-mouthed frog (Uperodon montanus) **was once seen in the Western Ghats'** shallow streams. **But since it was last studied in 1934, the species faded away permanently**. In 2022, **a group of zoologists photographed 40 tadpoles of the species in the biodiverse Western Ghats, at the same stage of development as when they were last recorded 89 years ago**.

A **majority of the amphibians have two different stages: Water-independent adult stage** (feeding and breeding) and the **aquatic larval stage** (feeding) **known as tadpoles**. These tadpoles / larvae have **completely different morphological appearance**, feeding, habitat and ecology which is totally different from adults.

The frogs **have a longish snout, which gives it its name**, and shiny brown skin with darker brown, red and golden spots on the back and head**. They are found in rock pools or tree holes filled with rainwater**. Its tadpoles **are free-swimming and exotrophic** (they feed on other species). Change in the tadpole body **colouration was**

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observed during the day (comparatively darker) and night (slightly transparent). This **frog is considered a montane species and is restricted to higher altitude ranges**. They are **distributed from near Wayanad south across the Palghat and the Shencottah gaps to the Agasthyamalai hills**.

It is **classified as 'Near Threatened' in the International Union for Conservation (IUCN)** of Nature Red List of Threatened Species.
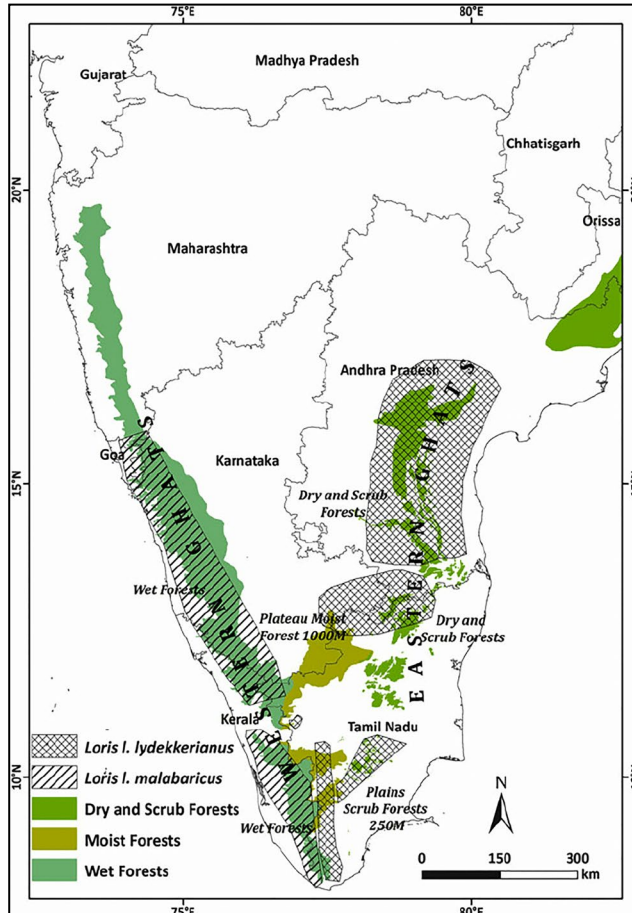
Read More: Western Ghats

World Hearing Day

World Hearing Day is **celebrated on the 3rd of March each year to raise awareness on how to prevent deafness and hearing loss and promote ear and hearing care** across the world.

Each year, **the World Health Organization (WHO) determines the theme. The theme of this year is "Ear and hearing care for all"**.

With this theme, the communication objectives are to:

Normal hearing range is from **0 dBHL** (Decibel Hearing Level), which is the audiometric zero, **to 20 dBHL**. A person **who is not able to hear as well as someone with normal hearing – hearing thresholds of 20 dB or better in both ears is said to have hearing loss**. Hard of hearing refers to people with hearing loss ranging from mild to severe. **Deaf' people mostly have profound hearing loss, which-implies very little or no hearing**.

**Read More: First World Report on Hearing: WHO**

Quad Meeting

During the **recent meeting of Quad members in New Delhi,** the Foreign Ministers of the Quad countries **called for lasting peace in Ukraine** and, in an indirect reference to the Russian invasion, underlined respect for territorial sovereignty and integrity. **They also addressed China's aggressive behavior in the Indo-Pacific** and its attempts to block the UN designation of terrorists.

It was **decided to form a Quad Working Group on Counter-Terrorism and to engage more closely with the Indian Ocean Rim Association (IORA),** a grouping of 23 members that include India and Australia.

Quad is the grouping of four democracies –India, Australia, the US, and Japan. All four nations find a common ground of being democratic nations and also support the common interest of unhindered maritime trade and security. It **aims to ensure and support a "free, open and prosperous" Indo-Pacific region**. The idea of **Quad was first mooted by Japanese Prime Minister Shinzo Abe in 2007. In 2017, India, Australia, the US and Japan, came together and formed this "quadrilateral" coalition**.

The next Quad Leaders' Summit will be hosted by Australia in 2023.

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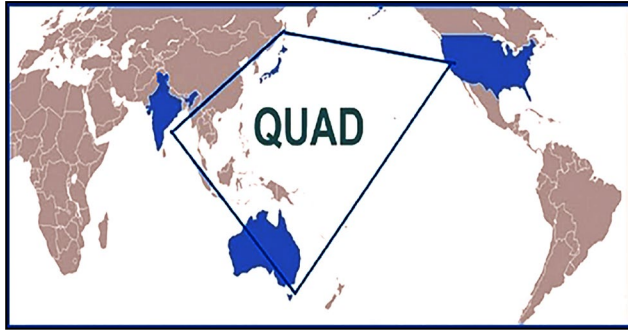
Read More: Issues and Opportunities related to Quad, Russia-Ukraine Conflict

Humayun & Other Great Mughals

Humayun (1530-1540, 1555-1556), the son of Babur and the second Mughal emperor, is **best known for the tomb dedicated to him in Delhi (Humayun's Tomb)**. He is **one of the six great Mughals** (Babur, Akbar, Jahangir, Shah Jahan, and Aurangzeb).

Humayun is **chiefly remembered as a political and military failure because he lost back to his rival, the Afghan Sher Shah,** whom Babur had conquered in India, and **had to seek refuge in Iran and fight in Afghanistan to regain his throne in Delhi**.

Babur was the **founder of the dynasty, Akbar the inclusive king**, and **Jahangir, although overshadowed by both his father and his son**, **is remembered as an emperor in whose reign peace, prosperity, and the arts flourished**.

Shah Jahan **was the master builder who gave India its most recognised monument**, the Taj Mahal. **Under Aurangzeb, the empire expanded to its farthest boundaries**.

Read More: Indo-Islamic Architecture

Dhara Initiative

The unique and flagship **initiative "Dhara: Ode to Indian Knowledge Systems"**, taken up **under the aegis of Azadi Ka Amrit Mahotsav by the Ministry of Culture** has completed one year in February 2023. The Indian Knowledge Systems (IKS) Division of the Ministry of Education located at AICTE, **New Delhi is the key execution partner for Dhara events.**

During its yearlong activities, **it has been successful in creating public awareness and stakeholder participation** and helped to devise a framework for the promotion and revival of multiple domains of IKS. The programme was conceptualized as a series of lectures and discussions dedicated to specific areas of inquiry highlighting India's civilizational achievements.

Azadi Ka Amrit Mahotsav **is an initiative of the Government of India to celebrate and commemorate 75 years of progressive India** and the glorious history of its people, culture and achievements. After a prolonged struggle spread over more than 100 years on the back of several movements spearheaded by individuals and communities across the country, **India successfully ousted the foreign rulers from the Indian subcontinent in 1947**.

Read More: Initiatives on 75th Independence Day
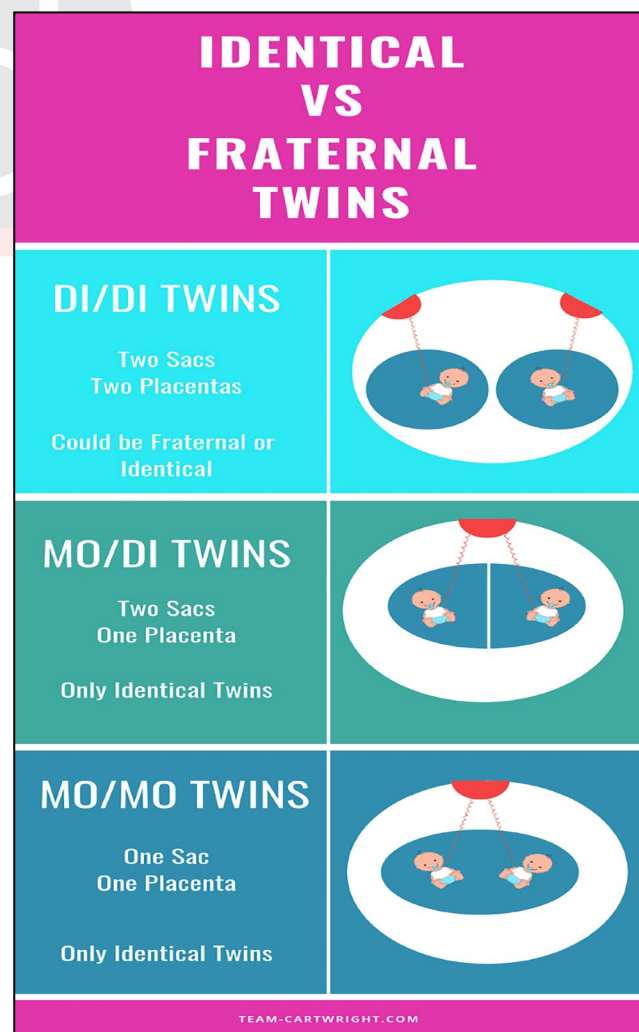
MoMo Pregnancy: A Rare Occurrence

In what has been termed a rare occurrence, **a US woman gave birth to two pairs of identical twins within six months of each other**. Such twins, **known scientifically as 'MoMo', an abbreviation for monoamniotic-monochorionic**, are some of the rarest types of twins, **making up less than 1% of all births in the United States**.

In a MoMo pregnancy, **the twins are known to share the same placenta, amniotic sac and fluid**. But they have different umbilical cords. They share everything except umbilical cords, which can easily become entangled in a single sac. **Unfortunately, there is a high rate of stillbirths associated with MoMo twins**.

Fraternal twins **are the result of two eggs being fertilized, while identical twins are the result of one egg being fertilized and split**. This means identical twins must be the same gender due to them having the same DNA.

World Wildlife Day

World Wildlife Day has **been celebrated every year on the 3rd of March since 2013**.

The **theme of this year is 'Partnerships for Wildlife Conservation'** which expanded into the conservation of marine life and oceans, and on collaborating with businesses and funding conservation activities.

The **date chosen coincides with the day of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), signed in 1973**.

This day also **marks the 50th anniversary of CITES' establishment**. CITES is an **international agreement between governments**. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species. Currently**, there are 184 parties to the convention, including India**. The CITES **Secretariat is administered by UNEP (The United Nations Environment Programme)** and **is located in Geneva, Switzerland**. The Conference of the Parties to CITES is the **supreme consensus-based decision-making body of the Convention and comprises all its parties**.

In India, **apart from the Union Ministery of Environment, Forests and Climate Change, the Wildlife Crime Control Bureau is a statutory bod**y under the Ministry that is especially meant to combat organised wildlife crime in the country.

Read More: Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), World Wildlife Day

SMART-PDS

As per the Union Minister of Consumer Affairs, Food and Public Distribution, SMART-PDS is an **important technologically driven initiative**, therefore, all states and union territories should make earnest efforts to implement it at the earliest.

SMART-PDS **is a system where smart ration cards are issued to beneficiaries of the public distribution system, and ration is given through fair price shops** on the production of the smart ration card by any member of the beneficiary family.

Major initiatives **are undertaken by the Government of India to strengthen the Public Distribution System (PDS) in India which includes the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** implemented from April 2020 to December 2022 during the COVID-19 pandemic in coordination with States & UTs and **One Nation One Ration Card plan implemented to support migrant population**, promoting **millets in the PDS is important for strengthening nutrition security in the country**.

Read More: Public Distribution System (PDS) in India

Porter Prize 2023

Union Health and Family Welfare Ministry **has received the Porter Prize 2023**. It recognized the **government's strategy in managing COVID-19,** also the approach, and involvement of various stakeholders **especially the involvement of Accredited Social Health Activists (ASHA) workers**. The country's contribution to developing and manufacturing vaccines was also lauded. **India delivered more than 2.5 billion doses**.

Porter Prize is **named after award-winning economist Michael E. Porter**. He has brought economic **theory and strategy concepts to bear on many of the most challenging problems faced by corporations, economies and societies.**

India launched the ASHA programme in 2005-06 as part of the **National Rural Health Mission**. With the launch of the National Urban Health Mission in 2013, **the programme was extended to urban settings as well**. The

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core of the **ASHA programme has been an intention to build the capacity of community members in taking care of their own health and being partners in health services**.

Read More: India's Covid Pandemic Management

Earth's 5th Layer

Scientists, in a new study, **have confirmed the existence of a 5th new layer** - the **innermost inner core** (apart from the **4 layers: crust, mantle, outer liquid and inner solid** core) with a **radius of around 650 Km** (inner core radius (whole) - **1,221 km**).

This 5th layer is **made of the same material as the inner core** (iron and nickel) and the **main difference between the two is the way the atoms are arranged** to form a solid. This layer could have solidified and grown in a different direction than the rest of the inner core. The idea that the Earth could hold a 5th layer was proposed in 2002.

Scientists rely on seismic waves to study earth's interiors. These waves behave differently as they pass through diverse materials (e.g. - **travel slower while passing through hot materials**).

According to the analysis done, the innermost inner core **slows down the seismic waves at a point between the rotation axis** (from pole to pole) **and the equatorial plane** (perpendicular to the poles). In contrast, the **outer shell** of the inner core **slows down the waves only in the equatorial plane.**
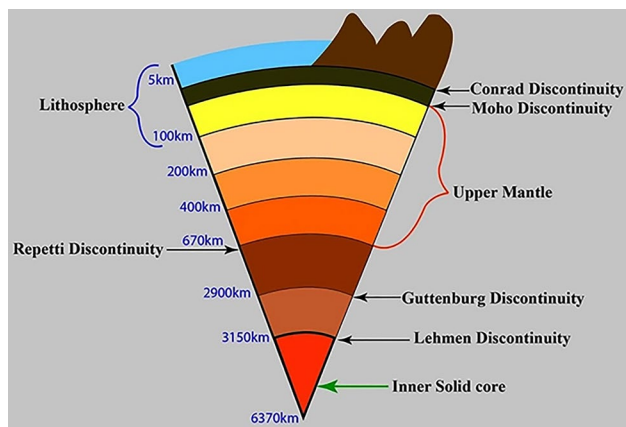
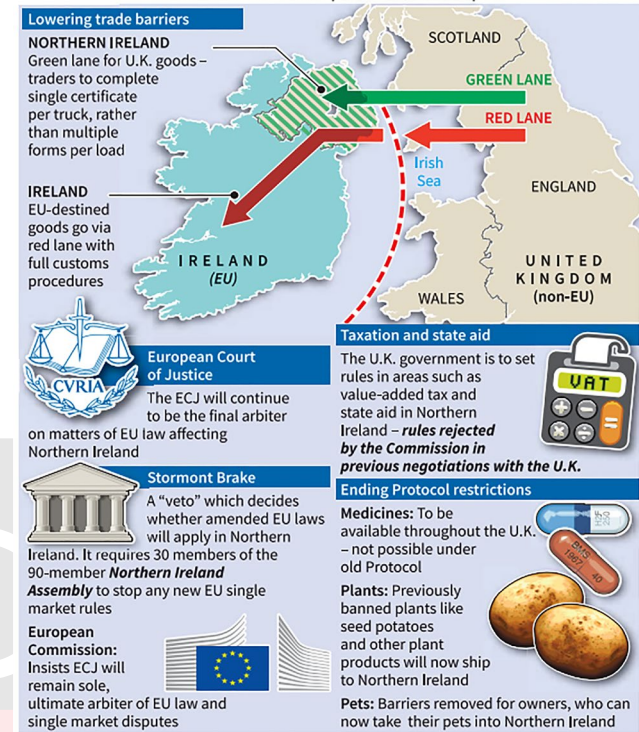**Read More - Hidden Mantle Layers, Earthquake (Infographic)**

Windsor Framework

A new deal to cool off trade disruptions
On February 27, the United Kingdom and the European Union struck a landmark agreement – the Windsor Framework – to replace the contentious Northern Ireland Protocol and end a bitter post-Brexit trade dispute

The **Windsor framework** is the latest attempt at a remedy to the political complexities that have impacted trade and sentiments between the EU and the UK. It will replace the **Northern Ireland Protocol - the thorniest of Brexit fallouts.**

Under the Northern Ireland protocol, **N. Ireland remained in the EU single market** with **cumbersome trade/customs inspections** of goods going from Great Britain to N. Ireland hindering trade and causing food products to lose shelf life. Also, **EU rules prevented some UK govt policies from being implemented** in N. Ireland and the **presence of an Irish Sea border** upset those who seek a united UK.

The Windsor framework seeks to **address the trade disruptions by permitting free trade between** Great Britain and Northern Ireland through the **(introduction of) use of green and red lanes for goods** flowing into Northern Ireland. Green lane goods will have fewer checks and controls, including no customs checks or rules of origin. Red lane goods under the framework will be subject to full checks and controls to preserve the EU's single market.

Read More - Brexit and Northern Ireland Issue

Note:

Adenovirus

West Bengal has recently reported **12 deaths in government hospitals due to Adenovirus infection.** However, there is no evidence of a viral epidemic at present.

Adenoviruses (ADVs) are **double-stranded linear DNA viruses** ranging from 70-90 nanometres in size. They can cause **cold-like symptoms, fever, sore throat, bronchitis, pneumonia, diarrhoea, and pink eye (conjunctivitis)**.

Read More - Adenovirus

El Nino

According to the **World Meteorological Organization (WMO)**, a warming El Niño event may develop in the coming months **after three consecutive years of La Niña.**

El Niño is characterised by an **unusual warming of waters in the eastern equatorial Pacific** as opposed to **La Niña which usually brings cooler waters** in the same area. The phenomenon together is called the **ENSO (El Niño Southern Oscillation).** El Niño has a high correlation with warmer summers and weaker monsoon rains in India.

Read More - El Nino and La Nina

News Broadcasting and Digital Standards Authority

The News Broadcasting and Digital Standards Authority (NBDSA) has instructed some news channels **to remove from their online platforms videos of certain programmes aired by them** after it found them to be in **violation of the Code of Ethics and Broadcasting Standards and Specific Guidelines**.

The NBDSA is an **independent body set up by the News Broadcasters & Digital Association (NBDA)**, which serves as a representative of private television news, current affairs and digital broadcasters. It **describes itself as the collective voice of the news, current affairs and digital broadcasters in India**. It is funded entirely by its members.

It **aims to protect all its members from carrying out unfair and/or unethical practices** or discredit television news broadcasters, digital news media and other related entities.

Read More: Ethical Code for Electronic Media

Grievance Appellate Committee Portal

The Ministry of Electronics and Information Technology (MeitY) **launched the Grievance Appellate Committee (GAC) portal under the Information Technology (IT) Rules, 2021**, allowing people **who are dissatisfied with complaints to social media companies on content takedown requests**, to be heard by one of three Committees constituted by the government.

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 were amended in 2022 to require social media companies **to respect all the rights accorded to the citizens under the Constitution** including **in the articles 14, 19 and 21**, indicating that platforms may now have to allow speech that is not allowed on their platforms **but is legal to express in public**.

In January 2023, the Union government **notified the formation of three GACs that will address user complaints against social media and other internet-based platform**s. These panels will also be empowered to oversee and revoke content moderation-related decisions taken by these platforms.

Read More: GACs to Address Complaints Against Social Media Platforms, India Amended Information Technology Rules

World NGO Day

Every year, non-governmental organizations (NGOs) around the **world celebrate World NGO Day on 27th February**. More than 89 nations across six continents mark International NGO Day. The **theme of 2023 revolves around the role and influence of NGOs in advancing human rights and achieving sustainable development goals.**

The **day assumed its official status when 12-member countries of the IX Baltic Sea NGO Forum** on 17th April 2010 formally recognised it. In 2012, the forum's Final Statement Resolution was adopted the day. Although the day was recognised officially in 2010, **it was only in 2014, that for the first time, World NGO Day was observed by the United Nations**.

NGOs are **non-profit organisations that support the resolution of many humane concerns** impacting people,

animals, and communities. They **offer assistance in areas including health, education, and jobs**.

Read More: Role of NGOs & Challenges faced by NGOs

Siang Unying Festival

Recently, the Union Minister of Ports, Shipping & Waterways and Ayush **attended the Siang Unying Festival** - which is an **important festival of the Adi community at Boleng, Arunachal Pradesh**.

The festival of Unying is **celebrated to honour the season of cultivation, the beginning of the Adi** community's new year, the arrival of spring seasons as well as to strengthen the bond among the community.

The Adi tribe of Arunachal Pradesh **is believed to have come from southern China in the 16th century.** They are the **Tibeto-Burman language-speaking population**. They reside in the far north **inhabiting East Siang and Lower Dibang Valley districts** of Arunachal Pradesh. The Adis are experts at making cane and bamboo items. **Solung** (harvesting festival where animal sacrifices and rituals are performed) and **Aran** (a hunting festival where all the male members of the family go for hunting) **are also among the major festivals of the Adi tribes**.

Read More: Rituals of Different Tribes

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