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Polity and Governance

Highlights

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- Stay Safe Online and G20 Digital Innovation Alliance
- Crowd Management

Maharashtra-Karnataka Border Dispute

Why in News?

The border dispute between Maharashtra and Karnataka is intensifying, with both states passing a unanimous resolution to support a legal battle to resolve the dispute.

What is Maharashtra-Karnataka Border Dispute?

➤ About:

- The border dispute over Belagavi, Karwar and Nipani in North Karnataka is long-standing.
- When state boundaries were redrawn on linguistic lines as per the **States Reorganisation Act of 1956**, Belagavi became part of the erstwhile Mysore state.
 - The Act was based on the findings of the Justice Fazal Ali Commission which was appointed in 1953 and submitted its report two years later.

- Maharashtra claims that parts of Belagavi, where **Marathi is the dominant language, should remain in Maharashtra.**
- In October 1966, the **Centre set up the Mahajan Commission, led by former Chief Justice of India Mehr Chand Mahajan**, to resolve the border dispute in Maharashtra, Karnataka and Kerala.
- The Commission recommended that Belgaum and 247 villages remain with Karnataka. Maharashtra rejected the report, and in 2004, moved the Supreme Court.
- **Basis of Maharashtra's Claim:**
 - Maharashtra's claim to **seek the readjustment of its border was on the basis of contiguity**, relative linguistic majority and wishes of the people. If the claim over Belagavi and surrounding areas was based on **Marathi-speaking people and linguistic homogeneity, it laid its claim over Karwar** and Supa where Konkani is spoken by citing Konkani as a dialect of Marathi.
 - Its argument was based on the **theory of villages being the unit for calculation and enumerated linguistic population** in each village. Maharashtra also points out the historical fact that the revenue

Note:

records in these Marathi-speaking areas are also kept in Marathi.

➤ **Karnataka's Position:**

- Karnataka has argued that the settlement of **boundaries as per the States Reorganisation Act is final.**
- The boundary of the State was neither tentative nor flexible. **The State argues that the issue would reopen border issues** that have not been contemplated under the Act, and that such a demand should not be permitted.

How is the Issue Being Resolved?

- Attempts are often made to resolve inter-state disputes with the cooperation of both sides, with the Centre working as a facilitator or a neutral mediator.
- If issues are resolved amicably, **Parliament can bring a law to alter state boundaries, such as the Bihar-Uttar Pradesh (Alteration of Boundaries) Act of 1968 and the Haryana-Uttar Pradesh (Alteration of Boundaries) Act of 1979.**
- In the Belagavi issue, Union Home Minister Amit Shah met Chief Ministers of both states and asked them to **form a six-member team, comprising three ministers from each side,** to address all boundary issues.

What are the other Methods Available?

➤ **Judicial Redressal:**

- The **Supreme Court in its original jurisdiction** decides disputes **between states.**
- **As per Article 131 of the Constitution reads,** the Supreme Court have original jurisdiction in any dispute **between the Government of India and one or more States; or** between the Government of India and any State or **between two or more states.**

➤ **Inter-state Council:**

- Article 263 of the Constitution gives **powers to the President to set up an Inter-state Council** for resolution of disputes between states.
- The Council is envisaged as a forum for discussion between the states and the Centre.
 - In 1988, the **Sarkaria Commission suggested that the Council should exist as a permanent body,** and in 1990 it came into existence through a Presidential Order.

What are Some of the other Inter-State Disputes in India?

Assam-Arunachal Pradesh:	<ul style="list-style-type: none"> ➤ Assam shares an 804.10 km inter-state boundary with Arunachal Pradesh. ➤ The state of Arunachal Pradesh, created in 1987, claims some land that traditionally belonged to its residents has been given to Assam. ➤ A tripartite committee had recommended that certain territories be transferred from Assam to Arunachal. The two states have since been battling it out in the court over the issue.
Assam-Mizoram:	<ul style="list-style-type: none"> ➤ Mizoram used to be a district of Assam before being carved out as a separate union territory and later, becoming another state. ➤ Mizoram shares a border with the districts Cachar, Hailakandi and Karimganj of Assam. ➤ Over time, the two states started having different perceptions about where the demarcation should be. ➤ While Mizoram wants it to be along an inner line notified in 1875 to protect tribals from outside influence, which Mizos feel is part of their historical homeland, Assam wants it to be demarcated according to district boundaries drawn up much later.
Assam-Nagaland:	<ul style="list-style-type: none"> ➤ The border dispute between the two states has been going on since the formation of Nagaland in 1963. ➤ The two states lay claim to Merapani, a small village next to the plains of Assam's Golaghat district. ➤ There have been reports of violent clashes in the region since the 1960s.
Assam-Meghalaya:	<ul style="list-style-type: none"> ➤ Meghalaya has identified close to a dozen areas on which it has a dispute with Assam about the state's borders.

Note:

Haryana-Himachal Pradesh:	<ul style="list-style-type: none"> ➤ The two northern states have a border dispute over the Parwanoo region, which lies next to the Panchkula district of Haryana. ➤ Haryana has laid a claim to a large part of the land in the area and has accused the hill state of encroaching on some of its area.
Ladakh-Himachal Pradesh:	<ul style="list-style-type: none"> ➤ The union territory of Ladakh and Himachal both claim Sarchu, a major halt point for those travelling through Leh-Manali highway. ➤ The region is located between Himachal Pradesh's Lahaul and Spiti district and Ladakh's Leh district.

Report Card of RTI Responsiveness

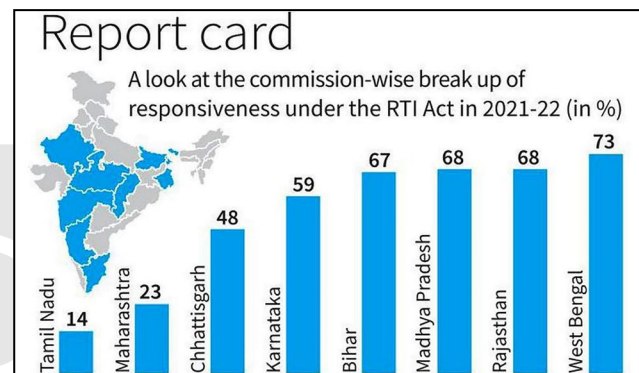
Why in News?

Recently, **Satark Nagrik Sangathan (SNS)** has released a report card of Responsiveness under **RTI (Right to Information) Act 2021-22**, which shows that **Tamil Nadu has been the worst performing RTI responsiveness**, furnishing only 14% of the information sought.

What are the Key Highlights of the Report Card?

- Maharashtra was second-worst, sharing 23% of the information asked for.
- Only 10 ICs provided full information in response to the RTI applications filed as part of this assessment. These included **Andhra Pradesh, Haryana, Jharkhand and northeastern States of Sikkim, Nagaland and Tripura.**
- The SIC of Bihar, which had failed to provide any information under the RTI Act for the assessments published in 2020 and 2021, **significantly improved its performance and furnished 67% of the information sought.**
- A large number of ICs across the country were **returning cases** without passing orders.
 - Uttar Pradesh and Andhra Pradesh returned around 40% of the appeals or complaints received by them.

- Of the 18 Information Commissioners the assessment found that 11 had returned appeals or complaints without passing any orders.
- **Several ICs have an extremely low rate of disposal per commissioner.**
 - For instance, the SIC of West Bengal had an annual average disposal rate of 222 cases per commissioner - each commissioner effectively disposing of less than one case a day - even though more than 10,000 cases were pending.
- Of all the 29 ICs, only the CIC has adopted a norm regarding the number of appeals or complaints to be disposed of by each commissioner in one year.



What is the Right to Information (RTI) Act?

- **About:**
 - The **Right to Information Act 2005** mandates timely response to citizen requests for government information.
 - The basic object of the Right to Information Act is to **empower the citizens, promote transparency and accountability** in the working of the Government, contain corruption, and make our democracy work for the people in a real sense.
- **Right to Information (Amendment) Act, 2019:**
 - It provided that the **Chief Information Commissioner and an Information Commissioner (of Centre as well as States)** shall hold office for such term as prescribed by the Central Government. Before this amendment, their term was fixed for 5 years.
 - It provided that the **salary, allowances and other service conditions of the Chief Information Commissioner and an Information Commissioner (of Centre as well as States)** shall be such as prescribed by the Central Government.

Note:

- Before this amendment, the salary, allowances and other service conditions of the Chief Information Commissioner were similar to those of the Chief Election Commissioner and that of an Information Commissioner were similar to those of an Election Commissioner (State Election Commissioners in case of States).
- It removed the **provisions regarding deductions in salary of the Chief Information Commissioner**, an Information Commissioner, the State Chief Information Commissioner and a State Information Commissioner due to pension or any other retirement benefits received by them for their previous government service.
- The **RTI (Amendment) Act, 2019 was criticized on grounds of diluting the law and giving more powers to the central government.**
- **Issues in the Implementation:**
 - Non-compliance in proactive disclosure by public authorities
 - Hostile approach of Public Information Officers (PIOs) towards citizens and misinterpreting provisions of the Right to Information (RTI) Act to conceal information.
 - Lack of clarity on what public interest is and right to privacy
 - Lack of political will and poor infrastructure
 - Rejection of information requests made by active citizens on important matters of public importance
 - Covert means of attacks and threats against RTI activists and applicants to suppress their voices

What is the Central Information Commission?

- **Established:** The Central Information Commission was established by the Central Government in 2005, under the provisions of the Right to Information Act (2005). It is not a constitutional body.
- **Members:** The Commission consists of a Chief Information Commissioner and not more than ten Information Commissioners.
- **Appointment:** They are appointed by the President on the recommendation of a committee consisting of the Prime Minister as Chairperson, the Leader of Opposition in the Lok Sabha and a Union Cabinet Minister nominated by the Prime Minister.

- **Tenure:** The Chief Information Commissioner and an Information Commissioner shall hold office for such term as prescribed by the Central Government or until they attain the age of 65 years, whichever is earlier.
 - They are not eligible for reappointment.
- **Power and Functions of CIC:**
 - It is the duty of the Commission to receive and inquire into a complaint from any person regarding information requested under RTI, 2005.
 - The Commission can order an inquiry into any matter if there are reasonable grounds (suo-moto power).
 - While inquiring, the Commission has the powers of a civil court in respect of summoning, requiring documents etc.

National Tourism Policy

Why in News?

Parliamentary committees have concluded that drafting a National Tourism Policy will not lead to the development of the tourism industry in the country.

- The committee has suggested fast-tracking the creation of a National Tourism Council on the lines of the GST council to directly make recommendations to the Central and State governments on various issues of the tourism sector and its stakeholders.

What are the Concerns raised by the Committee?

- **Inclusion in the Concurrent List:**
 - The committee also sought to know the steps taken by the Tourism Ministry regarding its earlier recommendation of including tourism in the concurrent list.
 - The committee is of the view that inclusion of tourism in the concurrent list will help in simplifying the issues of the pandemic-hit Indian tourism sector since tourism is a multi-sectoral activity.
- **Industry Status to Hospitality Projects:**
 - It also sought to know why some 20 States were yet to accord industry status to hospitality projects and asked the Ministry whether anything in this

Note:

regard has been conveyed by these States to the Centre.

- As of now eight States (**Maharashtra, Gujarat, Madhya Pradesh, Kerala, Karnataka, Punjab, Rajasthan and Uttarakhand**) have accorded industry status to hospitality projects.

➤ **Regarding Sanctioned Projects:**

- It expressed concern that in **projects sanctioned five years ago or before 2017-18, the progress rates achieved have been less than expected.**
 - **Projects Sanctioned:** ‘Development at Hazratbal’ in Jammu and Kashmir and ‘Infrastructure Development at Puri, **Shree Jagannath Dham** – Ramachandi- Prachi River front at Deuli under Mega Circuit’ in Odisha.
 - The committee is of the view that **projects taking longer than five years may incur high cost and schedule or time overruns**, which will put extra financial burden and resource crunch on the Ministry and implementing agencies involved.

What are the Highlights of the Draft National Tourism Policy?

➤ **Industry Status to Sector:**

- It mentions **granting industry status to the tourism sector**, as well as granting infrastructure status to hotels, in an effort to attract investment.

➤ **Five Key Areas:**

- Five key areas **would be given significant focus in the next 10 years** — green tourism, digital tourism, destination management, skilling the hospitality sector and supporting tourism-related to **Micro, Small and Medium Enterprises (MSMEs)**.

➤ **Advocacy for Appropriate Taxation and Subsidy Policies:**

- The Mission will advocate appropriate taxation and subsidy policies to encourage investment in sustainable tourism activities and discourage unsustainable tourism.

➤ **Offers Framework Conditions:**

- The draft policy doesn’t deal with specific operational issues, but offers framework conditions to help the sector, especially in the wake of the pandemic.
- The overall mission and vision are being laid out to improve the experience of tourists, foreign as well as local.

What is the Status of the Tourism Sector in India?

➤ **About:**

- India ranks **6th according to World Travel and Tourism Council** in terms of Travel & Tourism total contribution to **GDP** in 2021.
- India is currently **ranked 54th in World Economic Forum’s Travel & Tourism Development Index (2021)**.
- India has 40 sites listed on the **UNESCO World Heritage List** (32 cultural, 7 natural, and 1 mixed) as of 2021.
 - **Dholavira and Ramappa Temple** are the latest ones.
- A total of 39 million jobs were created in the tourism sector in FY20, which represented 8% of the country’s employment. By 2029, it will account for 53 million jobs.

➤ **Recent Initiatives:**

- **Swadesh Darshan Scheme Dekho Apna Desh Initiative**
- National Green Tourism Mission
- **PRASAD scheme**
- **Buddhist Conclave**

What are the Challenges Related to the Tourism Sector in India?

➤ **Lacking in Infrastructure:**

- Tourists in India still face many infrastructure related problems like inadequate roads, water, sewer, hotels and telecommunications etc.

➤ **Safety and security:**

- Safety and security of tourists, especially of the foreign tourists, is a major hurdle to tourism development. Attacks on foreign nationals raise questions about India’s ability to welcome tourists from far away countries.

➤ **Lack of skilled manpower:**

- Lack of skilled manpower is another challenge to the Tourism Industry in India.

➤ **Absence of basic amenities:**

- Absence of basic amenities like drinking water, well maintained toilets, first aid, cafeteria etc. at tourist places.

➤ **Seasonality:**

Note:

- Seasonality in Tourism, with the busy season being limited to six months from October to March and heavy rush in November and December.

CAG Audit Report on Assam's NRC

Why in News?

Recently, the **Comptroller and Auditor General of India (CAG)** has detected large-scale anomalies in the updating of the **National Register of Citizens (NRC)** in Assam.

What are the CAG's Concerns?

- **Irregularities in the Utilisation of Funds:**
 - At the time, **the process to update the NRC was started in December 2014 with a deadline for completion in February 2015** and the project cost was pegged at Rs. 288.18 crores.
 - There was, however, a **five-fold increase in the cost by March 2022** due to additional time to complete it and changes in the update software.
 - As for irregularities, the **CAG found that the number of wages paid to the outsourced staff was 45.59%-64.27% less** than what was approved by the NRC coordination committee.
- **Lack of Secure and Reliable Software:**
 - In the NRC update process, a **highly secure and reliable software was required to be developed**, however, lack of proper planning was observed in this regard to the extent of 215 software utilities were added in a haphazard manner to the core software.

What has the CAG Recommended?

- The **country's top auditor sought penal measures against Wipro Limited** for violating the provisions of the **Minimum Wages Act, 1948** and for paying data operators less than minimum wages.
 - Information technology firm Wipro Limited was entrusted with **one of the prime software installation companies** by the NRC Directorate.
- Secondly, the report **recommended action against the State Coordinator of National Registration (SCNR)** for "excess, irregular and inadmissible payments".

- The **CAG also recommended fixing accountability of the SCNR** as the principal employer for "not ensuring compliance with the Minimum Wage Act".

What is the NRC Exercise?

- An NRC was **first created in 1951 in Assam** to identify those born in India and migrants from erstwhile East Pakistan, now Bangladesh.
- In 2013, the **Supreme Court issued directions to the Centre and State to initiate an exercise in Assam** to update the 1951 register.
- The order was based on a petition filed by an NGO named Assam Public Works.
- The first draft was released in 2018.
- The final list, published in 2019, included those **who could establish their Indian citizenship by being residents or descendants of people** living in Assam before March 25, 1971 (the cut-off date for deportation of foreigners as per the **Assam Accord** of August 1985).
- As many as 19.06 lakh people out of 3.3 crore applicants were excluded due to a lack of adequate documents to prove their citizenship. Several parties dismissed the final list as "faulty".
- Three years later, the process is on pause as the **Registrar General of India (RGI)** is yet to notify the final list.

AVGC Promotion Task Force Report

Why in News?

Government has received the report of the **Animation, Visual Effects, Gaming and Comics (AVGC) Promotion Task Force**.

What are the Main Recommendations?

- **Domestic Industry Development for Global Access:**
 - A **National AVGC-XR (Extended Reality) Mission with a budget outlay to be created** for integrated promotion & growth of the AVGC sector.
 - Launch of a **'Create in India' campaign** with exclusive focus on content creation, In India, For India & For World.

Note:

- With a goal to make India the global hub for AVGC, institute an International AVGC Platform, along with a Gaming Expo with focus on **Foreign Direct Investment (FDI)**, Co-production treaties and Innovation.
- Establish a **National Centre of Excellence (COE) for the AVGC sector** to become an international reference point across Skilling, Education, Industry Development and Research & Innovation for the AVGC sector.
- **Developing Talent Ecosystem to realize Demographic Dividends:**
 - Leverage **National Education Policy (NEP)** to develop **creative thinking with dedicated AVGC course content at school levels**, to build foundational skills and to create awareness about AVGC as a career choice.
 - A **University Grants Commission (UGC)** recognised curriculum for undergraduate and postgraduate degrees has also been suggested.
 - Enhance Industry participation to ensure employment opportunities and absorption for students from non-metro cities and Northeast states.
 - Established AVGC Accelerators and Innovation hubs in academic institutions, on lines of **Atal Tinkering Labs**.
- **Enhancing Technology & Financial Viability for Indian AVGC Industry:**
 - Democratize AVGC technologies by **promoting subscription-based pricing models for MSME, Start-Ups and institutions**.
 - Made in India for AVGC technologies through incentive schemes for R&D and IP creation. Evaluate PLI scheme to incentivize AVGC hardware manufacturers.
 - Enhanced **Ease of Doing Business** in AVGC sector i.e., tax benefits, import duties, curbing piracy, etc.
 - Leverage Start-Up India to provide technical, financial and market access assistance to AVGC entrepreneurs to promote culture of R&D and local IP Creation.
- **Raising India's Soft Power through an Inclusive Growth:**
 - Establish a **dedicated Production Fund for domestic content creation** from across India to promote Indian culture & heritage globally.
 - Evaluate Reservation for high-quality indigenous content by broadcasters.

- For an Inclusive India, **target skilling and industry outreach for youth in Tier 2 & 3 towns and villages in India**.
- Establish Special incentives for women entrepreneurs in the AVGC sector.
- Establish a framework to ensure Child Rights Protection in the digital world.

What is the Status of AVGC Sector of India?

- The AVGC sector in India has **witnessed unprecedented growth rates in recent times**, with many global players entering the Indian talent pool to avail offshore delivery of services.
- Further, the **Media and Entertainment (M&E) Industry is expected to grow at an 8.8% CAGR by 2026**.
- As per the experts, within the M&E Industry, the AVGC sector can witness a growth of 14-16% in the next decade.
- India is emerging as a **primary destination for high-end, skill-based activities in the AVGC sector**.
- The Government of India has **designated audio-visual services as one of the 12 Champion Service Sectors** and announced key policy measures aimed at nurturing sustained growth.
- The AVGC Sector is an important segment of the Media & Entertainment sector, is emerging as an important growth engine of the Indian economy.

What are the Challenges with the AVGC Sector?

- **Lack of Authentic Data:**
 - Non availability of data such as employment, industry size, education intuitions, etc. for AVGC sector, makes decision making tougher for entities.
- **Skill Gap in Education and Employment sector:**
 - Creation of the AVGC ecosystem within the country **requires a workforce with specialized skills** for various roles such as animators, developers, designers, localization experts, product managers, etc.
 - At present, the **education system at school and university level does not have a dedicated curriculum focused on AVGC**.
- **Infrastructure Constraints:**
 - In the absence of **adequate training infrastructure**, there is deterioration in the quality of training being delivered to students, thus impacting the quality of output and human resources for the AVGC industry.

Note:

- **Less focus on Research Development:**
 - There is **also a need to develop research related narrative for the AVGC-XR sector**, so that dedicated focus can be given to it.
- **Absence of an AVGC Academic Reference Point:**
 - There is **no apex institute in India for the AVGC sector** unlike other sectors such as engineering, design, management, packaging, etc.
- **Availability of Funds:**
 - At present **there is no dedicated fund available for the promotion of the AVGC sector** which acts as an obstacle for the growth of the sector in India.
- **Lack of Globally-Popular Indian IPs:**
 - The AVGC sector in general **has suffered a lack of original Indian intellectual property as most work in this sector is outsourced.**
 - Animation industry is dominated by services to other countries and thus it is important to incentivize local production with additional concessions to increase local IP.
- Despite the fact that MM projects have a very high outcome certainty due to ready availability of underlying technology, there were **considerable delays in the initiation and sanction of such projects by the DRDO.**
- In 119 out of 178 projects, the original time schedules **could not be adhered to.**
 - **In 49 cases**, the additional time was in fact **more than 100 % of the original timeframe.**
- The delays ranged from **16 to 500% and that an extension was taken multiple times.**
- Out of **86 projects declared as successful during January 2010 and December 2019**, in 20 projects one or more key objective(s)/parameter(s) was/were not achieved.
 - Instead of seeking extension of time to achieve all the key objectives/parameters of the project proposal, **these projects were closed as successful.**
- There was also a **lack of synergy between the DRDO and the Services which resulted in divergent views on the Qualitative Requirements**, deliverables, and outcomes of User Trials. This affected the overall success rate of the MM Projects.

CAG slams DRDO for delays

Why in News?

Recently, the **CAG (Comptroller and Auditor General of India)** has released a report, which has flagged time and cost overrun of the **Mission Mode (MM) Projects** of the **DRDO (Defence Research and Development Organisation).**

- MM projects are taken up by the DRDO on high priority, based on **specific user requirements and with definite timeframes** for their completion.
 - These projects depend on technologies that are already available, proven and readily accessible within the DRDO or India, or from abroad at a short notice.

What are the Issues Highlighted by the Report?

- There have been inefficiencies in overall project management **that have resulted in several instances of cost overruns**, over-assessment of anticipated benefits of projects, and **delay in submission of closure reports.**
- There have been issues of delay in productionisation of successful projects, which defeats the **very purpose of taking up such projects.**

Who is the CAG?

- CAG is an **independent authority under the Constitution of India.**
- He is the **head of the Indian audit & account department** and chief Guardian of Public purse.
- It is the **institution through which the accountability of the government and other public authorities (all those who spend public funds) to Parliament and State Legislatures and through them to the people is ensured.**
- The Comptroller and Auditor-General **shall not be eligible for further office either under the Government of India or under the Government of any State** after he has ceased to hold his office.
- **Article 148 provides for an independent office of the CAG.**
 - Other Provisions Related to CAG include: **Articles 149-151 (Duties & Powers, Form of Accounts of the Union and the States and Audit Reports)**, Article 279 (calculation of net proceeds, etc.) and Third Schedule (Oath or Affirmation) and Sixth Schedule (Administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram).

Note:

What is DRDO?**➤ About:**

- DRDO is the **R&D (Research and Development) wing of the Ministry of Defence** with a vision to empower India with cutting-edge defence technologies.
- Its **pursuit of self-reliance** and successful indigenous development and production of strategic systems and platforms such as **Agni and Prithvi series of missiles, Light Combat Aircraft, Tejas**, multi-barrel rocket launcher, Pinaka, air defence system, Akash, a wide range of radars and electronic warfare systems, etc. have given quantum jump to India's military might, generating effective deterrence and providing crucial leverage.

➤ Various Programmes of DRDO:

- **Integrated Guided-Missile Development Programme (IGMDP):**
 - It was one of **Dr. APJ Abdul Kalam's** major works to make Indian defence forces self-sufficient in the field of missile technology.
 - The missiles developed under IGMDP are: Prithvi, Agni, Trishul, Akash, Nag.
- **Mobile Autonomous Robot System (MARS):**
 - MARS is a smart robust robot to **handle land mines and Inert Explosive Devices (IEDs)** which helps the Indian Armed Forces to disarm them from far distances despite hostile surroundings.
 - With some add-ons, this system can even be used to dig the ground for the object and defuse the Improvised Explosive Device by various methods.
- **Highest Terrestrial Centre in Ladakh:**
 - DRDO's centre in Ladakh is at 17,600 feet above sea level at Changla near Pangong lake which is intended to serve as a **natural cold storage unit for the preservation of natural and medicinal plants.**

Good Governance Day

Why in News?

Good Governance Day (25th December) is being celebrated on the birth anniversary of former Prime Minister **Atal Bihari Vajpayee**.

What is Good Governance?**➤ About:**

- Governance is the **process of decision-making and the process by which decisions are implemented (or not implemented).**
 - Governance can be used in several contexts such as corporate governance, international governance, national governance and local governance.
- Good Governance is defined as **"the manner in which power is exercised in the management of a country's economic and social resources for development"**
- The concept of good governance existed even during the days of Chanakya. He had mentioned it elaborately in **Arthashastra**.
- Citizens centric administration lies on the foundation of good governance.

➤ 8 Principles of Good Governance:

- **Participation:**
 - **People should be able to voice their own opinions** through legitimate immediate organizations or representatives.
 - This includes men and women, vulnerable sections of society, backward classes, minorities, etc.
 - Participation also **implies freedom of association and expression.**
- **Rule of Law:**
 - **Legal framework should be enforced impartially**, especially on human rights laws.
 - Without rule of law, politics will follow the principle of matsya nyaya i.e. the law of fish which means the strong will prevail over the weak.
- **Consensus Oriented:**
 - Consensus oriented decision-making ensures that even if everyone does not achieve what they want to the fullest, a common minimum can be achieved by everyone which will not be detrimental to anyone.
 - It mediates differing interests to meet the broad consensus on the best interests of a community.
- **Equity and Inclusiveness:**

Note:

- Good governance assures an equitable society.
- People should have opportunities to improve or maintain their well-being.
- **Effectiveness and Efficiency:**
 - Processes and institutions should be able to produce results that meet the needs of their community.
 - Resources of the community should be used effectively for the maximum output.
- **Accountability:**
 - Good governance aims towards betterment of people, and this cannot take place without the **government being accountable** to the people.
 - Governmental institutions, private sectors, and civil society organizations should be held accountable to the public and institutional stakeholders.
- **Transparency:**
 - Information should be accessible to the public and should be understandable and monitored.
 - It also means free media and access to information.
- **Responsiveness:**
 - Institutions and processes should serve all stakeholders in a reasonable period of time.

What are the Challenges to Good Governance in India?

- **Women Empowerment:**
 - Women are not adequately represented in government institutions, and other allied sectors.
- **Corruption:**
 - The high level of corruption in India has been widely perceived as a major obstacle in improving the quality of governance.
- **Delay in Justice:**
 - A citizen has the right to avail timely justice, but there are several factors, because of which a common man doesn't get timely justice. One such factor is lack of personnel and logistics under disposal of court.
- **Centralisation of Administrative System:**

- Governments at lower levels can only function efficiently if they are empowered to do so. This is particularly relevant for the **Panchayati Raj Institutions (PRIs)**, which currently suffer from inadequate devolution of funds as well as functionaries to carry out the functions constitutionally assigned to them.
- **Criminalisation of Politics:**
 - The criminalisation of the political process and the unholy nexus between politicians, civil servants, and business houses are having a baneful influence on public policy formulation and governance.
- **Other Challenges:**
 - **Environmental security, sustainable development** and challenges of **globalization, liberalisation and market economy.**

What are the Indian Initiatives to improve Good Governance?

- **Good Governance Index (GGI):**
 - GGI has been launched by the **Ministry of Personnel, Public Grievances & Pensions to determine the status of governance in the country.**
 - It assesses the impact of various interventions taken up by the State Government and UTs.
- **National e-Governance Plan:**
 - It has the vision to **"make all government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency & reliability of such services at affordable costs to realise the basic needs of the common man."**
- **Right to Information Act, 2005:**
 - It plays an effective role in ensuring transparency in governance.
- **Other Initiatives:** Setting up of **NITI Aayog, Make in India programme, Lokpal, etc.**

Who was Atal Bihari Vajpayee?

- Atal Bihari Vajpayee was born on **25th December, 1924 in the erstwhile princely state of Gwalior (now a part of Madhya Pradesh).**
- He entered in national politics during the **Quit India Movement of 1942** which hastened the end of British colonial rule.

Note:

- In 1947, Vajpayee started working as a journalist for newspapers of Deendayal Upadhyaya — Rashtradharma (a Hindi monthly), Panchjanya (a Hindi weekly) and the dailies Swadesh and Veer Arjun. Later, influenced by Syama Prasad Mookerjee, Vajpayee joined the Bharatiya Jana Sangh in 1951.
- He was the **former Prime Minister of India** and was elected to the position twice in **1996 and 1999**.
- As a parliamentarian, **Vajpayee was awarded with the Pandit Govind Ballabh Pant Award for Best Parliamentarian in 1994**, which defines him as “a role model par excellence for all legislators.”
- He was conferred with the country’s highest civilian honour, the **Bharat Ratna** in 2015 and second-highest civilian honour, the **Padma Vibhushan** in 1994.

Samudrayaan Mission

Why in News?

According to the Ministry of Earth Science, the **Samudrayaan Mission is expected to be realised by year 2026**.

What is Samudrayaan Mission?

- **About:**
 - The mission is aimed at **sending three personnel to 6000-metre depth in a vehicle called ‘MATSYA 6000’** for the exploration of deep-sea resources like minerals.
 - ‘MATSYA 6000’ vehicle is being **designed and developed by National Institute of Ocean Technology (NIOT)**, Chennai under **Ministry of Earth Sciences**.
 - It has an endurance of 12 hours under normal operation and 96 hours in case of emergency for human safety.
 - It is **India’s first unique manned ocean mission** and is a part of the Rs 6000-crores **Deep Ocean Mission**.
- **Significance:**
 - The manned submersible will **allow scientific personnel to observe and understand unexplored deep-sea areas** by direct intervention.

- It will also **boost the Central government’s vision of ‘New India’** that **highlights the Blue Economy** as one of the ten core dimensions of growth.
 - India has a **unique maritime position, a 7517 km long coastline**, which is home to nine coastal states and 1,382 islands.
 - For India, **with its three sides surrounded by the oceans and around 30% of the nation’s population living in coastal areas** and coastal regions play a major economic factor.
 - It supports **fisheries and aquaculture, tourism, livelihoods, and blue trade**.

What is the Deep Ocean Mission?

- It was approved in June 2021 by the Ministry of Earth Sciences. It aims to **explore the deep ocean for resources, develop deep-sea technologies for sustainable use of ocean resources**, and support the **Blue Economy Initiatives** of the Indian Government.
- The cost of the Mission has been estimated at Rs. 4,077 crores over a **five-year period** and will be implemented in phases.

What are the Other Related Initiatives?

- **India-Norway Task Force on Blue Economy for Sustainable Development:** It was inaugurated jointly by both the countries in 2020 to develop and follow up joint initiatives between the two countries.
- **Sagarmala Project:** The **Sagarmala project** is the strategic initiative for port-led development through the extensive use of IT enabled services for modernization of ports.
- **O-SMART:** India has an umbrella scheme by the name of **O-SMART** which aims at regulated use of oceans, marine resources for sustainable development.
- **Integrated Coastal Zone Management:** It focuses on conservation of coastal and marine resources, and improving livelihood opportunities for coastal communities etc.
- **National Fisheries Policy:** India has a National Fisheries policy for promoting ‘Blue Growth Initiative’ which focuses on sustainable utilization of fisheries wealth from marine and other aquatic resources.

Note:

Samudrayaan Mission

India's First Manned Ocean Mission – Launched in Chennai (2021)

Objective

- Send 3 persons in a self-propelled, manned submersible vehicle - MATSYA 6000 (indigenously developed) to a depth of 6000 m
- Deep-ocean exploration and mining of rare minerals

Nodal Ministry

Ministry of Earth Sciences

Nodal Mission

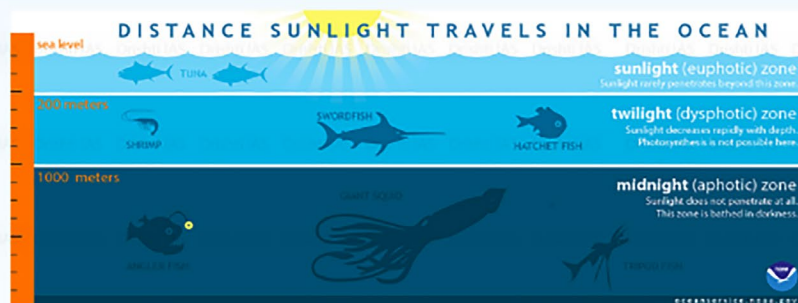
Deep Ocean Mission (June 2021) - To Support Blue Economy Initiatives

Significance for India

- First developing country to carry out a deep ocean mission
- Joined the elite club of nations (US, Russia, France, Japan and China) to have niche technology and vehicles to carry out subsea activities
- Promotion of ocean literacy; Underwater engineering innovations

2021-2030

Decade of Ocean Science for Sustainable Development (declared by UN)



Deep Ocean

Generally defined as the depth at which light begins to dwindle, typically around 200 meters

India's Oceanic Facts

- **Coastline:** ~7,516km
- **Coastal States:** 9 of 28
- **Total Islands:** 1,382
- **Ports:** 200+ (including 13 major ports)
- **Exclusive Economic Zone:** 2 million+ km²
- **Cargo handled by Ports:** ~1,400 million tons (yearly)
- **Coastal Economy:** 4 million+ fisherfolk & coastal communities

Pradhan Mantri Virasat Ka Samvardhan Scheme

Why in News?

Pradhan Mantri Kaushal Ko Kaam Karyakram (PMKKK) has been named as Pradhan Mantri Virasat Ka Samvardhan (PM VIKAS) Scheme by the **Ministry of Minority Affairs**.

What are the Key Points of the Scheme?

➤ About:

- It is a **Central-Sector Scheme**, which focuses on the skilling, entrepreneurship and leadership training requirements of the minority and artisan communities across the country.
- This is an integrated scheme that converges **five erstwhile schemes of the Ministry of Minority Affairs** viz,
 - **Seekho aur Kamao:**
 - This is a **placement linked skill development scheme** for minorities aiming to upgrade the skills of minority youth in various modern/traditional skills **depending upon their qualification, present economic trends and market potential**
 - **USTTAD (Upgrading the Skills & Training in Traditional Arts/Crafts for Development):** It aims to promote and preserve the rich heritage of the traditional arts & crafts of the minority communities.
 - **Hamari Dharohar:** It has been formulated to preserve rich heritage of minority communities of India.
 - **Nai Roshni:** It is a **Leadership Development Programme** for women belonging to minority communities in the age group of 18 to 65 years. It was started in 2012-13.
 - **Nai Manzil:** The scheme aims to benefit the youth (both men & women) belonging to **six notified minority communities of 17-35 years of age, who do not have formal school leaving certificate.**
- The scheme has been approved by the Cabinet for the period of **15th Finance Commission**.

➤ Components:

- Skill and Training
- Leadership and Entrepreneurship
- Education
- Infrastructure Development

➤ Objectives:

- PM VIKAS aims to improve the **livelihoods of the minorities, particularly the artisan communities**, using the components of skill development, education, women leadership & entrepreneurship.
- These components complement each other in the **ultimate objective of the scheme to increase the incomes of the beneficiaries and provide support** by facilitating credit and market linkages.

What are the Other Schemes Related to the Minority?

➤ Pradhanmantri Jan Vikas Karyakram:

- The programme aims to **develop socio-economic and basic amenities assets like school, college, polytechnic, girls' hostel, ITI, skill development centre etc** for the minority communities.

➤ Begum Hazrat Mahal Girls Scholarships:

- Scholarships for **economically backward girls** belonging to the six notified Minority communities.

➤ Gharib Nawaz Employment Scheme:

- It was launched so that **short-term job-oriented skill development courses may be provided to minorities' youth** in order to enable them for skill based employment.

➤ Hunar Haat:

- Launched to provide market and employment and employment opportunities to **master artisans, craftsmen and traditional culinary experts**.

Rashtriya Gokul Mission

Why in News?

Recently, Ministry of Fisheries, Animal Husbandry and Dairying announced that **employment will be given to more than 50 lakh farmers**.

- Under **Rashtriya Gokul Mission (RGM)** there is a scheme to **provide subsidy on cow/buffalo/pig/chicken/goat breeding farms and silage making units** of which 50% subsidy will be given by the Government of India. Also, **3% interest subvention on the loan amount** can also

Note:



be taken under the Animal Husbandry Infrastructure Development Fund (AHIDF) scheme.

What is Rashtriya Gokul Mission?

➤ About:

- It is being implemented for **development and conservation of indigenous bovine breeds since December 2014**.
- The scheme is also continued under umbrella scheme **Rashtriya Pashudhan Vikas Yojna from 2021 to 2026** with a budget outlay of Rs.2400 crore.

➤ Nodal Ministry:

- Ministry of Fisheries, Animal Husbandry and Dairying

➤ Objectives:

- To enhance productivity of bovines and increasing milk production in a sustainable manner using advance technologies.
- To propagate use of high genetic merit bulls for breeding purposes.
- To enhance Artificial insemination coverage through strengthening breeding network and delivery of Artificial insemination services at farmers doorstep.
- To promote indigenous cattle & buffalo rearing and conservation in a scientific and holistic manner.

➤ Significance:

- The RGM will result in enhanced productivity and benefit of the programme, **percolating to all cattle and buffaloes of India especially with small and marginal farmers**.
- This programme will **also benefit women in particular since over 70% of the work** involved in livestock farming is **undertaken by women**.

➤ Components:

- Availability of High genetic Merit Germplasm
- Extension of Artificial Insemination Network
- Development and Conservation of indigenous Breeds
- Skill Development
- Farmers Awareness
- Research Development and Innovation in Bovine Breeding

➤ Implementing Agency:

- Rashtriya Gokul Mission will be implemented through the "State Implementing Agency (SIA viz Livestock Development Boards).

➤ Significant Initiatives:

○ Gopal Ratna Awards:

- For farmers maintaining the best herd of Indigenous Breed and practicing best management practices.

○ Kamdhenu Awards:

- For best-managed Indigenous herd by Institutions/ Trusts/ NGOs/ Gaushalas or best-managed Breeders' societies.

○ Gokul Grams:

- RGM envisages the establishment of integrated cattle development centers, '**Gokul Grams**' to **develop indigenous breeds including up to 40% nondescript breeds** (belonging or appearing to belong to no particular class or kind) with objectives to:
 - Promote indigenous cattle rearing and conservation in a scientific manner.
 - Propagate high genetic merit bulls of indigenous breeds.
 - Optimize modern Farm Management practices and promote Common Resource Management.
 - Utilize animal waste in an economical way i.e., Cow Dung, Cow Urine.

- Recently, **funds have been released for setting up of 16 Gokul Grams**.

○ National Kamdhenu Breeding Centre (NKBC):

- It is being established as a Centre of Excellence to develop and conserve Indigenous Breeds in a holistic and scientific manner.

○ E-Pashu Haat:

- It is a web portal which provides information on pet cattle, trading of bovine animals that were not offered on any other platform in the country.

○ Nakul Prajnan Bazaar:

- An e-market portal connecting breeders and farmers, for quality- disease-free bovine germplasm.

○ Pashu Sanjivni:

- An animal wellness program encompassing the provision of animal health cards ('Nakul Swasthya Patra') along with unique identification and uploading data on National Database.

○ **Advanced Reproductive Technology (ART):**

Note:

- Including Assisted Reproductive Technique- IVF/ Multiple Ovulation Embryo Transfer (MOET) and sex-sorted semen technique to improve the availability of disease-free female bovines.
- **National Bovine Genomic Center for Indigenous Breeds (NBGC-IB):**
 - It will be established for selection of breeding bulls of high genetic merit at a young age using highly precise gene-based technology.
- **AHIDF Scheme:**
 - AHIDF of Rs.15000 crore has been set up under **Atma Nirbhar Bharat Abhiyan** stimulus package for incentivizing investments by individual entrepreneurs, private companies, MSME, **Farmers Producers Organizations (FPOs)** and Section 8 companies to **establish:**
 - the **dairy processing and value addition infrastructure,**
 - **meat processing** and value addition infrastructure and
 - **Animal Feed Plant.**

District Mineral Foundation Scheme

Why in News?

Odisha's Keonjhar district is **India's highest recipient of funds under the District Mineral Foundation (DMF) scheme**, and has spent ₹3,000 crore under the scheme over the past seven years.

- Keonjhar is **hugely rich in mineral reserves**, especially iron ore. The district has **2,555 million tonnes of iron ore** available beneath its soil, of which **approximately 50 million tonnes is extracted each year**, a key driver of Odisha's economy.

What is DMF Scheme?

- **About:**
 - As per the **Mine and Minerals Development Regulation (Amendment) Act, 2015**, in **every district affected by mining-related operations**, the **state government** shall, by notification, **establish a trust as a non-profit body** to be called the **District Mineral Foundation**.
- **DMF Funds:**

- Funds every **mining lease holder of will pay a fraction of royalty, not exceeding one-third of the royalty**, to the DMF as per rates prescribed by Central Government.
- This fund will be used for **welfare of the people affected in the mining affected areas.**
 - **In Keonjhar, the total DMF fund collection has touched an astounding ₹8,840 crore, the highest for any district in India.**

Objective:

- The idea behind the contribution is that local mining-affected communities, **mostly tribal and among the poorest** in the country, also **have the right to benefit from natural resources extracted from where they live.**

Functioning:

- The functioning of the DMF trusts and the fund use governed by states' DMF Rules incorporate the mandates of a **central guideline, Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY).**

What is PMKKKY?

About:

- It is a scheme by the **Ministry of Mines** for the welfare of people & affected areas by using the funds accrued under District Mineral Foundation (DMF).

Objectives:

- To **implement various developmental and welfare projects/programs in mining affected areas** that complement the existing ongoing schemes/projects of State and Central Government.
- To **minimize/mitigate the adverse impacts, during and after mining**, on the environment, health and socio-economics of people in mining districts.
- To ensure **long-term sustainable livelihoods** for the affected people in mining areas.

Implementation:

- At least **60% the fund will be utilized for "High Priority Areas"** like Drinking water supply, Environment preservation & pollution control measure, Health care, Education, etc.
- **Rest of the fund** will be utilized for **"Other Priority Areas"**, such as Physical infrastructure, Irrigation, Energy & watershed development and Measures for enhancing environmental quality.

Note:



AYURSWASTHYA Yojana

Why in News?

Ayush Ministry is currently running a **Central Sector Scheme** titled **AYURSWASTHYA Yojana**.

What is AYURSWASTHYA Yojana?

- **About:**
 - It has two components:
 - **AYUSH and Public Health:** To promote AYUSH intervention for community health care.
 - **Up-gradation of facilities to Centre of Excellence:** To support establishment of advanced/specialized AYUSH medical health units in reputed AYUSH and Allopathic institutions both in Government and Non-Government sector.
 - Under the Centre of Excellence component of AYURSWASTHYA Yojana, **financial assistance is provided to eligible individual organizations/institutes** for establishing and upgrading their functions & facilities and/or for research & development activities in AYUSH.
- **Funding:**
 - The maximum admissible financial assistance under the Centre of Excellence component of AYURSWASTHYA Yojana, to an organization/institute is **Rs.10.00 crores for a maximum period of three years**.

What are the other Schemes Related to AYUSH?

- **National Ayush Mission:** The Mission addresses the gaps in health services through supporting the efforts of State/UT Governments for providing AYUSH health services/education in the country, particularly in vulnerable and far-flung areas.
- **New Portals on Ayush Sector:** CTRI (Clinical Trial Registry of India), RMIS (Research Management Information System), SAHI (Showcase of Ayurveda Historical Imprints), AMAR (Ayush Manuscripts Advanced Repository), and e-Medha (electronic Medical Heritage Accession) have been launched.
- **AYUSH Entrepreneurship Programme:** It was jointly organized by the Ministry of AYUSH and Ministry of Micro, Small and Medium Enterprises (MSME) for

promoting the AYUSH sector in the country under different Schemes of the Ministry of MSME.

- **Ayush Wellness Centers:** AWC are launched to establish a holistic wellness model based on AYUSH principles and practices focusing on preventive, promotive, curative, rehabilitative and palliative healthcare by integration with the existing public health care system.
- **ACCR Portal and Ayush Sanjivani App:** It is conceptualized and developed by the Ministry of Ayush as a platform to support both Ayush practitioners and the public.

Free Foodgrains Scheme

Why in News?

Recently, the Union Ministry of Consumer Affairs, Food and Public Distribution issued a notification to provide free foodgrains (rice, wheat and coarse grains) to all eligible households under the **National Food Security Act, 2013**, for one year from January 1, 2023.

- The government, however, discontinued the **Pradhan Mantri Garib Kalyan Anna Yojana**.

What are Coarse Cereals?

- Coarse cereals are traditionally grown in resource-poor agro-climatic regions of the country.
 - Agro-climatic zone is a land unit in terms of major climates suitable for a certain range of crops and cultivars.
- Sorghum, pearl millet, maize, barley, finger millet and several small millets such as kodo millet, little millet, foxtail millet, proso millet and barnyard millet together called coarse cereals.
 - Sorghum, pearl millet, finger millet, maize and small millet (barnyard millet, proso millet, kodo millet and foxtail millet) are also called nutri-cereals.
- Coarse cereals are known for their nutri-rich content and having characteristics like drought tolerance, photo-insensitivity and resilient to climate change etc.

What is NFSA?

- **Notified On:**
 - 10th September, 2013.
- **Objective:**
 - To provide for food and nutritional security in the human life cycle approach, by ensuring access to adequate quantities of quality food at affordable prices to people to live a life with dignity.

Note:

- **Coverage:**
 - 75% of the rural population and upto 50% of the urban population for **receiving subsidised foodgrains under the Targeted Public Distribution System (TPDS)**.
 - Overall, **NFSA covers about 81.35 crore citizens**.
- **Eligibility:**
 - Priority Households are to be covered under TPDS, **according to guidelines by the State government**.
 - Households are covered under the **Antyodaya Anna Yojana**.
- **Provisions:**
 - 5 Kgs of foodgrains per person per month at Rs. 3/2/1 per Kg for rice/wheat/coarse grains.
 - The existing AAY household will continue to **receive 35 Kgs of foodgrains per household per month**.
 - **Meal and maternity benefits** of not less than Rs. 6,000 to pregnant women and lactating mothers during pregnancy and six months after child birth.
 - **Meals for children** upto 14 years of age.
 - **Food security allowance** to beneficiaries in case of non-supply of entitled foodgrains or meals.
 - **Setting up grievance redressal mechanisms** at the district and state level.

What are Government Initiatives in this Regard?

- **National Food Security Mission**
- **Rashtriya Krishi Vikas Yojana (RKVY)**
- **Integrated Schemes on Oilseeds, Pulses, Palm oil and Maize (ISOPOM)**
- **eNAM Portal**

Court Vacations

Why in News?

Recently, the **Chief Justice of India (CJI)** has said that the Supreme Court will not have a vacation bench when it breaks for its annual winter vacation.

- While this judicial schedule has its origins in colonial practices, it has come **under criticism for quite some time now**.

What are Court Vacations?

- **About:**
 - The **Supreme Court** has **193 working days a year for its judicial functioning**, while the **High Court's**

function for approximately 210 days, and trial courts for 245 days.

- High Courts have the **power to structure their calendars according to the service rules**.
- The Supreme Court takes two long vacations each year, the summer and winter breaks, but is **technically not fully closed during these periods**.
- **Vacation Bench:**
 - A Vacation Bench of the Supreme Court is a **special bench constituted by the CJI**.
 - Litigants can still approach the Supreme Court and, if the court decides that the plea is an **"urgent matter"**, the **Vacation Bench hears the case on its merits**.
 - Cases such as bail, eviction, etc. **often find precedence in listing before vacation benches**.
 - It is **not uncommon for courts to hear important cases** during vacation.
 - **In 2015**, a five-judge Bench of the Supreme Court heard the challenge to the constitutional amendment setting up the **National Judicial Appointments Commission (NJAC)** during the summer vacation.
 - **In 2017**, a Constitution Bench held a six-day hearing in the case challenging the practice of triple talaq during summer vacation.
- **Legal Provisions:**
 - **Under Rule 6 of Order II of The Supreme Court rules, 2013**, the CJI has nominated the **Division Benches for hearing of urgent miscellaneous matters** and regular hearing matters during the summer vacation for the period.
 - The rule reads that **CJI may appoint one or more Judges to hear during summer vacation or winter holidays all matters** of an urgent nature which under these rules may be heard by a Judge sitting singly.
 - And, whenever necessary, he **may likewise appoint a Division Court for the hearing of urgent cases** during the vacation which require to be heard by a Bench of Judges.

What are the Issues with Court Vacations?

- **Not Convenient for Justice Seekers:**
 - The long vacation which the courts obtain is not very convenient for justice-seekers.
- **Not good Optics in Light of Pendency:**

Note:

- Extended frequent vacations are not good optics, especially in the light of mounting pendency of cases and the **slow pace of judicial proceedings**.
- For an ordinary litigant, the **vacation means further unavoidable delays** in listing cases.
- **Incongruous with European Practices:**
 - The summer break perhaps began because **European judges of the Federal Court of India found Indian summers too hot** — and took the winter break for Christmas.

Recusal of Judges

Why in News?

Recently, a **Supreme Court (SC)** judge recused herself from hearing a **writ petition** filed by Bilkis Bano against a Gujarat government decision to prematurely release 11 men sentenced to life imprisonment for gang-raping her during the 2002 riots.

What is Recusal?

- **About:**
 - It is the **act of abstaining from participation in an official action** such as a legal proceeding due to a conflict of interest of the presiding court official or administrative officer.
- **Rule for Recusal:**
 - There are **no formal rules governing recusals**, although several SC judgments have dealt with the issue.
 - In **Ranjit Thakur v Union of India (1987)**, the SC held that the test of the likelihood of bias is the reasonableness of the apprehension in the mind of the party.
 - The judge needs to look at the mind of the party before him, and decide that he is biased or not.
- **Reason for Recusal:**
 - When there is a **conflict of interest, a judge can withdraw from hearing a case** to prevent creating a perception that he carried a bias while deciding the case.
 - The conflict of interest can be in many ways such as:
 - Having a prior or personal association with a party involved in the case.
 - Appeared for one of the parties involved in a case.

- Ex parte communications with lawyers or non-lawyers.
- An appeal is filed in the SC against a judgement of a High Court (HC) that may have been delivered by the SC judge when he was in the HC.
- In a matter of a company in which he holds shares unless he has disclosed his interest and there is no objection to it.
- The practice stems from the cardinal principle of **due process of law** that nobody can be a judge in her own case.
 - Any interest or conflict of interest would be a ground to withdraw from a case since a judge has a duty to act fair.

What is the Process of Recusal?

- The decision to recuse **generally comes from the judge himself** as it rests on the conscience and discretion of the judge to disclose any potential conflict of interest.
 - Some judges orally convey to the lawyers involved in the case their reasons for recusal, many do not. Some explain the reasons in their order.
- In some circumstances, **lawyers or parties in the case bring it up before the judge**. Once a request is made for recusal, the decision to recuse or not rests with the judge.
 - While there are some instances where judges have recused even if they do not see a conflict but only because such an apprehension was cast, there have also been several cases where judges have refused to withdraw from a case.
- If a judge recuses, the **case is listed before the Chief Justice for allotment to a fresh Bench**.

What are the Concerns related to Recusal?

- **Undermining Judicial Independence:**
 - It **allows litigants to cherry-pick a bench of their choice**, which impairs judicial fairness.
 - Also, the purpose of recusal in these cases undermines both independence and impartiality of the judges.
- **Different Interpretations:**
 - As there are no rules to determine when the judges could recuse themselves in these cases, there are different interpretations of the same situation.
- **Delays the Process:**

Note:

- Some requests for recusal are made with the intent to intimidate the court or to get better of an 'inconvenient' judge or to obfuscate the issues or to cause obstruction and delay the proceedings or in any other way frustrate or obstruct the course of justice.

Types of Majorities



Drishti IAS

Types of Majority in Parliament (II)

Special Majority

- Majority of the total membership (irrespective of vacancies/absentees) of each House and a majority of 2/3rd of the members of each House present and voting



Const. Provisions – Amended by Special Majority

- Fundamental Rights
- Directive Principles of State Policy
- All other provisions not covered under Simple Majority or under Special Majority + Consent of States

For the removal of Vice President and the Speaker/Deputy Speaker of Lok Sabha, effective majority is required (more than 50% of the total strength minus vacancies)



Special Majority + Consent of States

- Const. provisions related to the federal structure of the polity - amended by a special majority + the consent of 50% of the state legislatures by a simple majority

Const. Provisions – Amended by Special Majority + Consent of States

- President - election and its manner
- Union and States - Distribution of legislative powers and Extent of the executive power
- Supreme Court and High Courts
- GST Council
- All 3 lists in 7th Schedule
- Parliament - Representation of states, Power to amend the Constitution and its procedure (Article 368 itself)



Jan Vishwas (Amendment of Provisions) Bill 2022

Why in News?

Recently, the Union Government tabled the Jan Vishwas (Amendment of Provisions) Bill, 2022 in Parliament.

- The objective is to “decriminalize” 183 offences across 42 legislations and enhance the **ease of living and doing business in India**.
- Some Acts that are amended by the Bill include: the **Indian Post Office Act, 1898**, the **Environment (Protection) Act, 1986**, the **Public Liability Insurance Act, 1991**, and the **Information Technology Act, 2000**.

What are the Highlights of the Bill?

- **Decriminalizing Certain Offences:**
 - Under the Bill, several offences with an imprisonment term in certain Acts have been decriminalised by imposing only a monetary penalty.
 - **For example:**
 - Under the **Agricultural Produce (Grading and Marking) Act, 1937**, counterfeiting grade designation marks is punishable with imprisonment of up to three years and a fine of up to five thousand rupees. Grade designation mark indicates the quality of an article under the 1937 Act.
 - The Bill replaces this with a penalty of eight lakh rupees.
 - Under the Information Technology Act, 2000, **disclosing personal information in breach of a lawful contract** is punishable with imprisonment of up to three years, or a fine of up to five lakh rupees, or both.

Note:

- The Bill replaces this with a penalty of up to 25 lakh rupees.
- In certain Acts, **offences have been decriminalised by imposing a penalty instead of a fine.**
 - For instance, under the Patents Act, 1970, a person selling a falsely represented article as patented in India is subject to a fine of up to one lakh rupees.
 - The Bill **replaces the fine with a penalty, which may be up to ten lakh rupees.** In case of a continuing claim, there shall be an additional penalty of one thousand rupees per day.
- **Revision of Fines and Penalties:**
 - The Bill **increases the fines and penalties for various offences in the specified Acts.**
 - Further, **these fines and penalties will be increased by 10%** of the minimum amount every three years.
- **Appointing Adjudicating Officers:**
 - As per the Bill, the **central government may appoint one or more adjudicating officers** for the purpose of determining penalties. The adjudicating officers may: (i) summon individuals for evidence, and (ii) conduct inquiries into violations of the respected Acts.
- **Appellate Mechanisms:**
 - The Bill also **specifies the appellate mechanisms for any person aggrieved by the order** passed by an adjudicating officer.
 - For instance, in the Environment (Protection) Act, 1986, appeals may be filed with the National Green Tribunal within 60 days from the order.

Why has the Bill been Introduced?

- **Rise in Criminal Cases:**
 - For decades, scholars of law have been concerned that criminal law has grown unprincipledly.
 - As per the National Judicial Data Grid, of the 4.3 crore pending cases, nearly 3.2 crore cases are in relation to criminal proceedings.
- **Political Motives:**
 - As opposed to punishing wrongful conduct, **criminalization often becomes a tool for governments to project a strong image.**

- Governments offer little in the way of justifications to support such decisions. This phenomenon has been termed “overcriminalisation” by scholars.
- **Overcrowding of Prisons:**
 - As per the **National Crime Records Bureau’s** Prison Statistics of 2021, a total of 5.54 lakh prisoners were confined in prisons against a capacity of 4.25 lakh.

What is the Scope of the Bill?

- The Bill might undertake ‘**quasi-decriminalisation**’.
- The Observer Research Foundation’s report titled Jailed for Doing Business found that there are more than 26,134 imprisonment clauses in a total of 843 economic legislations, rules and regulations which seek to regulate businesses and economic activities in India.
 - In this light, the number of offences deregulated under the Bill seems to be a mere drop in India’s regulatory framework.
- The **regulatory offences to be considered for ‘decriminalisation’ need to be prioritised** not only from the point of view of the ease of doing business but also from the points of view of the ills that plague our criminal justice system itself.
- The bill conforms to the understanding of the government that decriminalization should be limited to regulatory domains.

Amendments to the Co-operative Societies Act

Why in News?

- Recently, responding to the demands by the Opposition, the Lok Sabha has referred the **Multi-State Co-operative Societies (Amendment) Bill 2022** to a joint **committee of Parliament.**
- The Bill is aimed at **overhauling the Multi-State Cooperative Societies Act, 2002**, which was enacted 20 years ago.

What is a Cooperative Society?

- **About:**
 - Cooperatives are organizations **formed at the grassroots level by people to harness the power of collective bargaining** in the marketplace.

Note:

- This can mean **different kinds of arrangements, such as using a common resource or sharing capital, to derive a common gain** that would otherwise be difficult for an individual producer to get.
- In agriculture, cooperative dairies, sugar mills, spinning mills etc. are formed with the **pooled resources of farmers who wish to process their produce.**
 - Amul is perhaps the **best-known cooperative society in India.**
- **Jurisdiction:**
 - Cooperatives are **a state subject under the Constitution**, meaning they come under the state governments' jurisdiction, but there are **many societies whose members and areas of operation are spread across** more than one state.
 - For example, most sugar mills along the districts on the **Karnataka-Maharashtra border procure cane from both states.**
 - Cooperatives of more than one state are registered under the **Multi-State Co-operative Societies Act (MSCS) of 2002 Act.**
 - Their board of directors has **representation from all states** they operate in.
 - Administrative and financial control of these societies **is with the central registrar, with the law making it clear that no state government official can wield any control over them.**

What is the Need for Amendment?

- Since 2002, many **changes have taken place** in the field of cooperatives. At that time, Cooperation was a department under the Ministry of Agriculture. However, in July 2021, the government carved out a **separate Cooperation Ministry.**
- **Part IXB** was inserted in the **Constitution via 97th Constitutional Amendment Act 2011.** In view of the insertion of Part IXB, it has become imperative to amend the Act.
 - **Under 97th Amendment:**
 - The right to form cooperative societies was included as **Right to Freedom (Article 19 (1)).**
 - **Promotion of Cooperation societies** was inserted as one of the DPSPs (**Article 43-B**).

- Further, developments over the years also necessitated changes in the Act so as to strengthen the co-operative movement in the multi-State co-operative societies.

What are the Proposed Amendments?

- **Merger of Cooperatives:**
 - The Bill provides for the **merger of “any co-operative society”** into an existing MSCS by a resolution passed by **majority (at least 2/3rd) of the members present and voting** at a general meeting of such society.
 - **At present, only MSCS can amalgamate** themselves and form a new MSCS.
- **Co-operative Election Authority:**
 - The Bill seeks to establish a **“Co-operative Election Authority”**, with a view to bring **“electoral reforms” in the co-operative sector.**
 - The Authority shall consist of a Chairperson, a Vice-Chairperson and a maximum of 3 more members to be appointed by the Centre.
 - All the members **will hold office for 3 years or until they attain the age of 65 years** (whichever is earlier) and **shall be eligible for re-appointment.**
- **Stricter Punishments:**
 - **The Bill seeks to increase the amount of penalty** for certain offences.
 - If the board of directors or officers receive any unlawful gains while transacting matters related to such society, they will be punishable with imprisonment for a **term which shall not be less than one month but which may extend to one year or with fine.**
- **Cooperative Ombudsman:**
 - The government has proposed to appoint **one or more “Co-operative Ombudsman”** with a territorial jurisdiction for inquiring into the complaints made by the members.
 - The **Co-operative Ombudsman will have the powers of civil court** in summoning and examination.
- **Rehabilitation and Development Fund:**
 - The Bill also seeks the **“establishment of the Co-operative Rehabilitation, Reconstruction and Development Fund”** for revival of “sick MSCS”.
 - It also proposes to insert a new section **70A relating to “concurrent audit” for MSCSs** having an annual turnover or deposit of more than the amount as determined by the Central Government.

Note:

What are the Criticisms of the Proposed Bill?

- The Opposition members in the Lok Sabha have argued that the bill seeks to **“take away” state governments’ rights**.
- Some of the objections are based on the fact that cooperative societies are a state subject. **Entry 43 of the Union List (7th Schedule)** makes it clear that co-operative societies do not come in the Centre’s domain.
 - **Entry 43 says** - “Incorporation, regulation and winding up of trading corporations, including banking, insurance and financial corporations, **but not including co-operative societies”**.”

Kerala University Laws (Amendment) Bills

Why in News?

Recently, Kerala Assembly passes University Laws (amendment) Bills to amend laws relating to the **governance of State universities and remove the Governor as the Chancellor of State universities**.

What is the Background?

- The Governor and the State Government of Kerala had been at loggerheads for months now.
- It got worse when the Governor **denied assent to the controversial Lok Ayukta (Amendment) and University Laws (Amendment) Bills** earlier passed by the State Assembly.
- The worsening relationship between the State Government and governor reached a tipping point with the **Supreme Court** order invalidating APJ Abdul Kalam Technological University (KTU) Vice-Chancellor’s (VC) appointment on the grounds **that it violated University Grants Commission (UGC) regulations**.
- Following this, the governor had **sought the resignations of 11 other VCs on the ground that the government had appointed them through the same process deemed unlawful by the Supreme Court**.

What are the University Laws (Amendment) Bills?

- The proposed legislation will **amend the statutes of 14 universities established by legislative Acts in Kerala and remove the Governor as the Chancellor of those universities**.

- The Bills will supplant the **Governor and give the government power to appoint eminent academicians as Chancellors** of various universities, thus ending the Governor’s watchdog role in university administration.
- The Bills also provide **provision to limit the term of the appointed chancellor to five years**. However, it also says that the **serving chancellor can be reappointed for another term**.

What stands in Favour and Against the Proposition?

- **Favour**
 - Earlier UGC Guidelines used to be mandatory for Central universities and “partially mandatory and partially directive” for State universities, had been **made legally binding for all universities by way of recent rulings by the Supreme Court**.
 - Such precedence pointed towards a **scenario in which the legislative powers of the Assembly on all subjects on the Concurrent List (of the Constitution) could be undermined** through a subordinate legislation or an executive order issued by the Centre.
 - It is said that the bill was brought in order to avoid legal tangles in future.
- **Against:**
 - If Chancellors were appointed by the Government, they would be indebted to the ruling front, thus leading to the erosion of Universities’ autonomy.
 - It may facilitate appointment of people **close to the ruling front**.
 - This will lead to a scenario in which the **governor can appoint only those who are close to the government**.

What is the Procedure for Appointing a Vice-Chancellor under UGC rules?

- According to the UGC Regulations, 2018, the VC of a university, in general, is appointed by the **Visitor/Chancellor, from a panel of three to five names** recommended by the duly constituted Search cum Selection Committee.
- A visitor is empowered to call for a set of fresh names in case of dissatisfaction with the given panel.
- In Indian universities, the **President of India is the ex-officio Visitor of all the Central Universities**, and the **Governor of the respective states is the Chancellor of all the state universities**.

Note:

- Necessarily this system is not uniform in all the universities. As far as the procedures adopted by different states are concerned, they vary.

What are the Governor's and President's Powers related to Universities?

➤ State Universities:

- While as Governor he functions with the aid and advice of the Council of Ministers, as Chancellor he acts independently of the Council of Ministers and takes his own decisions on all University matters.

➤ Central Universities:

- Under the Central Universities Act, 2009, and other statutes, the President of India shall be the Visitor of a central university.
- With their role limited to presiding over convocations, Chancellors in central universities are titular heads, who are appointed by the President in his capacity as Visitor.
- The Vice Chancellor too are appointed by the Visitor from panels of names picked by search and selection committees formed by the Union government.
- The Act adds that the President, as Visitor, shall have the right to authorise inspections of academic and non-academic aspects of the universities and also to institute inquiries.

Appropriation Bill

Why in News?

Recently, the Union Finance Minister moved the Appropriation (No.5) Bill, 2022, and Appropriation (No.4) Bill, 2022, in the Rajya Sabha.

- The bill **authorized payment and appropriation of certain further sums from and out of the Consolidated Fund of India** for the services of the financial year 2022-2023 for consideration and return.

What is an Appropriation Bill?

➤ About:

- The Appropriation Bill **gives power to the government to withdraw funds from the Consolidated Fund of India** for meeting the expenditure during the financial year.

- As per **Article 114 of the Constitution**, the government can withdraw money from the Consolidated Fund only after receiving approval from Parliament.
- The amount withdrawn is used to meet the current expenditure during the financial year.

➤ Procedure Followed:

- The Appropriation Bill is **introduced in the Lok Sabha** after discussions on Budget proposals and Voting on Demand for Grants.
 - The defeat of an Appropriation Bill in a parliamentary vote would lead to the resignation of a government or a general election.
- Once it is passed by the Lok Sabha it is sent to the Rajya Sabha.
 - **Rajya Sabha has the power to recommend any amendments in this Bill.** However, it is the prerogative of the Lok Sabha to either accept or reject the recommendations made by the Rajya Sabha.
- After the bill receives assent from the president it becomes an Appropriation act.
 - The unique feature of the Appropriation Bill is its automatic repeal clause, whereby the Act gets repealed by itself after it meets its statutory purpose.
- The government **cannot withdraw money from the Consolidated Fund of India till the enactment of the appropriation bill.** However, this takes time and the government needs money to carry on its normal activities. To meet the immediate expenses the **Constitution has authorised the Lok Sabha to make any grant in advance for a part of the financial year.** This provision is known as the '**Vote on Account**'.
 - **A vote on account is defined in Article 116 of the Indian Constitution.**
 - During an election year the Government either opts for 'interim Budget' or for 'Vote on Account' as after the election the Ruling Government may change and so the policies.
- **Amendment:**
 - No amendment can be proposed to an Appropriation Bill which will have the effect of varying the amount or altering the destination of any grant so made or of varying the amount of any expenditure charged on the Consolidated Fund of India, and the decision of the **Lok Sabha Speaker** as to whether such an amendment is admissible is final.

Note:

What is the Difference between Appropriation Bill and Finance Bill?

- While the **Finance Bill** contains provisions on financing the expenditure of the government, an Appropriation Bill specifies the quantum and purpose for withdrawing money.
- Both appropriation and finance bills are classified as **money bills** which do not require the explicit consent of the Rajya Sabha. The Rajya Sabha only discusses them and returns the bills.

What is the Consolidated Fund of India?

- It was constituted under Article 266 (1) of the Constitution of India.
- It is made up of:
 - All revenues received by the Centre by way of taxes (Income Tax, Central Excise, Customs and other receipts) and all non-tax revenues.
 - All loans raised by the Centre by issue of Public notifications, treasury bills (internal debt) and from foreign governments and international institutions (external debt).
- All government expenditures are incurred from this fund (except exceptional items which are met from the Contingency Fund or the Public Account) and no amount can be withdrawn from the Fund without authorization from the Parliament.
- The **Comptroller and Auditor-General of India (CAG)** audits the fund and reports to the relevant legislatures on the management.

What are the Stages of Budget in Parliament?

- Presentation of Budget.
- General discussion.
- Scrutiny by Departmental Committees.
- Voting on Demands for Grants.
- Passing an Appropriation Bill.
- Passing of Finance Bill.

Anti-Maritime Piracy Bill

Why in News?

Recently, **Rajya Sabha** passed the **Anti-Maritime Piracy Bill** which the government said would provide an effective legal instrument to combat **Maritime Piracy**.

- The **security of sea lanes of communication** is critical as more than 90% of India's trade takes place by sea routes and more than 80% of the country's **hydrocarbon requirements** was sea-borne.

What are the Key Features of the Bill?

- **About:**
 - The Bill provides for **prevention of maritime piracy** and **prosecution of persons** for such piracy-related crimes.
 - It will apply to all parts of the sea adjacent to and beyond the limits of the **Exclusive Economic Zone** of India, i.e., beyond 200 nautical miles from the coastline.
 - The Bill brings into law the **United Nations Convention on the Law of the Sea (UNCLOS)**.
- **Definition of Piracy:**
 - It defines **piracy** as any illegal act of violence, detention, or destruction committed against a ship, aircraft, person or property, for private purposes, by the crew or passengers of a private ship or aircraft. Such acts may be carried out in the **high seas** (beyond the Exclusive Economic Zone of India) or **any place outside the jurisdiction of India**.
 - **Inciting or intentionally facilitating** such acts would also qualify as piracy.
 - It includes any other act that is considered as **piratical under international law**.
 - Piracy also includes **voluntary participation** in the operations of a pirate ship or aircraft used for piracy.
- **Penalties:**
 - An act of piracy will be punishable with:
 - **Imprisonment for life**; or
 - **Death**, if the act of piracy causes or attempts to cause death.
 - An attempt to commit, aid, support, or counsel an act of piracy will be **punishable with up to 14 years of imprisonment**, and a fine.
 - Participating, organising, or directing others to participate in an act of piracy will also be **punishable with up to 14 years of imprisonment**, and a fine.
 - Offences will be considered **extraditable**. This means that the accused can be **transferred to any country for prosecution** with which India has signed an **extradition treaty**.

Note:

- In the absence of such treaties, offences will be extraditable on the basis of reciprocity between the countries.
- **Jurisdiction of the Courts:**
- The central government, in consultation with the Chief Justice of the concerned **High Court**, may notify **Sessions Courts** as the Designated Courts under this Bill.
 - The Designated Court will try offences committed by:
 - A person in the **custody of the Indian Navy or Coast Guard**, regardless of his nationality.
 - A citizen of India, a resident foreign national in India, or a stateless person.
 - The Court will **not have jurisdiction over offences committed on a foreign ship** unless an intervention is requested by:
 - The country of origin of the ship.
 - The ship-owner.
 - Any other person on the ship.
 - Warships and government-owned ships employed for non-commercial purposes will **not be under the jurisdiction of the Court**.

What are the Key Challenges in the Bill?

- Under the Bill, if a person, while committing an act of piracy causes or seeks to cause death, **he will be punished with death**.
- This implies a **mandatory death penalty** for such offences.
 - The **Supreme Court** has held that mandatory death penalty for any offence is **unconstitutional as it violates Articles 14 and 21 of the Constitution**.
 - However, **Parliament** has passed laws providing for mandatory death penalty for some offences. **Example:** Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 (SC/ST Act).
 - The Bill provides for imprisonment of up to 14 years if a person participates in an act of piracy. Committing an act of piracy (which includes voluntarily participating in the operation of a pirate ship or aircraft) is punishable with life imprisonment.
 - As these **circumstances may overlap**, it is unclear how the punishment would be determined in such cases.
- The Bill will apply to all parts of the sea adjacent to and **beyond the limits of the Exclusive Economic**

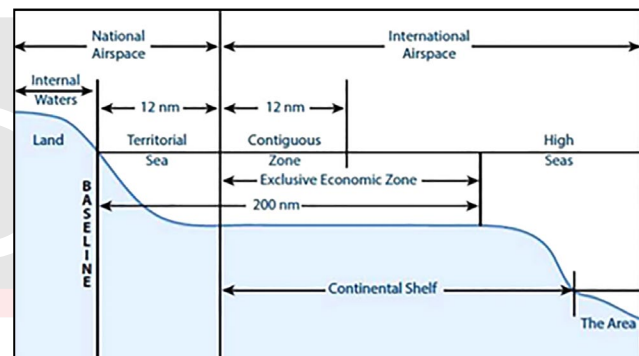
Zone (EEZ) of India, i.e., beyond 200 nautical miles from the coastline.

- The question is whether the Bill should cover the EEZ also, that is the **area between 12 nautical miles and 200 nautical miles** (from the coastline of India).

What is the UN

Convention on the Law of the Sea?

- **The UNCLOS, 1982** is an international agreement that establishes the **legal framework for marine and maritime activities**.
- It is also known as **Law of the Sea**. It divides **marine areas into five main zones** namely- Internal Waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas.



- It is the only international convention which stipulates a **framework for state jurisdiction in maritime spaces**. It provides a **different legal status** to different maritime zones.
- It provides the **backbone for offshore governance** by coastal states and those navigating the oceans.
- It not only zones coastal states' offshore areas but also provides **specific guidance for states' rights and responsibilities** in the five concentric zones.
- In 1995, **India ratified the UNCLOS**.

Ministry of Panchayati Raj Year End Review 2022

Why in News?

Recently, the year-end-review of the **Ministry of Panchayati Raj for the year 2022** was released. What are the Key Achievements of the Ministry?

Note:

- **SVAMITVA Scheme:**
 - **About:**
 - **Survey of Villages and Mapping with Improved Technology in Village Areas (SVAMITVA)** scheme was launched by the Prime Minister on **National Panchayati Raj Day 2020** to enable economic progress of Rural India by providing “**Record of Rights**” to every rural household owner.
 - **Achievements:**
 - As on December 2022, drone flying has been completed in around 2 lakh villages.
 - **Drone flying** has been saturated in Dadra and Nagar Haveli and Daman and Diu, Delhi, Haryana, Lakshadweep Islands, Puducherry, Uttarakhand, Goa, Andaman and Nicobar Islands.
 - **Property cards** have been prepared for all the Inhabited villages of Haryana and Uttarakhand.
- **e-Gram Swaraj e-Financial Management System:**
 - **e-Gram Swaraj** is a Simplified Work Based Accounting Application for **Panchayati Raj**.
 - It assists in enhancing the **credibility of Panchayat** through inducing greater **devolution of funds to Panchayati Raj Institutions**. It brings better transparency through decentralized planning, progress reporting and work-based accounting.
- **Geo-Tagging of Assets:**
 - Ministry has developed “**mActionSoft**”, a mobile based solution to help in capturing photos with **Geo-Tags** (i.e., GPS Coordinates) for the works which have assets as an output.
 - As of December 2022, 2.05 lakh photographs of the assets have been uploaded by the Gram Panchayats for the activities taken under **Fifteen Finance Commission** in 2022.
- **Citizen Charter:**
 - In order to focus on the commitment of the Panchayati Raj Institutions (PRIs) towards its Citizens in respects of Standard of Services, the Ministry has provided platform to upload Citizen Charter document with the slogan “**Meri Panchayat Mera Adhikaar – Jan Sevaayein Hamaare Dwaar**”.
 - Till December 2022, 2.15 lakh Gram Panchayats have uploaded their approved Citizen Charter and offering 952 services to citizen out of which 268 services are delivered through online mode.
- **Audit Online:**
 - In order to provide **audited reports of Panchayat accounts in the public domain**, the Ministry had conceptualized the application “**AuditOnline**” for carrying out **online audits of Panchayat accounts** pertaining to Central Finance Commission Grants.
 - It not only facilitates the auditing of accounts but also provisions for maintaining digital audit records pertaining to audits that have been carried out.
- **Gram Urja Swaraj:**
 - The Ministry has started the **Gram Urja Swaraj initiative**, with an aim to promote adoption of **renewable energy** at Gram Panchayat level.
 - The Ministry has also launched the **Gram Urja Swaraj Portal in May 2022**, to capture the inclination of Panchayati Raj Institutions (PRIs) towards adoption of renewable energy.
- **Revamped Rashtriya Gram Swaraj Abhiyan (2022-23 to 2025-26):**
 - The focus of the scheme of **Revamped RGSA** is on **re-imagining Panchayati Raj Institutions** as vibrant centers of local self-governance with special focus on **Localization of Sustainable Development Goals (LSDGs)** at grassroot level adopting **thematic approach through concerted and collaborative efforts** of Central Ministries and State Line departments and other Stakeholders with ‘**Whole of Government and Whole of Society**’ approach.
 - The Revamped RGSA will extend to all States and Union Territories (UTs) of the country.
 - As of December 2022, an amount of Rs.435.34 crore has been released to 11 State and other implementing agencies and **more than 13 lakh Elected Representatives, Functionaries** and & other stakeholders of Panchayats were **provided various and multiple trainings** for which details have been uploaded on Training Management Portal.

Year-End- Review of DST

Why in News?

Recently, the year-end-review of the **Department of Science & Technology (DST)** under the Ministry of Science & Technology was released.

What are the Major Achievements of DST During 2022?

- **India’s Ranking in Global S&T Indices:**

Note:

- India is now placed at 40th position among the top innovative economies globally as per **Global Innovation Index (GII) 2022**.
- The country remains among the top 3 countries in scientific publications as per the **National Science Foundation (NSF) database** and also in terms of **no of PhDs, in size of the Higher Education System**; as well as in terms of number of Start-ups.
- **Creating a Robust Start-up & Innovation Ecosystem:**
 - DST has been a pioneer in establishing a network of Technology Business Incubators (TBI) and **Science & Technology Entrepreneur's Parks (STEP)** across the country under the **National Initiative for Developing and Harnessing Innovations (NIDHI) program**.
 - **New PRAYAS centres have been supported during 2022** along with support to other ongoing PRAYAS centres across the country that are **supporting young innovators to turn their ideas into prototypes**.
- **New Heights in Supercomputing Capacity:**
 - **New installations of high-performance computers at five institutes** (IIT Kharagpur, NIT Trichy, IIT Gandhinagar, IIT Guwahati, IIT Mandi).
- **Development in Cyberphysical Domains:**
 - The Union Cabinet approved the **National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS) in 2018** for a period of five years, to be implemented by the DST.
 - The Mission is being **implemented through 25 Technology Innovation Hubs (TIHs)** created at reputed academic institutes across the country.
 - **Some of the new innovations include:**
 - **XraySetu:** AI researchers at **ARTPARK** developed an AI-driven platform called XraySetu that helped Chest **X-ray** interpretation of images.
 - **RAKSHAK:** A team of scientists from IIT Bombay has developed a tapestry method for screening **Covid-19** under **Remedial Action, Knowledge Skimming, and Holistic Analysis of Covid-19 (RAKSHAK)**, an effort supported by the Technology Innovation Hub (TIH) at IIT Jodhpur.
- **India's Position on International S&T Engagement:**
 - India assumes the **G20 Presidency** recently and will convene the G20 Leaders' Summit **for the first time in the country in 2023**.
 - As part of the same, DST takes the responsibility of coordinating the **activities of Science-20 (S20) and Research Innovation Initiative Gathering (RIIG) Engagement Groups** during India's G20 Presidency in 2023.
 - **India joins hands with Finland to establish Virtual Network Centre in Quantum Computing** to jointly develop 20 qubits superconducting-based Quantum Computer in 1st phase and further **scale it up to 54 qubits in second phase**.
- **Geospatial Data, Infrastructure & Technology:**
 - Recently, the **2nd United Nations World Geospatial Information Congress (UNWGIC)** on the theme **"Geo-Enabling the Global Village: No one should be left behind"** was held successfully in Hyderabad.
 - Survey of India (SoI) the **National Survey and Mapping Organisation** of the country has **successfully carried out drone surveys of rural abadi areas of 2,00,000+ villages as part of the SVAMITVA** (Survey of villages and mapping with improvised technology in village areas).
 - **Online maps portal** provides various digital geospatial products (free as well as at fair & transparent price) to the users.
 - **High-resolution mapping for major river basins** is also being carried out to provide the high resolution **GIS (Geographic Information System)** and **Digital Elevation Model (DEM)** for improved flood hazard mapping and other planning purposes.
- **Accessible Scientific Infrastructure for All Stakeholders:**
 - Four new Universities under '**Promotion of University Research and Scientific Excellence (PURSE)**' and 65 Departments in various academic organizations and universities were supported under the **Fund for Improvement of S&T Infrastructure (FIST)**.
- **Solutions for Energy & Environment Challenges:**
 - A **first-of-its-kind Distributor System Operator (DSO) report has been prepared** that can help in transforming the operational and financial state of the Indian power sector and **boost private sector's confidence attracting much-needed investment and innovation in the industry**.
 - A real-time pollution monitoring photonic system, **Air Unique Quality Monitoring System (AUM)** has been developed which is **capable of real-time remote monitoring of all air quality parameters**, with high sensitivity and accuracy simultaneously, at a very high frequency of sampling.

Note:

- The **first Indigenously Designed** High Ash Coal Gasification Based **Methanol Production Plant** has been opened in Hyderabad.
 - With this, Government owned engineering firm BHEL (Bharat Heavy Electricals Limited) has **successfully demonstrated a facility to create methanol from high ash Indian coal.**
- **Expansion to Newer Areas:**
 - The Department has been implementing **two National missions on Climate Change.** Four new **State Climate Change Cells (SCCCs)** have been established in the States of Goa, UT of Chandigarh and Jharkhand and Uttar Pradesh.
- **Career Opportunities for Women Scientists:**
 - DST is encouraging meritorious girls to pursue higher education and career in underrepresented **Science Technology Engineering and Mathematics (STEM)** areas, through its major initiative '**Vigyan Jyoti**'.
 - Women scientists under the **Women Scientists Scheme-A (WOS-A)** pursue research after **breaking into careers in 5 subject areas of Basic and Applied Sciences.**
 - The **SERB-POWER mobility grant** was introduced to provide an opportunity for women scientists to visit leading institutions/universities across the globe for a period of 1-3 months
- **Conserving the Heritages:**
 - Under the **Science and Heritage Research Initiative (SHRI)** programme of DST, the **soundproofing qualities of the Pattamadai mat**, a mat made by weaving or interlacing **korai grass with cotton threads**, has been explored for use in noise guarding classrooms as well as recording studios against external noise disturbances.
 - This can **increase the demand for this traditional art of Tirunelveli**, Tamil Nadu.
- **Research Capabilities in State Universities & Colleges:**
 - A dedicated scheme, **State University Research Excellence (SERB-SURE)** has been launched by Science and Engineering Research Board (SERB) to **create a robust R&D ecosystem in state universities and colleges** including the private ones.
- **Good Laboratory Practice (GLP):**
 - DST is implementing the **National GLP Compliance Monitoring Programme** for certification of Indian

Test Facilities/laboratories, conducting non-clinical health and environment safety studies in accordance with the **Organisation for Economic Co-operation and Development (OECD) Principles.**

➤ **Policy Formulation in Key Areas**

- Brought out two guidelines during the year and two major policies are in the process of finalisation.
 - **Scientific Research Infrastructure Sharing maintenance and Networks (SRIMAN)** guidelines
 - **Scientific Social Responsibility (SSR)** Guidelines
 - **Science, Technology and Innovation (STI) Policy**
 - **National Geospatial Policy**

Year-End- Review of Department of Consumer Affairs 2022

Why in News?

Recently, the year-end-review of the **Department of Consumer Affairs** under the **Ministry of Consumer Affairs, Food and Public Distribution** for the year 2022 was released.

What are the Key Achievements of the Department?

- **Scheme for strengthening of Price Monitoring Mechanism:**
 - **Price Monitor Cell** monitors **wholesale and retail prices** of twenty-two essential commodities including Rice, Wheat, Atta, Gram Dal etc. based on data collected from 179 market centres spread across the country representing North, West, East, South and North-eastern regions of the country.
 - During the year, **57 price reporting centers were added.** Number of price reporting centers increased from 122 on 1st January 2021 to **179 till December 2022.**
- **Price Stabilization Fund (PSF):**
 - PSF is a **central sector scheme** for providing working capital and other incidental expenses for **procurement and distribution** of agri-horticultural commodities.
 - During 2022, **12.83 Lakh Metric Tonnes (LMT)** of pulses has been Transferred from Price

Note:

Support Scheme (PSS), Department of Agriculture Cooperation & Farmers Welfare (DACFW) to PSF, Department of Consumer Affairs (DoCA) /Procured/ Import under PSF.

➤ **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY):**

- During 2022, Rs. 35.59 crore were released to States/Union Territories as reimbursement for expenditure on intra-State movement & handling, fair price shop dealer's margin and Additional Margin Distribution through Point of Sale (PoS) Device for distribution of pulses under **PMGKAY** and **Atma Nirbhar Bharat Scheme**.

➤ **Consumer Awareness:**

- The new mascot of the DoCA "Jagriti" was launched to strengthen the campaign titled "Jago Grahak Jago" to reinforce top-of-mind awareness with all the consumers.

➤ **Bureau Of Indian Standards (BIS):**

- **BIS Act 2016** came into force with effect from 12th October 2017, subsequently **Governing Council was reconstituted**.
 - The total number of standards in force, as on 25th November 2022 is 21,833.
- BIS (India) is holding the chairship of the **South Asian Regional Standards Organization (SARSO)** Technical Management Board for a **three-year term from Oct 2020 to Oct 2023** and Board of Conformity Assessment (BCA).
- **Management System Certification:**
 - BIS operates 20 Management Systems Certification Schemes, In 2021-22, two new more schemes i.e., **Occupational Health & Safety Management System** and **Energy Management System** have been accredited by **National Accreditation Board for Certification Bodies (NABCB)**.

➤ **Consumer Protection:**

- **World Consumer Rights Day:**
 - The **World Consumer Rights Day** was celebrated on 15th March 2022 at Vigyan Bhawan, New Delhi.
 - The theme of the event was "Fair Digital Finance".
- **Settlement of cases through National Lok Adalat:**
 - **National Legal Service Authority (NALSA)** along with other Legal Service institutions conducts **Lok Adalats**.

- DoCA wrote to all State/UT Govts. for referring pending consumer cases to be taken up through National Lok Adalat.

➤ As a result, 5,930 cases were settled on a single day on 12th December, 2022 through Lok Adalat across the Country.

○ **Consumer Protection Act, 2019:**

- **Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022** were notified under the **Consumer Protection Act, 2019**

○ **E-Filing:**

- A Consumer Commission online application portal named "edaakhil.nic.in" has been developed to facilitate the consumers/advocates to file the consumer complaint online through the e-Daakhil portal from home or anywhere at their own comfort.

○ **Fake Reviews:**

- **BIS** launched the framework titled Indian Standard (IS) 19000:2022 '**Online Consumer Reviews — Principles and Requirements for their Collection, Moderation and Publication**'.
 - The standards will be applicable to every online platform which publishes consumer reviews.
 - The standard **provides for responsibilities of organization** including developing a code of practice, and necessary stipulations for terms and conditions like accessibility, criteria, and ensuring content does not contain financial information etc.

➤ **Legal Metrology:**

○ **Amendment to Rules:**

- **The Legal Metrology (Packaged Commodities) Rules, 2011** were amended to allow the electronic products industries to **declare certain mandatory declarations in the digital form through the QR Code** for a period of one year, if not declared in the package itself.
 - This permission is to enable greater use of technology in this digital era to declare the mandatory declaration through the QR Code which can be scanned to view the declarations.

Note:

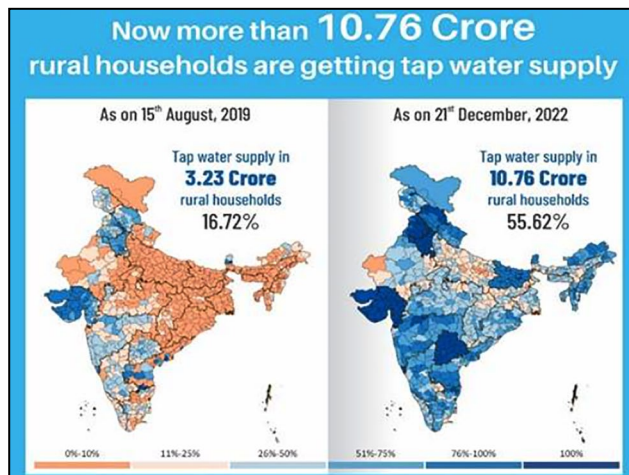
Department of Drinking Water and Sanitation Year End Review 2022

Why in News?

Recently, the year-end-review of the **Department of Drinking Water and Sanitation** under the Ministry of Jal Shakti; **Jal Jeevan Mission (JJM) & Swachh Bharat Mission - Grameen (SBM - G)** for the year 2022 was released.

What are the Key Achievements of the JJM?

➤ Coverage Under Jal Jeevan Mission:



- As on 21st December 2022, under the Jal Jeevan Mission, **more than 10.76 Crore (55.62%) of rural households** are being provided with tap water connection in adequate quantity, of prescribed quality on a regular basis.
- Four States namely **Goa, Telangana, Gujarat, and Haryana** and 3 Union Territories of **Puducherry, Daman & Diu and Dadra & Nagar Haveli and Andaman & Nicobar Islands**, reported as “**Har Ghar Jal**”, i.e. Every rural household has provision of tap water supply.
 - Goa becomes the **First ‘Har Ghar Jal’ Certified State** & Dadra & Nagar Haveli and Daman & Diu becomes the **First ‘Har Ghar Jal’ Certified Union Territory (UT)** in India in August, 2022.
 - **Burhanpur District of Madhya Pradesh** becomes the first ‘**Har Ghar Jal’ certified district** in India in July, 2022.

➤ Har Ghar Jal Certification:

Har Ghar Jal* Status

Certified States/ UTs : Goa, A & N Islands, Puducherry, D&NH and D&D, Haryana

Reported States/ UTs : Telangana, Gujarat

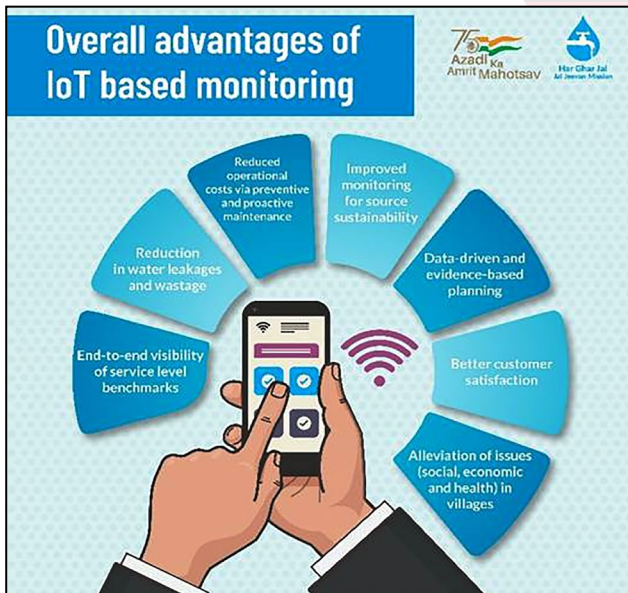
Districts		Blocks		Panchayats		Villages	
Reported	Certified	Reported	Certified	Reported	Certified	Reported	Certified
125	56	1,353	413	77,260	34,452	1,61,704	49,928

* Har Ghar Jal means all households in that unit are provided with tap water supply

- Once a village is declared as “**Har Ghar Jal**”, the **Gram Panchayat** of that village conducts a special Gram Sabha and passes a resolution with the concurrence of all the village members that all the households, schools, Anganwadi, and public institutions in their village have functional tap connection and thus declare themselves as “**Har Ghar Jal Certified**”.
- **Coverage of Potable Tap Water to JE-AES Affected Districts:**
 - The government of India accords priority to **Japanese Encephalitis (JE)-Acute Encephalitis Syndrome (AES)** affected Districts to ensure potable tap water supply in all the households under Jal Jeevan Mission.
 - In 61 districts affected with JE/AES across 5 states, tap water connection **increased from 8 lakh (2.69%) to 147.14 lakh (49.29%) households**, resulting in improvement in the health profile of the rural population of these areas.
- **Status of Water Quality Monitoring and Surveillance:**
 - There are a total of **2,074 water testing laboratories** in the country. Of these, 1,005 are **National Accreditation Board for Testing and Calibration Laboratories (NABL)** accredited.
- **Implementation Support Agencies (ISAs):**
 - The States/ UTs are extending support to the Panchayats by engaging **Implementation Support Agencies (ISAs)** to facilitate constitution of **Village Water Sanitation Committee (VWSC)**, under participatory rural appraisal for community mobilization, support in preparing Village Action Plan and carry out activities post infrastructure construction.
 - About 14 thousand ISAs have been engaged, which are actively working in the field.
- **National WASH Expert:**

Note:

- **National Centre for Drinking Water, Sanitation, and Quality** has been entrusted with the task of empanelment and deployment of **National WASH Experts** for ground truthing and technical assistance to States in the implementation of the **Jal Jeevan Mission (JJM)**.
- During 2022, 62 teams have visited around 1,035 villages for ground truthing of the implementation work done under JJM.
- **Use of Technologies for Drinking Water Supply and Water Quality:**
 - JJM focuses on various technologies for the community-led implementation of:
 - **Source sustainability measures** such as aquifer recharge, **rainwater harvesting**, increased storage capacity of water bodies, reservoirs, desilting, etc. to improve the lifespan of water supply systems.
 - Technologies like **Internet of Things (IoT)** for **Supervisory Control and Data Acquisition (SCADA)**, remote sensing, and design software have been used in building **climate resilience through water accounting**, water quality control, water use efficiency, water resource planning, and impact assessment.



- **Grievance Redressal Mechanism:**
 - **Grievance Redressal Cell** has been constituted in the Department to address the grievances related to the water supply. People are lodging their complaint through the **Centralized Public grievances Redress and Monitoring System (CPGRAMS)**.

- **Jeevan Survekshan (JJS) Toolkit:**
 - The **Vice President of India** launched '**Jal Jeevan Survekshan**' toolkit and dashboard on 21st October, 2022.
 - The purpose of Jal Jeevan Survekshan 2023 is to incentivize States/ Districts functionaries to strive for better performances and improved water service delivery in rural areas.

What are the Key Achievements of Swachh Bharat Mission (Grameen)?

- **About SBM (G):**
 - **Swachh Bharat Mission (Grameen)**, a **Centrally Sponsored Scheme**, was launched by Prime Minister 2nd October, 2014, with the main aim to make the country **Open Defecation Free (ODF)** by 2nd October, 2019, the 150th birth anniversary of **Mahatma Gandhi**, by providing access to toilets to all the rural households in the country.
 - All the villages in the country had declared themselves ODF by 2nd October, 2019.
- **Achievements:**
 - Around **1.25 lakhs villages declared Open Defecation Free (ODF)** Plus between 1st January, 2022 to 20th December, 2022.
 - To prioritize **Liquid Waste Management "Sujlam"** campaign was launched.
 - Under Sujlam 1.0 and Sujlam 2.0 campaigns, more than 23 lakh soak pits were constructed.
 - Under the **"GOBARdhan"** initiative of SBM(G), 96 community/cluster level Biogas Plants have been established since January 2022.
 - GOBARdhan's objective is to ensure cleanliness in villages and generate wealth and energy by converting bio-waste including animal waste, agri-residue into bio-slurry and biogas and to improve the lives of villagers.
 - The Department of Drinking Water and Sanitation (DDWS) is also coordinating the implementation of GOBARdhan: Waste to Wealth initiative involving various Departments/ Ministries to provide an enabling environment for the Biogas/ Compressed Biogas (CBG) sector.
- **Retrofit to Twin Pit Abhiyan:**
 - **Retrofit to Twin Pit Abhiyan** was launched by Union Minister of Jal Shakti on 2nd October 2022.

Note:

- The campaign will promote the safe disposal of faecal sludge through a simple on-site methodology of retrofitting single pit toilet to twin pit toilet.
- During the first phase of the Campaign from 2nd October - 19th November 2022, States have completed the baseline assessment of 97% villages.
- **Swachh Survekshan Grameen 2023 (SSG 2023):**
 - DDWS has launched **Swachh Survekshan Grameen (SSG) 2023** on 2nd November 2022 with an objective to create **healthy competition amongst States, Districts and Gram Panchayats** and to ascertain progress of SBM-G Phase II.
 - Under SSG 2023, assessment will be undertaken at Gram Panchayat and District level.
 - To make SSG 2023 more participatory, Gram Panchayats will undertake village self-assessment on ODF Plus parameters.

Year-End- Review of CSIR

Why in News?

Recently, the year-end-review of the **Council of Scientific & Industrial Research (CSIR)** under the Ministry of Science & Technology was released.

What are the Key Achievements of CSIR?

- **First-Ever Biofuel-Powered Flight:**
 - CSIR facilitated India's **First-Ever Biofuel-Powered Flight** paving the way for sustainable and alternative fuels when the first biofuel-powered flight was **flagged off from Dehradun to Delhi**.
 - The bio-aviation fuel was **produced indigenously by the CSIR-Indian Institute of Petroleum (IIP)** from Jatropha oil and was based on the patented technology of the institute.
- **Aroma Mission:**
 - CSIR launched the **CSIR-Aroma Mission** in 2016 which **seeks to bring about transformative change in the aroma sector** through interventions in agriculture, processing and product development for fuelling the growth of the aroma industry and **boosting rural employment**.
- **Indigenous Autoclave Technology:**
 - CSIR-National Aerospace Laboratories (NAL) has successfully developed **state-of-art Indigenous**

Autoclave Technology for processing advanced lightweight composites that are **integral to modern-day civil and military airframes**.

➤ Conversion of Plastic into Diesel:

- CSIR-IIP and GAIL (Petroleum Business Company) have **developed a technology that can convert 1 tonne of plastic waste** and other Polyolefin products **into 850 litres of the cleanest grade of diesel**.

➤ Anaerobic Gas Lift Reactor (AGR):

- CSIR- Indian Institute of Chemical Technology (IICT) has developed and patented a **high-rate biomethanation technology known as AGR** for the generation of biogas and bio manure from organic solid waste like poultry litter, food waste, press mud, cattle manure, **Organic fraction of municipal solid waste (OFMSW)**, sewage sludge etc.

➤ RENEU Technology:

- CSIR- National Environmental Engineering Research Institute (NEERI) has **developed this technology for the construction of wetlands** that are sustainable wastewater treatment processes. Restoration of Nallah with Ecological Units (RENEU) was successfully implemented as a part of the **National Mission to keep the Ganges clean** for the pilgrims during the holy festival.

➤ Drishti Transmissometer:

- CSIR-NAL has developed and transferred the technology of **Drishti Transmissometer** that has been deployed in many airports in India. The transmissometer is a **visibility measuring system, useful for safe airport operations and landings**.

➤ Head-Up Display:

- A transfer agreement for the manufacturing of a **new variant of Head-Up Display (HUD) for the Tejas Fighter Aircraft for commercial production** has been signed between CSIR-Central Scientific Instruments Organisation (CSIO), Chandigarh and Bharat Electronics Limited (BEL).

➤ Bharatiya Nirdeshak Dravya:

- **Bharatiya Nirdeshak Dravya (BND 420)** is India's first **home-grown high purity gold reference standard** developed through a collaboration among the India Government Mint (IGM), **Bhabha Atomic Research Centre (BARC)**, CSIR-NPL and National Centre for Compositional Characterisation of Materials.

➤ Shale Gas:

Note:

- CSIR-CIMFR has discovered **shale gas in two areas in the Gondwana basin in Central India and Godavari basin**. The total shale gas discovered so far in the country in these two basins is estimated to be about 63 trillion Cubic Feet (TCF).
 - It is **considered as one of the best sources of non-conventional natural gas**.
- **Portable Reading Machine (PRM):**
 - A reading device developed by CSIR-CSIO **helps the visually impaired by reading the text aloud**. The advanced reading machine named “Divya Nayan” is a stand-alone, PRM.
- **Dimethyl Ether:**
 - CSIR-NCL has set-up an indigenous process technology to create **Dimethyl Ether (DME)** from **methanol**.
 - DME is a **clean fuel with potential to replace diesel and will be a non-fossil additive to LPG gas**. This will also help the **Pradhan Mantri Ujjwala Yojana program**, by reducing LPG imports.
- **Earthquake Warning System:**
 - A **first-of-its-kind earthquake warning system** has been developed by CSIR-CSIO. The system **can sense tremors, record them and generate an SMS** to the concerned action points, in real-time.
- **Sindhu Sadhana:**
 - The first indigenously built research vessel **Sindhu Sadhana** to gather samples for **genome mapping of microorganisms in the Indian Ocean**.
 - To understand the biochemistry and the response of the ocean to **climate change**, nutrient stress and **increasing pollution**.
- **Green Crackers:**
 - CSIR-NEERI developed **Green Crackers in a bid to curb air pollution**. A green logo and QR coding system **were also launched to track manufacture & sale of counterfeit crackers**.
- **Heeng Cultivation:**
 - For the first time, CSIR- Institute of Himalayan Bioresource Technology (IHBT) introduced **asafoetida (Heeng) cultivation in the Indian Himalayan region**.
- **Kisan Sabha App:**
 - **Kisan Sabha App** has been developed by CSIR- Central Road Research Institute (CRRI) **to connect farmers to the supply chain and freight transportation management system**.
 - This portal acts as a **one-stop solution for farmers, transporters, and other entities engaged in the agriculture Industry**.
- **Ksheer Scanner:**
 - CSIR has developed a low-cost and portable **Ksheer Scanner, a technology to detect adulterated milk**.
- **Rice Variety:**
 - CSIR-Centre for Cellular and Molecular Biology (CCMB) in collaboration with the Indian Institute of Rice Research at Hyderabad has **released a new variety of rice that resists pests and is also beneficial for those with diabetes**.
 - The new Improved **Samba Masuri (ISM) rice variety is resistant to Bacterial Blight (BB)**.
- **JIGYASA:**
 - It is **one of the major initiatives taken up by CSIR at national level to widen and deepen CSIR's Scientific Social Responsibility (SSR)** by connecting school students to scientists at CSIR.
- **Purple Revolution:**
 - CSIR enabled the famed **Purple Revolution by introducing Lavender Cultivation in J&K** benefiting farming families. India from being one of the importers of Lemongrass essential oil a few years back, now **becomes one of the largest exporters in the world**.
 - Indigenous development of Tulip bulb production under the **Floriculture mission helped reduce the import of planting material**.
- **Gaon Ka Pani Gaon Mein:**
 - CSIR has led a Mission mode project for developing **Village Level Water Management (VLWM) Plans** for augmenting water resources in selected villages.
 - Mission on **High-Resolution Aquifer Mapping & Management in Arid Regions of North-Western India** has also been launched and implemented in association **with the Ministry of Jal Shakti under Jal Jeevan Mission**.
- **India's First Indigenously Developed Hydrogen Fuel Cell Bus:**

Note:

- The bus uses hydrogen fuel cells and air to generate electricity for power and can run for 600 km without stopping. **The only emission from the bus is water**, thus making it the **most environment friendly mode of transportation**.

➤ **Traditional Knowledge Digital Library (TKDL):**

- Recently, the Cabinet approved widening access of the TKDL database to users, besides patent offices, The opening up of the TKDL database to users **will drive research & development, and innovation based on India's valued heritage across diverse fields**.

➤ **Steel Slag Roads:**

- CSIR developed the **steel slag valorisation technology to convert waste steel slag as road-making aggregates**. Processed steel slag aggregates as developed through waste steel slag have been successfully utilized in the construction of **India's First Steel Slag Road in Surat**.

➤ **Maiden Flight of HANSA NG:**

- CSIR-NAL designed and developed **Hansa NG aircraft** which is an all composite two seat light trainer aircraft to be used as an ab-initio flying training aircraft for the flying clubs in India, with significant modifications on Hansa 3 aircraft to make it more useful as a trainer aircraft.
 - **HANSA-NG is an upgraded version of HANSA, which saw the first flight in 1993, and was certified in 2000.**

➤ **3D-Printed Patient-Specific Medical Implants:**

- CSIR-CSIO developed a technology for manufacturing patient-specific medical implants **for several human body parts**. The technology has been transferred to industry **for commercial production and marketing of the product**.

➤ **Connect Global Indian Scientific Community on Digital Mode:**

- CSIR has developed a virtual platform - **PRABHASS** (Pravasi Bharatiya Academic and Scientific Sampark) Portal **to connect with the global Indian S&T Diaspora** for jointly addressing societal challenges/problems.

➤ **CSIR 'Skill India Initiative':**

- This initiative **aims to equip young minds with the necessary technological skills through exposure to CSIR labs**. More than 2 lakh people have been trained under the initiative.

Department of Social Justice and Empowerment Year End Review 2022

Why in News?

Recently, the year-end-review of the **Department of Social Justice & Empowerment** for the year 2022 was released.

What are Key

Achievements of the Department?

- **Reservation to Economically Weaker Sections (EWS):**
 - **Articles 15(6) and 16(6)** were inserted in the **Constitution** vide the **Constitution 103rd Amendment Act 2019**.
 - These Articles enable the States to provide upto 10% **reservation for the EWS** in Government jobs and Government Educational Institutions.
 - The **Supreme Court of India**, in November 2022, has **upheld the validity of the Constitution 103rd Amendment Act 2019**.
 - **Nasha Mukht Bharat Abhiyan (NMBA):**
 - NMBA was launched in 2020 by the **Ministry of Social Justice & Empowerment** and is being implemented in 372 most vulnerable districts based on the findings of the first **Comprehensive National Survey** and inputs from the **Narcotics Control Bureau (NCB)**.
 - It intends to reach out to the masses and spread awareness about substance use with focus on higher educational Institution, university campuses & schools, reaching out & identifying dependent population.
 - **Achievements:**
 - Around **9.3 crore people** have been sensitized on substance use including **3 Crore Youth and 2 Crore Women**.
 - Events like '**Nashe se Azaadi- A National Youth and Students Interaction Programme**', '**Naya Bharat, Nasha Mukht Bharat**', '**NMBA Interaction with NCC**' are regularly organized to engage and connect with youth and other stakeholders.
 - **National Action Plan for Drug Demand Reduction (NAPDDR)** is a scheme under which **financial**

Note:

assistance is provided to State Governments, UT Administration, NGOs/VOs and Government Hospitals for different programmes for Drug Demand Reduction for Awareness Generation, Capacity Building, Counselling, Treatment and rehabilitation.

➤ **Pre & Post Matric Scholarship for Scheduled Castes:**

○ **National Overseas Scholarship Scheme:**

- Department of Social Justice & Empowerment (DoSJE) is implementing the **National Overseas Scholarship (NOS) for Scheduled Caste** etc. under which financial assistance is provided to selected students from **Scheduled Castes; De notified, Nomadic & Semi - Nomadic Tribes;** landless agricultural laborers and traditional artisan categories, for pursuing Masters and PhD level courses abroad.

- Number of seats under NOS has been increased from 100 to 125 with effect from 2021-22.

○ **National Fellowships for SC Students (NFSC):**

- The objective of the Scheme is to **provide fellowships in the form of financial assistance to students** belonging to Scheduled Caste category to pursue higher studies leading to M. Phil., Ph.D. in Science, Humanities and Social Science streams, in Indian Universities/ Institutions/Colleges recognized by University Grants Commission (UGC).

➤ **Pradhan Mantri Anusuchit Jaati Abhyudaya Yojana (PM AJAY):**

- It has been framed after **merging the three erstwhile schemes** namely:

- Pradhan Mantri Adarsh Gram Yojana (PMAGY)
- Special Central Assistance to Scheduled Caste Sub Plan (SCA to SCSP)
- Babu Jagjivan Ram Chatrawas Yojana (BJRCY)

○ **Developments:**

● **Grants-in-Aid Component (Erstwhile SCA to SCSP):**

- The financial Assistance has been enhanced from Rs.10,000/- to Rs. 50,000/- or 50% of the asset cost, whichever is lesser for beneficiary/ household.
- Web based portal has been developed for submission, appraisal, and approval and monitoring of Annual Action Plan through portal.

➤ **National Backward Classes Finance & Development Corporation (NBCFDC):**

- **NBCFDC** was incorporated under **Section 25 of the Companies Act 1956 in 1992** (now section 8 of Companies Act 2013) as a Company not for profit with an objective to **promote economic and developmental activities** for the benefit of **Other Backward Classes (OBCs)**.

○ **Achievements:**

- During the year 2022 (Jan-Nov 2022), NBCFDC disbursed funds of Rs. 418 Crores for more than 1.2 lakh beneficiaries.

➤ **Dr. Ambedkar Foundation (DAF):**

- DAF has launched a new scheme **Dr. Ambedkar Centre of Excellence (DACE)**, which has been implemented in 30 Central Universities throughout the country, for **coaching of Scheduled Caste students for Civil Services Examination (CSE)**.

- **Dr. Ambedkar Medical Scheme** was implemented successfully with 173 beneficiaries.

- **Dr. Ambedkar Scheme for Social Integration through inter Caste Marriages** benefitted 218 beneficiaries.

➤ **Scheme for Residential Education for Students in High Schools in Targeted Areas (SHRESHTA):**

- **The Ministry of Social Justice & Empowerment** implements the **Central Sector Scheme** of **“Grant-in-Aid to Voluntary and other Organizations working for Scheduled Castes”** under which financial assistance is provided to the **NGOs** for projects related to the Education sector to Scheduled Caste students.

- The scheme has been revised with effect from 2022-23 as **(SHRESHTA)** and a new component under Mode-I has been added to the Scheme, under which every year a specified number of meritorious SC students in the country will be selected for quality residential education in top-class residential High Schools through a nationwide entrance test conducted by National Testing Agency (NTA).

➤ **Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi (PM DAKSH) Scheme:**

- Under the **PM DAKSH Scheme**, skills are provided to marginalized persons covering SCs, OBCs, EBCs, DNTs, Sanitation workers including waste pickers, through Corporations (NSFDC, NBCFDC and NSKFDC) under the Department of SJE.

Note:

- Under it, NSFDC's target is to provide skill training of 20,600 during 2022-23.
- Achievements:
 - During 2022, NBCFDC has sanctioned skill development training programmes for 19553 trainees.
- **National Action for Mechanised Sanitation Ecosystem (NAMASTE):**
 - **Achievements of NAMASTE:**
 - Coverage of 3944 manual scavengers/dependants under various Skill Development Training programmes.
 - Covered 8396 sanitation workers under RPL/ Upskilling training programme.
 - Provided assistance of Rs. 8.17 crore to 445 manual scavengers/dependants for general self-employment programme.
- **Transgender:**
 - A Memorandum of Understanding has been signed with **National Health Authority** in 2022 for providing a comprehensive **Medical package to Transgender Persons** in convergence with **Ayushman Bharat Yojana**.
 - The Comprehensive Package would cover all aspects of transition related healthcare for Transgender persons. It will also (not exhaustive) provide coverage for hormone therapy, gender reassignment surgery inclusive of post operation formalities which can be redeemed at all private and government healthcare facilities.

Eastern Zonal Council Meeting

Why in News?

Union Home and Cooperation Minister presided over the **25th Eastern Zonal Council meeting in Kolkata.**

What are Zonal Councils?

- About:
 - Zonal Councils are the **statutory (and not the constitutional) bodies**.
 - They are established by an Act of the Parliament, that is, **States Reorganisation Act of 1956**.
 - The act divided the country into **five zones- Northern, Central, Eastern, Western and Southern** and provided a zonal council for each zone.

- While forming these zones, **several factors have been taken into account** which include:
 - The natural divisions of the country.
 - The river systems and means of communication.
 - The cultural and linguistic affinity.
 - The requirements of economic development, security and law and order.
- In addition to the above-mentioned Zonal Councils, a North-Eastern Council was created by a separate Act of Parliament, the **North-Eastern Council Act of 1971**.
- Its members include Assam, Manipur, Mizoram, Arunachal Pradesh, Nagaland, Meghalaya, Tripura and Sikkim.
- **Composition:**
 - **Northern Zonal Council:** It comprises the States of Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, National Capital Territory of Delhi, Union Territory of Chandigarh and Ladakh.
 - **Headquarter:** New Delhi
 - **Central Zonal Council:** It comprises the States of Chhattisgarh, Uttarakhand, Uttar Pradesh and Madhya Pradesh.
 - **Headquarter:** Allahabad
 - **Eastern Zonal Council:** It comprises the States of Bihar, Jharkhand, Orissa, Sikkim and West Bengal.
 - **Headquarter:** Kolkata
 - **Western Zonal Council:** It comprises the States of Goa, Gujarat, Maharashtra and the Union Territories of Daman & Diu and Dadra & Nagar Haveli.
 - **Headquarter:** Mumbai
 - **Southern Zonal Council:** It comprises the States of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and the Union Territory of Puducherry.
 - **Headquarter:** Chennai
- **Organizational Structure:**
 - **Chairman:** The union home minister is the Chairman of each of these Councils.
 - **Vice Chairman:** The Chief Ministers of the States included in each zone act as Vice-Chairman of the Zonal Council for that zone by rotation, each holding office for a period of one year at a time.
 - **Members:** Chief Minister and two other Ministers as nominated by the Governor from each of the States and two members from Union Territories included in the zone.

Note:

- **Advisers:** One person nominated by the Planning Commission (now NITI Aayog) for each of the Zonal Councils, Chief Secretaries and another officer/ Development Commissioner nominated by each of the States included in the Zone.

What are the Objectives and Functions of the Council?

- **Objectives:**
 - Bringing out national integration.
 - Arresting the growth of acute State consciousness, regionalism, linguism and particularistic tendencies.
 - Enabling the Centre and the States to co-operate and exchange ideas and experiences.
 - Establishing a climate of co-operation amongst the States for successful and speedy execution of development projects.
- **Functions of the Councils:**
 - Any matter of common interest in the field of economic and social planning,
 - Any matter concerning border disputes, linguistic minorities or inter-State transport,
 - Any matter connected with or arising out of, the reorganization of the States under the States Reorganisation Act.

J&K Land Grant Rules 2022

Why in News?

Recently, the **Jammu and Kashmir administration** has notified "**J&K Land Grant Rules 2022**" which has **ended the owners right to hold on to properties on lease** in the **Union Territory (U.T.)** and plans to **outsource these properties** afresh online.

What are the Key Features of J&K Land Grant Rules 2022?

- The new laws replaced "**J&K Land Grants Rules 1960**", which had liberal lease policy such as **99-year lease period** and extendable.
 - Most **hotels at famous tourist places** in the Valley and **prime commercial structures** in twin capitals of Jammu and Srinagar are on lease land.
- The new laws state that **all leases**, except the subsisting or expired residential leases, including lease granted

under the J&K Land Grants Rules 1960, notified area (All Development Authorities set in tourism sector) Land Grants Rules, 2007 and leases expired or determined prior to the coming into force of these rules or issued under these rules **shall not be renewed and shall stand determined.**

- The **Lieutenant Governor** administration plans to hold a **fresh online auction** to outsource these lease properties.
- All the outgoing lessees would **immediately hand over the possession of the land taken on lease** to the government, failing which the outgoing lessee shall be evicted.
- J&K's land laws were regressive.

Why are the Rules being Opposed?

- Few Political Parties have argued that the newly-introduced Land Grant Rules-2022 will **push six to seven lakh people into the unemployment** bracket and will only pave the **way for millionaires and capitalists** from outside to buy hotels and commercial establishments in J&K.
 - The fresh Land Grant Rules-2022 will end the rights of present owners and sell it at market price. No local businessman has purchasing power compared to millionaires and billionaires from the rest of the country.
- The present **owners with bank loans will be forced to sell their houses** to repay their loans.
 - The current bank borrowing from the J&K Bank stands at ₹60,000 crore, an indicator of the loans raised by locals to survive the turbulent times since 1990s.

What are Administrations' Claims for the Rules?

- The J&K Administration has claimed that **no poor will be impacted by the amendments** to the land laws. Rule of law outside **has to be implemented** here too.
- There were properties worth ₹100 crore, which were being leased for ₹ 5 as payment. Only such people are worried by the amendments. New rules are to bring J&K at par with the rest of the country.
- Lieutenant Governor claimed that the land laws in J&K were regressive and were not framed keeping in view the interests of the common masses. Around 40% - 45% cases in various courts are due to land disputes only.

Note:

Trademark

Why in News?

The Delhi High Court granted an **interim injunction in favour of Hamdard Laboratories** in its plea against Sadar Laboratories Private Limited for **infringing its registered trademark**.

- The Court has restrained the manufacture and sale of sweet beverage concentrate 'Sharbat Dil Afza' during the pendency of a lawsuit for alleged trademark infringement by **Hamdard Dawakhana which sells 'Rooh Afza'**.

What is the Court's Verdict?

- The court said Rooh Afza served as the **source identifier for Hamdard for over a century and has acquired immense goodwill** and it was essential to ensure that the competitors keep a safe distance from the mark.
- It is not difficult to conceive that a person who looks at the label of 'DIL AFZA' may recall the label of 'ROOH AFZA' as the word 'AFZA' is common and the meaning of the words 'ROOH' and 'DIL', when translated in English, **are commonly used in conjunction**.
- Both the products have the **"same deep red colour and texture"** and "structure of the bottles is not materially different" and thus **opined that the "commercial impression of the impugned trademark is deceptively similar to the appellants' trademark"**.

What is a Trademark?

- A trademark is a **sign capable of distinguishing the goods or services** of one enterprise from those of other enterprises. Trademarks are protected by **Intellectual Property Rights (IPR)**.
- **In India**, trademarks are governed by the Trade Marks Act 1999, which was amended in 2010.
- It legally **differentiates a product or service from all others of its kind** and recognizes the source company's ownership of the brand.
- Although trademarks do not expire, the **owner must make regular use of it in order to receive the protections** associated with them.
- It serves as a **badge of origin exclusively identifying a particular business** as a source of goods or services.
- **Trademark infringement is the unauthorised usage** of a sign that is identical or deceptively similar to a registered trademark.

- A mark is said to be **strong when it is well-known and has acquired a high degree of goodwill**.
- The degree of the protection of any trademark changes with the strength of the mark; the stronger the mark, the higher the requirement to protect it.

Stay Safe Online and G20 Digital Innovation Alliance

Why in News?

As part of India's **G20 presidency**, the Ministry for Electronics & Information Technology (MeitY) has launched the **"Stay Safe Online" campaign and the "G20 Digital Innovation Alliance" (G20-DIA)**.

What is the Stay Safe Online Campaign?

- The objective of the 'Stay Safe Online Campaign' is to **raise awareness among citizens to stay safe in the online world** due to the widespread use of social media platforms and the rapid adoption of digital payments.
- The exponential increase in the number of internet users in India and the rapidly evolving technology landscape have **brought unique challenges**.
- The campaign will make **citizens of all age groups**, especially children, students, women, senior citizens, specially-abled, teachers, faculty, officials of Central/ State Governments, etc. **aware of the cyber risk** and ways to deal with it.
- The campaign will be carried out in **English, Hindi and local languages** to reach a wider audience.
- The campaign involves the **dissemination of multilingual awareness content in the form of infographics, cartoon stories, puzzles, short videos, etc.**

What is G20 Digital Innovation Alliance (G20-DIA)?

- It aims to identify, recognize, and enable the adoption of innovative and impactful digital technologies developed by **start-ups, from G20 nations as well as the invited non-member nations**.
- It envisages to address the **needs of humanity in the six critically important sectors i.e., Agri-tech, Health-tech, Ed-tech, Fin-tech, Secured Digital Infrastructure, and Circular Economy**.
 - Startup products in these six sectors enabled through Digital Public Goods Infrastructure **can**

Note:

create a global population-scale impact and reduce the digital divide and enable sustainable, and inclusive techno-socio-economic development.

- The engagement of innovators, entrepreneurs, startups, corporations, investors, mentors, and other ecosystem stakeholders will **lead to the speedy acceptance of the platform that India plans to offer through the G20 Digital Innovation Alliance (G20-DIA).**

Crowd Management

Why in News?

The recent tragedies in Seoul, South Korea, and Morbi in Gujarat have once again put crowds and their management under the spotlight.

- **National Disaster Management Authority (NDMA)** has been mandated, under the provisions of **Disaster Management Act 2005** to, inter alia, issue guidelines for the management of disasters that periodically affect the normal life and well-being of the people.

What is Crowd Management?

- Crowd management is defined as the **systematic planning for, and supervision of, the orderly movement and assembly of people.**
- Crowd management involves the assessment of the people handling capabilities of a space prior to use.
- It includes **evaluation of projected levels of occupancy, adequacy of means of ingress and egress**, processing procedures such as ticket collection, and expected types of activities and group behavior.

What are the Causes of Crowd Disaster/Stampede?

- **Structural Failures:**
 - Demolition of interim facilities, vertical stairs, narrow buildings due to illegal structures, hawkers, and parking.
- **Electric/Fire Disasters:**
 - A common cause is **improper use of firecrackers or incorrect wiring** during the celebrations in makeshift kitchens.
 - Electricity supply failure creating panic and triggering sudden exodus.
- **Crowd Behavior:**

- Minimizing the size of the mass, lack of coordination with management, overselling of the tickets, mass panicking by sudden rush or rumours to get celebrity autographs or freebies.

- People need at least 1 square yard of space each to control their movements. Most people who die in crowds die from asphyxiation while standing upright, not from trampling.
- Humans lose consciousness after being compressed for just 30 seconds, they can be brain dead within 6 minutes.

➤ **Inadequate Security:**

- Taking drastic measures such as firing teargas due to insufficient deployment of safety teams.

➤ **Lack of Coordination among Administrative Agencies:**

- Inadequate coordination between the fire service, the police, the shrine management, etc.

What are the NDMA

Guidelines on Crowd Management?

- The first step is to **regulate traffic in areas surrounding the pandals and Dussehra grounds.**
 - For pedestrians, **route maps for reaching the venue and emergency exit route should be put up at strategic points.** Barricading to ensure the movement of people in a queue is key to control a burgeoning crowd.
- **CCTV cameras to monitor movement and police presence to reduce the risk of snatching** and other petty crimes should also be on the organisers' agenda.
- **Medical emergencies can occur in claustrophobic spaces.** An ambulance and health care professionals on stand-by can save lives in exigencies.
- On the part of revellers, **familiarising people with exit routes, staying calm and following instructions will help prevent stampede-like situations.**
- In case a stampede breaks out, protect the chest by placing hands like a boxer and keep moving in the direction of the crowd.
- **Organisers should ensure authorised use of electricity**, fire safety extinguishers and other arrangements meeting safety guidelines.
- A list of neighbourhood hospitals would come in handy. Simple precautions like wearing light, cotton clothes and knowledge of basic tricks like rolling on the ground to douse off fire are a must.

Note:



Economic Scenario

Highlights

- Indian Footwear and Leather Development Programme
- Minimum Support Price (MSP)
- GI Status for Kerala's Five Agricultural Products
- SAMARTH Scheme
- Open Network for Digital Commerce
- India's Startup Boom
- Prospect of Indian Economy in 2023
- India's Slowing Exports
- State of the Economy Report: RBI
- GNPA Ratio
- Quantitative Instruments of Monetary Policy
- India's Oil Dependence
- Recession and Yield Curve
- Global Minimum Tax

Indian Footwear and Leather Development Programme

Why in News?

Recently, the Union Government has approved the continuation of the Scheme 'Indian Footwear and Leather Development Programme (IFLDP)' till 31st March 2026 or till further review.

- IFLDP was approved as continuation of the erstwhile IFLADP (Indian Footwear Leather and Accessories Development Programme)

What is IFLDP Scheme?

- **About:**
 - It is a **Central Sector Scheme**, which aims at **development of infrastructure** for the leather sector, address **environmental concerns** specific to the leather sector, facilitate **additional investments**, **employment generation** and **increase in production**.
 - It was launched by **Department for Promotion of Industry and Internal Trade** under the **Ministry of Commerce and Industry**.
- **Sub-Schemes:**
 - Sustainable Technology and Environmental Promotion (STEP)
 - Integrated Development of Leather Sector (IDLS)
 - Mega Leather Footwear and Accessories Cluster Development (MLFACD)
 - Establishment of Institutional Facilities (EIF)

- Brand Promotion of Indian Brands in Footwear and Leather Sector
- Development of Design Studios in Footwear and Leather Sector.

What is the Impact of erstwhile IFLADP?

- The programme has a direct benefit towards **quality employment** generation especially for women, **skill development**, decent work, making the industry more **environment friendly** and prompting a **sustainable production system**.
- The leather clusters located in different parts of the country have accrued benefit in terms of **reduction of poverty**, **gender equality**, **sector specific skill/education**, etc., thus touching many of the **Sustainable Development Goals (SDGs)**.
- Other **National Development Plans (NDPs)** such as economic growth, generation of employment, good health and well-being, infrastructure development, affordable and **clean energy** and other environmental benefits are well-served by the IFLAD Programme.

What is the Current Status of India's Leather Industry?

- The Leather industry in India accounts for around **13% of the world's leather production** of hides/skins and handles a robust **annual production of about 3 bn sq. ft.** of leather.
- The industry is known for its consistency in high export earnings and it is among the **top 10 foreign exchange earners for the country**.

Note:

- India has an abundance of raw materials with access to **20% of the world's cattle and buffalo** and **11% of the world's goat and sheep population**.
- The Leather industry is an employment intensive industry providing **jobs to more than 4 million people**, mostly from the **weaker sections of the society**.
 - Women employment is predominant in Leather products industry with about 30% share.
 - The Leather industry in India has one of the youngest workforces with 55% of the workforce below 35 years of age.
- As of 2022, India is the **second largest producer of footwear and leather garments**, second largest exporter of leather garments and fifth largest exporter of leather goods & accessories in the world.
- The **major production centres of leather and footwear products** in India are located in Tamil Nadu, Andhra Pradesh, West Bengal, Uttar Pradesh, Maharashtra, Punjab, Haryana and Delhi.
- The **major markets** for Indian Leather & Footwear Products are USA, Germany, U.K, Italy, France, Spain, Netherlands, U.A.E, China, Hong Kong, Belgium, and Poland.
- USA is the **largest importer of leather and leather products from India** and accounted for 25.19% of the country's total leather exports during April-August 2022.

Minimum Support Price (MSP)

MINIMUM SUPPORT PRICE (MSP)

The rate at which the govt. purchases crops from farmers; based on a calculation of at least 1.5x the cost of production incurred by the farmers

RECOMMENDED BY

Commission for Agricultural Costs & Prices (CACP) (recommends MSPs for 22 mandated crops and Fair and Remunerative Price for Sugarcane)

22 MANDATED CROPS

(14 Kharif, 6 Rabi and 2 Other Commercial crops)

CEREALS	Paddy, Wheat, Barley, Juar, Bajra, Maize And Ragi	
PULSES	Gram, Arhar, tur, Moong, Urad And Lentil	
OILSEEDS	Groundnut, Rapeseed-mustard, Soyabean, Sunflower, Sesamum, Safflower And Niger Seed	
RAW COTTON	RAW JUTE	GOPRA

MSP is the price at which the govt. is supposed to procure the mandated crops from farmers if the market price falls below it

FACTORS FOR RECOMMENDING MSP

- Cost of cultivation
- Demand-Supply situation for the crop
- Market price trends
- Inter-crop price parity
- Implications for consumers (inflation)
- Environment (soil and water use)
- Terms of trade b/w agri and non-agri sectors (ratio of farm inputs and outputs)

Considers both A2+FL and C2 costs

Actual expenses on seeds, fertilizers, irrigation and the like

Unpaid family labour

Rents or interest foregone on owned land and fixed capital costs

C2

MSP has no statutory backing — a farmer cannot demand MSP as a matter of right

Note:

GI Status for Kerala's Five Agricultural Products

Why in News?

Five agricultural products of Kerala- Attappady Attukombu Avara, Attappady Thuvara, Onattukara Ellu, Kanthalloor-Vattavada Veluthulli, and Kodungalloor Pottuvellari have been granted **Geographical Indication (GI)** status.

- The Gamosa (traditional cloth) of Assam, Alibag White Onion from Maharashtra, Ladakh Raktsey Karpo Apricot and Tandur Redgram of Telangana also got GI tag recently.

What are the Key Facts about the Latest GIs?

- **Attappady Attukombu Avara (Beans):**
 - It is **curved like a goat's horn** as its name indicates.
 - Its **higher anthocyanin content** compared to other dolichos beans **imparts violet colour in the stem and fruits.**
 - Anthocyanin is **helpful against cardiovascular diseases** along with its **antidiabetic properties.**
 - The **higher phenolic content** of Attappady Attukombu Avara imparts **resistance against pest and diseases**, making the crop suitable for organic cultivation.
- **Attappady Thuvara (Red Gram):**
 - It is having **seeds with white coat.**
 - Compared to other red grams, Attappady Thuvara **seeds are bigger and have higher seed weight.**
- **Onattukara Ellu (Sesame):**
 - Onattukara Ellu and its oil are famous for its **unique health benefits.**
 - Relatively **higher antioxidant content** in Onattukara Ellu helps in **fighting the free radicals, which destroy the body cells.**
 - Also, the **high content of unsaturated fat** makes it **beneficial for heart patients.**
- **Kanthalloor-Vattavada Veluthulli (Garlic):**
 - Compared to the garlic produced in other areas, this garlic contains **higher amount of sulphides, flavonoids, proteins and also rich in essential oil.**
 - It is **rich in allicin**, which is **effective against microbial infections, blood sugar, cancer, etc.**

- **Kodungalloor Pottuvellari (Snapmelon):**
 - This snap melon, which is **harvested in summer**, contains **high amount of Vitamin C.**
 - Compared to other cucurbits, nutrients such as **calcium, magnesium, fibre and fat content are also high** in Kodungalloor Pottuvellari.

SAMARTH Scheme

Why in News?

Under the SAMARTH Scheme of Textile Ministry, more than **13,235 artisans have been trained in the last three years.**

What is the Samarth Scheme all about?

- **About:**
 - Samarth (Scheme for Capacity Building In Textile Sector) is a **flagship skill development scheme** approved in continuation to the **Integrated Skill Development Scheme** for 12th Five Year Plan (FYP), Cabinet Committee of Economic Affairs.
 - The **office of the Development Commissioner (Handicrafts)** is implementing the SAMARTH to provide skill training to handicraft artisans under the component 'Skill Development in Handicrafts Sector' of **National Handicrafts Development Programme (NHDP).**
- **Objectives:**
 - To **provide demand-driven, placement-oriented skilling programmes** to incentivize the efforts of the industry in creating jobs in the organized textile and related sectors to promote skilling and skill up-gradation in the traditional sectors through respective sectoral divisions/organizations of the **Ministry of Textile.**
 - To **provide livelihood to all sections of the society** across the country.

What is the Status of the Textile Sector in India?

- **About:**
 - Textiles & garments industry is a **labour intensive sector that employs 45 millions people in India and is second only to the agriculture sector in terms of employment.**

Note:

- India's textiles sector is **one of the oldest industries in the Indian economy**, and is a storehouse and carrier of traditional skills, heritage and culture.
- It can be divided into two segments:
 - The unorganised sector is small scale and uses traditional tools and methods. It consists of **handloom, handicrafts and sericulture (Production of silk)**.
 - The organised sector uses modern machinery and techniques and consists of the spinning, apparel and garments segment.
- **Other Schemes of the Textile Sector:**
 - **Scheme for Integrated Textile Park (SITP):** Launched in 2005, it aims to provide the industry with **world-class state of the art infrastructure facilities** for setting up their textile units.
 - **Power-Tex India:** It is an all-inclusive scheme that's made for the **development of the power loom sector** which further addresses the unheard needs of the power loom sector.
 - **Silk Samagra Scheme:** It focuses on improving the quality and productivity of domestic silk thereby reducing the country's dependence on imported silk.
 - **Amended Technology Upgradation Fund Scheme (ATUFS):** It is a credit linked Capital Investment Subsidy (CIS) scheme to **catalyze capital investments for technology upgradation and modernization of the textile industry**.
 - **National Handloom Day:** National Handloom Day is **observed every year on 7th August** to mark the importance of the handloom weaving community in India.
 - **National Technical Textile Mission:** The mission aims to position India as a **global leader in Technical Textiles by increasing the domestic market size** from USD 40 billion to USD 50 billion by 2024.

Note:

- On the occasion of **International Women's Day 2022**, the Union Minister for **Micro, Small and Medium Enterprises (MSMEs)**, launched a Special Entrepreneurship Promotion Drive for Women –"SAMARTH".
- Through this initiative, the Ministry of MSME is focusing on providing Skill Development and Market Development Assistance to women.

Open Network for Digital Commerce

Why in News?

Open Network for Digital Commerce (ONDC) will charge a **"small fee" from platforms that will contribute towards "maintenance and development"** of the network.

- The network **will seek to reduce the compulsory commissions charged from sellers and logistics partners** on the network by private e-commerce firms such as US-based Amazon and homegrown Flipkart — the two largest e-commerce firms in the country.

What is ONDC?

➤ About:

- It is an **open e-commerce protocol** set up by the Ministry of Commerce's **Department of Promotion of Industry and Internal Trade (DPIIT)**.
- Under ONDC, it is **envisaged that a buyer registered on one participating e-commerce site** (for example, Amazon) may purchase goods from a seller on another participating e-commerce site (for example, Flipkart).
- Presently, **buyers and sellers have to be on the same app for a transaction** which happens through the same platform. For example, a buyer needs to go to Amazon, to buy a product from a seller on Amazon.

➤ Objectives:

- Democratisation and decentralization of eCommerce
- Inclusivity and access for sellers, especially small and medium enterprises as well as local businesses
- Increased choices and independency for consumers

What Benefits Does the ONDC Offer?

- **Level Playing Field:** ONDC is keen to level the playing field for e-commerce operators and widen the digital market access for **Micro, Small and Medium Enterprises (MSMEs)** and small traders in the country.
- **Competitive and Innovative Ecosystem:** ONDC will empower suppliers and consumers by breaking the monopoly of giant platforms to drive innovation and transform businesses in sectors like retail, food, and mobility.

Note:

- **Freedom of Choice for Consumers:** Consumers can potentially discover any seller, product or service in a common platform, thus increasing freedom of choice for consumers.
- **Neutral and Regulated Platform:** ONDC aims at fostering open networks developed on **open-sourced methodology**, using open specifications and network protocols, and independent of any specific platform.
 - It will set protocols for cataloguing, vendor match, and price discovery on an open source-basis, like the **Unified Payments Interface (UPI)**.

What are the Issues with ONDC?

- ONDC is a **complex ecosystem to implement**, unlike UPI.
- **Switching customers from the incumbents**, which are offering a satisfactory service, will be difficult.
- Network participants **may not make significant market development investments** initially.
- Growth in the seller base will not necessarily improve **buyer experience on the network**.
- Monetisation on the network is **not very clear**.
- **Attaining critical mass will be difficult** as buyer and seller sides are disconnected.
- **Lack of clarity on accountability**, especially in addressing customer complaints and returns.

India's Startup Boom

Why in News?

According to figures presented in Parliament in December 2022, over the last five years, the number of registered **startups** in India have grown from 452 in 2016 to 84,012.

- Many of them are located in the cloud, **which refers to the servers and data storage that are accessible through the internet**, and storage companies are offering a variety of incentives to lure and retain them.

What is the Role of AWS

Cloud Services in India's Start-up Boom?

- **About:**
 - AWS, or Amazon Web Services, **one of India's largest providers of cloud-based services, has provided start up credits that allow aspirant startups** to use a suite of services from computing, storage and hosting for free.

- AWS has helped **"compress" the lifecycle of a startup**, allowing them to become more innovative.
- Cloud services **mean that they can simulate experiments on the cloud**, run tests, fail, and learn from it.
- India has the **world's third-largest startup ecosystem** after United States (US) and China and therefore, **one of the biggest markets for such cloud services**.
 - Some of the companies supported by AWS included: **HealthifyME, which developed an app called 'Vaccinate Me,'** which allowed feature phones to book close to 50 million vaccination-appointments.
- AWS also powered the **Ayushman Bharat Digital mission** as well as the Cowin system for **Covid-19** vaccinations.

➤ **India's Cloud Computing Market:**

- India's cloud computing market was expected to **grow at 28.1% during the forecast period until 2027**.
- The high concentration and increasing number of **small and medium-sized businesses in India that are rapidly shifting towards cloud computing** is emerging as the major driving factor for the market.
- Furthermore, **growing investment towards the construction of cloud data centres** is expected to boost the India cloud computing market.

What is the State of Start-ups in India?

➤ **About:**

- 49% of start-ups are from tier-2 and tier-3 cities.
- As of September 2022, India is home to **107 unicorns with a total valuation of USD 340.79 Billion**.
- According to the India **Venture Capital** Report 2021 published by Bain and Company, **the number of cumulative start-ups has grown at a CAGR of 17% since 2012 and crossed 1,12,000**.

➤ **Major Challenges Related to Start-ups in India:**

- **Lack of Forward Thrust to Innovation:** India's education system lacks **vocational training** and industry exposure that keeps students deprived of pursuing innovation. As a result, this makes the Indian higher education system lags behind in terms of research and development.
- **Lack of Recognition:** Since nearly 70% of the Indian population lives in rural areas that are still deprived from **reliable internet access**. Consequently, many

Note:

village-based start-up go unrecognised and are deprived of government funding initiatives.

- **Bootstrapped Nature:** For running a start-up, a significant amount of working capital is required. Many start-ups in India, especially at early stages, are bootstrapped, i.e., self-funded through the founders' own savings, since domestic financing is limited.
- **Scalability Concern:** Small start-ups in India have limited understanding of customers and are confined to only certain regions, where they know the local language and local people.
- **Marginal Penetration in Space Sector:** Indian startups in fintech and e-commerce are doing exceptionally well, but space startups remain outliers.
 - Globally, the space economy is valued at USD 440 billion, with India holding less than 2% of the market.

What are the Government's Initiatives for Startups?

- **Startup India Seed Fund Scheme (SISFS):** It aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- **National Startup Awards:** It seeks to recognize and reward outstanding startups and ecosystem enablers that are contributing to economic dynamism by spurring innovation and injecting competition.
- **SCO Startup Forum:** The first-ever **Shanghai Cooperation Organisation (SCO)** Startup Forum was launched in October 2020 to develop and improve startup ecosystems collectively.
- **Prarambh:** The 'Prarambh' Summit aims to provide a platform to startups and young minds from around the world to come up with new ideas, innovation and invention.

Prospect of Indian Economy in 2023

Why in News?

The Indian economy is projected to record relatively healthy **Gross Domestic Product (GDP) growth** of 6.9% in 2022-23 and **inflation** has started moderating.

- In 2020, the main event was the nationwide lockdown in the wake of the **first wave of the Covid-19 pandemic** that determined the shape of India's economy.
- In 2021, it was the **vicious second wave of Covid** that shaped our economy and recovery.
- In 2022, it was **Russia's invasion of Ukraine** that largely **determined the fate of India's economy**.
 - As a result, issues such as inflation, rupee's exchange rate and India's forex reserves dominated more than the **routine concerns about GDP growth**.

What are the Recap Highlights?

- **Inflation:**
 - Headline Retail inflation was already above 6% when 2022 started.
 - The **inflation situation flared up after Russia's invasion** of Ukraine.
 - In April 2022, retail inflation **hit an eight-year high**. By the time RBI decided to **raise Repo Rates in a hurriedly convened MPC (Monetary Policy Committee)** meeting in May 2022.
 - The **US and the actions of the US Federal Reserve** were cited as prime factors for global inflation.
- **Rupee's Exchange Rate and Forex Reserves:**
 - Many of India's macroeconomic indicators started getting adversely affected because of **higher crude oil prices**.
 - Trade deficits started rising as the financial year started and there were concerns **about India's Current Account Deficit (CAD), Forex Reserves and Balance of Payment**.
 - Eventually, the rupee hit the politically sensitive 80-to-a-dollar mark. But the rupee was not the **only currency losing ground against the dollar**. Dollar had risen against the **euro to achieve parity**.
- **All-round Monetary Tightening:**
 - By the middle of the year, central banks across the world started **raising interest rates** in order to reduce liquidity and contain inflation.
- **GDP Growth Slides:**
 - **India had grown by almost 9% in the previous financial year (2021-22)** that ended in March 2022.
 - In September 2022 India had overtaken the **UK to become the world's 5th largest economy**.
 - India's growth rate is expected to slow down from almost 9% last financial year (2021-22) to under

Note:

7% in the current year (2022-23) and further to around **6% (or possibly lower) in the next financial year (2023-24)**.

➤ **Budget, Unemployment and Poverty:**

- In the run-up to the **Union Budget**, the key concern was to figure out **whether the government can come up with a plan to boost employment** in the country. That's because India **had historically high levels of labour market stress even before Covid and the pandemic** had just made matters worse.
- In the Budget 2022-23, Indian bet on significantly ramping up **capital expenditure to start a virtuous cycle of growth**.
 - But experts argued that while this strategy had obvious benefits in normal times, **India's economy was still scarred by Covid** and it was unclear if the Budget will do enough to boost employment.

How is the Global Economic Outlook for 2023?

➤ **Growth Forecast:**

- In its **'State of the Economy' update**, the Reserve Bank of India warned of **"a darkening global outlook"**, and emerging market economies (EMEs) appear to be **"more vulnerable"**.
- The expectation that **global growth could average around 3% in 2022** seems to be a **commendable achievement**.

➤ **Inflation:**

- Global food, energy and other commodity prices may have eased moderately over the past few months, **but inflation continues to stay high**.
 - Global inflation, according to the **IMF (International Monetary Fund)**, is forecast to decline from 8.8% in 2022 to 6.5% in 2023 to 4.1% by 2024 — still high by most yardsticks.
- The problem going into 2023 is the implications of **stubbornly high inflation for the US Federal Reserve**, especially the fact that the American labour market remains red hot, defying the impact of the Fed's monetary tightening.

➤ **Impact of US Fed Rate Hikes:**

- The difference between interest rates in the US and countries such as India **widens every time the Fed raises policy rates**, thus making the latter less attractive for the currency carry trade;

- Higher returns in **US debt markets could trigger a churn in emerging market equities**, tempering foreign investor enthusiasm.
- Currency markets would be potentially impacted **by the outflow of funds to the US**; sustained rate hikes by the Fed would also mean a lower impetus to growth in the US, which could be bad news for global growth, especially when China is facing a new Covid outbreak.

What are the Prospects of the Indian Economy 2023?

➤ **Positives:**

- The near-term growth outlook for the Indian economy is **supported by domestic drivers**, some of which are reflected in the buoyant trends in high frequency indicators.
- There has been significant deleveraging over the last five years, with the **corporate debt-to-GDP at its lowest in nearly a decade and a half**, and bank books have shed much of the legacy bad loans.
 - The lower the debt-to-GDP ratio, the more likely the country will pay back its debt and the lower its risk of default, which could cause financial stability in the domestic and international markets.
- Waning input cost pressures, surging corporate sales, and a turn-up in investments in fixed assets **seem to be heralding the beginning of an upturn in the Capex Cycle**, which could potentially contribute to a **reboot of India's growth momentum**.
- Bank credit has been growing in **double digits for eight months now, reflecting in part an uptick in investment appetite**.
- The **China-plus-one strategy** being adopted by most multinational companies could be an opportunity, given that China is **vacating large amounts of space in low-skilled, unskilled labour intensive manufacturing** such as textiles, shoes, leather, and ceramics, and India has a chance to fill part of this vacuum.
- Agriculture has been a **sustained driver for overall GDP growth, with the rabi** outlook showing good prospects for wheat production with higher support prices, adequate reservoir levels, and climatic factors supporting higher acreage.

➤ **Negatives:**

Note:

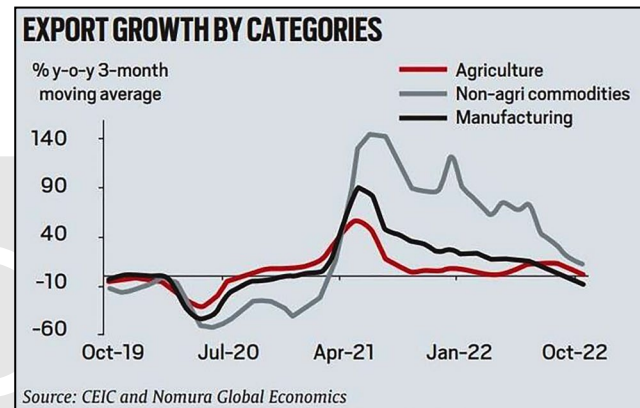
- The Ukraine war drags on, threatening an energy-linked downturn in the European Union, **India's biggest export market**.
- The US continues to grapple with cooling inflation pressure, and a let-up in the Fed's rate hikes is **unlikely until well into the second half of the year**.
- 2023 will see **higher protectionism worldwide**, greater fervor for de-globalisation, and more economic balkanisation: a worrying prospect for countries such as India that are keen to tap exports as a driver for growth.
 - Given that no country in the world has grown at over 7% for a decade without strong export growth, the **protectionist mood around the world is a major dampener for emerging economies**.
- In India, **manufacturing continues to be wobbly**. Factory output, as measured by the **Index of Industrial Production (IIP)**, slumped to a 26-month low in the festive month of October, 2022. Core sector growth for October was just 0.1%, the lowest for 20 months. **That has led to a rapid downward revision of India's growth projections** by analysts for the next fiscal.
- Capacity utilisation — the ratio of actual output to the potential output that can be produced under normal conditions — has shown a minor uptick but continues to hover around the 75% mark.
 - Unless this goes up on a **sustained basis, private investments are unlikely to pick up perceptibly**.
- There is continuing **distress** among the **Micro, Small and Medium Enterprises (MSME)** firms, reflecting the deep cleavages in industrial recovery where the bigger companies are doing far better than the smaller firms.
- Capital expenditure of the **states has remained weak**. Investments by states typically tend to have a higher multiplier effect.
- India's significant dependence on imported energy, at 4% of the country's GDP, is a **challenge that shows up on the balance of payments side**. A current account deficit of well over 3% is projected for FY23.
- The buoyancy in farm output notwithstanding, rural wages contracted for the ninth consecutive month in September, pointing to **continuing distress in the hinterland**.

India's Slowing Exports

Why in News?

India's exports declined about **16.7% in October 2022** compared with the same period 2021, raising concerns over slowing exports.

- For October, USD 2 billion worth of exports declining was **seen in steel and allied products**.
- Electronic goods exports remained among a handful of segments to **witness a rise in exports growing about 38% to USD 1.8 billion**.



What are the

Factors of Slowing Export Demand?

- **Weaker Global Demand:**
 - The global economic growth is **decelerating sharply in the wake of persistently high inflation across developed countries** and, as a result, as sharp **tightening of monetary policy**.
 - With growth contraction across the board — UK and US are set to see recession while the euro area is likely to stall even as China struggles to grow — the demand for Indian goods has plummeted. That is why exports have contracted.
- **Inflation:**
 - Inflation has been driven up **more by local factors, including higher food prices, than imported reasons** and that those pressures are set to dampen thanks to easing international commodity prices and the arrival of Kharif crop.
 - Retail inflation has been consistently above 7% these past few months, but stood at 6.8% for October, 2022.

Note:



➤ **Fall in Oil and other Export:**

- Oil export growth fell to -11.4% y-o-y from 43.0% in September 2022, partly reflecting **lower global crude oil prices**, while non-oil exports plunged -16.9% y-o-y, with the decline broad-based across iron ore, handicrafts, textiles, some agricultural goods, plastics, gems & jewellery, engineering goods, chemicals, pharmaceuticals and leather goods.
 - Engineering goods, which have lent a strong shoulder to India's goods exports in recent years, **slid 21%**.

➤ **Rising Global Trade Tension:**

- Recent trade war between the US and China and other global trade wars has impacted **growth all over the world**.
- It has impacted manufacturing and exports in **different parts of the world, including the Indian economy too**.

What are the Positive Signals to the Economy?

- Despite the slowing export scenario, it is likely that domestic demand will carry through.
- The investment cycle will be reinvigorating which will spur growth and job creation in the coming days.
- The private sector capital expenditure is on track to touch **six lakh crore this fiscal 2022-23** which would make it the highest of the past six years.
 - Private capex typically depends on credit, or loans, from the banking system.
 - And that has **seen a healthy growth in the recent past touching a high of 18%** in September, 2022.

What about other Exporting Nations?

- Vietnam, an export-dominated country, **recorded a 4.5% growth in exports from a year earlier to USD 29.18 billion** amid 'sustained foreign demand'.
- Similarly, exports by the **Philippines grew 20% in October, 2022**.
 - The government there had said that exports rose for the first time in three months in September amid what it calls 'signs of reviving foreign demand'.
- **China is an outlier in 2022** because of **stringent lockdowns that are impacting manufacturing output**, though lockdowns are being eased currently following protests against restrictions.

How has the Indian Forex Reserve been?

- For the week ended December 2, foreign exchange reserves stood at about **USD 561 billion**.
- October imports stood at USD 56.7 billion (an eight-month low) as a benchmark, and there about **9-10 months' worth of import cover which isn't as healthy** as the 14-to-15-month cover that we had seen during the pandemic.
- However, economists **feel this isn't as bad as 2013 when foreign investors began pulling out of India's financial markets**.
 - At that time, India had less than seven months' worth of import cover.
- And if anything, forex reserves have been rising in recent weeks signalling hope for the future.

Note:

- **Import Cover** is a measure of how many months of imports can be covered by foreign exchange reserves held by a country's central bank.
- It is an important indicator of the stability of the currency.

What are India's Export Promotion Schemes?

- **Merchandise Exports from India Scheme:**
 - MEIS was introduced in the **Foreign Trade Policy (FTP) 2015-20**, under MEIS, the government provides duty benefits depending on product and country.
 - Rewards under the scheme are payable as percentage of realised **free-on-board value (of 2%, 3% and 5%)** and MEIS duty credit scrip can be transferred or used for payment of a number of duties including the basic customs duty.
- **Service Exports from India Scheme:**
 - It was introduced in April 2015 for 5 Years under the Foreign Trade Policy of India 2015-2020.
 - Earlier, this Scheme was named as Served from India Scheme (SFIS Scheme) for Financial Year 2009-2014.
 - Under it, incentives are given by the Ministry of Commerce and Industry to Service Exporters based in India to promote the export of services from India.
- **Remission of Duties or Taxes on Export Product (RoDTEP):**

Note:

- It is a fully automated route for Input Tax Credit (ITC) in the **GST (Goods and Service Tax)** to help increase exports in India.
 - ITC is provided to set off tax paid on the purchase of raw materials, consumables, goods or services that were used in the manufacturing of goods or services. This helps in avoiding double taxation and the cascading effect of taxes.
- It was started in January 2021 as a replacement for the MEIS, which was not compliant with the rules of the **World Trade Organisation**.
- **Rebate of State and Central Taxes and Levies (RoSCTL):**
 - Announced in March, 2019, RoSCTL was offered for embedded state and central duties and taxes that are not refunded through GST.
 - It was available only for garments and made ups. It was introduced by the Ministry of Textiles.
 - Previously, it was Rebate for State Levies (ROSL).

State of the Economy Report: RBI

Why in News?

Recently, the **Reserve Bank of India (RBI)** has released a report titled- “**State of the Economy**”, which warns of a **darkening global outlook**.

What are the Highlights of the Report?

- **Darkening Global Outlook:**
 - The **balance of risks gets increasingly tilted towards a darkening global outlook for 2023**, the year that will bear the brunt of monetary policy actions of this year.
- **Emerging Market Economies:**
 - Emerging market economies (EMEs) appear precarious, having **battled currency depreciations and capital outflows in addition to slowing growth and high inflation**.
- **Energy Prices:**
 - An **unease hangs over energy prices**, for now, **Organisation of the Petroleum Exporting Countries (OPEC) plus** stayed its hand in cutting production, but an **oil price cap threatens to unleash disruptive**

financial forces, with hedge funds already cutting net long positions in crude contracts.

- Despite moderation in global commodity markets, **climate change and the war in Ukraine are set to keep food prices at higher** than pre-pandemic levels.
- **Debt:**
 - **Debt** distress is rising, with **a surge in default rates and an appreciating US dollar** – the principal currency in which debt is denominated – although more recently it has tumbled down from 20-year highs.
- **Indian Growth Outlook:**
 - **Inflation:**
 - Inflation may be slightly down, but it is certainly not out.
 - Inflation is likely to moderate in 2023 from current levels, but it would remain well above targets in most economies.
 - The easing of inflation is primarily driven by the **sharp moderation in food inflation**. The index declined by 11 bps month-on-month (m-o-m), which along with a favorable **Base Effect**.
 - **Domestic Drivers:**
 - The near-term growth outlook for the **Indian economy is supported by domestic drivers**.
 - Domestic economic activity remained resilient in November and early December of 2022.
 - The **outlook for private consumption and investment is looking up**, although relatively higher inflation in rural areas is muting spending in those regions.
 - Headline inflation moderated by 90 basis points to 5.9 % in November 2022 driven by a **fall in vegetables prices** even as **core inflation** remained steady at 6 %.
 - **Equity Inflow:**
 - **Equity markets** touched a string of new highs during November **buoyed by strong portfolio flows to India**.
 - Waning input cost pressures, still buoyant corporate sales and turn-up in investments in fixed assets are **heralding the beginning of an upturn in the capex cycle in India** which will contribute to a **speeding up of growth momentum in the Indian economy**.
 - **Future Prospects:**

Note:

- In December 2022, as India engages in setting out its priorities and deliverables under its **G20 Presidency**, there is a sense that perhaps it's time for India in the centre of the world's stage has arrived.
- As the **third largest economy in PPP (Purchasing power parities) terms**, and the **5th largest in terms of market exchange rates**, India accounts for 3.6 % of G20 GDP while its share in real (PPP) terms is much higher at 8.2 %.
- In 2023, India is projected to be among the fastest growing economies within G20.
- India's priorities under the G20 Presidency **encapsulate a vision of unity and interconnectedness**. They will also reflect **the priorities of the global South: One Earth, One Family, One Future**.

GNPA Ratio

Why in News?

As per the **Reserve Bank of India (RBI)**, the **Gross Non-Performing Assets (GNPA)** ratio, which **declined to a seven-year low of 5% in September 2022**, is **expected to improve further to 4.9% by September 2023**.

- However, if the macroeconomic environment worsens to a medium or severe stress scenario, **the GNPA ratio may rise to 5.8% and 7.8%, respectively**.

What are the Other Observations?

- The ratio of GNPA to gross advances stood at 5.9% in March 2022. As of September 2022, the **Net Non-Performing Assets (NNPA) ratio stood at a ten-year low of 1.3%**, wherein the **Private Sector Banks (PVBs') NNPA ratio was below 1%**.
- GNPA ratios of **Public Sector Banks (PSBs) may rise from 6.5%** in September 2022 to 9.4% in September 2023, whereas **it would go up from 3.3% to 5.8% for PVBs and from 2.5% to 4.1% for Foreign Banks (FBs)**, under the severe stress scenario.
- Under the baseline scenario, the aggregate **Capital to Risk Weighted Assets Ratio (CRAR)** of major banks is **projected to slip from 15.8% in September 2022 to 14.9%** by September 2023.
- The **Common Equity Tier-1 (CET1) capital ratio of some of the banks may decline from 12.8%** in September 2022 to 12.1% by September 2023 under the baseline scenario.

What are Some of the Key Terms?

- **GNPA:** These assets are the sum of all the loans that have been defaulted by the individuals who have acquired loans from the financial institution.
- **Macro-environment:** It refers to how the macroeconomic conditions in which a company or sector operates influence its performance.
 - Macroeconomics **deals with aggregate production, spending, and the price level in an economy** as opposed to individual industries and markets.
- **NNPA:** These are the amount that is realised after provision amount has been deducted from the gross non-performing assets.
- **CRAR:** The Capital Adequacy Ratio, also known as CRAR, is used to protect depositors and promote the stability and efficiency of financial systems around the world.
 - The CAR is a **measure of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures**.
- **CET1:** It includes equity instruments where returns are linked to the banks' performance and therefore the performance of the share price. They have no maturity.
 - According to **Basel-III norms**, banks' regulatory capital is divided into Tier 1 and Tier 2, while Tier 1 is subdivided into Common Equity Tier-1 (CET-1) and Additional Tier-1 (AT-1) capital.

What is a Non-Performing Asset?

- NPA refers to a **classification for loans or advances that are in default** or are in arrears on scheduled payments of principal or interest.
- Banks are required to **classify non-performing assets further into the following three categories** based on the period for which the asset has remained non-performing and the realisability of the dues:
 - **Sub-standard Assets:** A substandard asset is an asset classified as an NPA for a period less than or equal to 12 months.
 - **Doubtful Assets:** A doubtful asset is an asset that has been nonperforming for a period exceeding 12 months.
 - **Loss Assets:** Loss assets are loans with losses identified by the bank, auditor, or inspector that need to be fully written off.

Note:

Quantitative Instruments of Monetary Policy

QUANTITATIVE INSTRUMENTS OF MONETARY POLICY



LIQUIDITY ADJUSTMENT FACILITY (LAF)

- ☉ **Repo Rate (RR):** The rate at which the RBI lends money to commercial banks. Here, RBI **purchases securities**.
- ☉ **Reverse Repo Rate:** The rate at which the RBI borrows money from commercial banks within the country. **Opposite of Repo.**
- ☉ If RBI wants to signal **tight monetary policy**, it will **increase the repo rate**; banks will **increase their lending rates**.



BANK RATE

- ☉ It is a **long-term rate (RR is short-term)** at which the central bank lends money to other banks.
- ☉ **Increase in Bank rate** will **increase the interest rates on the Loans /Deposits** and vice versa.



STATUTORY LIQUIDITY RATIO (SLR)

- ☉ SLR is the minimum percentage of deposits that a commercial bank has to **maintain in the form of liquid cash, gold or other securities**.
- ☉ If RBI wants to **tighten the monetary policy**, it will **raise the SLR**.



CASH RESERVE RATIO (CRR)

- ☉ Banks are required to hold a certain proportion of their deposits in the form of **cash with RBI**.
- ☉ With the **increase in CRR**, banks **increase the lending rates**.



OPEN MARKET OPERATIONS (OMOS)

- ☉ These include **purchase/sale of government securities** by the Central Bank for **injection/absorption of durable liquidity** in the banking system.



Drishti IAS

Note:



drishti

India's Oil Dependence

Why in News?

Russia has for the second month in a row remained India's top oil supplier in November 2022 surpassing traditional sellers Iraq and Saudi Arabia.

- Russia now makes up for 22% of India's total crude imports, ahead of Iraq's 20.5% and Saudi Arabia's 16%.
- The **European Union** ban on imports of Russia's seaborne oil from 5th December has driven Russia to seek alternative markets, mainly in Asia, for about 1 million barrels per day.

What is the Current

Scenario of India's Oil Import/Consumption?

- **India is the world's third-largest oil consumer** at around 5 million barrels a day, behind the US and China. The oil demand is growing at 3-4% a year in the country.
 - By this estimate, in a decade, India could be consuming about 7 million barrels a day.
- According to the Petroleum Planning and Analysis Cell (PPAC), **India imported 212.2 million tonnes of crude oil in 2021-22**, up from 196.5 million tonnes in the previous year.
 - For April 2022-23, the oil import dependence was around 86.4% against 85.9% in the corresponding year-ago period.
- It has been **argued that due to increasing demand**, the consumption of oil has gone up, which has marginalised the efforts being made to increase output.
 - Higher crude oil import bill is expected to dent the macroeconomic parameters.

What Initiatives have

been taken to Cut down Crude Oil Imports?

- In March 2015, the Prime Minister of India inaugurated the '**Urja Sangam 2015**' — India's then **biggest global hydrocarbon meet** aimed at shaping India's energy security.
 - All the stakeholders were urged to **increase the domestic production of oil** and gas to **reduce import dependence from 77% to 67% by 2022** and further to **50% by 2030**.

- The government has also introduced various policies for increasing domestic production of oil and natural gas under the **Production Sharing Contract (PSC) Regime, Discovered Small Field Policy, Hydrocarbon Exploration and Licensing Policy (HELP), New Exploration Licensing Policy (NELP)**, etc.
 - However, an underlying issue with domestic oil production is that oil and gas projects — from exploration to production — **have a long gestation period**.
 - Besides, **pricing and tax policies are not stable** and the oil and gas business **requires huge capital**, so **investors are often wary of taking risks**.
- The Government of India promotes the **Ethanol Blending Programme (EBP)** with the aim of reducing the country's dependence on crude oil imports, cutting carbon emissions and boosting farmers' incomes.
 - The Government has advanced the **target for 20% ethanol blending in petrol** (also called E20) to 2025 from 2030.

What can be Done to Reduce India's Oil Import Dependence?

- **Encouraging Domestic Production:** It must be kept in mind that India's demand for oil is only going to go up as we go for 10% GDP growth and that India will continue to be an oil economy for many more years to come.
 - The only way India can reduce its dependence on imports is to increase the size of India-owned exploration and production assets overseas. That is what China has done.
 - The public sector oil giant **Oil and Natural Gas Corporation (ONGC)** is also taking various steps to increase the production by redevelopment of existing matured fields and development of new/marginal fields.
- **Alternate Green Sources:** Another way out for India is to expand its basket and focus on **green energy**. With the economy gaining momentum, demand for power is on the upswing. With the **CoP26 commitments** in place, the demand for **Renewable Energy** is at an all-time high, which calls for substantial capacity addition.
 - The wind sector gained momentum, thanks to private investments and government initiatives coupled with regulatory support.
 - However, backed by global supply of solar cells and modules and favourable policies, solar power emerged more competitive than wind power.

Note:

Recession and Yield Curve

Why in News?

In many of the world's top economies, including the United States, the biggest and most consequential, **there are fears of recession** as the new year approaches.

- The US does look headed for a recession — **a key pointer is the inversion of US treasury yields.**

What is a Recession?

- **A recession typically involves the overall output in an economy** contracting for at least two consecutive quarters, along with job losses and reduction in overall demand.
- The **US National Bureau of Economic Research (NBER)** decides whether the economy is in a recession based on its assessment of **the depth, diffusion, and duration of the impact on the economy.**
 - Sometimes, the duration may not be long but the decline could be very severe — as it happened in the wake of the **Covid-19 pandemic.**
 - Or, the depth and diffusion may be relatively less but the downturn may last long — as is expected in the United Kingdom in the wake of the economic crisis.

What are US Treasuries?

- In any economy, the **safest loans are those that are given to governments** — entities that will always be there, and which typically do not default on their debt.
- Governments need to borrow money because their tax revenues more often than not aren't enough to finance all their spending.
- The **instrument by which the government borrows from the market** is called a government bond.
- **In India they are called G-secs, in the UK they are called gilts, and in the US, they are called treasuries.**

What is the Yield of a Treasury?

- Unlike a bank loan, on which the interest rate varies with time, **a government bond comes with pre-determined "coupon" payment.**
- So, the US government may "float" a 10-year bond with a face value of USD100 and coupon payment of USD 5. This means, if you lend USD100 to the US

government by buying this bond, you would get USD 5 each year for the next 10 years plus the whole sum of USD100 at the end of 10 years. This would imply a yield of 5%.

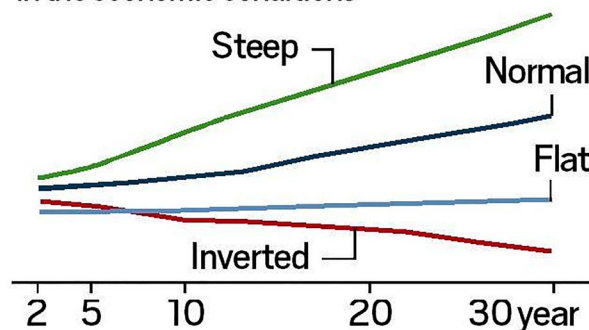
- But if for some reason one sold this bond to another investor, the yield will change depending on the price at which the bond is sold. If the price increases — say, the bond is sold for USD110 — the yield will fall because the annual return (USD5) remains the same. And if the price falls, the yield will rise.

What is the Yield Curve?

- Governments borrow for durations ranging from 1 month to 30 years.
- Typically, **yields are higher for longer tenures** because one is lending money for longer.
- If the yields for different tenures of bonds are mapped, it will give an upward-sloping curve.
- **The curves can be flat or steep depending on the money available in the market** and the expected overall economic activity. When investors feel buoyant about the economy, they pull money out of long-term bonds and put it into short-term riskier assets such as stock markets. **As prices of long-term bonds fall, their yields rise — and the yield curve steepens.**

DIFFERENT TYPES OF YIELD CURVES

The yield curve evolves in line with changes in the economic conditions



What is Yield Inversion?

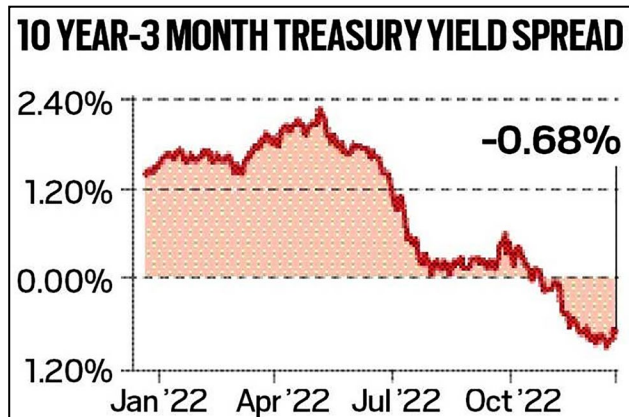
- Yield inversion happens **when yields for shorter duration bonds are higher than the yields on longer duration bonds.** If investors suspect that the economy is heading for trouble, they will pull out money from short-term risky assets (such as stock markets) and

Note:



put it in long-term bonds. This causes the prices of the long-term bonds to rise and their yields to fall. This process first **leads to flattening and eventually the inversion of the yield curve.**

- Yield inversion has long been a reliable predictor of recession in the US — and US treasuries have been witnessing yield inversion for a while now.
- The spread between the yields of 10-year and 3-month treasuries has turned negative.



Why does this matter to India?

- Rising interest rates are likely to make the **US dollar even more strong against the rupee. Indian imports will become costlier** as a result, and could **fuel domestic inflation.**
- Higher returns in the US may also lead to some **rebalancing of the investments coming to India.**
- Indian exports may benefit due to a weaker rupee but a **recession will dampen the demand for Indian exports.**

Global Minimum Tax

Why in News?

Recently, EU members have agreed to implement a minimum tax rate of 15% on big businesses in accordance with **Pillar 2 of the global tax agreement framed by the Organisation for Economic Cooperation and Development (OECD)** in 2021.

- In 2021, **136 countries including India** had agreed on a plan to redistribute tax rights across jurisdictions and enforce a minimum tax rate of 15% on large multinational corporations.

What is Global Minimum Tax?

- A **Global Minimum Tax (GMT)** applies a **standard minimum tax rate to a defined corporate income base** worldwide.
- The OECD developed a proposal featuring a **corporate minimum tax of 15% on foreign profits of large multinationals**, which would give countries new annual tax revenues of USD 150 billion.
- The framework of GMT aims to **discourage nations from tax competition through lower tax rates** that result in corporate profit **shifting and tax base erosion.**

What are the Key Points of the Plan?

- **Two Pillar Plan:**
 - **Pillar 1:**
 - 25% of profits of the **largest and most profitable Multinational Enterprise (MNEs)** above a set **profit margin would be reallocated** to the market jurisdictions **where the MNE's users and customers are located.**
 - It also provides for a simplified and streamlined approach to the application of the arm's length principle to in-country **baseline marketing and distribution activities.**
 - It includes **features to ensure dispute prevention and dispute resolution in order to address any risk of double taxation**, but with an elective mechanism for some low-capacity countries.
 - It also **entails the removal and standstill of Digital Services Taxes (DST)** and similar relevant measures, to prevent harmful trade disputes.
 - **Pillar 2:**
 - It provides a **minimum 15% tax on corporate profit**, putting a floor on tax competition.
 - This will apply to multinational groups with annual global revenues of over **750 million euros.** Governments across the world will impose additional taxes on the foreign profits of MNEs headquartered in their jurisdiction at least to the agreed minimum rate.
 - This means that if a company's earnings go untaxed or lightly taxed in one of the tax havens, their home country would impose a top-up tax that would bring the effective rate to 15%.
- **Objectives:**

Note:

- It aims to ensure that **big businesses with global operations do not benefit by domiciling themselves in tax havens** in order to save on taxes.
- The minimum tax and other provisions **aim to put an end to decades of tax competition between governments** to attract foreign investment.

What is the Significance of the Move?

- **End of Race to the Bottom:**
 - It tries to **put an end to the “race to the bottom” which has made it harder for governments to shore up the revenues required** to fund their rising spending budgets.
 - A **race to the bottom** refers to **heightened competition between nations, states, or companies**, where product quality or rational economic decisions are sacrificed in order to gain a competitive advantage or reduction in product manufacturing costs.
- **Stopping Financial Diversion to Tax Havens:**
 - Increasingly, income from intangible sources such as drug patents, software and royalties on intellectual property has migrated to Tax Havens, **allowing companies to avoid paying higher taxes in their traditional home countries.**
- **Mobilising Financial Resources:**
 - With budgets strained after the Covid-19 crisis, **many governments want more than ever to discourage multinationals** from shifting profits – and tax revenues – to low-tax countries regardless of where their sales are made.
- **Global Tax Reforms:** Since the inception of the **Base Erosion and Profit Shifting (BEPS) programme**, the proposal for GMT is another positive step towards global taxation reforms.
 - BEPS refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift

profits to low or no-tax locations. OECD has issued 15 Action Items to address this.

➤ **Counters Global Inequality:**

- The minimum tax proposal is particularly **relevant at a time when the fiscal state of governments across the world has deteriorated** as seen in the worsening of public debt metrics.
- It is believed that the plan will also help **counter rising global inequality by making it tougher for large businesses** to pay low taxes by availing the services of tax havens.

What are the Issues?

➤ **Threat of tax Competition:**

- It is considered the threat of tax competition **that keeps a check on governments which would otherwise tax their citizens heavily** to fund profligate spending programs.

➤ **Impending Sovereignty:**

- It impinges on the **right of the sovereign to decide a nation’s tax policy.**
- A global minimum rate would essentially **take away a tool country use to push policies that suit them.**

➤ **Question of Efficacy:**

- The deal has also been criticized for **lacking teeth: Groups such as Oxfam said the deal would not put an end to tax havens.**

What is the Organization for Economic Cooperation and Development?

- The OECD is an **intergovernmental economic organisation**, founded to stimulate economic progress and world trade.
- **Founded:** 1961.
- **Headquarters:** Paris, France.
- **Total Members:** 36.
- India is not a member, but a key economic partner.



Note:

International Relations

Highlights

- Geopolitical Challenges and Opportunities for India in 2023
- Foreign Policy of India
- Vijay Diwas and Indo Bangladesh Relations
- India-Armenia Relations
- India-Nepal Relations
- Ukraine Peace Formula
- Russia-China Joint Naval Drills
- Strait of Hormuz

Geopolitical Challenges and Opportunities for India in 2023

Why in News?

India is entering 2023 with challenges and opportunities staring at it on the diplomatic and military fronts with the **Russia-Ukraine** war and **China's belligerence** at India's doorstep.

- With a highly infectious **Covid-19 variant** spreading across China, a level of uncertainty has again gripped the world. And an economic downturn looms large on the horizon.
- As the **G20** Chair, India is looking forward to shaping conversations **on issues confronting the world**.
- As **UN Security Council's** non-permanent member for 2 years, India sought to project its views and **contribute to the global conversations**.

What were the Major Concerns in 2022?

- **Russia-Ukraine War:**
 - The Russian invasion of Ukraine has **upended the global order in place since World War II**, impacted the world's **food and energy security**, and is pushing the global economy towards a **recession**.
 - The nuclear rhetoric from Russian leaders has caused anxiety, while the strategic embrace of **Russia and China is another worry**.
- **China's Aggression:**
 - The Ukraine war has also made the world sit up and look at China's aggression in the Indo-Pacific.
 - India too is facing that aggression on its border, with a **skirmish in Arunachal Pradesh after the 2020 Galwan clashes** that killed 20 Indian soldiers.

- China's belligerence can be seen in its recent activities in the **South China Sea**, where it has been observed to carry out construction on an island.

➤ Taliban Engagement:

- Less than a year after Taliban's recapturing of Afghanistan, India reopened its **operations in the Indian embassy in Kabul** and began the **process of re-engaging by sending humanitarian aid** in the form of food grains, vaccines, and essential medicines.

- While India has made its red lines clear on the **Menace of Extremism and Rights of Minorities and women**, **it has also signalled a long-term commitment to Afghanistan's future**.

- **India** has made a commitment of USD 80 million — over and above its USD 3 billion commitment in the last two decades — for improving the lives of Afghans.

- This means India is looking at the Taliban as a political actor, although it is **influenced and even controlled by Pakistan's military establishment**.

➤ Neighborhood in Crisis:

- The **Lankan economic and political crisis** was a major challenge in the neighbourhood. India provided **humanitarian aid, fuel, medicines, more than any other country** in such a short period of time.

- India is also helping Lanka negotiate an economic debt relief package from the **International Monetary Fund (IMF)**.

- With China as a rival in Sri Lanka, India wants a **government that understands India's security and strategic interests**.

- **Engagement with Myanmar** has continued in **low-key visits and assistance to the military junta regime**.

Note:



drishti

- The key impact has been the **influx of refugees from Myanmar** to the north-eastern states through the porous borders and concern about non-state actors fomenting trouble in the north-east.

What are the Challenges and Opportunities Ahead?

➤ **Handling China:**

- The recent **Tawang Clash** has shown that China is **challenging the status quo, not just in eastern Ladakh but in other sectors.**
- It is clear that China is the **biggest adversary** unlike in the past where some gave them the benefit of doubt.
- India's **strategic response has been guided** by a thinking that one has to stand up to the bully, but that has come at a cost, with **soldiers braving the harsh winter in eastern Ladakh** for the third year in a row.
- As China sees itself as a superpower and whose time has come, more clashes and competing interests with India are likely, which will have to be resolved through negotiations.

➤ **Engaging with Russia:**

- Russia has been a reliable supplier of defence equipment for the past seven decades, and despite diversification to the US, France and Israel among others, **it still dominates the field.**
- But it has been complicated by the Russia-Ukraine war, where the reliability of Russian equipment is **being questioned and the supply chain is under strain.**
- For India, China has been the biggest worry and what concerns India is that **Russia's ties with China influences some of its decisions.**
 - In the post **Cold War-era**, economic relations have formed the **"new strategic basis" for Sino-Russian relations.**
 - China is Russia's biggest trading partner and the **largest Asian investor in Russia.**
 - The West's approach towards Russia after the war has brought Moscow much closer to China. Delhi's effort will be to engage with both Russia and the West, and put its strategic defence and national security interests first.

➤ **G20 as a Global Stage:**

- The hosting of the **G20 summit** will be one of the **biggest portrayals of India's rise** at the global stage months ahead of the General Elections in 2024.
- India has already positioned **itself as the "voice of the Global South"** — a reference to the developing and the less-developed countries — and will seek to put its priorities on the global forum.
- In this context, India will also **seek to bring Russian and Western interlocutors and leaders together** and end the conflict in Europe.
- If India manages to do so, it will **claim a diplomatic win, which will go down well with its domestic constituency.**

➤ **Ties with the West:**

- With India buying cheap oil and not joining the West against Russia, India will have to work to **assuage the concerns of European and American partners.** In fact, the G20 preparations will give some opportunity to do that.

➤ **Challenge in the Neighbourhood:**

○ **Sri Lanka and Maldives:**

- While Sri Lanka will continue to demand India's humanitarian, financial and political attention in the new year, **India will also be part of political conversation in Maldives.**
 - The Maldives is going to polls in September 2023, and an "India Out" campaign is likely to fire up the political debate. Delhi will be watching closely as political parties try to project India as the bully and a big brother.

○ **Bangladesh:**

- **Bangladesh** also goes into election mode in 2023, with polls scheduled for January 2024 after an iron-fisted reign of Sheikh Hasina.
- India will be looking at her prospects **after a long and uninterrupted political journey that has brought security in India's eastern states.**

○ **Nepal:**

- Nepal witnessed a dramatic turn of events, with rebel-turned-politician **Pushpa Kamal Dahal 'Prachanda' becoming the Prime Minister and former PM KP Oli** — a known India-baiter in recent years — holding the keys to the government.
- This will pose a significant challenge for India, which has seen Beijing's influence grow in Kathmandu in recent years.

Note:



➤ Pakistan's Crucial Year:

- Elections in Pakistan are scheduled for later in 2023. This will again be a contest to observe how the new civilian government and the Army chief will shape their attitude towards India.
- In India, with Lok Sabha polls due in 2024, how the Pakistan puzzle is raked up and managed might hold the key to the next steps in the relationship.

Foreign Policy of India

Why in News?

On the geopolitical and diplomatic stage, 2022 was a difficult year, especially following Russia's invasion of Ukraine.

How did India handle the Ukraine Crisis?

➤ Following Non-Alignment Policy:

- The war in Ukraine saw the government spell out its **version of "non-alignment"**, as it sought to keep a balance in the growing polarisation between the U.S. and the **European Union** on one side, and Russia on the other.
- On one side the Indian **Prime Minister made his discomfort with the war clear directly to Russian President Vladimir Putin with the words "This era is not for war"** and on the other hand **refused to accept western sanctions, growing military and oil trade with Russia**, and seeking **rupee-based payment mechanisms** to facilitate them.

➤ Refusing to Vote on the Resolution:

- Most significantly, in more than a dozen resolutions at the **United Nation Security Council (UNSC), United Nations General Assembly (UNGA), International Atomic Energy Agency (IAEA), Human Rights Commission**, and other multilateral platforms seeking to censure Russia for the invasion and humanitarian crisis, **India chose to abstain**.
 - The Indian Foreign Policy said that India's policy was guided by its national interests, telling those who expected India to take sides, "Tough luck if our policies do not meet your expectations".

What were the Other

Highlights in Foreign Policy in 2022?

➤ Returning to Free Trade Agreements (FTAs):

- In 2022, **India returned to FTAs**, after a break of several years when India had called for a review of all **FTAs**, scrapped all Bilateral Investment Treaties (BITs) and walked out of the 15-nation Asian **Regional Comprehensive Economic Partnership (RCEP)**.
- In 2022, **India signed trade agreements with the UAE and Australia**, and hopes to progress on talks with the EU, **Gulf Cooperation Council** and Canada for others.

➤ Joining US led IPEF:

- India also joined the **U.S.-led Indo-Pacific Economic Forum (IPEF)**, although it later decided to stay out of trade talks.

What about Ties with Neighbours?

➤ Sri Lanka:

- India's foreign policy was marked by **economic assistance to Sri Lanka in the midst of its collapse**.

➤ Bangladesh, Bhutan, and Nepal:

- Foreign policy of India is marked by **regional trade and energy agreements with Bangladesh, Bhutan, and Nepal** that could see a South Asian energy grid emerge.

➤ Central Asian countries:

- India has also strengthened ties with **Central Asian countries** on connectivity.
 - India has restarted efforts to revive the much-delayed **Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project**.
 - India also discussed the best use of the **International North-South Transport Corridor (INSTC)**.
 - Steps have also been taken to operationalize the **Chabahar port** in Iran which can provide a secure, viable and unhindered access to the sea for the Central Asian countries.
 - In addition, the **Ashgabat Agreement** on International Transport and Transit Corridor (ITTC) was discussed to enhance connectivity between India and Central Asian countries.

➤ Afghanistan and Myanmar:

- The government kept channels open with repressive regimes like Afghanistan's Taliban and the Myanmar Junta, opening a "technical mission" in Kabul and sending the foreign secretary to Myanmar to discuss border cooperation.

Note:

- Earlier in December, 2022 **India abstained on a UNSC vote calling for Myanmar to end violence and release political prisoners.**
- **Iran and Pakistan:**
 - With Iran too, where protests against the killing of an activist have brought thousands onto the streets, India has steered clear of any criticism.
 - However, ties with Pakistan remain flat, with a big showdown at the UN in December, 2022 between the foreign ministers of the two nations.

What Progress has been made in the LAC-China Standoff?

- Despite a visit to Delhi by China's Foreign Minister and disengagement at some stand-off points, tensions at the **Line of Actual Control** remained high, and an unsuccessful Chinese PLA attempt to take Indian posts at Yangtse in Arunachal Pradesh ended the year, signaling more violent clashes in 2023.
- In spite of the fraught state of relations, India is due to host the Chinese President twice in 2023, at the **G-20** and **SCO summits**, opening up the possibility for talks to end the standoff.

What are the Current Challenges in India's Foreign Policy?

- **Pakistan-China Strategic Nexus:**
 - The most formidable threat **India faces today is from the Pakistan-China strategic nexus that seeks to change the status quo** at the contested borders and undermine India's strategic security.
 - China's aggressive actions since May 2020 to change the status quo at the Line of Actual Control have severely damaged Sino-Indian relations.
- **China's Expansion:**
 - For India, **the issue of how to balance China's forays into South Asia** and the **Indian Ocean region** is another concern.
 - Under the rubric of China's much touted **Belt and Road Initiative (BRI)**, it is developing **China-Pakistan Economic Corridor (CPEC)** in Pakistan (through the Indian territory in the Pakistan-occupied Kashmir), building China-Nepal Economic Corridor, China-Myanmar Economic Corridor and dual use infrastructure in the littorals of the Indian Ocean.
- **Balancing Big Power Relations:**
 - India's strategic autonomy **precludes New Delhi to join any military alliance or strategic partnership**

that is inimical to another country or group of countries.

- Traditionally, the **West has perceived India closer to the Soviet Union / Russia.** These perceptions are accentuated with India actively participating in SCO, **BRICS** and **Russia-India-China (RIC) forum.**
- For India to balance an assertive China, it has to rely on external balancing in the Indo-Pacific to overcome the security dilemmas posed by the Pakistan-China hybrid threats.
- India's participation in **QUAD**, signing of foundational agreements with US, Japan, France, UK and Indonesia should be seen from that perspective.
- **Refugee Crisis:** In spite of not being a party to the **1951 Refugee Convention** and its 1967 Protocol, **India has been one of the largest recipients of refugees in the world.**
 - The challenge here is to **balance protection of human rights and national interest.** As the Rohingya crisis unfolds, there is still a lot that India can do to facilitate the finding of long-term solutions.
 - These actions will be key in determining India's regional and global standing on human rights.

Vijay Diwas and Indo Bangladesh Relations

Why in News?

Every year **16th December** is observed by **Indian Armed Forces and Bangladesh** as **Vijay Diwas (Bijoy Dibos)** to mark **India's victory over Pakistan in the 1971 war** and the birth of Bangladesh as an independent nation.



Note:

What are the Key Points about the Indo-Pak War for Bangladesh Liberation?

- **Background:**
 - Pakistan right after India's independence consisted of East and West Pak where a **major problem was the geographical disconnect** between the two regions.
 - **Cultural conflicts and negligence of East Pak's administration** were also challenges.
 - In the mid-1960s, leaders such as **Sheikh Mujibur Rahman** (the founding father of Bangladesh), actively began protesting against the policies of West Pak which was followed by a brutal crackdown by the Pakistani military.
- **India's Role:**
 - On 15 May 1971, **India launched Operation Jackpot** to recruit, train, arm, equip, supply and advise **Mukti Bahini fighters** engaged in guerrilla warfare against the Pakistan military.
 - On 3rd December 1971, **India decided to go on a war with Pakistan** to save Bengali Muslims and Hindus in East Pakistan. The war lasted for 13 days.
 - After that, a **written agreement** between India, Pakistan and the provisional government of Bangladesh came into effect bringing an end to the **Bangladesh Liberation War**.
- **Significance:**
 - 51 years ago, on 16th December, the **largest surrender of military personnel took place since the end of World War II**.
 - The chief of the Pakistani forces surrendered unconditionally to the Indian Army and Mukti Bahini in Dhaka.
 - Victory Day celebrations are of importance to not only Bangladesh but also marks a special occasion celebrated across India which **bears testimony to the pivotal role of the Indian military and its contribution** to the war.

How are India's Relations with Bangladesh since Its Independence?

- **India's Immediate Recognition:**
 - India was **one of the first countries to recognize Bangladesh** and **establish diplomatic relations immediately** after its independence in December 1971.
 - The **UN member nations** were also quick to recognise Bangladesh's independent identity.

- **Defence Cooperation:**
 - India and Bangladesh share 4096.7 km. of border; the **longest land boundary that India shares with any of its neighbours**.
 - Assam, West Bengal, Mizoram, Meghalaya, and Tripura share borders with Bangladesh.
 - The two also conduct Joint exercises - **Army (Exercise Sampriti)** and **Navy (Exercise Milan)**.
- **Economic Relations:**
 - In 2021-22, **Bangladesh has emerged as the largest trade partner for India in South Asia** and the **fourth largest destination for Indian exports** worldwide.
 - **Exports to Bangladesh grew more than 66%** from USD 9.69 billion in FY 2020-21 to USD 16.15 billion in FY 2021-22.
 - Recently, the **Prime Minister of Bangladesh visited India** and held talks with Indian Prime Minister where India and Bangladesh signed 7 agreements for cooperation in various areas.
- **Key Challenges in Relations:**
 - Despite the remarkable progress, the **unresolved Teesta water sharing issue** looms large.
 - The problem of **Bangladeshi civilians being shot at the border** has also dented relations; these shootings occur as many **Bangladeshi people try to illegally migrate into India**.
 - Despite its '**Neighbourhood First Policy**', India has been losing its influence in the region to China; **Bangladesh is an active partner of the Belt and Road Initiative (BRI)**.

India-Armenia Relations

Why in News?

Armenia and India celebrated 30 years of bilateral diplomatic relations in 2022.



Note:

How have Historical Ties been?

- Armenia and India **maintain active political ties**. Effective cooperation exists between the two nations within international bodies.
- After Armenia's independence in 1991, **Armenian-Indian relations were reestablished**.
- Diplomatic relations were established between the Republic of Armenia and India in 1992.
- In 1999, the Indian Embassy in Yerevan began operations.
- If the Armenian-Indian political relations can be evaluated as "excellent", **Armenia is the only Commonwealth of Independent States (CIS) country with which India had diplomatic relations in 1995 (other than Russia)**.
 - The CIS was founded in 1991 **after the dissolution of the Soviet Union**.
 - At present the CIS unites: Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine.
- India and Armenia signed a **Treaty on Friendship and Cooperation in 1995**.
- But the trade and economic cooperation between the two countries cannot be deemed adequate.

What are the Areas of Cooperation Between the Two Countries?

- **Defence Relations:**
 - Armenia had already shown interest in Indian military hardware before the 2020 war.
 - In 2020, Armenia signed a USD 40 million arms deal with India for the supply of four SWATHI radars to detect the location of weapons.
 - In October 2022, India signed an agreement with Armenia to export missiles, rockets & ammunition.
 - The missiles will also include Indigenous **Pinaka Multi-Barrel Rocket** Launcher.
 - India may also export its **Man Portable Anti-Tank Guided Missile (MPATGM)** to Armenia.
- **Supply Chain and Economy:**
 - In the contest over global supply chains, **Armenia provides a potential outpost for New Delhi in the Eurasian corridor** which extends from the **Persian Gulf** to Russia and Europe.

- Armenia can also **prove a worthy developmental partner to India in domains such as agriculture, pharmaceuticals, manufacturing, and technology**.
- The collaboration can provide an outstanding substitute for the debt-fuelled Chinese **Belt and Road Initiative** model.
- Finally, it **goes without saying that Armenia growing purchases of Indian defence hardware would provide an impetus** to both public and private sector defence manufacturing in India.

What is the Significance of Armenia for India?

- **Countering Pan-Turkism:**
 - **Turkey's imperial ambition of establishing a pan-Turkic empire**, administered from Ankara, is identifiable in the present-day Caucasus and other parts of Eurasia.
 - The **racist doctrine envisions an empire comprising all nations and regions that speak a Turkic-type language**, disregarding the extent of difference between those languages and that spoken in Turkey as well as the approval of the regions' respective populaces.
 - With recent exports of military hardware to Armenia, **New Delhi has openly positioned itself on Armenian side in the Nagorno-Karabakh conflict** and has therefore chosen to counter Azerbaijan and its supporters including Turkey and Pakistan as well as Ankara's expansionist pan-Turkic ambitions.
- **Geo-Strategic Benefits:**
 - As an ally of Azerbaijan, **Pakistan has been supplying men and military hardware to assist the former** in its conflicts.
 - Azerbaijan has **returned the favour by offering geopolitical, geoeconomic, and geostrategic benefits** to its partners in Islamabad.
 - **Azerbaijan's success in Armenia would significantly energize Pakistan**, with perilous consequences.
 - The purpose of seizing Armenian territory forcibly is to gain unhindered access to Turkey, Azerbaijan, Pakistan, and the entire Turkic-oriented axis of nations, up to China.
 - Munitions and military hardware could utilise this route to arrive at the doorstep of Kashmir.
 - To prevent this, **New Delhi can utilize its military skills and capabilities to assist Armenia** in securing itself against Azerbaijan's energy-funded superior military strength.

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➤ **Economic Cooperation:**

- Armenia can play an important role in the **Indian-backed International North-South Transport Corridor (INSTC)** and the Iranian-backed **Black Sea-Persian Gulf Transport Corridor**.

India-Nepal Relations

Why in News?

Pushpa Kamal Dahal "Prachanda" was sworn in as Nepal's new Prime Minister.

- It is believed that **Deuba's predecessor - KP Sharma Oli was pro-China**, and the coming together of Communist forces is a turning back of the clock for India.
- After the bitterness in ties during Oli's terms in office from 2015-2016 and 2018-2021, **India-Nepal relations had improved after Deuba became PM in 2021**.

What are the Areas of Cooperation Between the Two Countries?

➤ **Trade and Economy:**

- India remains **Nepal's largest trade partner**, with bilateral trade crossing USD 7 billion in FY 2019-20.
- India provides transit for almost the entire third country trade of Nepal.
- Indian firms are among the largest investors in Nepal, accounting for **more than 33% of the total Foreign Direct Investment (FDI) stock in Nepal**, worth nearly USD 500 million.

➤ **Connectivity:**

- Nepal **being a landlocked country is surrounded by India from three sides** and one side is open towards Tibet which has very limited vehicular access.
- India-Nepal has undertaken various connectivity programs to enhance people-to-people linkages and promote economic growth and development.
- India is looking to develop the inland waterways for the movement of cargo, within the framework of trade and transit arrangements, providing additional access to sea for Nepal calling it linking **Sagarmatha (Mt. Everest)** with **Sagar (Indian Ocean)**.

➤ **Defence Cooperation:**

- Bilateral defence cooperation includes assistance to the Nepalese Army in its modernisation through the provision of equipment and training.

- The **Gorkha Regiments of the Indian Army** are raised partly by recruitment from hill districts of Nepal.
- India from 2011, every year undertakes a joint military exercise with Nepal known as **Surya Kiran**.

➤ **Humanitarian Assistance:**

- Nepal lies in the sensitive ecological fragile zone which is prone to **earthquakes and floods** causing massive damage to both life and money, whereby it remains the biggest recipient of India's humanitarian assistance.

➤ **Multilateral Partnership:**

- India and Nepal share multiple multilateral forums such as BBIN (Bangladesh, Bhutan, India, and Nepal), **BIMSTEC** (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation), **Non Aligned Movement**, and **SAARC** (South Asian Association for Regional Cooperation) etc.

What are the Challenges?

- **Territorial Disputes:** One of the main challenges in the Indo-Nepal ties is the **Kalapani boundary issue**. These boundaries had been fixed in 1816 by the British, and India inherited the areas over which the British had exercised territorial control in 1947.
- **Issues with Peace and Friendship Treaty:** The 1950 Treaty of Peace and Friendship was sought by the Nepali authorities in 1949 to continue the special links they had with British India and to provide them an open border and the right to work in India.
 - But today, it is viewed as a sign of an unequal relationship, and an Indian imposition.
- **China's Intervention:**
 - In recent years, Nepal has drifted away from India's influence, and China has gradually filled the space with investments, aid and loans.
 - China considers Nepal a key partner in its **Belt and Road Initiative (BRI)**, and wants to invest in Nepal's infrastructure as part of its grand plans to boost global trade
- **Internal Security:** It is a major concern for India as the Indo-Nepal border is virtually open and lightly policed which is exploited by terrorist outfits and insurgent groups from North Eastern part of India e.g., supply of trained cadres, fake Indian currency.

Note:

Ukraine Peace Formula

Why in News?

Recently, the Prime Minister of India spoke to the Ukrainian President to discuss India's ongoing **G-20 Presidency**, and Ukraine's "**10-point Peace Plan**".

- In early December 2022, Ukraine **urged the leaders of the Group of Seven nations** to support its **Global Peace Summit** idea in winter that would focus on the peace plan "as a whole or some specific points in particular".

What is Ukraine's 10-Point Peace Plan?

- Ukraine first announced its peace formula at a November 2022 summit of the Group of 20 major economies. The plan calls for:
 - Radiation and **nuclear safety**, focusing on restoring safety around Europe's largest nuclear power plant, Zaporizhzhia in Ukraine, which is now-Russian occupied.
 - **Food security**, including protecting and ensuring Ukraine's grain exports to the world's poorest nations.
 - Energy security, with focus on **price restrictions on Russian energy resources**, as well as aiding Ukraine with **restoring its power infrastructure**, half of which has been damaged by **Russian attacks**.
 - Release of all prisoners and deportees, including war prisoners and children deported to Russia.
 - Restoring Ukraine's **territorial integrity** and Russia reaffirming it according to the **United Nations Charter**.
 - Withdrawal of Russian troops and cessation of hostilities, restoration of Ukraine's state borders with Russia.
 - Justice, including the establishment of a special tribunal to prosecute Russian war crimes.
 - Protection of environment with focus on demining and restoring water treatment facilities.
 - Prevention of escalation of conflict, and building security architecture in the Euro-Atlantic space, including guarantees for Ukraine.
 - **Confirmation of the war's end**, including a document signed by the involved parties.

What has been the World's Response to Peace Formula?

- **Russia rejected Ukraine's peace proposal** and Moscow reiterated that it would not give up any territory it has taken by force, around a fifth of Ukraine, which Russia has annexed.
- The Western world's support for Ukraine's military has run into billions of dollars, led by Washington, and nations have rushed to help Kyiv with demining and fixing power infrastructure.
 - But **response to Ukraine's peace plan** and its **proposed peace summit** has been more cautious.
- The **G7 leaders said they were committed to bringing peace** to Ukraine "in line with its rights enshrined in the U.N. Charter."

Russia-China Joint Naval Drills

Why in News?

Recently, Russia and China have begun a **joint naval exercise in the East China Sea**.



What are the Key Points of the Exercises?

- It involves **firing exercises and anti-submarine drills**.
- The main goal of the drills is to **strengthen naval cooperation between the Russian Federation and the People's Republic of China** and to maintain peace and stability in the **Asia Pacific region**.
- This joint exercise is directed at **demonstrating the determination and capability of the two sides to jointly respond to maritime security threats** and

Note:

further deepen the **China-Russia comprehensive new-era strategic partnership** of coordination.

- Russia and China have also **engaged in frequent military drills** over the past year, including in May 2022 when the two countries flew nuclear-capable bombers.
- That was followed with a sweeping **joint exercise in September 2022 that involved more than 2,000 Chinese troops**, hundreds of military vehicles, combat aircraft and warships.

What are India's

Exercises with China & Russia?

- **China:**
 - **Exercise Hand-in-Hand:**
 - The aim of the exercise is to practice **joint planning and conduct of counter terrorist operations** in semi urban terrain.
- **Russia:**
 - **Exercise Indra:**
 - The exercise will entail the conduct of **counter terror operations** under the **United Nations** mandate by a joint force against international terror groups.
 - The INDRA series of exercises **began in 2003 and was conducted as a bilateral naval exercise alternately** between the two countries.
 - However, the first joint Tri-Services Exercise was conducted in 2017.
 - **Exercise TSEINTR:**
 - Exercise **TSEINTR 2019 is part of the annual series of large-scale exercises** that form part of the Russian Armed Forces' annual training cycle.
 - The series rotates **through the four main Russian operational strategic commands** i.e Vostok (East), Zapad (West), TSEINTR (Centre) and Kavkas (South).

Strait of Hormuz

Why in News?

Recently, the United Arab Emirates and Iran's military have started their annual Drill in the coastal area of the **Gulf of Oman** and near the strategic Strait of Hormuz.

- The maneuvers are **aimed at improving readiness in confronting foreign threats and any possible invasion.**

What is the Strait of Hormuz?

- The strait is located at the **mouth of the Persian Gulf** and is crucial to global energy supplies, with about a fifth of all oil traded at sea passing through it.
- The waterway **separates Iran and Oman, linking the Persian Gulf to the Gulf of Oman and the Arabian Sea.**
- The Strait is 33 km wide at its narrowest point, but the shipping lane is just three km wide in either direction.
- Most crude exported from Saudi Arabia, Iran, the UAE, Kuwait and Iraq – all members of the **Organization of the Petroleum Exporting Countries (OPEC)** – is shipped through this waterway.
- It is also the route used for nearly all the **Liquefied Natural Gas (LNG)** produced by the world's biggest LNG exporter, Qatar.
- The UAE and Saudi Arabia have sought to find other routes to bypass the Strait, including building more oil pipelines.



Note:

Social Issues

Highlights

- Drug Menace
- Ban on Liquor
- Prohibition on the Sale of Single Cigarettes
- Social Progress Index 2022
- State of Food Insecurity in 2022
- India to Become Largest Populated Country
- Denotified, Nomadic, Semi-Nomadic Tribes
- Vokkaligas, Lingayats share in Reservation
- Democratic Vision of Ambedkar
- Rise in Organ Donation
- Law on Acid Attacks in India

Drug Menace

Why in News?

Kerala is using sports to tackle drug menace, for which its Excise department has created clubs **near college campuses and hostels in Kerala.**

- Apart from making students motivated to participate in sports, awareness classes are conducted and information on substance abuse is shared.

What is the Status of Drug Menace in India?

- The menace of drug addiction has spread fast among the youth of India.
 - India is sandwiched between two largest Opium producing regions of the world that is **the Golden triangle on one side and the Golden crescent on other.**
 - The golden triangle area comprises **Thailand, Myanmar, Vietnam and Laos.**
 - The golden crescent area includes Pakistan, Afghanistan and Iran.
- India is one of the **world's single largest opiate markets in terms of users and would likely be vulnerable** to increased supply.
 - This is because of the intensification of **trafficking in opiates originating in Afghanistan may be taking place eastwards**, in addition to southwards and westwards along the traditional **Balkan route.**
- According to **World Drug Report 2022**, India has the **fourth largest quantity of opium seized in 2020** at 5.2 tons and the third-highest amount of morphine was also seized in the same year at 0.7 tons.

- According to the **World Drug Report 2021**, prescription drugs and their ingredients or 'precursors' are being increasingly diverted for recreational use in India--the largest manufacturer of generic drugs in the world.
 - India is also linked to shipment of drugs sold on the 19 major **darknet markets analysed over 2011-2020.**

What are the Initiatives to Cope with Drug Menace?

- **Indian:**
 - **Narco-Coordination Centre:** The **Narco-Coordination Centre (NCORD)** was constituted in November, 2016 and the scheme of "Financial Assistance to States for Narcotics Control" was revived.
 - **Seizure Information Management System (SIMS):** SIMS is a e-portal created by the Narcotics Control Bureau (NCB) to create a complete online database of drug offences and offenders.
 - **National Drug Abuse Survey:** The government is also conducting a National Drug Abuse Survey to measure trends of drug abuse in India through the Ministry of Social Justice & Empowerment with the help of National Drug Dependence Treatment Centre of AIIMS.
 - **Project Sunrise:** It was launched by the Ministry of Health and Family Welfare in 2016, to tackle the **rising HIV prevalence** in north-eastern states in India, especially among people injecting drugs.
 - **NDPS Act:** It prohibits a person from producing, possessing, selling, purchasing, transporting, storing, and/or consuming any narcotic drug or psychotropic substance.

Note:



- The NDPS Act has since been amended thrice – in 1988, 2001 and 2014.
- The Act extends to the whole of India and it applies also to all Indian citizens outside India and to all persons on ships and aircraft registered in India.
- **Nasha Mukh Bharat:** Government has also announced the launch of the '**Nasha Mukh Bharat**', or **Drug-Free India Campaign** which focuses on community outreach programs.
- **International Treaties and Conventions to Combat Drug Menace:**
 - India is signatory of the following international treaties and conventions to combat the menace of Drug Abuse:
 - **United Nations (UN) Convention on Narcotic Drugs (1961)**
 - UN Convention on Psychotropic Substances (1971).
 - **UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)**
 - UN Convention against Transnational Organized Crime (UNTOC) 2000.

Ban on Liquor

Why in News?

A recent hooch tragedy in Bihar claimed many lives and left several others critically ill and blind.

What is the Background of Liquor Ban in India?

- In India, **attempts at prohibition have been influenced by the thinking of Mahatma Gandhi**, who viewed alcohol consumption more as a disease than a vice.
- Following India's independence, **Gandhians continued to push for a liquor ban.**
 - These efforts led to the inclusion of **Article 47 in the Constitution.**
- Several Indian states have enacted bans on alcoholic beverages.
 - For example, **Haryana made several attempts at prohibition but was forced to abandon the policy** due to the inability to control illicit distillation and bootlegging, which also resulted in many deaths.

- **Prohibition has been in effect in Gujarat since 1st May 1960**, but the liquor trade persists through the black market.
- Bihar's prohibition, imposed in April 2016, which initially appeared to succeed and yield certain social gains.
 - However, following several deaths from consuming illicit liquor, the policy is increasingly coming under attack.
- Currently, there are **five states (Bihar, Gujarat, Lakshadweep, Nagaland, and Mizoram) with total prohibition** and some more with partial prohibition.

What is the Indian Constitution's View of Alcohol?

- **Directive Principles of State Policy (DPSP) (Article 47):**
 - It mentions that "in particular, the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health."
 - **While DPSPs are not in themselves legally enforceable**, they set goals that the state should aspire towards to establish conditions under which citizens can lead a good life.
 - Thus, **alcohol is seen by the Constitution and by extension**, the Indian state, as an undesirable evil that needs to be regulated.
- **Seventh Schedule:**
 - According to the **Seventh Schedule of the Constitution**, alcohol is a state subject, i.e., state legislatures have the right and responsibility to draft laws regarding it, including "the production, manufacture, possession, transport, purchase and sale of intoxicating liquors."
 - Thus, laws regarding alcohol differ from state to state, falling in the whole spectrum between prohibition and private sale.

What is the Reason that Not all States have Banned Alcohol?

- While the Constitution sets prohibition on alcohol as a goal, for most states, it is very difficult to declare a ban on alcohol.
- This is primarily because **liquor revenues are not easy to ignore and have consistently contributed a large share of state governments' revenue.**

Note:

- For instance, in Maharashtra, state liquor revenues amounted to Rs 11,000 crore in April 2020 (during the nationwide Covid lockdown), compared with Rs 17,000 crore in March.

What are the Pros and Cons of Prohibition?

➤ Pros:

- Various studies have provided **evidence linking alcohol with domestic abuse or domestic violence.**
 - Case of Bihar: Crimes against women have **clearly declined both in terms of rate** (per 100,000 female population) and incidence (absolute numbers).

➤ Cons:

- **Strengthen Organised Crime Groups:**
 - Prohibition **creates opportunities for a thriving underground economy** that distributes liquor, outside the regulatory framework of the state.
 - This **creates its own problems, from strengthening organised crime groups (or mafias)** to the distribution of spurious liquor.
 - In the case of Bihar, it was reported that a year after prohibition was enforced, **there was a spike in substance abuse.**
 - While the government made liquor more inaccessible, it is impossible to take it out of circulation completely.
- **Affects Poorer Sections of Society:**
 - Prohibition **disproportionately affects poorer sections of society with upper classes still being able to procure expensive** (and safe) alcohol.
 - In Bihar, most of the cases registered under its prohibition laws are related to **illicit or low-quality liquor consumption.**
- **Burden on Judiciary:**
 - Bihar introduced complete prohibition in April 2016. While it certainly has led to reduction in alcohol consumption, the related social, economic, and administrative costs have been far too much to justify gains. Prohibition crippled the judicial administration.
 - The former NV CJ Ramana had stated that decisions like the liquor ban in Bihar put a huge burden on courts. As of 2021, there are three lakh cases pending in the courts related to liquor ban.

Prohibition on the Sale of Single Cigarettes

Why in News?

Recently, the **Parliamentary Standing Committee** on Health and Family Welfare has recommended a ban on the sale of single sticks of cigarettes, in its report about **Cancer Management, Prevention and Diagnosis.**

What is the Need for Imposing a Ban?

➤ Cancerous:

- Oral **cancer** accounts for the highest proportion of cancer cases in the country.
- Tobacco consumption accounts for **nearly 50% of all cancers, collectively referred to as tobacco-related cancers.**

➤ Singles Stick are more Alluring:

- Single sticks are more economical to **acquire than a full pack of cigarettes.**
- A ban on single-stick sales will compel a **potential consumer to buy the entire pack which may not be particularly economical, thus curbing potential experimentation** and the scope for regular intake.
- Moreover, a potential ban will also mean that the **consumer would have to carry around the packet.**

➤ Some Reports concern over Usage:

- The **World Health Organisation (WHO)** has observed that all forms of tobacco are harmful, and there is no safe level of exposure to tobacco.
 - It also states that **smoking cigarettes is the most common way of tobacco use** worldwide.
- The medical journal, **Lancet** noted in June 2020, that by 2030, 7 million of annual deaths from smoking are expected to **be from low and middle-income countries.**

➤ Highly Addictive:

- Nicotine in tobacco products is highly addictive, and without cessation support only 4% of users who attempt to quit tobacco consumption will succeed, according to the WHO.

What are the Key Recommendations?

➤ Containing the Sale of Tobacco:

- National Health Policy (2017) endeavors a **relative reduction in current tobacco use by 30% in 2025,**

Note:



making it imperative that the **government take effective measures to contain the sale of tobacco products.**

- To this effect, it recommends that the government prohibit the sale of single sticks of cigarettes and lay stringent penalties and fines on offenders.
- **Abolishment of Smoking Areas:**
 - The government should abolish all **designated smoking areas in airports, hotels and restaurants** in addition to encouraging a smoke-free policy in organizations.
- **Revive Tax Increases:**
 - India has the lowest prices for tobacco products and thus making them more accessible and it must be looked at to increase **taxes on them.**
 - The revenue acquired from additional taxation can be **used for cancer prevention and awareness.**
- **Prohibition on Gutka:**
 - Sought a ban on gutka and pan masala alongside **a prohibition on their direct and indirect advertisement.**
 - This is based on the observation that, in India, **more than 80% of tobacco consumption is in the form of chewing tobacco** with or without areca nut, aggressively marketed as a mouth freshener.

How Efficacious Can a Ban Be?

- **Not Feasible Pan India Ban:**
 - It is not practical to enforce a pan-India ban on the sale of loose cigarettes. It's not feasible at all **because of the scale of such small shops and stalls that sell cigarettes and tobacco products.**
- **May Create Routes for Illegal Cigarettes:**
 - Only 8 % of the total tobacco is consumed as legal cigarettes. The remaining is consumed through **29 tax evasion-prone products such as bidis, chewing tobacco, khaini and illegal cigarettes.**
 - According to Euromonitor International, the volume of illegal cigarettes in India was **estimated to be at 26.8 billion sticks in 2021.** In fact, India is the **4th largest illicit cigarette market** in the world.
 - Banning things **only leads to taking the illegal route to acquiring them.** And some of the cigarettes in the illegal market may be of even inferior quality thereby **causing more damage to the well-being of an individual.**

➤ **Absence of vendor Licensing Regime:**

- Nonetheless, the proposed move will reduce consumption and sales, but the ban will not be very effective if the vendor licensing regime is not instituted.
- The government must also **consider instituting vendor licensing.**
- Because cigarettes would not be available everywhere, **the potential for recurrence of the consumption would be reduced.**

What are the Tobacco Control Measures in India?

➤ **International Convention:**

- Governments adopt and implement the tobacco control provisions of the WHO Framework Convention on Tobacco Control (WHO FCTC).
- It is the first international treaty negotiated under the auspices of the WHO.
- It was adopted by the World Health Assembly on 21 May 2003 and entered into force on 27 February 2005.

➤ **Cigarettes and Other Tobacco Products Act (COTPA), 2003:**

- Replaced the Cigarettes Act of 1975 (largely limited to statutory warnings- 'Cigarette Smoking is Injurious to Health' to be displayed on cigarette packs and advertisements. It did not include non-cigarettes).
- The 2003 Act also included cigars, bidis, cheroots, pipe tobacco, hookah, chewing tobacco, pan masala, and gutka.

➤ **National Tobacco Control Programme (NTCP), 2008:**

- Objective: To control tobacco consumption and minimize tobacco consumption related deaths
- Activities: Training and capacity building; information, education, and communication (IEC) activities; tobacco control laws; reporting survey and surveillance and tobacco cessation

➤ **Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2020:**

- It was mandated that the specified health warning shall cover at least 85% of the principal display area of the package.
- Of this, 60% shall cover pictorial health warning and 25% shall cover textual health warning.

Note:

- **mCessation Programme:**
 - It is an initiative using mobile technology for tobacco cessation.
 - India launched mCessation using text messages in 2016 as part of the government's **Digital India initiative**.
 - It uses two-way messaging between the individual seeking to quit tobacco use and programme specialists providing them dynamic support.
- **Prevention and Control of Pollution Act of 1981-** Recognized smoking as an air pollutant.
- **Cable Television Networks Amendment Act of 2000-** Prohibited the transmission of advertisements on tobacco and liquor in India.
- **The Government of India has issued regulations under the Food Safety and Standards Act 2006** which lay down that tobacco or nicotine cannot be used as ingredients in food products.
- 31st May is observed as **'World No Tobacco Day'** every year to spread awareness about the deadly effects of tobacco consumption.

Social Progress Index 2022

Why in News?

Recently, the Social Progress Index (SPI) for States and Districts of India was released by the **Economic Advisory Council to the Prime Minister (EAC-PM)**.

- The SPI was compiled by the Institute for Competitiveness and Social Progress Imperative.
- The report also dwells on **India's performance (ranked 110 out of 169 nations) based on the global SPI 2022** that is brought out by Social Progress Imperative since 2013.

What is EAC-PM?

- It is an **independent body constituted to give advice on economic and related issues to the Prime Minister**.
- EAC-PM is **responsible for analysing and advising the Prime Minister** on any issue of macroeconomic importance that the Prime Minister refers to.
- These could be either suo-motu or on reference from the Prime Minister or anyone else.
- They also include attending to any other task as may be desired by the Prime Minister from time to time.



A LONG WAY TO GO

➤ SPI assessed states and districts based on **12 components**

➤ These components are spread across three critical dimensions of social progress - basic human needs, foundations of wellbeing, and opportunity

➤ The index used a framework comprising **89 indicators** at the state level and **49** at the district level

➤ Based on the SPI scores, states and districts have been ranked under six tiers of social progress

➤ As per the Index, AP has not completed even **30 per cent** of sanctioned households under the PMAY scheme

➤ Puducherry has the highest SPI score of **65.99** in the country

➤ Lakshadweep and Goa closely followed it with scores of **65.89** and **65.53**, respectively

➤ Jharkhand and Bihar scored the lowest, **43.95** and **44.47**, respectively

➤ In the 'basic human needs' component, Goa, Puducherry, Lakshadweep, and Chandigarh are the top four states

➤ Mizoram, Himachal Pradesh, Ladakh, and Goa emerged as the best-performing states for the 'foundations of wellbeing'

➤ Tamil Nadu scored the highest in the 'opportunity' dimension

➤ Three aspirational districts of Andhra Pradesh - Visakhapatnam, Vizianagaram and Kadapa - beat the national averages in terms of 'human needs and opportunity'



What is SPI all about?

- **About:**
 - SPI is a **comprehensive tool that can serve as a holistic measure** of a country's social progress at the national and sub-national levels.
 - The report aims to **provide a systematic account of the social progress made at all levels in the country**.
 - The index uses an **extensive framework comprising 89 indicators** at the state level and 49 at the district level.
- **Assessment Components:**
 - The index **assesses states and districts based on 12 components** across three critical dimensions of social progress:
 - **Basic Human Needs:** It assesses the performance of states and districts in terms of Nutrition

Note:

and Basic Medical Care, Water and Sanitation, Personal Safety and Shelter.

- **Foundations of Wellbeing:** It evaluates the progress made by the country across the components of Access to Basic Knowledge, Access to Information and Communication, Health and Wellness, and Environmental Quality
- **Opportunity:** It focuses on Personal Rights, Personal Freedom and Choice, Inclusiveness, and Access to Advanced Education.

What are the Findings of the Index?

- **Highest SPI Score:** Puducherry
- **Lowest SPI Score:** Jharkhand and Bihar
- **Basic Human Needs:** Goa, Puducherry, Lakshadweep, and Chandigarh are the top four states with the best performance in water, sanitation and shelter.
- **Foundations of Wellbeing:** Mizoram, Himachal Pradesh, Ladakh, and Goa have emerged as the best-performing states for the Foundations of Wellbeing.
 - For **Environmental Quality**, Mizoram, Nagaland, and Meghalaya are the top three states.
- **Opportunity:** Tamil Nadu has achieved the highest component score for Opportunity dimension.
- **Top Best Performing Districts:** Aizawl (Mizoram), Solan (Himachal Pradesh) and Shimla (Himachal Pradesh) have emerged as the top three best-performing districts.

State of Food Insecurity in 2022

Why in News?

Hunger has remained grisly in several parts of the world including India in 2022, so much so that the **United Nations World Food Programme (WFP)** called 2022 'The year of Unprecedented Hunger'.

- According to the **Food and Agriculture Organization (FAO)**, about 307 crore people worldwide could not afford a healthy diet in 2020. India is home to almost a third of this global population.

What are the Highlights from Various Reports?

- **World Food Programme:**
 - The number of people facing acute food insecurity has **almost tripled since 2019 and as many as 828 million people go to bed hungry every night**, according to **WFP (World Food Programme)**.

- Food security shot past pre-pandemic levels, especially in war-torn places and those wrecked by climate disasters.
- **The Future of Food and Agriculture by FAO:**
 - According to FAO's report **Future of Food and Agriculture — Drivers and triggers for transformation**, the world will witness persistent **food insecurity** if agrifood systems remain the same.
 - The world will witness persistent food insecurity, degrading resources and unsustainable economic growth in the future if agrifood systems remain the same.
 - The world was "**tremendously off track**" to meet the **Sustainable Development Goals (SDG)**, including agrifood targets.
 - By 2050, there will be 10 billion people in the world to feed and this will be an unprecedented challenge if significant attempts are not made to reverse current trends.
- **Global Hunger Index (GHI):**
 - India ranked an abysmal 107 out of 121 countries on the **Global Hunger Index (GHI) 2022**.
 - Among the South Asian countries, India (107) is ranked below Sri Lanka (64), Nepal (81), Bangladesh (84), and Pakistan (99).
 - **Globally, the progress against hunger has largely stagnated** in recent years, with a global score of 18.2 in 2022 as compared to 19.1 in 2014, there is only a slight improvement. However, the **2022 GHI score is still considered "moderate"**.
- **State Food Security Index (SFSI) by FSSAI:**
 - **Tamil Nadu scored the highest among major states** on all indicators, followed by **Gujarat and Maharashtra**.
 - **Tamil Nadu scored a total of 82.5 points** on a scale of 100 where the indicators included human resource and institutional data, compliance, food testing infrastructure and surveillance, training and capacity building and lastly, consumer empowerment.
 - **Among Union Territories (UT), Jammu and Kashmir topped** the list, performing better than the national capital with a score of 68.5, followed by National Capital Territory of Delhi (66) and Chandigarh (58).
- **Promises and Reality Report:**

Note:

- More than 90 million eligible people have been **excluded from legal entitlements under the Targeted Public Distribution System (TPDS)**, India's tool to combat food insecurity.
- The Census of India 2011 remains the source of data for arriving at the number of people to be covered by the scheme. As a consequence, **subsequent years have seen the exclusion of a large chunk of the population.**
- This in-built fallacy in the legal framework led to exclusion of at least 12% of the population from the legal entitlements in the most legitimized way.

What are the Suggestions given by the Various Reports?

- **Systemic Policy Changes:**
 - Systemic policy changes and global concerted efforts are **necessary to alleviate the condition of these people and meet the UN-mandated Sustainable Development Goal of 'Zero Hunger' by 2030.**
- **Sustainable Agricultural Systems:**
 - With the rapid growth of the human population, our demand for food has also risen.
 - Agricultural systems **will need to produce more food in a sustainable manner in the future to cope with this.**
- **Population Decline of Insects:**
 - Without an abundance of insect pollinators, humans face the mind-boggling challenge of growing food and other agricultural products at scale.
 - Insects are **important because of their diversity, ecological role and influence on agriculture,** human health and natural resources.
 - They create the biological foundation for all terrestrial ecosystems, further, they cycle nutrients, pollinate plants, disperse seeds, maintain soil structure and fertility, control populations of other organisms and provide a major food source for other taxa.
- **Think Beyond Short Term Needs:**
 - Decision makers need to think beyond short-term needs. A lack of vision, piecemeal approaches and **quick fixes will come at a high cost for everyone**
 - There is an urgent need to change **course so that a more sustainable and resilient future for agrifood systems** is created.

- **Viewing Nutrition Through Different Lenses:**
 - Better nutrition involves more than just food, it includes health, water, sanitation, gender perspectives, and social norms. Therefore, **there is a need to look forward to comprehensive policy to fill the nutritional gap.**
- **Bringing Social Audit Mechanism:**
 - States and Union Territories **should compulsorily carry out the social audit of the mid-day meal scheme in every district,** with the help of local authorities and simultaneously work on nutritional awareness.
 - Use of **information technology** to improve program monitoring can be thought of too.
- **Re-orienting PDS:**
 - There is a need to be re-orient and an up-scale **Public Distribution System** to make it more transparent and reliable and ensure availability, accessibility and **affordability of nutritious food, also making a positive impact on the purchasing power of the lower socio-economic segment of the population**
- **Women-led SDG Mission:**
 - There is a need to redesign existing direct nutrition programs and linking it with **women's self-help groups can make India realise the Sustainable Development Goal- 2** to end hunger and all forms of malnutrition by 2030.
- **Reducing Waste, Reducing Hunger:**
 - India wastes about 7% of its total annual food production and almost 30% of the fruits and vegetables **because of inadequate warehousing facilities and cold storages.**
 - According to the **International Institute of Refrigeration,** if developing countries had the same level of refrigeration infrastructure as developed countries, they would save 200 million tonnes of food or around 14% of their food supply, which can help in tackling hunger and malnutrition.

What are India's Initiatives to Eradicate Hunger/Malnutrition?

- **Eat Right India Movement**
- **POSHAN Abhiyan**
- **Pradhan Mantri Matru Vandana Yojana**
- **Food Fortification**
- **National Food Security Act, 2013**

Note:

- **Mission Indradhanush**
- **Integrated Child Development Services (ICDS) Scheme**
- **Amendments in the Essential Commodities Act, 1955**
- **Make India Trans Fat free.**
- **International Year of Millets.**
- **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).**

India to Become Largest Populated Country

Why in News?

It is estimated that around April 2023, India's 1.43 billion people will exceed **China's population**.

- In 2022, China will for the first **time register an absolute decline in its population**.

What are the Drivers of these Shifts?

- **Mortality and Fertility:**
 - **Crude Death Rate (CDR):** The CDR — the number of persons dying per year per 1,000 population — was 23.2 for China and 22.2 for India in 1950.
 - It fell to single digits for China first in 1974 (to 9.5) and for India in 1994 (9.8), and further to 7.3-7.4 for both in 2020.
 - **Life Expectancy at Birth:** Another mortality indicator is **life expectancy at birth**. Between 1950 and 2020, it went up from 43.7 to 78.1 years for China and from 41.7 to 70.1 years for India.
 - **Total Fertility Rate:** The total fertility rate (TFR) — the number of babies an average woman bears over her lifetime — was as high as 5.8 for China and 5.7 for India in 1950.
 - India's TFR fell to 2 in 2019-2021, from 3.4 in 1992-93.
- **Sustained Lows in TFR:**
 - Populations can keep growing even with TFRs falling. De-growth **requires TFRs to remain below replacement levels** for extended periods.
 - The effects of that — fewer children today becoming parents tomorrow and procreating just as much or less — may reflect only after a couple of generations.
 - China's **TFR dipped below replacement first in 1991**, which was almost 30 years before India's.

What are the Challenges and Opportunities?

- **Challenges:**
 - Having the most people on the planet could prove to be a **big negative for India unless it can provide food**, education, housing, health services and jobs to its people.
 - The scale of this challenge is gigantic.
 - Across India, water scarcity is a chronic issue. All these **needs are crucial but by far the single most important thing for India to do is to generate jobs**. The scale of this particular challenge is truly daunting.
 - In 2020, India has 900 million people (67% of the total population) in the working age group of 15-64.
 - This is expected to expand by another 100 million by 2030.
- **Opportunity:**
 - **Claim for permanent member at UNSC:** If India becomes the largest country, it will give Indians a claim to be the permanent member of the Security Council.
 - New population will push its existing demand for a permanent seat on the UN Security Council.
 - The geopolitical reality has changed and new powers have emerged which deserve a place alongside the old — **Russia, the UK, China, France and the United States**.
 - **Increase in Fiscal Space:** Fiscal resources can be diverted **from spending on children to investing in modern physical and human infrastructure** that will increase economic sustainability of India.
 - **Rise in Workforce:** With more than **65% of the working age population**, India can rise as an economic superpower, supplying more than half of Asia's potential workforce over the coming decades.
 - **Increase in the Labour Force** that enhances the productivity of the economy.
 - **Rise in Women's Workforce** that naturally accompanies a **decline in fertility**, and which can be a new source of growth.

What should be the Strategy of India?

- **Mass Prosperity Strategy:**
 - India's large remittances from a small population overseas reinforce that our **mass prosperity strategy should be human capital and formal jobs**.

Note:

- 0.8 % of software employment workers generate 8 % of GDP.
- This case is **reinforced by remittances from the overseas population of less than 2 % of our resident population crossing USD 100 billion last year.**
- **Qualitative Shift in Employment:**
 - The qualitative shift during the previous five years from low-skilled, informal employment in Gulf countries to high-skilled formal jobs in high-income countries is significant.
 - In 2021, the US replaced the UAE as the single biggest source country with 23 % of remittances. Our rich forex remittance harvest — roughly 25 % higher than FDI and 25 % less than software exports — **is fruit from the tree of human capital and formal jobs.**
- **Additional Jobs:**
 - To absorb the influx of young people into the workplace, **India would need to create close to 12 million additional, non-farm jobs every year, starting in 2023.**
 - This was triple the four million non-farm jobs created annually **between 2012 and 2018.**
 - India would need a growth rate of 10% per annum to be able to invest in industry so that this army of young people can be absorbed.
- **Investments in Education:**
 - While India is expected to have a **demographic dividend** from this large workforce, reaping its potential benefits requires significant investments in education.

Denotified, Nomadic, Semi-Nomadic Tribes

Why in News?

The Parliamentary panel on Social Justice and Empowerment has asked the government to expedite categorisation of **Denotified, Nomadic and Semi-Nomadic Tribes** under either the **SC/ST/OBC** lists. Delay would increase their suffering and deprive them of welfare schemes.

Who are Denotified, Nomadic and Semi-Nomadic Tribes?

- These are communities that are the **most vulnerable and deprived.**

- DNTs (Denotified) are communities that were **'notified as being 'born criminals'** during the British regime under a series of laws starting with the **Criminal Tribes Act of 1871.**
 - These Acts were repealed by the **Independent Indian Government in 1952**, and these communities were **"De-Notified"**.
- A few of these communities which were listed as **de-notified were also nomadic.**
 - Nomadic and semi-nomadic communities are **defined as those who move from one place to another rather than living in one place all the time.**
- Historically, Nomadic Tribes and De-notified Tribes never had access to private land or home ownership.
- While most DNTs are spread across the **Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Classes (OBC)** categories, some DNTs are not covered in any of the SC, ST or OBC categories.
- Many commissions and committees constituted since Independence have referred to the problems of these communities.
 - These include the **Criminal Tribes Inquiry Committee, 1947** constituted in the United Provinces (now Uttar Pradesh),
 - **Ananthasayanam Ayyangar Committee in 1949** (it was based on the report of this committee the Criminal Tribes Act was repealed),
 - **Kaka Kalelkar Commission** (also called first OBC Commission) constituted in 1953.
 - The **B P Mandal Commission constituted in 1980** also made some recommendations on the issue.
 - The **National Commission to Review the Working of the Constitution (NCRWC), 2002** held that DNTs have been wrongly stigmatised as crime prone and subjected to high handed treatment as well as exploitation by the representatives of law and order and general society.
 - The NCRWC was established under the chairmanship of Justice M N Venkatachaliah.
- It has been estimated that South Asia has the **world's largest nomadic population.**
 - In India, roughly 10% of the population is Denotified and Nomadic.
 - While the number of Denotified Tribes is about 150, the population of Nomadic Tribes consists of about 500 different communities.

Note:

What are the Challenges Faced by Nomadic Tribes?

- **Lack of Basic Infrastructure Facilities:** Like drinking water, shelter, and sanitation facilities are not available to the communities. Healthcare and education facilities are also not available.
- **Bad Treatment by Local Administration:** Due to the stigma of Criminals bestowed upon them in the past, they are still treated as criminals and tortured by the local administration and police.
- **Lack of Social Security Cover:** Since they are on move frequently, they do not have a permanent settlement. As a result, they lack social security cover and are not issued **Ration Cards, adhar Card**, etc. and hence, they are not getting benefits under the government welfare schemes.
- The **caste categorization is not very clear** for these communities, in some states some of the communities are included under the SC category, in some other states they are included under OBCs.
 - However, most of the groups from these communities do not have caste certificates and hence are not able to avail the benefits of government welfare programs.

What are the Related Developmental Efforts for These Tribes?

- **Dr. Ambedkar Pre-Matric and Post-Matric Scholarship for DNTs:**
 - This Centrally Sponsored Scheme was launched in 2014-15 for the welfare of those DNT students who are not covered under SC, ST or OBC.
 - The scheme of Pre-matric Scholarship for DNT students is helpful in spreading education amongst DNT children especially the girl child.
- **Nanaji Deshmukh Scheme of Construction of Hostels for DNT Boys and Girls:**
 - This Centrally Sponsored Scheme, launched in 2014-15, is implemented through State Governments/ UT Administrations/Central Universities.
 - The aim of the scheme is to provide hostel facilities to those DNT students; who are not covered under SC, ST or OBC; to enable them to pursue higher education.
- **Scheme for Economic Empowerment of DNTs:**
 - It aims to provide free competitive exam coaching, health insurance, housing assistance, and livelihood initiatives.

- It ensures **expenditure of Rs. 200 crores to be spent over five years beginning 2021-22.**
- The DWBDNCs (Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic Communities) has been **tasked with the implementation of this scheme.**
- **DWBDNC:**
 - DWBDNC was established under the **Societies Registration Act, 1860** under the aegis of the **Ministry of Social Justice and Empowerment** for the purpose of implementing welfare programmes.
 - The DWBDNC was constituted on 21st February 2019, under the chairmanship of Bhiku Ramji Idate.

Vokkaligas, Lingayats share in Reservation

Why in News?

Recently, Karnataka has categorized the two dominant communities, **Vokkaligas and Lingayats**, as “**moderately backward**” from the “**backward**” category in a move that could increase their share in reservation for **Other Backward Classes (OBC)**.

What are the Key Points of the Move?

- Karnataka currently has **32% quota for OBC, and 17% and 7% quota for Scheduled Castes and Scheduled Tribes**, respectively, taking the **total to 56%**.
- The **Panchamasali sub-sect of Veerashaiva Lingayats** has demanded inclusion in the 2A category which has 15% quota from their current 3B category which has 5% quota.
- The Cabinet’s decision is based on the **recommendations of the Karnataka State Commission for Backward Classes.**
- The Vokkaliga community, which is currently in the 3A category, will be moved to a **newly-created 2C category with 4% reservation.** And the Lingayat community, which is in the 3B category, will now be in a **new 2D category with 5% reservation.**
- The Cabinet decision ensures that there is no sub-categorisation of the Lingayat community.
- The Lingayats are a **dominant community who make up nearly 17% of Karnataka’s six crore population-** followed by Vokkaligas. The new categories will not

Note:

affect the existing reservation provided to other communities.

- The reservation will be applicable only in education and jobs, and “not political reservation.

Who are Lingayats?

➤ About:

- The term **Lingayat** denotes a person who wears a personal **linga**, an iconic form of god Shiva, on the body which is **received during the initiation ceremony**.
- Lingayats are the followers of the **12th century social reformer-philosopher poet, Basaveshwara**.
- Basaveshwara was **against the caste system and Vedic rituals**.
- The Lingayats are **strict monotheists**. They enjoy the worship of only one God, **namely, Linga (Shiva)**.
- Lingayats had been classified as a **Hindu subcaste called “Veerashaiva Lingayats”** and they are considered to be Shaivites.

➤ Separate Religion for Lingayats:

- Lingayats had distanced themselves from **Hindu Veerashaivas because the latter followed the Vedas** and supported the caste system, to which Basaveshwara was against.
- Veerashaivas are the **followers of the five peethas (religious centers)**, called Pancha Peethas. These peethas are set up on similar lines to the four peethas set up by Adi Shankara.

Who are Vokkaligas?

- It is even believed that the **Rashtrakutas and Western Gangas were of Vokkaliga origin**.
- Vokkaliga is a category defined in **terms of occupation, and to that extent could be an ethnic category; these are largely farmers by origin**.
- The Vokkaliga caste **originates in the Indian state of Karnataka**. In the former princely state of Mysore, the Vokkaligas were the largest community.
- As a community of warriors and cultivators, they have historically wielded **tremendous demographic, political, and economic dominance in Old Mysore**.

How has the Status of OBC Reservation Emerged Over Time?

- The **Kalelkar Commission, set up in 1953**, was the **first to identify backward classes other than the**

Scheduled Castes (SCs) and Scheduled Tribes (STs) at the national level.

- The **Mandal Commission Report, 1980** estimated the **OBC population at 52% and classified 1,257 communities** as backward.
 - It recommended increasing the existing quotas, which were only for SC/ST, from 22.5% to 49.5% to include the OBCs.
- **The central government reserved 27% of seats in union civil posts and services for OBCs [Article 16(4)]**. The quotas were subsequently enforced in central government educational institutions [Article 15 (4)].
 - In 2008, the **Supreme Court** directed the central government to **exclude the creamy layer (advanced sections) among the OBCs**.
- The **102nd Constitution Amendment Act, 2018** provided constitutional status to the National Commission for Backward Classes (NCBC), which was previously a statutory body under the Ministry of Social Justice and Empowerment.

Democratic Vision of Ambedkar

Why in News?

Several studies have examined Dr B.R. Ambedkar’s concept of democracy, primarily through the lens of social, political, and economic philosophy.

What Constitutes

Democracy in Ambedkar’s Opinion?

➤ Morality:

- A look at the **Buddha** and his Dhamma sheds light on how **Ambedkar viewed democracy as an approach that affected every aspect of human existence**.
 - Buddha, **Kabir** and **Mahatma Phule**’s philosophies played an important role in Ambedkar’s own engagement with democracy.
- According to him, **democracy must also be viewed morally** despite its pillars of equality, liberty, and fraternity.
- **Use of Morality in Caste System:**
 - **Ambedkar used the lens of morality in investigating the caste system**, the Hindu social system, the nature of religion and Indian history.

Note:

- Since Ambedkar brought the most marginalized communities into democracy, it was difficult to place his framework of democracy within these rigid religious structures and socio-political systems.
- Thus, Ambedkar attempts to construct a new structure based on the principles of Buddhism.

➤ **Balancing Individualism and Fraternity:**

- He was **critical of extreme individualism that was a possible outcome of Buddhism**, as such characteristics failed to engage in activism that challenged social order.
- Thus, he believed that **there needed to be a balance between individualism and fraternity for a harmonious society.**

➤ **Importance to Practicality:**

- Ambedkar gave **utmost importance to practicality.**
- For him, **concepts and theories needed to be tested** as they were supposed to be practised in society.
- He used **rationality and critical reasoning to analyse any subject matter**, because he believed that a subject must first pass the test of rationality, failing which, it must be rejected, altered or modified.

What are the Types of Morality?

➤ **Social Morality:**

- According to Ambedkar, **social morality was built through interaction and such interaction was based on the mutual recognition of human beings.**
- Yet, under the rigid systems of caste and religion, such interaction was not possible as one did not accept another person as a respectable human being due to their religion or caste background.
- Social morality was **based on equality among human beings and a recognition of respect.**

➤ **Constitutional Morality:**

- Constitutional morality for Ambedkar was a **prerequisite to maintaining a system of democracy in a country.**
 - Constitutional morality means adherence to the core principles of constitutional democracy.
- He believed that only through a negation of hereditary rule, laws that represented all people, with people's representatives and a State which has the confidence of the people, can democracy be maintained.

- One single person or political party could not represent the needs or will of all the people.
- Ambedkar realised that the **caste system did not go hand in hand with such an understanding of moral democracy.**
 - This was because the **traditional caste structure was of a hierarchical rule**, with no mutual respect among individuals, and complete subjugation of one group by another.

What is Ambedkar's view of Indian society?

➤ **Caste System:**

- According to his analysis of Indian society, the **caste system is a particularistic value in Hinduism.**
 - Particularism is a **political theory where one group promotes its own interests** without regard to the interests of larger groups.
- The upper castes, according to Ambedkar, **universalise the negative particularity** (their dominance over the other groups) and particularise the negative universal morality (wherein the caste system and the subsequent alienation of certain groups is justified).
- This negative social relation is essentially 'undemocratic'.
- It is to fight such separation that Ambedkar attempted to bring the democratic processes of Buddhism into the discourse of modern democracy.

➤ **Role of Religion in Democracy:**

- In Ambedkar's view, **democracy was born from religion**, without which associated living was impossible.
- Thus, **instead of removing aspects of religion completely**, he attempts to reconstruct a new version of democracy that accepts the democratic aspects of religions like Buddhism.
- Finally, **Ambedkar realises that in order to conceptualise democracy as a way of life**, it was important to distinguish principles and rules in society.
- In the Buddha and His Dhamma, Ambedkar elaborates how the concepts of Dhamma, which includes Prajna or thinking and understanding, Sila or good action and finally Karuna or kindness, emerge as a **'morally transformative' concept that dismantles regressive social relations.**

Note:

What are the Conditions put forward by Ambedkar for Democracy to Function?

- **Tackling Inequalities in Society:**
 - There must not be any glaring inequalities in society and there must not be an oppressed class.
 - There must not be a class that has got all the privileges and a class that has got all the burdens to carry.
- **Strong Opposition:**
 - He emphasized on the **existence of a strong opposition**.
 - Democracy means veto power. Democracy is a contradiction of hereditary authority or autocratic authority, where elections act as a periodic veto in which people vote out a government and opposition in parliament act as an immediate veto that curbs the autocratic tendencies of the government in power.
- **Liberty:**
 - Additionally, he argued that **parliamentary democracy instills a passion for freedom**; freedom to express thoughts and opinions, freedom to live a respectful life, freedom to do what one values.
 - But we can see a **parallel fall of India in the Human Freedom Index along with a weakened opposition** and consequently falling democratic credentials.
- **Equality in Law and Administration:**
 - Ambedkar also upheld equality in law and administration.
 - **Likes should be treated likely and there should be no discrimination** based on class, caste, gender, race and so on.
 - He brought forward the idea of **constitutional Morality**.
 - For him, the constitution contains only the legal skeleton, but the flesh is what he calls constitutional morality.

Rise in Organ Donation

Why in News?

After a fall during the first year of the **Covid-19 pandemic**, organ donation numbers increased back in 2021.

- In India, **Transplantation of Human Organs Act, 1994** provides various regulations for the removal of human organs and its storage. It also regulates the transplantation of human organs for therapeutic purposes and for the prevention of commercial dealings in human organs.

What is the Status of Organ Donation in India?

- India has an **organ donation rate of about 0.52 per million population**. In comparison, the organ donation rate in Spain, **the highest in the world, is 49.6 per million population**.
 - Unlike India where a person has to register to be an organ donor — and the family has to consent to it after death — **Spain has an opt-out system where a person is presumed to be a donor unless otherwise specified**.
- Although organ donation has increased, however, **the number of deceased donations has remained lower** than the number of donations from living persons.
 - Deceased Donation is the **organs donated by the kin of those who suffered brain death or cardiac death**.
- Only 14.07% of the total organs harvested in 2021 were from deceased donors, much less than the 16.77% of 2019.
- Of the 12,387 organs **harvested in 2021**, only 1,743 — a little more than 14% — were from deceased donors. The numbers harvested in 2021 were close to the highest in the last five years (12,746, in 2019).
- There is also a **geographical skew in deceased donations**. All but two deceased organ donations in 2021 were in 15 states, with **the top five — Telangana, Tamil Nadu, Maharashtra, Gujarat, and Karnataka — accounting for more than 85% of the total**. Two organs were harvested from a deceased donor in Goa.
 - One reason for the geographical skew could be that most organ transplant and harvesting centres are concentrated in these geographies.

What is the Need

for Increasing Deceased Donations?

- **Gap in the Number of Organs Needed:**
 - The first reason is the gap in the number of organs needed and the number of transplants that happen in the country.

Note:

- In absolute numbers, India conducts the third highest number of transplants in the world.
- Yet, of the estimated 1.5-2 lakh persons who need a kidney transplant every year, only **around 8,000 get one**.
- Of the 80,000 persons who require a liver transplant, **only 1,800 get one**. And of the 10,000 who need a heart transplant, only 200 get it.
- **Prevalence of Lifestyle Diseases:**
 - Demand is on the rise **because of the increasing prevalence of lifestyle diseases**.
 - Besides, organs like heart and lungs can be retrieved only from deceased donors.
- **Only Harvested from Brain Dead Persons:**
 - The second reason is that without deceased donations, **a precious resource is wasted**.
 - Nearly 1.5 lakh persons die in road traffic accidents every year in India, many of whom **can ideally donate organs**.
 - Although donations are possible after the heart stops working, **almost all organs are currently harvested from brain dead persons**.

Law on Acid Attacks in India

Why in News?

Recently, a girl was attacked with an acid-like substance in Delhi by three assailants. The incident has brought back to focus the heinous crime of acid attacks and the easy availability of corrosive substances.

Acid Attacks in India: What's the Scenario?

- According to the data of the **National Crime Records Bureau (NCRB)**, there were 150 such cases recorded in 2019, 105 in 2020 and 102 in 2021.
- **West Bengal and Uttar Pradesh consistently record the highest number of such cases** generally accounting for nearly 50% of all cases in the country year on year.
- The **charge sheeting rate of acid attacks stood at 83%** and the conviction rate at 54% in 2019.
 - In 2020, the figures stood at 86% and 72% respectively. **In 2021, the figures were recorded to be 89% and 20% respectively.**

- In 2015, the **Ministry of Home Affairs (MHA)** issued an advisory to all states to ensure speedy justice in cases of acid attacks by expediting prosecution.

What is the Law on Acid Attacks in India?

- **Indian Penal Code:** Until 2013, acid attacks were not treated as separate crimes. However, **following amendments carried out in the Indian Penal Code (IPC), acid attacks were put under a separate section (326A) of the IPC** and made punishable with a **minimum imprisonment of 10 years** which is extendable to life along with a fine.
- **Denial of Treatment:** The law also has provisions for punishment for denial of treatment to victims or **police officers refusing to register an FIR or record any piece of evidence**.
 - Denial of treatment (by both public and private hospitals) can lead to imprisonment of up to one year and dereliction of duty by a police officer is **punishable by imprisonment of up to two years**.

What is the Law on the Regulation of Acid Sales?

- **The Poisons Act, 1919:** In 2013, the Supreme Court took cognizance of acid attacks and **passed an order on the regulation of sales of corrosive substances**.
 - Based on the order, the MHA issued an advisory to all states on how to regulate acid sales and **framed the Model Poisons Possession and Sale Rules, 2013 under The Poisons Act, 1919**.
 - As a result, **states were asked to frame their own rules based on model rules**, as the matter fell under the purview of states.
- **Maintenance of the Data:** Over-the-counter sale (without a valid prescription) of acid **was not allowed unless the seller maintains a logbook/register** recording the sale of acid.
 - This logbook was to also **contain the details of the person to whom acid is sold**, the quantity sold, the address of the person, and also specify the reason for procuring acid.
- **Age Restriction & Documentation:** The sale is also to be **made only upon presentation of a photo ID containing his address** issued by the government. The buyer must also prove he/she is **above 18 years of age**.

Note:

- **Confiscation of Acid Stocks:** Sellers are also required to **declare all stocks of acid with the concerned Sub-Divisional Magistrate (SDM) within 15 days** and in case of undeclared stock of acid. The SDM can **confiscate the stock and suitably impose a fine of up to Rs 50,000** for a breach of any of the directions.
- **A Record-Keeping Requirement:** As per the rules, educational institutions, research laboratories, hospitals, government departments and the departments of Public Sector Undertakings, **which are required to keep and store acid, to maintain a register of usage of acid** and file the same with the concerned SDM.
- **Accountability:** As per the rules, **a person shall be made accountable for the possession and safe keeping of acid in their premises.** The acid shall be stored under the supervision of this person and there shall be **compulsory checking** of the students/ personnel leaving the laboratories/place of storage where acid is used.

What is the Compensation and Care for the Acid-attack Victims?

- **Compensation:** Acid attack **victims are paid compensation of at least Rs. 3 lakhs** by the concerned State Government/Union Territory as the aftercare and rehabilitation cost.
- **Free of Cost Treatment:** States are supposed to ensure that treatment provided to acid attack victims in any hospital, public or private, is free of cost. The **cost incurred on treatment is not to be included in the Rs 1 lakh compensation** given to the victim.
- **Reservation of Beds:** Acid attack victims need to undergo a series of plastic surgeries and hence **1-2 beds at private hospitals could be reserved** for the treatment of acid attack victims.
- **Social Integration Programs:** States should also extend social integration programs to the victims for which **Non-Governmental Organisations (NGOs) could be funded** to exclusively look after their rehabilitative requirements.

Note:

Science & Technology

Highlights

- Innovation in Agriculture
- GM Mustard
- Base Editing
- Anticancer mRNA Vaccine
- Whole Genome Sequencing
- BF.7 Variant of the Coronavirus
- Incovacc, Intranasal Covid-19 Vaccine
- Deepfake Technology
- iDEX and Defence India Start-Up Challenge
- Japan's New Policy on Nuclear Energy
- Water Worlds
- Uncontrolled Re-Entries of Satellites

Innovation in Agriculture

Why in News?

Recently, the government of India has taken various initiatives related to Agriculture by using **Internet of Things (IoT)** and **Artificial Intelligence (AI)**.

- **IoT** is a **computing concept** that describes the idea of everyday physical objects being connected to the internet and being **able to identify themselves to other devices**.

What is the Need for

IoT and AI in the Agriculture Sector?

- Even as agriculture remains a priority sector accounting for the livelihoods of around 58 % of the country's population, **adoption of technology in the sector is at a transitory juncture and faces several challenges across the value chain**.
- These challenges require **disruptive interferences which can be provided by technological solutions such as the IoT and AI etc.**
- Adoption of AI technologies can **pave the way for higher production with the optimum utilization of available resources** and facilitate predictive analysis, crop health management, enhance quality and traceability among others.
- The adoption of innovative and transformative smart farming practices in **the country is gradually becoming a major trend**.
- Globally technology advancements in recent years are **re-engineering both the upstream and downstream**

segments of the agri value chain, which makes it **important to adapt innovation in Agriculture**.

- Cutting-edge technologies in AI such as IoT, **ML (Machine Learning)**, **cloud computing**, statistical computing, deep learning, Virtual Reality (VR) and Augmented Reality (AR) can enable the Agriculture Sector to **overcome the challenges of productivity, quality, traceability and carbon emission with enhanced profitability**.

What is the Usage of AI in Agriculture?

- **Analyzing Farm Data:**
 - Farms produce hundreds of thousands of data points on the ground daily. With the help of AI, **farmers can now analyze a variety of things in real-time such as weather conditions**, temperature, water usage or soil conditions collected from their farm to better inform their decisions.
 - Farmers are also using AI to create seasonal forecasting models to improve agricultural accuracy and increase productivity.
- **Precision Agriculture:**
 - Precision agriculture uses AI technology to aid in **detecting diseases in plants, pests, and poor plant nutrition on farms**.
 - AI sensors can detect and target weeds and then decide which herbicides to apply within the right buffer zone.
 - This helps to **prevent over-application of herbicides and excessive toxins** that find their way in our food.
 - It would **increase productivity by introducing precision agriculture**.

Note:

➤ Tackling the Labour Challenge:

- With fewer people entering the farming profession, **most farms are facing the challenge of a workforce shortage.**
- One solution to help with this shortage of workers is AI agriculture bots. These **bots augment the human labour workforce and are used in various forms.** For example:
 - These bots can **harvest crops at a higher volume and faster pace** than human labourers, more accurately identify and eliminate weeds, and reduce costs for farms by having around the clock labour force.
 - Additionally, farmers are beginning to turn to chatbots for assistance. Chatbots **help answer a variety of questions and provide advice** and recommendations on specific farm problems.

What are the Related Initiatives taken?

➤ National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS):

- It was launched in **2018 by the Ministry of Science and Technology** with an outlay of Rs. 3,660.00 crore for a period of five years to encourage innovation in new age technologies.
- Under the Mission, 25 Technology Innovation Hubs (TIHs) have been set up in premier institutes of **national importance across the country in advanced technology verticals.**
- The Mission can act as an engine of growth that would benefit national initiatives in health, education, energy, environment, agriculture, strategic cum security, and industrial sectors, **Industry 4.0, SMART Cities, Sustainable Development Goals (SDGs) etc.**

➤ Digital India initiatives:

- Under the Digital India initiatives government has set up Centres of Excellence on Internet of Things with the objective to enable **India to emerge as an innovation hub in IoT through democratization of innovation and realization of prototypes.**
- One of the focus areas of Centres of Excellence on IoT is on **Agri-tech and it connects various entities** such as startups, enterprises, venture capitalists, government and academia.

➤ National e-Governance Plan in Agriculture:

- Funding is given to **State Governments for Digital Agriculture projects** using emerging technologies

like Artificial Intelligence and Machine Learning (AI/ML), IoT, Block chain etc.

➤ Innovation and Agri-Entrepreneurship Development:

- This programme is operational under **Rashtriya Krishi Vikas Yojana (RKVY)** from 2018-19 with the objective to **promote innovation and entrepreneurship** by providing financial support and nurturing the incubation ecosystem.
- In this connection, **five Knowledge Partners (KPs)** and 24 Agribusiness Incubators (R-ABIs) have been appointed across the country. The **five KPs are:**
 - National Institute of Agricultural Extension Management (MANAGE), Hyderabad.
 - National Institute of Agricultural Marketing (NIAM) Jaipur.
 - Indian Agricultural Research Institute (IARI) Pusa, New Delhi.
 - University of Agriculture Science, Dharwad, Karnataka.
 - Assam Agriculture University, Jorhat, Assam.

GM Mustard

Why in News?

Recently, the **Genetically Modified (GM) mustard Dhara Mustard Hybrid (DMH-11)** was tested in the field and shown to be **more productive.**

- Production of the **DMH-11** variety is not interfering with **honey bees' natural pollination practices.**

What are Genetically Modified (GM) Crops?

- **GM crops** are derived from plants whose **genes are artificially modified**, usually by inserting **genetic material** from another organism, in order to give it new properties, such as **increased yield, tolerance** to a **herbicide, resistance** to **disease** or **drought**, or **improved nutritional value.**
 - Earlier, India approved the commercial cultivation of only one GM crop, **Bt cotton**, but **Genetic Engineering Appraisal Committee (GEAC)** has recommended GM Mustard for commercial use.

What is GM Mustard?

- **DMH-11** is an indigenously developed **transgenic mustard.** It is a **genetically modified variant of Herbicide Tolerant (HT) mustard.**

Note:

- **DMH-11** is a result of a cross between **Indian mustard variety 'Varuna'** and **East European 'Early Heera-2'** mustard.
- It contains **two alien genes ('barnase' and 'barstar')** isolated from a **soil bacterium** called **Bacillus amyloliquefaciens** that enable breeding of **high-yielding commercial mustard hybrids**.
- **Barnase in Varuna induces a temporary sterility** because of which it can't naturally self-pollinate. **Barstar in Heera blocks the effect of barnase allowing seeds to be produced.**
- **DMH-11** has shown approximately **28% more yield** than the **national check** and **37 % more** than the **zonal checks** and its use has been claimed and approved by the **GEAC**.
 - **"Bar gene"** maintains the **genetic purity of hybrid seed**.

Why is the Barnase/Barstar System Required?

- The **hybrid seed production** requires an **efficient male sterility and fertility restoration system**.
- The currently available conventional **cytoplasmic-genetic male sterility system** in mustard has limitations of **breakdown of sterility** under certain environmental conditions leading to **lowering of seed purity**.
- The **genetically engineered barnase/barstar system** provides an **efficient and robust alternative method for hybrid seed production** in mustard.
- In India, the **Centre for Genetic Manipulation of Crop Plants (CGMCP)** has made a **successful attempt** with some alterations in the **barnase/ barstar system** which culminated in the development of **GM mustard hybrid MH11** which has undergone the required regulatory testing processes during **2008-2016**.

Why GM Mustard is Necessary?

- India's **import of edible oils is on continuous rise** to meet the domestic demand. It ultimately led reduction forex. GM Mustard is **essential to reduce the forex drain on Agri-import**.
- **Productivity of oilseed crops** viz., soybean, rapeseed mustard, groundnut, sesame, sunflower, safflower and linseed in India is **much lower than the global productivity of these crops**.
- Crossing of genetically diverse parents results in hybrids with **increased yield and adaptation**

What are the Safety

Concerns associated with DMH-11?

- The safety of **three genes** used in the creation of the technique **Barnase, Barstar and Bar** is being questioned.
- Field trials for **three years (two years of BRL-I and one year of BRL-II)** have been conducted to assess the impact on **human health and environment** as per the stipulated guidelines and applicable rules.
- It is important to note that comprehensive research on the toxicity, allergenicity, compositional analysis, field trials, and environmental safety studies of GM mustard has shown that **they are safe for food and feed usage as well as for production**.
- **DMH-11** has **"Bar gene"** which is responsible for **herbicide tolerance**. Effectiveness of **"Bar Gene"** is under question as per herbicide tolerance is concerned.

What is the Significance

of Genetically Modified Crops?

- Crossing of **genetically diverse plants** results in **hybrids** with **increased yield and adaptation**, a phenomenon known as **hybrid vigor heterosis** which has been widely exploited in crops like rice, maize, pearl millet, sunflower and many vegetables.
- It has been convincingly demonstrated that hybrids in general show **20-25% higher yield** over the **conventional varieties** across the crops.
- **Hybrid technology** can play an important role in **enhancing the productivity of rapeseed mustard** in the country.

Base Editing

Why in News?

Recently, scientists in the United Kingdom (UK) have **successfully tested a new form of cancer therapy, 'Base Editing'** for the time in a patient with T-cell Acute Lymphoblastic Leukemia (T-ALL).

What is Base Editing?

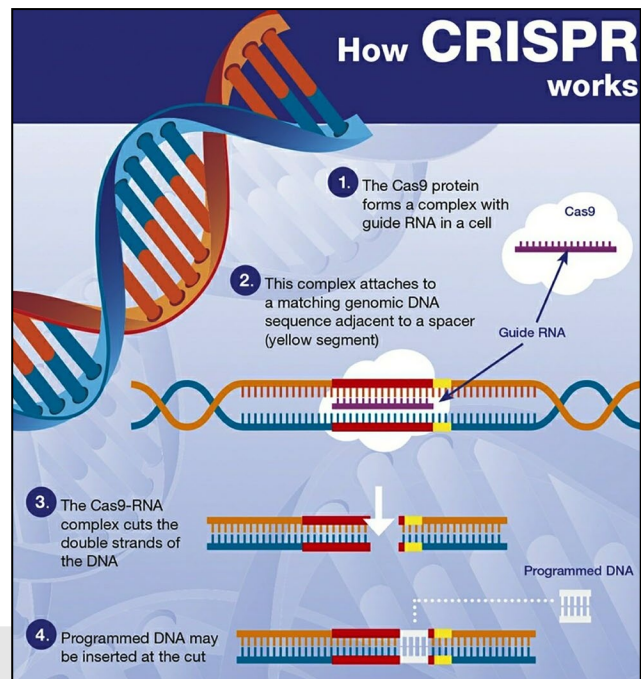
- **Bases are the language of life**. Just as letters in the alphabet spell out words that carry meaning, the **billions of bases in our Deoxyribonucleic Acid (DNA)** spell out the instruction manual for our body.
 - A **mis-arrangement in the sequence of bases** may cause cancer.

Note:

- Using the technique of **base editing**, the molecular structure of just one base in a genetic code can be altered, effectively changing its genetic instructions.
 - **Genetic code** refers to the instructions contained in a gene that tell a cell how to make a specific protein.
 - Each genetic code uses the four nucleotide bases of DNA: **Adenine (A), Cytosine (C), Guanine (G) and Thymine (T)** — in various ways to spell out three-letter “codons” that specify which amino acid is needed at each position within a protein.
- **Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR)** technology is one of the most popular approaches that allows the genes to be altered, thereby, fixing the errors.
 - This method has been further improved to be able to directly change certain bases such as a C can be changed into a G and T into an A.

What is CRISPR Technology?

- CRISPR is a **gene editing technology**, by which research scientists selectively modify the DNA of living organisms using a special protein called Cas9.
 - CRISPR/Cas9 edits genes by precisely cutting DNA and then letting natural DNA repair processes to take over. The system consists of two parts: the **Cas9 enzyme and a guide Ribonucleic Acid (RNA)**.
 - **Cas9**: a CRISPR-associated (Cas) endonuclease, or enzyme, that acts as “molecular scissors” to cut DNA at a location specified by a guide RNA.
 - **Guide RNA (gRNA)**: a type of RNA molecule that binds to Cas9 and specifies, based on the sequence of the gRNA, the location at which Cas9 will cut DNA.
- **CRISPR-Cas9 technology** is often described as ‘Genetic Scissors’.
 - Its mechanism is often compared to the ‘cut-copy-paste’, or ‘find-replace’ functionalities in common computer programmes.
 - A **bad stretch** in the DNA sequence, which is the cause of disease or disorder, is **located, cut, and removed and then replaced with a ‘correct’ sequence**.
 - The technology replicates a natural defence mechanism in some bacteria that uses a similar method to protect itself from virus attacks.



What is T-ALL?

- It affects the stem cells in the bone marrow that produce a particular kind of White Blood Cells (WBCs) called T lymphocytes (T-cells).
 - T-cells provide a person with immunity by killing cells carrying infections, activating other immune cells, and regulating the immune response.
- **T-ALL is a rapid and progressive type of blood cancer** in which the T-cells start destroying healthy cells instead of helping in immunity (that’s T-cells’ normal function).
- It is usually treated by chemotherapy, radiation therapy and stem cell/bone marrow transplant.

Anticancer mRNA Vaccine

Why in News?

Recently, the results of a trial of messenger Ribonucleic Acid (mRNA-4157/V940) vaccine made by Moderna and MSD (Merck & Co.) when taken along with an immunotherapy drug Keytruda has shown promising results against advanced melanoma, a kind of skin cancer.

What is mRNA Vaccine Therapy for Advanced Melanoma?

- **About:**

Note:

- It is a **personalised cancer vaccine** *i.e.*, tailor-made for every patient.
- To build the vaccine, researchers **took samples of patients' tumors and healthy tissue**.
 - After analysing the samples to **decode their genetic sequence and isolate mutant proteins associated only with the cancer**, that **information was used to design** the vaccine.
- The personalised cancer vaccine **uses the same m-RNA technology** that was used to **produce the Covid-19 vaccine**.
 - mRNA vaccines **use mRNA to teach** our cells how to **make a protein** that **triggers an immune response inside our bodies**.
- **Mechanism:**
 - It **allows the body's immune system** to seek and **destroy cancerous cells**.
 - The personalised cancer vaccine **works in concert with Keytruda, to disable a protein called Programmed Death 1 (PD-1)**, that **helps tumors to evade the immune system**.
 - When injected into a patient, the **patient's cells act as a manufacturing plant, producing perfect copies of the mutations** for the immune system to recognise and destroy.
 - Having been **exposed to the mutations** without the virus, the **body learns to fight off the infection**.
- **Efficacy:**
 - The vaccine showed a **44% reduction in the risk** of dying of cancer or having the cancer progress.
 - The **combination of mRNA-4157/V940 and Keytruda** was generally **safe and demonstrated the benefit compared with Keytruda alone** after a year of treatment.

What are Different Types of Vaccines?

- **Inactivated Vaccines:**
 - Inactivated vaccines use the **killed version of the germ** that causes a disease.
 - Vaccines of this type are created by **inactivating a pathogen, typically using heat or chemicals such as formaldehyde or formalin**. This destroys the pathogen's ability to replicate, but keeps it **"intact" so that the immune system can still recognize it**. ("Inactivated" is generally used rather than "killed" to refer to viral vaccines of this type, as viruses are generally not considered to be alive.)

- They usually don't provide immunity (protection) **that's as strong as live vaccines**. So, you may need several doses over time (booster shots) in order to get ongoing immunity against diseases.
 - **They are Used to protect: Hepatitis A, Flu** (shot only), **Polio** (shot only), **Rabies**.
- **Live-attenuated Vaccines:**
 - Live vaccines use a **weakened (or attenuated) form of the germ** that causes a disease.
 - Because these vaccines are so similar to the natural infection that they help prevent, they create a **strong and long-lasting immune response**.
 - The limitation of this approach is that **these vaccines usually cannot be given to people with weakened immune systems**.
 - **Live vaccines are used against: Measles**, Mumps, Rubella (MMR combined vaccine), Rotavirus, Smallpox among others.
- **Messenger (m) RNA Vaccines:**
 - mRNA vaccines **make proteins in order to trigger an immune response**. mRNA vaccines have several benefits compared to other types of vaccines, **including shorter manufacturing times** and, because they do not contain a live virus, no risk of causing disease in the person getting vaccinated.
 - The vaccines are used to protect against: Covid-19.
- **Subunit, Recombinant, Polysaccharide, and Conjugate Vaccines:**
 - They use **specific pieces of the germ** - like its protein, sugar, or capsid (a casing around the germ). They give a very strong immune response.
 - They can also be used on people with weakened immune systems and long-term health problems.
 - These vaccines are used to protect against: Hib (Haemophilus influenzae type b) disease, **Hepatitis B**, HPV (Human papillomavirus), **Pneumococcal disease** among others.
- **Toxoid Vaccines:**
 - They use a toxin (harmful product) made by the germ that causes a disease. They **create immunity to the parts of the germ that cause a disease instead of the germ itself**. That means the immune response is targeted to the toxin instead of the whole germ.

Note:

- Toxoid vaccines are used to protect against: **Diphtheria, Tetanus.**
- **Viral Vector Vaccines:**
 - Viral vector vaccines use a **modified version of a different virus as a vector** to deliver protection.
 - Several different viruses have been used as vectors, including **influenza, vesicular stomatitis virus (VSV), measles virus, and adenovirus, which causes the common cold.**
 - Adenovirus is **one of the viral vectors used in some Covid-19 vaccines** being studied in clinical trials.
 - The vaccines are used to protect against: **Covid-19**

Whole Genome Sequencing

Why in News?

Recently, Researchers at the Indian Institute of Science Education and Research (IISER) Bhopal have carried out **Whole Genome Sequencing of banyan (Ficus benghalensis) and peepal (Ficus religiosa)** from leaf tissue samples.

- The work helped in **identifying 17 genes in the case of banyan and 19 genes of peepal with multiple signs of adaptive evolution (MSA)** that play a pivotal role in **long-time survival of these two Ficus species.**

What is Whole Genome Sequencing?

- **About:**
 - All organisms have a unique **genetic code, or genome**, that is composed of **nucleotide bases- Adenine (A), Thymine (T), Cytosine (C) and Guanine (G).**
 - The unique **Deoxyribonucleic Acid (DNA) fingerprint, or pattern can be identified by knowing the sequence of the bases** in an organism.
 - **Determining the order of bases is called sequencing.**
 - **Whole genome sequencing** is a laboratory procedure that **determines the order of bases in the genome of an organism in one process.**
- **Methodology:**
 - **DNA Shearing:**

- Scientists begin by using **molecular scissors to cut the DNA**, which is composed of millions of bases (A's, C's, T's and G's), into pieces that are **small enough for the sequencing machine to read.**
- **DNA Bar Coding:**
 - Scientists **add small pieces of DNA tags, or bar codes, to identify** which piece of sheared DNA belongs to **which bacteria.**
 - This is similar to how a bar code identifies a product at a grocery store.
- **DNA Sequencing:**
 - The **bar-coded DNA from multiple bacteria is combined** and put in a **DNA sequencer.**
 - The sequencer **identifies the A's, C's, T's, and G's, or bases**, that make up each bacterial sequence.
 - The sequencer **uses the bar code to keep track of which bases belong to which bacteria.**
- **Data Analysis:**
 - Scientists use computer analysis tools to **compare sequences from multiple bacteria and identify differences.**
 - The number of differences can **tell the scientists how closely related the bacteria are, and how likely it is that they are part of the same outbreak.**
- **Advantages:**
 - Provides a **high-resolution, base-by-base view** of the genome
 - Captures both **large and small variants that might be missed with targeted approaches**
 - Identifies **potential causative variants for further follow-up studies of gene expression** and regulation mechanisms
 - Delivers **large volumes of data in a short amount of time** to support assembly of novel genomes
- **Significance:**
 - Genomic information has been instrumental in **identifying inherited disorders**, characterizing the **mutations that drive cancer progression**, and **tracking disease outbreaks.**
 - It is beneficial for **sequencing agriculturally important livestock, plants, or disease-related microbes.**

Note:

What is Genome?

- A **genome** refers to **all of the genetic material in an organism**, and the human genome is mostly the same in all people, but a very small part of the DNA does vary between one individual and another.
 - Every organism's **genetic code is contained in its DNA**, the building blocks of life.
- The discovery that DNA is **structured as a "double helix" by James Watson and Francis Crick in 1953**, started the quest for understanding how genes dictate life, its traits, and what causes diseases.
 - **Each genome contains all of the information needed** to build and maintain that organism.
 - In humans, a copy of the entire genome contains more than 3 billion DNA base pairs.

What is the Difference between Genome and Gene?

GENE VERSUS GENOME	
A gene is a part of a DNA molecule	The genome is the total DNA in a cell
Hereditary element of genetic information	All set of nuclear DNA
Encodes protein synthesis	Encodes both proteins and regulatory elements for protein synthesis
Length is about a few hundreds of bases	Length of the genome of a higher organism is about billion base pairs
A higher organism has about thousands of genes	Each organism has only one genome
Variations of the gene named alleles can be naturally selected	Horizontal gene transfer & duplication cause large variations in the genome

BF.7 Variant of the Coronavirus**Why in News?**

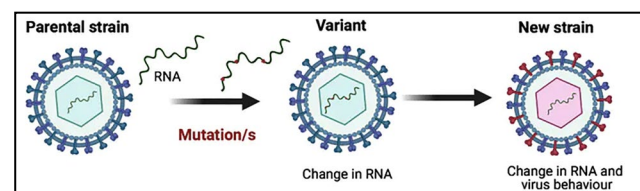
The current surge in **Covid-19** infections in China, is believed to be driven by the **BF.7** sub-variant of **Omicron** that is circulating over there.

What is the BF.7 Variant of Coronavirus?

- The dominant virus strain in China is BF.7, a **sub-variant of Omicron** that has been in circulation for over a year now.
- There are over **500 Omicron sub-variants** currently in circulation.
- BF.7 is the name for the **BA.5.2.1.7**, which itself has evolved from the **BA.5** sub-variant.
- BF.7 is **not unique to China**.
 - It accounted for over **5% of the cases in the US in October, 2022** and over **7% of the cases in the UK**.
- When **viruses mutate, they create lineages and sub-lineages**— like the main trunk of the SARS-CoV-2 tree sprouting branches and sub-branches.
- A research study reported that the BF.7 sub-variant has a **4.4-fold higher neutralisation resistance** than the original D614G variant— meaning that in a lab setting, **antibodies from a vaccinated or infected individual were less likely to destroy BF.7** than the **original Wuhan virus** that spread worldwide in 2020.
 - A **higher neutralisation resistance** means there is a **higher likelihood of the variant spreading in a population** and replacing other variants.

How are New Variants Formed?

When a virus multiplies, it **doesn't always manage to produce an exact copy of itself. This means that, over time, the virus may start to differ slightly in terms of its genetic sequence.**



- Any changes to the viral genetic sequence during this process is **known as a Mutation**.

Note:

- Viruses with **new mutations** are sometimes called **Variants**. Variants can differ by one or multiple mutations.
- When a new variant has different functional properties to the original virus and becomes established in a population, it is sometimes referred to as a **New Strain of the virus**.
 - All strains are variants, but **not all variants are strains**.

Incovacc, Intranasal Covid-19 Vaccine

Why in News?

Bharat Biotech's intranasal vaccine, **BBV154** or **Incovacc** is the world's first intranasal vaccine to be approved as a booster dose for **Covid-19**.

What is Incovacc?

- **About:**
 - The nasal vaccine is a **recombinant replication-deficient adenovirus vectored vaccine** with a pre-fusion stabilized spike protein.
- **Significance:**
 - With the vaccine **being delivered through a nasal spray**, it will **do away with the need for needles and syringes** currently required for all the **Covid-19 vaccines** available.
 - It will also **reduce dependence on personnel trained to give shots**.
 - Incovacc is **effective for Omicron variants** that replicate in the upper respiratory tract before entering the lungs.
- **Mechanism:**
 - As the vaccine is given nasally, it **triggers an immune response in the mucosal membrane**.
 - BBV154 may **produce local antibodies in the upper respiratory tract** which may provide the potential to reduce infection and transmission.
 - Since the nasal vaccine **gives local immunity (in the nose where the virus first enters)**, it can be said that it is **more likely to be effective at preventing transmission** than the current generation of vaccines we have.
- **Booster Dose:**

- This is the **second heterologous booster** to be included in the vaccination programme after **Corbevax**.
 - In homologous boosting, a person is injected with the same vaccine that was used for the two previous doses. In heterologous boosting, **a person is injected with a different vaccine from that was used for the primary dose**.
- It has **previously received the nod** to be used as a **primary dose**.
- Incovacc will be available as a booster dose only for those **above 18 years of age who have got 2 doses of either Covaxin or Covishield**.
 - It will **not be administered to any other category, for now, including those who have already taken booster dose**.
 - Those **who have taken Covishield and Covaxin can now take this nasal vaccine** as a heterologous booster dose.

Deepfake Technology

Why in News?

The **Cyberspace Administration of China**, the country's cyberspace watchdog, is rolling out new regulations to restrict the use of **deep synthesis technology** and curb disinformation.

- The policy requires deep synthesis service providers and users to ensure that any doctored content using the technology is explicitly labelled and can be traced back to its source.

What is Deep Synthesis?

- **Deep synthesis** is defined as the use of technologies, including **deep learning** and **augmented reality**, to **generate text, images, audio and video to create virtual scenes**.
 - One of the most notorious applications of the technology is **deepfakes**, where synthetic media is used to **swap the face or voice** of one person for another.
 - **Deepfakes** are getting harder to detect with the advancement of technology.

What is Deepfake Technology?

- **About:**

Note:



- **Deepfake technology** is a method for manipulating **videos, images, audios** utilizing powerful computers and deep learning.
- It is used to generate **fake news** and **commit financial fraud** among other **wrong doings**.
- It overlays a digital composite over an already-existing **video, picture, or audio**; **cybercriminals** use **Artificial Intelligence technology**.
- **Origin of the Word:**
 - The term **deepfake** originated in **2017**, when an anonymous Reddit user called himself “**Deepfakes.**”
 - This user manipulated **Google’s open-source, deep-learning technology** to create and post **pornographic videos**.
- **Misuse:**
 - **Deepfake technology** is now being used for **nefarious purposes** like scams and hoaxes, celebrity pornography, **election manipulation**, social engineering, **automated disinformation attacks**, identity theft and financial fraud etc.
 - Deepfake technology has been used to impersonate notable personalities like former U.S. Presidents Barack Obama and Donald Trump, India’s Prime Minister Narendra Modi, etc.

What are other Countries doing to Combat Deepfakes?

- **European Union:**
 - The **European Union** has an updated **Code of Practice** to stop the spread of disinformation through deepfakes.
 - The **revised Code** requires tech companies including **Google, Meta, and Twitter** to take **measures** in **countering deepfakes** and **fake accounts** on their platforms.
 - They have **six months** to implement their measures once they have signed up to the Code.
 - If found **non-compliant**, these companies can face fines as much as **6%** of their annual global turnover, according to the updated Code.
 - Introduced in **2018**, the **Code of Practice** on Disinformation brought together for the first-time worldwide industry players to commit to counter disinformation.
- **United States:**
 - The **U.S.** introduced the **bipartisan Deepfake Task Force Act** to assist the Department of Homeland Security (DHS) to **counter deepfake technology**.

- The measure directs the **DHS** to conduct an annual study of **deepfakes** assess the technology used, track its uses by foreign and **domestic entities**, and come up with available countermeasures to tackle the same.
- **California and Texas** have passed laws that criminalize the publishing and distributing of deepfake videos that intend to influence the outcome of an election. The law in Virginia imposes criminal penalties on the distribution of nonconsensual deepfake pornography.
- **India:**
 - In **India**, however, there are **no legal rules against using deepfake technology**.
 - However, **specific laws** can be addressed for misusing the tech, which include **Copyright Violation, Defamation** and **cyber felonies**.

iDEX and Defence India Start-Up Challenge

Why in News?

Innovations for Defence Excellence (iDEX), the flagship initiative of Department of Defence Production, Ministry of Defence, has **reached a milestone with the signing of its 150th contract**.

- The contract relates to an Indian Navy project of the **Defence India Start-up Challenge (DISC 7) SPRINT edition**.

What is iDEX?

- **About:**
 - iDEX, **launched in 2018**, is an ecosystem to foster innovation & technology development in Defence and Aerospace by engaging innovators & entrepreneurs to deliver technologically advanced solutions for modernizing the Indian Military.
 - It **provides funding/grants** to Micro Small and Medium Enterprises (MSMEs), **start-ups**, individual innovators, R&D institutes and academia to carry out research and development.
 - The iDEX-Prime aims to **support projects requiring support beyond Rs 1.5 crore up to Rs 10 crore**, to help ever-growing start-ups in the defence sector.

Note:

- iDEX portal was launched to **provide wider publicity and better visibility of iDEX activities and enable more efficient running of future challenges** through better information management.
- **Core Objectives:**
 - **Indigenization:** Rapid development of new, indigenized and innovative technology.
 - **Innovation:** Creates a culture of engagement with innovative startups to encourage co-creation.
- **Funding:**
 - iDEX is funded and managed by “**Defence Innovation Organisation (DIO)**”.
- **Achievement:**
 - iDEX has been awarded the prestigious **Prime Minister Award for Public Policy in Innovation Category** for the year 2021.

What is DIO?

- DIO is a **not-for-profit organisation** formed under section 8 of the **Companies Act 2013**.
- It is funded by **Hindustan Aeronautics Limited (HAL)** and **Bharat Electronics Limited (BEL)**.
- It provides **high-level policy guidance to iDEX**.

What is DISC?

- DISC aims at supporting **Startups/MSMEs/Innovators to create prototypes and/or commercialize products/solutions** in National Defence and Security.
- The **First DISC** was launched in 2018 at Bengaluru.
- It was launched by the **Ministry of Defence in partnership with Atal Innovation Mission (AIM)**.
 - **AIM** is Government of India’s flagship initiative to **create and promote a culture of innovation and entrepreneurship** across the country.
- Under the program, **the start-ups, Indian companies and individual innovators** (including research & academic institutions) can participate.
- **DISC 7 has been launched with 69 Problem Statements (PS)** from Indian Navy for resolution by startups & innovators.

What are Government Initiatives Regarding Indigenisation?

- **First Negative Indigenisation**
- **Positive Indigenisation List**

- **New FDI Policy in Defence Sector**
- **Defence Acquisition Procedure 2020**
- **Defence Industrial Corridors**

Japan’s New Policy on Nuclear Energy

Why in News?

Recently, Japan has adopted a new policy **promoting greater use of Nuclear Energy to ensure a stable power supply** amid global fuel shortages and to reduce carbon emissions.

What is Japan’s New Policy?

- It is Japan’s major **reversal of its nuclear phase-out plan** following the Fukushima crisis in 2011.
 - **Fukushima accident** caused by Tsunami in 2011 was the **second worst nuclear accident in the history of nuclear power generation**. The site is on Japan’s Pacific coast, in northeastern Fukushima prefecture about 100 km south of Sendai.
- The Policy seeks to **maximize the use of existing nuclear reactors by restarting as many of them as possible** and prolonging the operating life of old reactors beyond their 60-year limit, and by developing next-generation reactors to replace them.
- It pledges to sustain use of nuclear power into the future. Most nuclear reactors in Japan are more than 30 years old.
- It aims to push for the **development and construction of “next-generation innovative reactors”** with safer features to replace about 20 reactors now set for decommissioning.
 - Nuclear energy **accounts for less than 7% of Japan’s energy supply**, and achieving the government’s goal of raising its share to 20-22% by fiscal 2030 will require about 27 reactors, from the current 10.

What is the Prospect of India’s Nuclear Energy?

- **Status of Nuclear Energy:**
 - Nuclear energy is the **fifth-largest source of electricity for India**. India has over 22 nuclear reactors in 7 power plants across the country which produces 6780 MW of nuclear power. The 7 power plants are:

Note:

- Tarapur Atomic Power Station (TAPS), Maharashtra.
 - Kudankulam Nuclear Power Station (KKNPS), Tamil Nadu
 - Kakrapar Atomic Power Station (KAPS), Gujarat.
 - (Kalpakkam) Madras Atomic Power Station (MAPS), Tamil Nadu.
 - Narora Atomic Power Station (NAPS), Uttar Pradesh.
 - Kaiga Generating Station (KGS), Karnataka.
 - Rajasthan Atomic Power Station (RAPS), Rajasthan.
- The public sector entity, **Nuclear Power Corporation of India (NPCIL)**, is responsible for designing, building, commissioning and operating nuclear power reactors in the country.
- NPCIL operates under the **Indian government's Department of Atomic Energy (DAE)**.
- **Significance for India:**
- **Availability of Thorium:** India is the **leader of the new resource of nuclear fuel called Thorium**, which is considered to be the nuclear fuel of the future.
 - With the availability of Thorium, India has the potential to be the first nation to realise the dream of a fossil fuel-free nation.
 - **Cuts Import Bills:** Nuclear energy will **also relieve the nation of about USD 100 billion annually** which we spend on importing petroleum and coal.
 - **Stable and Reliable Source:** The greenest sources of power are **definitely solar and wind. But solar and wind power, despite all their advantages, are not stable** and are dependent excessively on weather and sunshine conditions.
 - Nuclear power, on the other hand, provides a **relatively clean, high-density source of reliable energy** with an international presence.
 - **Cheaper to Run:** Nuclear power plants are cheaper to run **than their coal or gas rivals**. It has been estimated that even factoring in costs such as managing radioactive fuel and disposal nuclear plants cost between 33 to 50% of a coal plant and 20 to 25% of a gas combined-cycle plant.
- **Challenges:**
- **Insufficient Nuclear Installed Capacity:** In 2008, the Atomic Energy Commission projected that India would have 650GW of installed capacity by 2050; the current installed capacity is only 6.78 GW.
- Such targets were based on the expectation that India would import many light-water reactors after the **India-U.S. civil nuclear deal**. But the deal has not led to the establishment of a single new nuclear plant, over 13 years after it was concluded.
- **Lack of Public Funding:** Nuclear power has never received the quantum of generous subsidy the fossil fuel received in the past and renewable is receiving currently.
- In absence of public funding, nuclear power will find it tough to compete against natural gas and renewables in the future.
- **Acquisition of Land:** Land acquisition and selection of location for Nuclear Power Plant (NPP) is also a major problem in the country.
- NPP's like **Kudankulam in Tamil Nadu** and Kovvada in Andhra Pradesh have met with several delays due to the land acquisition related challenges.
- **Impact of Climate Change:** Climate change will increase the risk of nuclear reactor accidents. During the world's increasingly hot summers, several nuclear power plants have already had to be temporarily shut down or taken off the grid.
- Further, nuclear power plants depend on nearby water sources to cool their reactors, and with many rivers drying up, those sources of water are no longer guaranteed.
- **Deployment at Insufficient Scale:** It might not be the appropriate choice for mitigating **India's carbon emissions** since it cannot be deployed at the necessary scale.
- **Nuclear Waste:** Nuclear waste can have drastically bad effects on life, causing cancerous growths, for instance, or causing genetic problems for many generations of animals and plants.
- In a densely populated country such as India, land is at a premium and emergency health care is far from uniformly available.

What are India's Initiatives Regarding Nuclear Energy?

➤ **Three-stage Nuclear Power Programme:**

- India has **consciously proceeded to explore the possibility of tapping nuclear energy for the purpose of power generation.**

Note:

- In this direction a **three-stage nuclear power programme** was formulated by Homi Bhabha in the 1950s.
- **The Atomic Energy Act, 1962:**
 - The Atomic Energy Act, 1962 was framed and **implemented with the set objectives of using two naturally occurring elements Uranium and Thorium** as nuclear fuel in Indian Nuclear Power Reactors.
- **Pressurised Heavy Water Reactors:**
 - In December, 2021, the Government of India informed Parliament about building ten indigenous **Pressurised Heavy Water Reactors (PHWRs)** to be set up in fleet mode and had granted “in principle approval” for 28 additional reactors, including 24 to be imported from France, the U.S. and Russia.
- **Nuclear power reactors at Jaitapur in Maharashtra:**
 - Government has given in-principle (first step) approval for setting up of **six nuclear power reactors at Jaitapur in Maharashtra.**
 - Jaitapur would be the world’s most powerful nuclear power plant. There would be six state-of-the-art Evolutionary Power Reactors (EPRs) with an installed capacity of 9.6 GWe that will produce low carbon electricity.
 - The six nuclear power reactors, which will have a capacity of 1,650 MW each, will be set up with technical cooperation from France.

Water Worlds

Why in News?

According to a new study, a team of astronomers have found **water worlds, two exoplanets orbiting a red dwarf star.**

What are the Key Findings?

- **About the Exoplanets:**
 - These exoplanets are **Kepler-138c and Kepler-138d**, which were observed using **NASA’s Hubble** and retired **Spitzer space telescope.**
 - It is the first-time planets are confidently identified as water worlds, a type of planet that was theorized by astronomers to exist for a long time.

- The exoplanets are located in a **planetary system that is 218 light years away** in the **constellation Lyra** and are unlike any planets in our solar system.
- The new planet takes **38 days to complete an orbit.**
- It is in the habitable zone, **meaning it is located in an orbit that receives just the right amount of heat from its star to allow water to exist** in a liquid form.
- **Findings:**
 - Kepler- 138c and d are made up of **ingredients lighter than rock (rocky planets like Earth)** but heavier than hydrogen or helium (gas-giant planets like **Jupiter**).
 - This **signals the presence of water**, up to half of the mass of the twin worlds should be water.
 - The volume of the two is three times that of Earth and **mass twice as big, they calculated.**
 - They are also **larger-scale versions of Enceladus (Saturn’s moon) and Europa (Jupiter’s moon).**
 - The density of the twin **exoplanets is lower than Earth** but comparable to Enceladus and Europa.
 - Until now, worlds slightly larger than Earth would likely have rocky features.
 - These twin planets of the same size and mass are **more massive than Earth but lighter than ice giants Uranus and Neptune.**
 - But they are different from the planets in our solar system, which is chiefly composed of **rocky planets like Earth and gas giants like Jupiter.**
- **Significance:**
 - It can help researchers address the **knowledge gap and find more water worlds in the future.**

Uncontrolled Re-Entries of Satellites

Why in News?

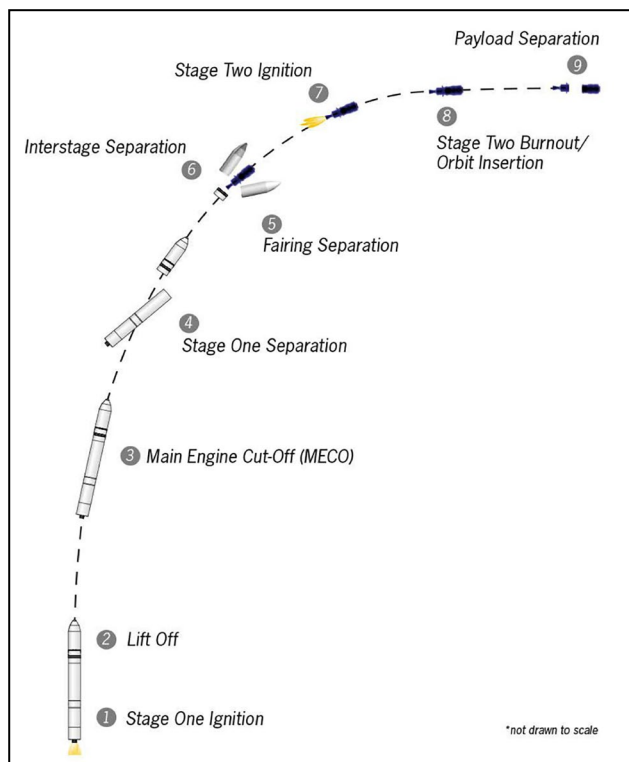
Outer Space Institute (OSI) has called for both national and multilateral efforts to **restrict uncontrolled re-entries** of Satellites.

- **OSI is a network of world-leading space experts united by their commitment to highly innovative, transdisciplinary research** that addresses grand challenges facing the continued use and exploration of space.

Note:

What are the Stages of a Rocket Launch?

- **Primary Stage:**
 - The primary stage of a rocket is **the first rocket engine to engage, providing the initial thrust to send the rocket skyward.**
 - This engine will continue to operate until its fuel is exhausted, at which time it separates from the rocket and falls to the ground.
- **Secondary Stage:**
 - After the primary stage has fallen away, **the next rocket engine engages to continue the rocket on its trajectory.**
 - The second stage has considerably **less work to do, since the rocket is already traveling at high speed** and the rocket's weight has significantly decreased due to the separation of the first stage.
 - If the rocket has additional stages, **the process will repeat until the rocket is in space.**
- **Payload:**
 - Once the payload, whether it be a satellite or a spacecraft, is in orbit, **the rocket's final stage falls away, and the craft will be maneuvered** using smaller **rockets whose purpose is to guide the spacecraft.** Unlike the main rocket engines, these maneuvering rockets can be used multiple times.



What is Uncontrolled Re-entry?

- In an uncontrolled re-entry, the rocket stage simply falls. Its path down is **determined by its shape, angle of descent, air currents and other characteristics.**
- It will also disintegrate as it falls. As the smaller pieces fan out, **the potential radius of impact will increase on the ground.**
- Some pieces burn up entirely while **others don't.** But because of the speed at which **they're travelling, debris can be deadly.**
 - **As per a 2021 report of the International Space Safety Foundation,** an impact anywhere on an airliner with debris of mass above 300 grams would produce a **catastrophic failure, meaning all people on board would be killed.**
- Most rocket parts have landed in oceans principally because earth's surface has more water than land. But many have dropped on land as well.

What are the Concerns?

- There have been many instances in the past **where rockets striking some parts on Earth.**
- Russian rocket in 2018 and **China's Long March 5B** rockets in 2020 and 2022 striking parts of Indonesia, Peru, India and Ivory Coast, among others.
- Parts of a **SpaceX Falcon 9** that fell down in Indonesia in 2016 included two **"refrigerator-sized fuel tanks"**.
- If re-entering **stages still hold fuel, atmospheric and terrestrial chemical** contamination is another risk.
- It is estimated that casualty risk from uncontrolled rocket body re-entries will be of order of 10% in the next decade" and that **countries in the 'Global South' face a "disproportionately higher" risk of casualties.**
 - The U.S. Orbital Debris Mitigation Standard Practices (ODMSP) require all launches to keep the chance of a casualty from a re-entering body to be below **0.01%.**
- There is **no international binding agreement to ensure rocket stages** always perform controlled re-entries nor on the technologies with which to do so.
- The **Liability Convention 1972** requires countries to pay for damages, **not prevent them.**

Note:

- These technologies include wing-like attachments, de-orbiting brakes, and extra fuel on the re-entering body, **and design changes that minimize debris formation.**

What can make Minimum Damage?

- Future solutions need to be extended not just launching satellites but to re-entering satellites as well.
- Advances in electronics and fabrication have made way for smaller satellites, **which are easier to build and launch in large numbers.** These satellites experience more atmospheric drag than if they had been bigger, **but they are also likely to burn up during re-entry.**
 - India's 300-kg **RISAT-2 satellite** re-entered earth's atmosphere in October after 13 years in low-earth orbit. The **ISRO (Indian Space Research**

Organisation) tracked it with its system for safe and sustainable space operations management from a month beforehand. It plotted its predicted paths using models in-house.

Note:

- The Soviet Union launched the **first artificial satellite in 1957.**
- There are **more than 6,000 satellites in orbit**, most of them in **low-earth** (100-2,000 km) and **geostationary** (35,786 km) orbits, placed there in more than 5,000 launches.
- The number of rocket launches have been surging with the advent of reusable rocket stages.



Note:

Environment & Ecology

Highlights

- Regenerative Agriculture
- Ikki Jathre
- Purse Seine Fishing
- Sand Battery
- World Bank Report on Air Pollution
- Carbon Markets
- Black Carbon
- Methane Emissions
- Kunming-Montreal Global Biodiversity Framework
- Tal Chhapar Sanctuary
- Butterflies Adaptation and Evolution Processes
- Cryomesh and Frozen Coral

Regenerative Agriculture

Why in News?

Farmers in Madhya Pradesh who follow regenerative farming methods find that they reduce the need for frequent irrigation, which conserves water and energy.

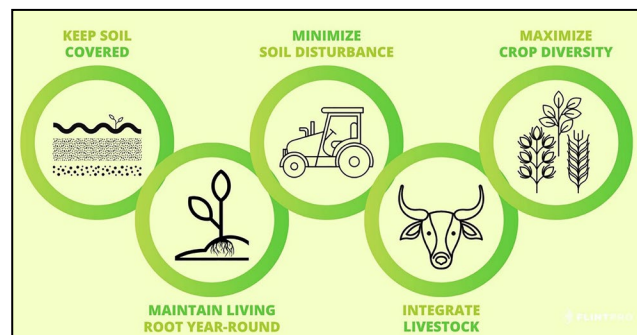
What is Regenerative Agriculture?

➤ Background:

- The **Green Revolution** of the 1960s pulled India from the brink of starvation, but the revolution **also made India the world's biggest extractor of groundwater**.
 - According to the **UN's World Water Development Report, 2022**, India extracts 251 cubic km or more than a quarter of the world's groundwater withdrawal each year; 90 % of this water is used for agriculture.
- Currently, there is severe and widespread **deficiency of organic carbon and micronutrients in Indian soils**.
- If **agriculture is to continue to feed the country's undernourished population** — 224.5 million, according to the UN's State of Food Security and Nutrition in the World, 2022 — **and drive its economy, it needs to work in harmony with nature, not against it**.
- Farmers, activists and agricultural research organisations across the world are **thus developing methods of chemical-less farming which uses natural inputs and cultivation practices such as crop rotation and diversification**, which fall under the wider umbrella of regenerative agriculture.

➤ About Regenerative Agriculture:

- Regenerative agriculture is a **holistic farming system** that focuses on soil health, food quality, biodiversity improvement, water quality and air quality through methods such as **reducing the use of chemical fertilisers and pesticides, reducing tillage, integrating livestock and using cover crops**.
- It adheres to the **following principles**:
 - **Minimize soil disturbance** through conservation tillage
 - **Diversify crops to replenish nutrients** and disrupt pest and disease lifecycles
 - **Retain soil cover** using cover crops
 - **Integrate livestock, which adds manure to the soil** and serves as a source of carbon sinks.



What are the

Advantages of Regenerative Agriculture?

➤ Improves Soil Health:

- It goes a step ahead of sustainable agriculture and aspires not only to maintain the resources like soil and water **but also to improve them**.

Note:

- According to the UN Food and Agriculture Organization, **healthy soil helps in better water storage**, transmission, filtering and reduces agricultural run-off.
- **Water conservation:**
 - Healthy soil helps in **improving water-use efficiency** by better water storage, transmission, filtering and reduces agricultural run-off.
 - Studies have established that 1% increase in soil organic matter per 0.4 hectare increases **water storage potential by more than 75,000 litres**.
- **Energy Conservation:**
 - Regenerative Agriculture practices **conserve energy used by irrigation aids such as pumps**.

What are Indian Efforts to Promote Regenerative Agriculture?

- **The National Project on Organic Farming:**
 - The National Project on Organic Farming is the country's longest experiment on the practice, ongoing since 2004 and conducted by ICAR-Indian Institute of Farming System Research, Meerut.
- **Systematic Rice Intensification:**
 - A method in which seeds are spaced at wider distances and organic manure is applied to improve yields.
- **Zero-Budget Natural Farming:**
 - It is also known as Subhash Palekar Natural Farming and emphasises on preparing and using **inputs made from crop residue, cow dung and urine, fruits, among other things**.
- **Samaj Pragati Sahyog:**
 - It is a grassroots organisation that promotes **natural methods to control agricultural pests** such as composting and recycling of crop residues, use of farm yard manure, cattle urine and application of tank silt, has also made efforts to this end.
 - It has conducted field trials with 1,000 farmers on more than 2,000 ha of land in four districts of Madhya Pradesh and one district of Maharashtra in 2016-18, to measure the water saved.

Ikki Jathre

Why in News?

Recently, a Kerala-based organisation, Thanal launched the **Ikki Jathre or the Festival of Rice** in tribal

parlance whereby 300 climate-resilient varieties of traditional rice were planted at **Panavally, Wayanad**.

- Thanal **initiated the Rice Diversity Block (RDB)** at Panavally under the **Save Our Rice campaign in 2009**, with a collection of 30 varieties of rice which now expanded to 300.

What is Ikki Jathre?

- The initiative aims to sensitise people to the **significance of conserving traditional crops that have the ability to withstand harsh climatic conditions**.
- The festival also sets the stage for **knowledge sharing and co-creation of knowledge** between tribal farmers and experts.
- For the RDB, **most of the varieties were collected** from Kerala, Karnataka, Assam, Tamil Nadu, Arunachal Pradesh, Maharashtra and West Bengal.
 - Also, there are **three traditional rice varieties from Vietnam and Thailand**.

What is Save Our Rice Campaign?

- **About:**
 - Save our rice campaign is a **people's movement to protect the diverse rice cultures**, knowledge, and ensure food sovereignty.
 - **In India, it started in 2004**, and empowers communities **build sustainable food security and livelihood**.
- **Functions:**
 - **Establishing community RDBs and seed banks, conserving and promoting indigenous varieties** of paddy seeds.
 - **Creating awareness about value of rice diversity** among urban consumers.
 - Facilitating **adoption of agro-ecological farming** in rice ecosystems, and encouraging farmers, states and local governments to adopt indigenous seeds.
 - Enabling **active discussions in the media about indigenous seeds** and agro ecological farming.

What are the Key Facts About Rice?

- Rice is a staple food for most of the population in India.
- It is a **kharif crop** which requires **high temperature, (above 25°C) and high humidity** with annual rainfall **above 100 cm**.

Note:

- In the areas of less rainfall, it is grown with the help of irrigation.
- In southern states and West Bengal, the climatic conditions allow the cultivation of two or three crops of rice in an agricultural year.
- In West Bengal farmers grow three crops of rice called 'aus', 'aman' and 'boro'.
- About one-fourth of the total cropped area in India is under rice cultivation.
- **Leading Producer States:** West Bengal, Uttar Pradesh, and Punjab.
- **High Yielding States:** Punjab, Tamil Nadu, Haryana, Andhra Pradesh, Telangana, West Bengal and Kerala.
- India is the second-largest producer of rice after China.

Purse Seine Fishing

Why in News?

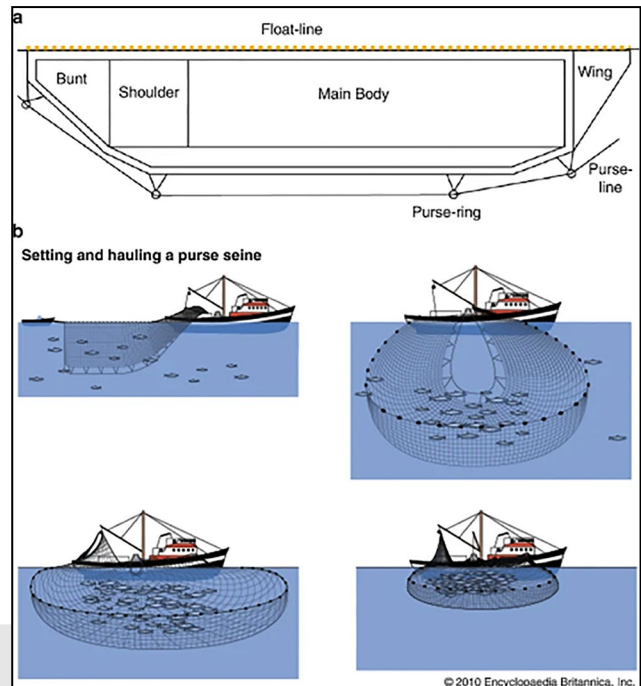
The Centre has told the **Supreme Court** that a ban imposed by certain coastal States on purse seine fishing, which is known to disadvantage endangered species, is not justified.

What are the Issues?

- Currently, bans on purse seine fishing are implemented in the **territorial waters** of Tamil Nadu, Kerala, Puducherry, Odisha, Dadra and Nagar Haveli and Daman and Diu, and the Andaman and Nicobar Islands **up to 12 nautical miles**.
- While States such as Gujarat, Andhra Pradesh, Goa, Karnataka, West Bengal have not imposed any such ban.

What is Purse Seine Fishing?

- **About:**
 - A purse seine is made of a **long wall of netting framed with floating and leadline and having purse rings hanging from the lower edge** of the gear, through which runs a purse line made from steel wire or rope which allow the pursing of the net.
 - The technique has been widely deployed on India's western coasts.



Advantages:

- Purse-seine fishing in open water is considered to be **an efficient form of fishing**.
- It has **no contact with the seabed** and can have low levels of by catch.
- It can also be **used to catch fish congregating around fish aggregating devices**
- It is used in the open ocean to target dense schools of single-species pelagic (midwater) fish like tuna and mackerel.

What are the Concerns?

- In some States, this technique **linked to concerns about the decreasing stock of small**, pelagic shoaling fish such as sardines, mackerel, anchovies and trevally on the **western coasts**.
- The scientific community argues that **climatic conditions, including the El Nino phenomenon, are responsible for the declining catch** of such fish in the last ten years.
- However, fishermen using traditional methods have placed the blame squarely on the rise of purse seine fishing, and fear a further fall in the availability of these small fish if the ban is lifted.
 - They have also demanded that, **as the Centre has supported the lifting of the ban, it should publish the expert committee report** it has based its stance on.

Note:

- A major concern is the **dwindling availability of oil sardines, a favourite of Kerala fish eaters.**
 - In 2021, Kerala recorded a catch of just 3,297 tonnes of sardine, a sharp decrease from the haul of 3.9 lakh tonnes in 2012.
- Purse seine is a non-targeted fishing gear and catches all sorts of fishes which **come in the way of the net, including juveniles.** Hence, they are very much **detrimental to marine resources.**

What is the Union

Government's Argument Against Ban?

- The Union Ministry of Fisheries, Animal Husbandry and Dairying has **recommended the lifting of the ban on purse seine fishing** on a report submitted by an expert committee.
- The expert panel has said that **this mode of fishing "per se has not resulted in any serious resource depletion** so far, given the available evidence".
- The expert panel has **recommended purse seiners to fish in territorial waters and the Indian Exclusive Indian Exclusive Economic Zone (EEZ)** subject to certain conditions.
- The committee has also suggested the framing of a "national management plan on purse seine fisheries.

What is the Jurisdiction of Fishing?

- **Fishing is a state subject** and the management plan for marine fisheries in territorial waters is the job of the State.
- State subject consists of **61 subjects (originally 66 subjects).**
 - These are of **local importance such as, local government, public order and police, agriculture, forest, public health and sanitation, fisheries, education, State taxes and duties.** The states under normal circumstances have exclusive power to make laws on subjects mentioned in the State List.

Sand Battery

Why in News?

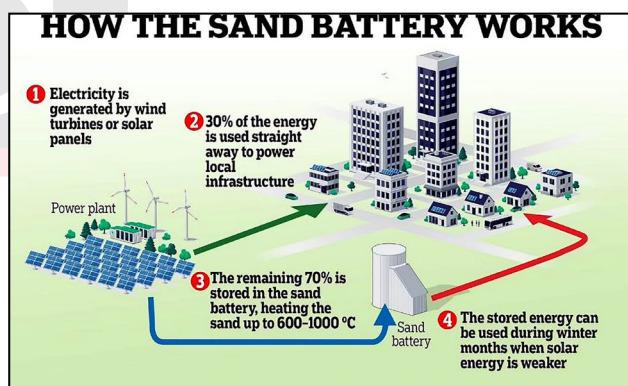
Sand batteries can store a significant extent of thermal energy and can aid **Clean Energy Solutions.**

- **Finland** has installed **the world's first fully working "sand battery"** in its town called **Kankaanpää** capable

of storing green power for months at a time. The batteries can also solve the issue of year-round supply.

What is a Sand Battery?

- A "sand battery" is a **high temperature thermal energy storage** that uses sand or sand-like materials as its storage medium. It stores energy in sand as heat.
 - Sand is a very effective medium for retaining heat over a long period, storing power for months at a time.
- Its main purpose is to **work as a high-power and high-capacity reservoir for excess wind and solar energy.** The energy is stored as heat, which can be used to heat homes, or to provide hot steam and high temperature process heat to industries that are often fossil-fuel dependent.
- The sand battery helps to **ambitiously upscale renewables production by ensuring there's always a way to benefit from clean energy,** even if the surplus is massive.



How can it Address Europe's Energy Crisis?

- Russia — the supplier of 40 % of the **European Union's** natural gas supply — has **shut off its pipelines to a large extent.**
- Countries in the Northern Hemisphere rely on a **central heating system in winters, with natural gas as the most common heating fuel.** This is unlike developing countries with a tropical climate.
- The sale of heat pumps, considered a renewable source of internal heating, rose by 35 % in the EU. A rise in the sale of **other controversial alternatives, such as wood pellets, accompanied this simultaneously.**
- The world is **increasingly looking at renewable internal heating sources.**

Note:

- Thermal storage will reduce reliance on fossil fuels, provide storage for intermittent **renewable energy and help balance the grid**.
 - Thermal energy storage is yet to develop as a field in this sense globally fully.
- In such times, finding alternative energy supplies to fill in the gap can be crucial, these **Sand Batteries can prove to be the right step in the right direction**.
- This patented technology is useful to a country like Finland, one of the countries closest to the North Pole, **where the sun sets at around 3 pm in winter months with temperatures as low as minus 30 degrees Celsius**.
- It is believed that it could solve the problem of **year-round supply, a major issue for green energy**.

World Bank Report on Air Pollution

Why in News?

Recently, the **World Bank** released a report titled **'Striving for Clean Air: Air Pollution and Public Health in South Asia'**.

- The report **details how persisting with policies currently being implemented** (largely since 2018) will yield results but not to the desired level.

What are the Highlights of the Report?

- **Airsheds:**
 - Six large airsheds exist in South Asia, where the air quality in one can affect the air quality in another. They are:
 - **West/Central Indo-Gangetic Plain (IGP)** that included Punjab (Pakistan), Punjab (India), Haryana, part of Rajasthan, Chandigarh, Delhi, Uttar Pradesh.
 - **Central/Eastern IGP:** Bihar, West Bengal, Jharkhand, Bangladesh
 - **Middle India:** Odisha/Chhattisgarh
 - **Middle India:** Eastern Gujarat/Western Maharashtra
 - **Northern/Central Indus River Plain:** Pakistan, part of Afghanistan; and
 - **Southern Indus Plain and further west:** South Pakistan, Western Afghanistan extending into Eastern Iran.

- When the wind direction was predominantly northwest to the southeast, **30% of the air pollution in Indian Punjab came from the Punjab Province in Pakistan** and, on average, 30% of the air pollution in the largest cities of Bangladesh (Dhaka, Chittagong, and Khulna) originated in India. In some years, substantial pollution flowed in the other direction across borders.
- **Exposure to PM 2.5:**
 - Currently over **60% of South Asians are exposed to an average 35 µg/m³ of PM_{2.5} annually**.
 - In some parts of the IGP it spiked to as much as 100 µg/m³ – nearly 20 times the upper limit of 5 µg/m³ recommended by the **World Health Organisation (WHO)**.
- **Dominant Sources of Air Pollution:**
 - Large industries, power plants and vehicles are dominant sources of air pollution around the world, but in South Asia, other sources make substantial additional contributions.
 - These include **combustion of solid fuels for cooking and heating, emissions from small industries such as brick kilns**, burning of municipal and agricultural waste, and cremation.

What are the Suggestions?

- **Reducing Airsheds:**
 - Governmental measures can reduce particulate matter, **but significant reductions in airsheds require coordinated policies across the airsheds**.
 - If Delhi National Capital Territory were to fully implement all air pollution control measures by 2030 while other parts of South Asia continued to follow current policies, it wouldn't keep pollution exposure below 35 µg/m³.
 - However, if other parts of South Asia also adopted all feasible measures it would bring pollution below that number.
- **Changing Approach:**
 - South Asian countries including India **need to change their approach in order to improve air quality and reduce pollutants** to levels considered acceptable by the WHO.
- **Close Coordination Required:**
 - Curbing air pollution requires not only tackling its specific sources, but **also close coordination across local and national jurisdictional boundaries**.

Note:

- **Regional cooperation can help implement cost-effective joint strategies** that leverage the interdependent nature of air quality.
- The most cost-effective one, which calls for full coordination between airsheds, would cut the average exposure of PM 2.5 in South Asia to 30 $\mu\text{g}/\text{m}^3$ at a cost of USD 278 million per $\mu\text{g}/\text{m}^3$ of reduced exposure and save more than 7,50,000 lives annually.

What is Airsheds?

- The World Bank defines an airshed as a **common geographic area where pollutants get trapped, creating similar air quality for everyone.**
- What are the Related Steps taken?
- **National Clean Air Campaign (NCAP):**
 - Launched in 2019, it **aims to reduce air pollution in 131 of India's most polluted cities.**
 - The target was initially to cut pollution by 20%-30% by 2024 over 2017 levels but has now been revised to cutting it by 40% by 2025-26.
- **System of Air Quality and Weather Forecasting and Research (SAFAR) Portal**
- **Air Quality Index:** AQI has been developed for eight pollutants viz. PM2.5, PM10, Ammonia, Lead, nitrogen oxides, sulphur dioxide, ozone, and carbon monoxide.
- **Graded Response Action Plan (for Delhi)**
- For Reducing Vehicular Pollution:
 - **BS-VI Vehicles,**
 - **Push for Electric Vehicles (EVs),**
 - **Odd-Even Policy** as an emergency measure (for Delhi)
- **New Commission for Air Quality Management**
- Subsidy to farmers for buying **Turbo Happy Seeder (THS) Machine** for reducing stubble burning.
- **National Air Quality Monitoring Programme (NAMP):**
 - Under NAMP, four air pollutants viz. SO₂, NO₂, PM₁₀, and PM_{2.5} have been identified for regular monitoring at all locations.

Carbon Markets

Why in news?

The Parliament has passed the **Energy Conservation (Amendment) Bill, 2022** in order to establish **Carbon Markets** in India and specify a Carbon Trading Scheme.

- The Bill amends the Energy Conservation Act, 2001.

What is the Energy Conservation (Amendment) Bill, 2022?

➤ About:

- The Bill empowers the Centre to specify a carbon credits trading scheme.
- Under the Bill, the **central government or an authorised agency will issue carbon credit certificates to companies or even individuals** registered and compliant with the scheme.
- These carbon credit certificates **will be tradeable in nature.** Other persons would be able to buy carbon credit certificates on a voluntary basis.

➤ Concerns:

- Bill does not provide **clarity on the mechanism to be used** for the trading of carbon credit certificates— whether it will be like the cap-and-trade schemes or use another method— and **who will regulate such trading.**
- It is not specified, which is the right ministry to **bring in a scheme of this nature,**
 - While carbon market schemes in other jurisdictions like the U.S., United Kingdom, and Switzerland are framed by their **environment ministries,** the Indian Bill was tabled by the power ministry instead of the **Ministry of Environment, Forest, and Climate Change (MoEFCC).**
- The Bill does not specify **whether certificates under already existing schemes would also be interchangeable** with carbon credit certificates and tradeable for reducing carbon emissions.
 - Two types of tradeable certificates are already issued in India— Renewable Energy Certificates (RECs) and Energy Savings Certificates (ESCs).
 - These are issued when companies use renewable energy or save energy, which **are also activities which reduce carbon emissions.**

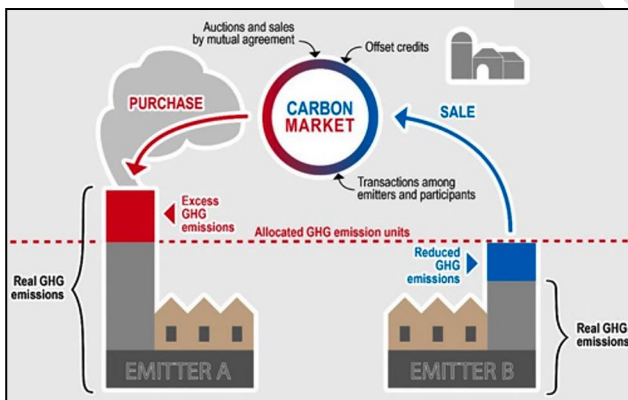
What are Carbon Markets?

➤ About:

- Carbon markets are a **tool for putting a price on carbon emissions.** It allows the **trade of carbon credits with the overall objective of bringing down emissions.**
- These markets create incentives to reduce emissions or improve energy efficiency.

Note:

- For example, an industrial unit which outperforms the emission standards stands to gain credits.
 - Another unit which is struggling to attain the prescribed standards can buy these credits and show compliance to these standards. The unit that did better on the standards earns money by selling credits, while the buying unit is able to fulfill its operating obligations.
- It establishes **trading systems** where **carbon credits or allowances** can be bought and sold.
- A **carbon credit** is a kind of tradable permit that, per United Nations standards, equals one tonne of carbon dioxide removed, reduced, or sequestered from the atmosphere.
 - **Carbon allowances or caps**, meanwhile, are determined by countries or governments according to their emission reduction targets.
- **Article 6 of the Paris Agreement** provides for the use of **international carbon markets by countries** to fulfill their **NDCs (Nationally Determined Contributions)**.
- NDCs are climate commitments by countries setting targets to achieve **net-zero emissions**.



➤ Types of Carbon Markets:

- **Compliance Markets:**
- Compliance markets are **set up by policies at the national, regional, and/or international level and** are officially regulated.
 - Today, compliance markets mostly operate under a principle called **‘cap-and-trade’**, **most popular in the European Union (EU)**.
 - Under the EU’s emissions trading system (ETS) launched in 2005, member countries set a cap or limit for emissions in different sectors, such as power, oil, manufacturing, agriculture, and waste management. This

cap is determined as per the climate targets of countries and is lowered successively to reduce emissions.

- Entities in this sector are issued **annual allowances or permits by governments equal to the emissions they can generate**.
 - If companies produce emissions beyond the capped amount, **they have to purchase additional permits**. This makes up the ‘trade’ part of cap-and-trade.
 - The market price of carbon gets determined by market forces when purchasers and sellers trade in emissions allowances.
- **Voluntary Markets:**
- Voluntary markets are those in which **emitters—corporations, private individuals, and others—buy carbon credits to offset the emission** of one tonne of CO₂ or equivalent greenhouse gases.
 - Such carbon credits are **created by activities which reduce CO₂ from the air, such as afforestation**.
 - In this market, a corporation looking to compensate **for its unavoidable GHG emissions purchases carbon credits from an entity engaged in projects** that reduce, remove, capture, or avoid emissions.
 - For Instance, in the aviation sector, airlines may purchase carbon credits to offset the carbon footprints of the flights they operate. In voluntary markets, credits are verified by private firms as per popular standards. There are also traders and online registries where climate projects are listed and certified credits can be bought.

➤ Status of Global Carbon Markets:

- In 2021, the value of global markets for tradeable carbon allowances or permits **grew by 164% to a record 760 billion euros (USD 851 billion)**, according to an analysis by Refinitiv.
- The EU’s ETS contributed the most to this increase, accounting for 90% of the global value at 683 billion euros.
- As for voluntary carbon markets, **their current global value is comparatively smaller at USD 2 billion**.
- The World Bank estimates that trading in carbon credits could reduce the cost of implementing NDCs by more than half — by as much as USD 250 billion by 2030.

Note:

What are the Challenges to Carbon Markets?

- **Poor Market Transparency:**
 - The **UNDP (United Nations Development Programme)** points out serious concerns pertaining to carbon markets- ranging from **double counting of greenhouse gas reductions** and **quality and authenticity of climate projects** that generate credits to poor market transparency.
- **Greenwashing:**
 - Companies may buy credits, **simply offsetting carbon footprints instead of reducing their overall emissions** or investing in clean technologies.
- **May Increase Net Emission through ETS:**
 - As for regulated or compliance markets, **ETSs (Emissions Trading System)** may not automatically reinforce climate mitigation instruments.
 - The **International Monetary Fund (IMF)** points out that including high emission-generating sectors under trading schemes to offset their emissions by buying allowances may increase emissions on net and provide no automatic mechanism for prioritizing cost-effective projects in the offsetting sector.

What is the Related Indian Initiative?

- **Clean Development Mechanism:**
 - In India, the clean development mechanism under the Kyoto Protocol provided a primary carbon market for the players.
 - The secondary carbon market is covered by the **perform-achieve-trade scheme** (which falls under the energy efficiency category) and the renewable energy certificate.

Black Carbon

Why in News?

In **Lok Sabha**, the Minister of State for Environment, Forest and Climate Change outlined the various measures taken to counter black carbon.

- Under the **Indian Space Research Organization (ISRO)** Geosphere Biosphere Programme, the ISRO operates a network of aerosol observatories and black carbon mass concentration is one of the parameters being measured.

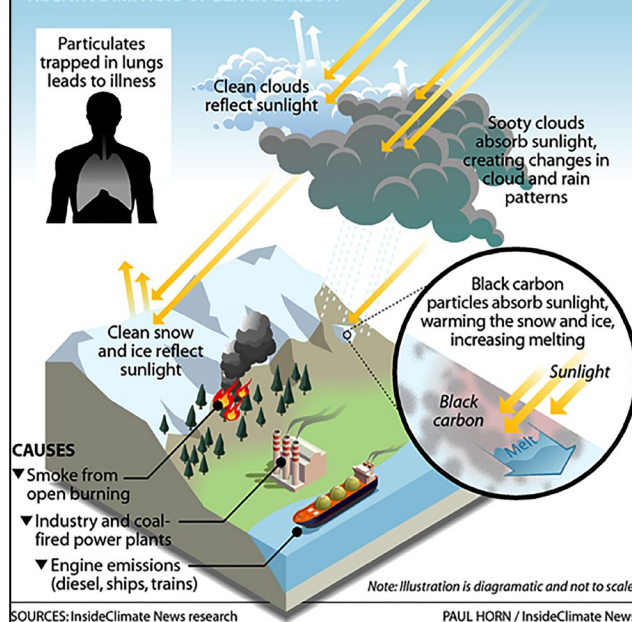
What is Black Carbon?

- **About:** Black Carbon (BC) is a **short-lived pollutant that is the second-largest contributor** to warming the planet behind **carbon dioxide (CO₂)**.
 - Unlike other **greenhouse gas emissions**, BC is quickly washed out and can be eliminated from the atmosphere if emissions stop.
 - Unlike historical carbon emissions it is also a localised source with greater local impact.
 - Black carbon is a kind of an aerosol.
- **General Impacts:** Among aerosols (such as brown carbon, sulphates), Black Carbon has been recognized as the **second most important anthropogenic agent for climate change** and the **primary marker to understand the adverse effects caused by air pollution**.
 - Black carbon absorbs solar energy, it warms the atmosphere. When it falls to earth with precipitation, it darkens the surface of snow and ice, reducing their albedo (the reflecting power of a surface), warming the snow, and hastening melting.
- **Emission:** It gets emitted from **gas and diesel engines, coal-fired power plants**, and other sources that burn **fossil fuel**. It comprises a significant portion of particulate matter or PM, which is an air pollutant.

Black Carbon's Arctic Impact

Black carbon, commonly known as soot, is a particulate pollutant that negatively affects both the climate and human health. Soot particles suspended in the atmosphere absorb sunlight, adding to global warming. And when it collects on ice and snow, it hastens melting.

NEGATIVE IMPACTS OF BLACK CARBON



Note:

What are the Various Measures taken?

- **Pradhan Mantri Ujjwala Yojana:**
 - Under this initiative, the government is promoting use of **cleaner household cooking fuels**.
- **BS VI Emission Norms:**
 - Leapfrogging from BS-IV to **BS-VI norms** for fuel and vehicles from 1st April, 2020.
- **Introducing Cleaner Fuels:**
 - Introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), **ethanol blending**.
- **SATAT Scheme:**
 - A new initiative, "**Sustainable Alternative Towards Affordable Transportation (SATAT)**", has been launched to set up 5000 **Compressed Bio-Gas (CBG)** production plants and make CBG available in the market for use.
- **Managing Crop Residue:**
 - Agricultural machines and equipment for in-situ crop residue management in Punjab, Haryana, Uttar Pradesh and NCT of Delhi are promoted under the Central Sector Scheme on **Promoting Agricultural Mechanization** for in-situ Crop Residue Management with 50% subsidy to individual farmers and 80% subsidy to the establishment of Custom Hiring Centres.
- **National Clean Air Programme:**
 - The Central Government is implementing the **National Clean Air Programme** as a long-term, time-bound, national-level strategy to tackle the air pollution problem across the country in a comprehensive manner.
 - The Centre has set a new target of a **40% reduction in particulate matter concentration in cities covered under the scheme by 2026**, updating the earlier goal of 20 to 30% reduction by 2024.
- **City specific Clean Air Action Plans:**
 - The **Central Pollution Control Board (CPCB)** has identified 131 cities based on ambient air quality levels exceeding national ambient air quality standards, and cities with a million plus population.
 - City specific Clean Air Action Plans **have been prepared and rolled out for implementation in these cities**.
 - **These plans define time bound targets to control city specific air polluting sources** (soil & road dust, vehicles, domestic fuel, municipal solid waste burning, construction material and industries, etc.).

➤ FAME Scheme:

- **Faster Adoption and Manufacturing of Electric Vehicles (FAME)** phase-2 scheme has been rolled out.

Methane Emissions

Why in News?

Recently a study has been published titled- "Wetland emission and atmospheric sink changes explain methane growth in 2020", which states that low nitrogen oxide pollution and warming wetlands likely **drove global methane emissions to record high levels in 2020**.

What are the Findings?

➤ Overview:

- Global methane emissions reached roughly 15 parts per billion (ppb) in 2020 from 9.9 ppb in 2019.
- In 2020, methane emissions from human activities decreased by 1.2 teragrams (Tg) per year.

➤ Contributors:

- Methane emissions from **oil and natural gas decreased by 3.1 Tg per year** compared to 2019. Contributions from coal mining decreased by 1.3 Tg per year. Fire emissions, too, dropped by **6.5 Tg per year**.
 - Globally, fire emissions appear to have fallen in 2020 compared to 2019, the researchers wrote in the study.
- Contributions from the **agricultural sector went up by 1.6 Tg per year**.
- Wetland emissions **rose by 6.0 Tg per year**.

➤ Causes:

- **Water-logged soils** make conditions ripe for soil microorganisms, **allowing them to produce more methane**.
- Nitrogen oxide levels fell by 6% in 2020 from 2019. Less nitrogen oxide pollution means less hydroxyl and more methane.
 - Nitrogen oxide enters the atmosphere from exhaust gasses of cars and trucks as well as electrical power generation plants.
 - Nitrogen oxide (NOx) **can impact methane levels**. In the troposphere — the upper part of the atmosphere — NOx combines with ozone to form hydroxyl radicals.

Note:

- These radicals, in turn, remove 85 % of methane annually from the atmosphere.
 - The **contribution of hydroxyl radicals in removing methane decreased** by roughly 7.5 Tg per year.
 - Roughly **53 % of the methane growth can be attributed to lower hydroxyl sink**, and the remaining 47 % from natural sources, **predominantly wetlands**.

What is the Significance of the Study?

- It can help unravel a puzzle concerning **why globally methane increased when many other greenhouse gases like carbon dioxide decreased** during 2020.
- The results have **significant implications for our ability to reliably predict methane changes in a future world** with lower anthropogenic emissions of pollutants like nitrogen oxides and also if we have a wetter world.

What is Methane?

- **About:**
 - Methane is the **simplest hydrocarbon, consisting of one carbon atom and four hydrogen atoms (CH₄)**.
 - It is flammable, and is used as a fuel worldwide.
 - Methane is a powerful **greenhouse gas**.
 - Methane has more than **80 times the warming power of carbon dioxide** over the first 20 years of its lifetime in the atmosphere.
 - The common **sources of methane are oil and natural gas systems**, agricultural activities, coal mining and wastes.
- **Impact:**
 - **More Global Warming Potential:** It is nearly 80-85 times more potent than carbon dioxide in terms of its global warming capacity.
 - This makes it a critical target for reducing global warming more quickly while simultaneously working to reduce other greenhouse gases.
 - **Promotes Generation of Tropospheric Ozone:** Increasing emissions are driving a rise in **tropospheric ozone air pollution**, which causes more than one million premature deaths annually.

What are the Initiatives to Tackle Methane Emissions?

- **Indian:**
 - **'Harit Dhara' (HD):** Indian Council of Agricultural Research (ICAR) has developed an anti-methanogenic

feed supplement **'Harit Dhara' (HD)**, which can cut down cattle methane emissions by 17-20% and can also result in higher milk production.

- **India Greenhouse Gas Program:** The India GHG Program led by WRI India (non-profit organization), Confederation of Indian Industry (CII) and **The Energy and Resources Institute (TERI)** is an industry-led voluntary framework to measure and manage greenhouse gas emissions.

- The programme builds comprehensive measurement and management strategies to reduce emissions and drive more profitable, competitive and sustainable businesses and organisations in India.

- **National Action Plan on Climate Change (NAPCC):** **NAPCC** was launched in 2008 which aims at creating awareness among the representatives of the public, different agencies of the government, scientists, industry and the communities on the threat posed by climate change and the steps to counter it.

- **Bharat Stage-VI Norms:** India shifted from **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI)** emission norms.

➤ Global:

- **Methane Alert and Response System (MARS):**
 - MARS will integrate data **from a large number of existing and future satellites that have the ability to detect methane emission events** anywhere in the world, and send out notifications to the relevant stakeholders to act on it.

○ **Global Methane Pledge:**

- At the Glasgow climate conference (UNFCCC COP 26) in 2021, **nearly 100 countries had come together in a voluntary pledge**, referred to as the Global Methane Pledge, to cut methane emissions by at least 30% by 2030 from the 2020 levels.

○ **Global Methane Initiative (GMI):**

- It is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a clean energy source.

Note:

Kunming-Montreal Global Biodiversity Framework




Why in News?

Recently, at the 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity “Kunming-Montreal Global Biodiversity Framework” (GBF) was adopted.

- GBF includes 4 goals and 23 targets for achievement by 2030.
- The U.N. biodiversity conference concluded in Canada’s Montreal.
- The first part of COP 15 took place in Kunming, China and reinforced the commitment to address the biodiversity crisis and the **Kunming Declaration** was adopted by over 100 countries.

Decoding the 23 targets set at COP15

A total of 196 countries have signed a historic deal to protect 30% of the world for nature by 2030 in Montreal

REDUCING THREATS TO BIODIVERSITY	MEETING HUMAN REQUIREMENTS THROUGH SUSTAINABLE USE	TOOLS AND SOLUTIONS FOR IMPLEMENTATION AND MAINSTREAMING
<p>1) Halting biodiversity loss: Bringing the loss of areas of high biodiversity importance close to zero, while respecting the rights of indigenous people</p> <p>2) Effective restoration: At least 30% of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration</p> <p>3) Mapping linkages: Sustainable use of above areas is consistent with conservation outcomes</p> <p>4) Saving endangered species: Urgent steps to halt human induced extinction of threatened species; maintain their diversity through in situ and ex situ conservation</p> <p>5) Protecting wild species: Sustainable, safe and legal use of wild species; preventing overexploitation</p> <p>6) Invasive alien species: Mitigating their impacts by reducing rates of introduction by 50%; controlling them in priority sites such as islands</p> <p>7) Tackling pollution: Reduce pollution risks to levels that are not harmful to biodiversity and ecosystem functions</p> <p>8) Climate crisis: Minimise impact of climate change and ocean acidification through nature-based solutions</p>	<p>9) Serving humans: Ensure use of wild species yields benefits for humans, especially for those most dependent on biodiversity</p> <p>10) Ecosystem productivity: Sustainable management of areas under agriculture, aquaculture, fisheries and forestry for resilience and long-term productivity</p> <p>11) Handling nature’s contributions: Restore, maintain and enhance nature’s contributions to people through regulation of air, water, and climate</p> <p>12) Biodiversity in urban fabric: Increase the area and quality and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas</p> <p>13) Sharing genetic resources: Take effective legal, policy, administrative and capacity-building measures to ensure equal sharing of benefits of genetic resources</p>	<p>14) Policy-making: Integration of biodiversity and its values into policies across all levels of govt, other sectors</p> <p>15) Legal perils for businesses: Regular assessments by transnational firms of their risks, dependencies, impacts on biodiversity; report on compliance with regulations</p> <p>16) Making eco-friendly choices: Encouraging people to make sustainable consumption choices, reduce global footprint of consumption</p> <p>17) Biosecurity measures: Adopting such steps for handling of biotechnology and distribution of its benefits</p> <p>18) Removal of harmful incentives: Identify by 2025, and eliminate/reform incentives harmful for biodiversity; cut them by \$500 bn per year by 2030</p> <p>19) Biodiversity finance: Increasing financial resources, mobilising \$200 billion per year by 2030</p> <p>20) Technical cooperation: Strengthen capacity-building and development, access to and transfer of technology</p> <p>21) Sharing knowledge: Access to information by decision makers, practitioners and public; access to technologies of indigenous peoples only with their consent</p> <p>22) Equal representation: Ensuring equitable representation in decision-making</p> <p>23) Gender based review: A gender-responsive approach by recognising women’s rights and access to natural resources</p>
 <p style="color: white; font-size: small;">Monitored wildlife populations have seen a 69% drop on average since '70, say WWF, LPF</p>	 <p style="color: white; font-size: small;">Indigenous rights have been included in one-third of the new framework’s targets</p>	 <p style="color: white; font-size: small;">Signatories aim to ensure \$200bn per year is channelled to conservation initiatives</p>

What are the Key Targets of the GBF?

- **30x30 Deal:**
 - Restore 30% degraded ecosystems globally (on land and sea) by 2030.
 - Conserve and manage 30% areas (terrestrial, inland water, and coastal and marine) by 2030.
- **Stop the extinction of known species, and by 2050** reduce tenfold the extinction risk and rate of all species (including unknown).
- **Reduce risk from pesticides by at least 50% by 2030.**
- Reduce nutrients lost to the environment by at least 50% by 2030.
- **Reduce pollution risks and negative impacts of pollution** from all sources by 2030 to levels that are not harmful to biodiversity and ecosystem functions.
- **Reduce global footprint of consumption by 2030**, including through significantly reducing overconsumption and waste generation and halving food waste.
- **Sustainably manage areas under agriculture, aquaculture, fisheries, and forestry** and substantially increase agroecology and other biodiversity-friendly practices.
- Tackle climate change through nature-based solutions.
- Reduce the rate of introduction and establishment of invasive alien species by at least 50% by 2030.
- Secure the safe, legal and sustainable use and trade of wild species by 2030.
- Green up urban spaces.

Note:

What are the Other Major Outcomes of COP15?

- **Money for Nature:**
 - Signatories aim to **ensure USD200 billion per year is channelled to conservation initiatives, from public and private sources.**
 - Wealthier countries should contribute at least USD20 billions of this every year by 2025, and at least USD30 billion a year by 2030.
- **Big Companies Report Impacts on Biodiversity:**
 - Companies should analyse and report how their operations affect and are affected by biodiversity issues.
 - The parties agreed to large companies and financial institutions being subject to “requirements” to make disclosures regarding their operations, supply chains and portfolios.
- **Harmful Subsidies:**
 - **Countries committed to identify subsidies that deplete biodiversity by 2025,** and then eliminate, phase out or reform them.
 - They agreed to slash those incentives by at least USD500 billion a year by 2030 and increase incentives that are positive for conservation.
- **Monitoring and reporting progress:**
 - All the agreed aims will be supported by processes to monitor progress in the future, in a bid to prevent this agreement meeting the same fate as similar targets that were agreed in Aichi, Japan, in 2010, and never met.
 - **National action plans will be set and reviewed,** following a similar format used for greenhouse gas emissions under U.N.-led efforts to curb climate change. Some observers objected to the lack of a deadline for countries to submit these plans.

How India Presented its Demands at the Conference?

- India called for an **urgent need to create a new and dedicated fund to help developing countries successfully implement a post-2020 global framework** to halt and reverse biodiversity loss.
 - So far, the **Global Environment Facility** which caters to multiple conventions, including the **UNFCCC** and **UN Convention to Combat Desertification,** remains the only source of funding for biodiversity conservation.

- India also said that **conservation of biodiversity must also be based on ‘Common but Differentiated Responsibilities and Respective Capabilities’ (CBDR)** as climate change also impacts nature.
- According to India, **developing countries bear most of the burden of implementing the targets for conserving biodiversity** and, therefore, require adequate funding and technology transfer.

What is the Convention on Biological Diversity (CBD)?

- CBD is a legally binding treaty to conserve biodiversity that **has been in force since 1993** and has been ratified by 196 nations.
- It **sets out guidelines for countries to protect biodiversity,** ensure sustainable use, and promote fair and equitable benefit sharing.
- It aims at achieving a **historic deal to halt and reverse biodiversity loss on par with the 2015 Paris Agreement on climate change.**
- The **CBD Secretariat is based in Montreal, Canada.**
- The Parties (Countries) under CBD, **meet at regular intervals and these meetings are called Conference of Parties (COP).**
- In 2000, a supplementary agreement to the **Convention known as the Cartagena Protocol on Biosafety** was adopted. It came into force on 11th September 2003.
 - The Protocol seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology.
- The **Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS)** was adopted in 2010 in **Nagoya, Japan at COP10.** It entered into force on 12th October 2014.
 - It not only applies to genetic resources that are covered by the CBD, and to the benefits arising from their utilization but also covers traditional knowledge (TK) associated with genetic resources that are covered by the CBD and the benefits arising from its utilization.
- **The COP-10 also adopted a ten-year framework for action** by all countries to save biodiversity. Officially known as **“Strategic Plan for Biodiversity 2011-2020”**, it provided a set of 20 ambitious yet achievable targets collectively known as the **Aichi Targets for biodiversity.**
- India enacted **Biological Diversity Act in 2002** for giving effect to the provisions of the CBD.

Note:



CBD COP15

The UN Convention on Biological Diversity (CBD) 1993 - a legally binding treaty to conserve biodiversity

CBD Conference of Parties is the Governing body of the Convention



MEETINGS OF THE CONFERENCE OF THE PARTIES

COP 1 (1994)

- Nassau, Bahamas
- Proposed 29 December as International Day for Biological Diversity

EXCOP 1

- 1st extraordinary meeting of UN CBD COP
- At Cartagena, Colombia (Feb 1999) & Montreal, Canada (Jan 2000)
- Adoption of Cartagena Protocol on Biosafety

COP 6 (2002)

- The Hague, Netherlands
- Global Taxonomy Initiative, Global Strategy for Plant Conservation adopted

COP 5 (2000)

- Nairobi, Kenya
- UNGA adopted 22 May as International Day for Biological Diversity

COP 10 (2010)

- Nagoya, Japan
- Nagoya Protocol (Access to Genetic Resources and Fair & Equitable Sharing of Benefits) adopted
- Strategic Plan for Biodiversity 2011-20 and Aichi Biodiversity Targets
- GBO 3

COP 8 (2006)

- Curitiba, Brazil
- Global Biodiversity Outlook (GBO) Report 2 (GBO 1 in 2001)

COP 11 (2012)

- Hyderabad, India

COP 14

- Sharm El-Sheikh, Egypt

PHASE-I

- Theme - Ecological Civilization: Building a Shared Future for All Life on Earth
- Held in Kunming, China (October 2021)
- Kunming Biodiversity Fund

COP 15

PHASE-II

- Held in Montreal, Canada
- Adopted Post 2020 Global Biodiversity Framework - 4 goals & 23 targets to be achieved by 2030.
- 30 by 30 Target - restore 30% degraded ecosystems and protect at least 30% of the world's lands, oceans and coastal areas by 2030
- No single country met all 20 Aichi targets (expired in 2020) within its own borders



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Note:



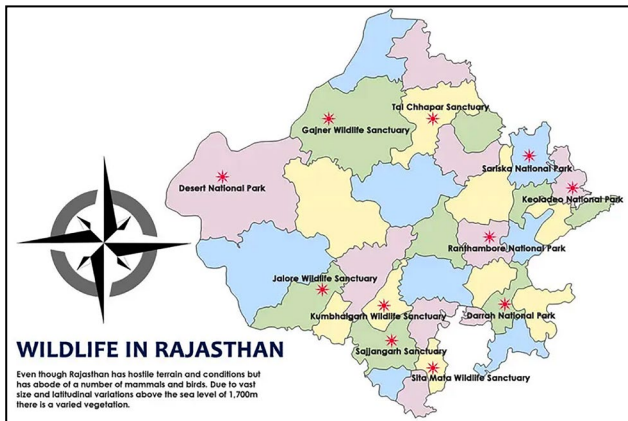
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Tal Chhapar Sanctuary

Why in News?

Recently, the famous **Tal Chhapar Blackbuck Sanctuary in Churu, Rajasthan** received a protective cover against a proposed move of the State government to reduce the size of its **Eco Sensitive Zone (ESZ)**.

The **World Wildlife Fund for Nature (WWF)** has also taken up a major project for the conservation of raptors in the sanctuary, spread in an area measuring 7.19 sq. Km.



What are the Key Facts about Tal Chhapar Sanctuary?

About:

- The Tal Chhapar Sanctuary is situated on the **border of the Great Indian Thar Desert**.
- Tal Chhapar is a **distinctive shelter** of the most graceful Antelope seen in India, **“the Blackbuck”**.
- It was given the **status of a sanctuary in 1966**.
- Tal Chhapar was a **hunting reserve of the erstwhile royal family of Bikaner**.
- The **“Tal”** word is Rajasthani word means **plane land**.
- This Sanctuary has **nearly flat territory and combined thin low-lying region**. It has got **open and wide grasslands** with spread **Acacia and Prosopis plants** that offer it a **look of a characteristic Savanna**.

Fauna:

- Tal Chhapar is an **ideal place to see Blackbucks** which are more than a thousand in number here.

It is a **good place to see the desert animals and reptile species**.

- The sanctuary is host to about **4,000 blackbucks, over 40 species of raptors and more than 300 species of resident and migratory birds**.
- Migratory birds in the sanctuary are **harriers, eastern imperial eagle, tawny eagle, short-toed eagle, sparrow, and little green bee-eaters, black ibis and demoiselle cranes**. Other than that, skylarks, crested larks, ring doves, and brown doves can be seen throughout the year.

What are Blackbucks?

About:

- The **Blackbuck (*Antelope cervicapra*)**, or the **Indian Antelope**, is a species of antelope **native to India and Nepal**.
 - It is widespread in Rajasthan, Gujarat, Madhya Pradesh, Tamil Nadu, Odisha, and other areas throughout peninsular India.
- It is **considered as the epitome of grassland**.
- The blackbuck is a **diurnal antelope (active mainly during the day)**.
- It has been **declared as the State Animal** of Punjab, Haryana, and Andhra Pradesh.
- **Cultural Importance:** It is a **symbol of purity for Hinduism** as its skin and horns are regarded as a sacred object. For **Buddhism**, it is a symbol of **good luck**.

Protection Status:

- **Wildlife Protection Act 1972:** Schedule I
- **IUCN Status:** Least Concern
- **CITES:** Appendix III

Threat:

- Habitat Fragmentation, Deforestation, Natural Calamities, Illegal Hunting.

Related Protected Areas:

- Velavadar Blackbuck Sanctuary - Gujarat
- Point Calimere Wildlife Sanctuary - Tamil Nadu
- In 2017, the **Uttar Pradesh** State Government approved the plan of setting up the **Blackbuck Conservation Reserve** in the trans-Yamuna belt near Prayagraj. It would be the first conservation reserve dedicated to the blackbuck.

Note:



What are Eco-Sensitive Zones (ESZs)?

- ESZs are **areas notified by the Ministry of Environment, Forest, and Climate Change (CC)**, under the **Environment Protection Act, 1986**.
- The basic aim is to **regulate certain activities around National Parks and Wildlife Sanctuaries** so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.
- In June, 2022, the **Supreme Court directed** that every protected forest, national park and wildlife sanctuary across the country should **have a mandatory eco-sensitive zone (ESZ) of a minimum one km** starting from their demarcated boundaries.

Butterflies Adaptation and Evolution Processes

Why in News?

A new study has **thrown light on many interesting aspects of butterflies' adaptation and evolution processes**.



- The study was conducted on several species of butterflies and their imitative traits in the **Western Ghats** in Karnataka.

What are the Highlights of the Study?

- The findings were categorised into three:
 - **Model Species:** Those that are toxic to predators.
 - **Batesian Mimicry Species:** Those that evolved traits of unpalatable species (poisonous) to avoid predators.
 - **Non-mimetic Species:** Those that are closely related to Batesian mimics but did not evolve mimicry trait.
- The unpalatable one is called models and the palatable one is called mimics.
- **Butterflies that have evolved to make use of mimicry** evolve faster than the species that don't make use of mimicry.
- Batesian mimics adapt to avoiding predators by **evolving similar wing colour patterns and flight behaviours**.
- Analyses revealed that **not only had colour patterns evolved at a much faster rate**, but that members of

mimetic communities had evolved at a faster rate than their close relatives.

- Butterflies exhibit a wide range of colours and colour patterns, suggesting that the **genetic architecture underlying wing patterns and colour pigments** are relatively malleable and susceptible to change.

What is the Significance of Western Ghats?**About:**

- Western Ghats consist of a **chain of mountains running parallel to India's Western Coast** and passing from the states of Kerala, Maharashtra, Goa, Gujarat, Tamil Nadu and Karnataka.

Significance:

- The Ghats **influence the Indian monsoon weather patterns** that mediate the warm tropical climate of the region.
- They act as a barrier to rain-laden monsoon winds that sweep in from the south-west.
- Western Ghats are home to **tropical evergreen forests**, as well as to 325 globally threatened species.

Cryomesh and Frozen Coral

Why in News?

While working on Australia's **Great Barrier Reef**, scientists have successfully trialed a new method for **freezing and storing coral** in their first trial.

**What is the Need for Freezing Coral?**

- As rising ocean temperatures destabilize the delicate ecosystems of Coral, therefore scientists are striving to **protect coral reefs**.
- The Great Barrier Reef has suffered **four bleaching events in the last seven years**, including the first-ever bleach during a **La Niña phenomenon**, which typically brings cooler temperatures.
- Scientists used the cryomesh to **freeze coral larvae at the Australian Institute of Marine Sciences (AIMS)**.

What is the Methodology of Freezing Coral?**Cryomesh:**

- Cryomesh was devised by a team from the University of Minnesota's College of Science and Engineering.

Note:

- This is lightweight and can be manufactured cheaply.
- It better **preserves coral and has the properties of cryoplates**.
- The mesh technology will help store coral larvae at -196°C (-320.8°F).
- **Significance:**
 - This cryogenically frozen coral **can be stored and later reintroduced to the wild**.
 - But current **process requires sophisticated equipment** including lasers, however a new lightweight “cryomesh” can be manufactured cheaply and better preserves coral.

What are Coral Reefs?


➤ About:

- **Corals** are marine invertebrates or animals which do not possess a spine. In scientific classification, **corals fall under the phylum Cnidaria and the class Anthozoa**.
- Coral is made up of **genetically identical organisms called polyps**. These polyps have **microscopic algae called zooxanthellae** living within their tissues.
 - The corals and algae have a **mutualistic relationship**.
 - The coral provides the zooxanthellae with the compounds **necessary for photosynthesis**.
 - In return, the zooxanthellae supply the coral with organic products of photosynthesis, like carbohydrates, which are utilized by the coral polyps for **synthesis of their calcium carbonate skeletons**.
 - In addition to providing corals with essential nutrients, zooxanthellae are **responsible for the unique and beautiful colors of corals**.
- They are also called the “**rainforests of the seas**”.
- There are **two types of corals**:
 - **Hard, shallow-water corals**—the kind that builds reefs.
 - **Soft corals and deepwater corals** that live in dark cold waters.
- **Significance:**
 - They support **over 25% of marine biodiversity even though they take up only 1% of the seafloor**.
 - The marine life **supported by reefs further fuels global fishing industries**.

- Besides, coral reef systems generate USD 2.7 trillion in annual economic value through goods and service trade and tourism.

What is the Great Barrier Reef?

- It is the **world's most extensive** and spectacular **coral reef ecosystem** composed of over 2,900 individual reefs and 900 islands.
- The reef is located in the **Coral Sea (North-East Coast)**, off the coast of Queensland, Australia.
- It can be seen from outer space and is the **world's biggest single structure made by living organisms**.
- It was selected as a **World Heritage Site in 1981**.



Coral Reefs

(Rainforests of the seas)

About


- ✦ Large underwater structures – made of skeletons of colonial marine invertebrates ‘coral’ – individually called polyp
- ✦ Symbiotic Relationship with algae ‘zooxanthellae’ (responsible for beautiful colours of corals)
- ✦ Support over 25% of marine biodiversity

Hard Corals vs Soft Corals

- ✦ Hard Corals - Rigid skeleton made of CaCO_3 - reef-building corals
- ✦ Soft Corals - Non reef-building

Great Barrier Reef (Australia)

- ✦ Largest Coral Reef in the World
- ✦ World Heritage Site (1981)
- ✦ Endures Mass Coral Bleaching



Corals in India

- ✦ Present in the areas of Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan

Significance


- ✦ Coral reefs **protect coastlines from storms/erosion**, provide jobs, offer opportunities for recreation
- ✦ Source of **food/medicines**

Threats

- ✦ **Natural:** Temperature, Sediment Deposition, Salinity, pH, etc.
- ✦ **Anthropogenic:** Mining, Bottom Fishing, Tourism, pollution, etc.

Coral Bleaching

- ✦ Corals under stress - expel algae – thus turning white (bleached)
- ✦ Bleached corals - not dead – but, more risk of starvation/disease



Initiatives to Protect Corals

Technology

- ✦ Cyromesh: Storage of the coral larvae at (-196°C) - Can be later reintroduced to the wild
- ✦ Biorock: Creating artificial reefs on which coral can grow rapidly

Global

- ✦ International Coral Reef Initiative
- ✦ The Global Coral Reef R&D Accelerator Platform

Indian

National Coastal Mission Programme

Note:

History

Highlights

- Pt. Madan Mohan Malaviya
- Veer Bal Diwas

Pt. Madan Mohan Malaviya

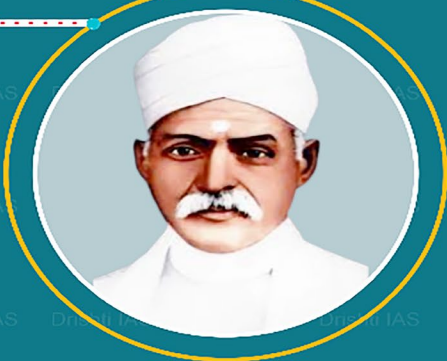
Pt. MADAN MOHAN MALAVIYA

25th December 1861- 2nd November, 1946

Educationist, Journalist, Politician and Freedom Activist
Title of '**Mahamana**' by Mahatma Gandhi and '**Karmayogi**' by Dr. S. Radhakrishnan

ROLE IN FREEDOM STRUGGLE

- He was **midway between the Moderates and the Extremists**
- Took part in **Salt Satyagraha** and the **Civil Disobedience Movement (1930)**
- Elected President of the Indian National Congress for four sessions (1909, 1913, 1919, and 1932)



MAJOR CONTRIBUTIONS


- Ending the Indian Indenture system (bonded labour)
- Setting up the **Ganga Mahasabha** in 1905
- Member of the Imperial Legislative Council for 11 years
- Popularised the term '**Satyamev Jayate**'
- Introduction of Devnagri in British-Indian Courts
- Helped establish the **Hindu Mahasabha** in 1915
- Founded the **Banaras Hindu University (BHU)** in 1916

JOURNALISM

- **Abhyudaya** (Hindi weekly) and **Maryada** (Hindi monthly)
- Chairman of the Board of Directors of the **Hindustan Times**

HONOURS

- **Bharat Ratna (2014)**
- **Varanasi-New Delhi Mahamana Express (2016)**



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Note:

Veer Bal Diwas

Why in News?

Recently, the Prime Minister participated in a historic programme marking 'Veer Bal Diwas' at Major Dhyan Chand National Stadium in Delhi.

- On 9th January 2022, the **day of the Prakash Purab of Sri Guru Gobind Singh Ji**, the Prime Minister had announced that 26th December would be observed as '**Veer Bal Diwas**', to mark the martyrdom of sons of Sri Guru Gobind Singh - **Sahibzadas Baba Zorawar Singh Ji and Baba Fateh Singh Ji**.

Who was Sahibzadas

Zorawar Singh and Fateh Singh?

- Sahibzada Zorawar Singh (9) and Sahibzada Fateh Singh (7) are among the most revered martyrs in **Sikhism**.
- A combination of Mughals soldiers besieged **Anandpur Sahib** on the orders of emperor Aurangzeb (1704).
- The two sons of Guru Gobind Singh were captured.
- They were offered safe passage if they became Muslims.
- They both refused, and so they were sentenced to death and were bricked alive.
- These two greats preferred death instead of deviating from the noble principles of Dharma.

Who was Guru Gobind Singh?

➤ About:

- The last of the ten Sikh Gurus, Guru Gobind Singh was **born on 22nd December 1666 in Patna, Bihar**.
 - His birth anniversary is based on the **Nanakshahi calendar**.

- He became the Sikh guru at the age of nine, following the demise of his father, **Guru Tegh Bahadur**, the ninth Sikh Guru.

- He was assassinated in 1708.

➤ Contributions:

○ Religious:

- He is known for his significant contributions to the **Sikh religion**, including the introduction of the turban to cover hair.
- He also founded **the principles of Khalsa** or the Five 'K's'.
 - The Five K's are kesh (uncut hair), kanga (wooden comb), kara (iron or steel bracelet), kirpan (dagger) and kachera (short breeches).
 - These were the five articles of faith that a Khalsa must always adorn.
- He also laid down many other rules for the Khalsa warriors to follow like abstaining from tobacco, alcohol, halal meat, etc. The Khalsa warrior was also duty-bound to protect innocent people from persecution.
- He named Guru Granth Sahib, the religious text of the Khalsas and the Sikhs, as the next Guru of the two communities.

○ Martial:

- He fought against the Mughals in the battle of Muktsar in 1705.
- In the Battle of Anandpur (1704), the Guru lost his mother and two minor sons who were executed. His eldest son also died in battle.

○ Literary:

- His literary contributions include the Jaap Sahib, Benti Chaupai, Amrit Savaiye, etc.
- He also wrote the Zafarnama which was a letter to the Mughal Emperor Aurangzeb.



Note:

Geography

Highlights

- Bomb Cyclone

Bomb Cyclone

Why in News?

Recently, a **Bomb cyclone** hit the **United States and Canada**, which triggered **road accidents** that results in the death of more than 30 people.

What is a Bomb Cyclone?

➤ About:

- A bomb cyclone is a **large, intense midlatitude storm that has low pressure at its center**, weather fronts and an array of associated weather, from blizzards to severe thunderstorms to heavy precipitation.
- Bomb cyclones put forecasters on high alert because **they can produce significant harmful impacts**.

➤ Reasons for the Formation:

- Storms **form when a mass of low-pressure air (warm air mass) meets a high-pressure mass (cold air mass)**. The air flows from high pressure to low, creating winds.
- It occurs when a midlatitude cyclone rapidly intensifies, **dropping at least 24 millibars over 24 hours**.

- A millibar measures atmospheric pressure.

- This quickly increases the pressure difference, or gradient, **between the two air masses, therefore making the winds stronger**.

- The formation of this rapidly strengthening weather system is a process called **bombogenesis**.

How does a Bomb Cyclone Differ from a Hurricane?

- **Hurricanes** tend to form in tropical areas and are powered by warm seas. For this reason, they're **most common in summer or early fall**, when seawater is warmest.
- Bomb cyclones **generally occur during colder months** because cyclones occur due to cold and warm air meeting.
 - During the summer, there's generally not much cold air across the atmosphere; this means a bomb cyclone is much less likely to occur.
- Hurricanes **form in tropical waters**, while **bomb cyclones form over the northwestern Atlantic, northwestern Pacific and sometimes the Mediterranean Sea**.



Note:

Art and Culture

Highlights

- Three Sites in Tentative List of World Heritage Sites
- Dokra Metalcraft
- Benin Bronze
- Lord Nataraja
- Sahitya Akademi Award
- PRASHAD Scheme
- Temples in India

Three Sites in Tentative List of World Heritage Sites

Why in News?

Recently, three sites- Gujarat's **Vadnagar** town and the iconic **Sun Temple at Modhera**, and the **Rock-cut Sculptures of Unakoti** in Tripura have been added to the **tentative list of United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites**.

What are the Key Facts about Three Sites?

➤ Vadnagar:

- It is located in the **Mehsana district in Gujarat is a city with deep historical roots**.
 - Also called Chamatkarpur, Anandpur, Snehpur and Vimalpur, the city of Vadnagar was **mentioned in the Puranas** as well.
- Home to many archaeological treasures, Vadnagar is **famous for its torans, a pair of 12th century Solanki-era columns**, 40 feet tall and built in red and yellow sandstone to celebrate a war victory.
- In 640 AD, Chinese Buddhist traveller, **Hiuen Tsang visited the city, and is said to have mentioned it in his travelogue**.
- During excavations in 2008-09, **ruins of a Buddhist monastery were also unearthed in Vadnagar**.
- Vadnagar is home to **Tanariri Performing Arts College**, named so to honour the valour of two sisters, Tana and Riri, who had sacrificed their lives when asked by Akbar to sing in his court, which was against their custom.

➤ Modhera Sun Temple:

- The Sun Temple at **Modhera is located on the left bank of the river Pushpavati**, a tributary of river Rupan in Becharaji taluka of **Mehsana district**.
 - This east-facing temple is **built with bright yellow sandstone**.
- The temple description states that it is built in **Maru-gurjara architectural style**, consists of the **main temple shrine (garbhagriha)**, a **hall (gadhamandapa)**, an **outer hall or assembly hall (Sabhamandapa or rangamandapa)** and a **sacred pool (Surya Kunda)**, which is now called Ramakunda.
 - **Ramakunda** is a massive rectangular stepped tank perhaps the **grandest temple tank in India**.
- Every year, at the **time of the equinoxes**, the **sun shines directly into this central shrine** of the temple.
- **Rock-cut Sculptures of Unakoti:**
 - It is **Shaivite pilgrimage** and dates back to 7th or 9th century if not earlier.
 - **Unakoti means one less than a crore** and it is said that **these many rock cut carvings** are available here.
 - As per Hindu mythology, when **Lord Shiva was going to Kashi along with one crore gods and goddesses, he made a night halt** at this location.
 - He **asked all the gods and goddesses to wake up before sun rise** and proceed for Kashi.
 - It is said that **in the morning, except Shiva himself, no one else could get up** so Lord Shiva set out for Kashi himself **cursing the others to become stone images**.
 - As a result, we have **one less than a crore stone images and carvings at Unakoti**.
 - The images found at Unakoti are of **two types, namely rock-carved figures and stone images**.

Note:



- Among the rock cut carvings, the central Shiva head and gigantic Ganesha figures deserve special mention.
 - The central Shiva head is known as 'Unakotiswara Kal Bhairava'.
 - On each side of the head-dress of the central Shiva, there are two full size female figures – one of Durga standing on a lion and another female figure on the other side.
 - In addition, three enormous images of Nandi Bull are found half buried in the ground.
- Every year a big fair popularly known as 'Ashokastami Mela' is held in the month of April which is visited by thousands of pilgrims.

What is UNESCO's Tentative List?

- UNESCO's tentative list is an inventory of properties which each state party intends to consider for nomination.
 - As per Operational Guidelines, 2019 of UNESCO, it is mandatory to put any monument/site on the tentative list for one year before it is considered for the final nomination dossier.
 - Once the nomination is done, it is sent to the World Heritage Centre (WHC).
- India now has now 52 sites on the tentative list.

What is World Heritage Site?

- World Heritage Site refers to any of various areas or objects inscribed on the UNESCO's World Heritage List.
- The sites are designated as having "outstanding universal value" under the Convention Concerning the Protection of the World Cultural and Natural Heritage 1972.
- It provides a framework for international cooperation in preserving and protecting cultural treasures and natural areas throughout the world.
- There are three types of sites: Cultural, Natural, and Mixed.
 - Cultural heritage sites include hundreds of historic buildings and town sites, important archaeological sites, and works of monumental sculpture or painting.
 - Natural heritage sites are restricted to those natural areas that have excellent ecological and evolutionary processes, unique natural phenomena, habitats of rare or endangered species etc.

- Mixed heritage sites contain elements of both natural and cultural significance.
- India has 40 world heritage sites, including 32 cultural properties, 7 natural properties and 1 mixed site. The latest one included are Harappan city of Dholavira and Kakatiya Rudreshwara (Ramappa) Temple.

Dokra Metalcraft

Why in News?

West Bengal's Lalbazaar is not just an art hub, but is also becoming a center for dokra, a popular metalcraft.

- In 2018, Dokra craft from West Bengal was presented with the Geographical Indication (GI) tag.



What is Dokra?

- Dokra is a form of ancient bell metal craft practiced by the Ojha metalsmiths living in states like Jharkhand, Chhattisgarh, Odisha, West Bengal and Telangana.
- However, the style and also the workmanship of this artisan community varies in different states.
- Dhokra or Dokra, is also known as bell metal craft.
- The name 'Dhokra' comes from the Dhokra Damar tribes, who are the traditional metal smiths of West Bengal.
 - Their technique of lost wax casting is named after their tribe, hence Dhokra metal casting.
 - The Dokra artifacts are made in brass and are unique in that the pieces do not have any joints. The method is combining metallurgical skills with wax techniques employing the lost wax technique, a unique form where mould is used only once and broken, making this art the only one-of-its-kind in the world.
 - The tribe extends from Jharkhand to Orissa to as far ahead to Chattisgarh, Rajasthan and even Kerala.
- Each figurine takes about a month to make.
- The dancing girl of Mohenjo-Daro (Harappan Civilization) is one of the earliest dhokra artefacts that is now known.

Note:

- Dokra Art is still used to craft artefacts, accessories, utensils and jewellery.

What are the Other Crafts?

- **Bronze Crafts:**
 - Rare Jain imagery and icons (Karnataka)
 - Pahaldar Lamps (Jaipur and parts of Uttar Pradesh)
 - Pembarthi craft (Telangana)
- **Other Metal Crafts:**
 - Marori work of Rajasthan
 - Tarkashi (Rajasthan)
 - Bidri Craft (Karnataka)

Benin Bronze

Why in News?

Germany has returned 20 **Benin Bronzes** that were looted in the 19th century to Nigeria.

- The return of these precious artifacts took place after Germany in July 2022 signed an agreement with Nigeria, **pledging to transfer the ownership of around 1,100 Benin Bronzes.**

What is Benin Bronze?

- The **Benin Bronzes** are a group of over 3,000 sculptures and artworks from the ancient Kingdom of Benin in present-day Nigeria. It dates back to at least the 16th century.
 - They were **looted by British colonial forces during the infamous raid on Benin City in 1897.**
- Several of these pieces were **specially commissioned for the kings or Obas, and Queen Mothers of the kingdom.**
- These artefacts provide insight into the **culture of the Benin Kingdom as well as its relationships with neighbouring states.** Some of these pieces also point to the kingdom's relationship with Europeans.



Which other looted Artifacts have Countries Demanded to be Returned?

- **Koh-i-Noor diamond:**

- The Koh-i-Noor has a **long and storied history in pre-partition India** and the British Raj. It is said to have been mined in what is present-day Andhra Pradesh.
- The diamond was acquired by Queen Victoria in 1849, following the **second Anglo-Sikh war**, during which **Punjab was brought under the East India Company.**
- The diamond was taken by the British after the signing of the Last Treaty of Lahore.
 - The Lahore treaty held between **Lord Dalhousie and Maharaja Duleep Singh in 1849**, Kohinoor diamond was **surrendered by the Maharaja of Lahore** to the Queen of England.

➤ Rosetta Stone:

- The other well-known example is the **Rosetta Stone**. Currently displayed at the British Museum, it is an **ancient Egyptian stone that features the inscriptions** that formed the basis of Egyptology itself.
- The stone was discovered by the army of **Napoleon Bonaparte near the town of Rashid (Rosetta)** in 1799 during the emperor's campaign to conquer Egypt. It was passed on to the British after they defeated the French in 1801.

Lord Nataraja

Why in News?

Recently, the **Tamil Nadu police** successfully **stopped the scheduled auctioning of a bronze idol of Nataraja by France.**

- The rare variety bronze idol was suspected to have been **stolen from Kayathar in Thoothukudi district half a century ago.**



What are the Key Facts about Lord Nataraja?

- **Nataraja (Lord of the Dance)**, the Hindu god Shiva in his form as the **cosmic dancer**, is represented in metal or stone in many Shaivite temples, particularly in South India.
 - It is an **important piece of Chola sculpture.**

Note:

- The **upper right hand** holds the damru (drum), which signifies the **sound of creation**. All creations spring from the great sound of the damru.
- The **upper left-hand** holds the eternal fire, which represents the **destruction**. Destruction is the precursor and inevitable counterpart of creation.
- The **lower right hand** is raised in the gesture of **Abhay mudra** signifying benediction and reassuring the **devotee to not be afraid**.
- The **lower left-hand** points towards the upraised foot and indicates the **path of salvation**.
- Shiva is dancing on the figure of a small dwarf. The dwarf symbolises **ignorance** and the ego of an individual.
- Shiva is shown as the **source of all movement within the cosmos** and as the god whose **doomsday dance, represented by the arch of flames**, accompanies the dissolution of the universe at the end of an eon.
- The matted and flowing locks of Shiva represent the **flow of river Ganges**.
- In ornamentation, one ear of Shiva has a male earring while the other has a female. This represents the fusion of male and female and is often referred to as **Ardhanarishwar**.
- A snake is twisted around the arm of Shiva. The snake symbolises the **kundalini power**, which resides in the human spine in the dormant stage. If aroused, one can attain true consciousness.
- The Nataraja is surrounded by a nimbus of glowing lights which symbolises the **vast unending cycles of time**.

Sahitya Akademi Award

SAHITYA AKADEMI AWARDS

The 2nd highest literary honour by the Govt of India, after the Jnanpith Award Estd. 1954

CONFERRED BY

- 📍 Sahitya Akademi - India's National Academy of letters

AWARDS

- 📍 24 awards for literary works in recognised languages (22 from 8th Schedule + English and Rajasthani)
- 📍 24 awards for literary translations from and into the languages of India.

CRITERIA FOR AWARDS

- 📍 Author must be of Indian Nationality
- 📍 Book/work must be an outstanding contribution to the corresponding language/literature



SAHITYA AKADEMI AWARDS 2022

BHASHA SAMMAN

- 📍 Given for considerable contribution to the propagation, modernization or enrichment of the languages concerned
- 📍 Awarded to **Udaya Nath Jha** (valuable contribution in classical and mediaeval literature in the eastern region)

BOOKS SELECTED FOR TRANSLATION

- 📍 **Yaad Vashem** (N. Nallathambi), **Akupacha Kavithalu** (Varala Anand) +15 more

IMP AWARDEES

- 📍 Anuradha Roy
- 📍 Badri Narayan
- 📍 Mr. Rajendran
- 📍 Praveen Bandekar
- 📍 Anis Ashfaq
- 📍 Manoj Kumar Goswami

WORK

- 📍 All the Lives We Never Lived (Eng novel)
- 📍 Tumadi Ke Shabd (Hindi poetry book)
- 📍 Kala Pani (Tamil Novel)
- 📍 Ujavya Sandechya Bahulya (Marathi Novel)
- 📍 Khwab Sarab (Urdu novel)
- 📍 Bhoor Satya (Assamese)



Anuradha Roy



Badri Narayan

OTHER SAHITYA AKADEMI AWARDS

- 📍 **Sahitya Akademi Bal Sahitya Puraskar**: Based on author's total contribution to children literature.
 - 📍 2022 Award - **Ganesh Marandi** for **Hapan Mai** (book in Santhali)
- 📍 **Sahitya Akademi Yuva Puraskar**: Books published by an author of age of 35 and below.
 - 📍 2022 Award - **Pawan Nalat** for **MI Sandarbha Pakharatoy** (Marathi Poetry)



Note:

PRASHAD Scheme

Why in News?

Recently, the President of India laid the foundation stone for the project 'Development of Pilgrimage Facilities at Bhadrachalam Group of Temples' in Telangana.

- Another project named 'Development of Pilgrimage and Heritage Infrastructure at Rudreshwara (Ramappa) Temple' was also laid later on.
- Both these projects have been approved under the **PRASHAD Scheme** of the Ministry of Tourism, Government of India.

What are the Key Features of the Temples?

➤ Bhadrachalam Group of Temples:

- The temple at Bhadrachalam is said to be more than 350 years old and is **closely associated with the epic of Ramayana**.
- It is believed that **Lord Rama with his wife Goddess Sita and brother Lakshmana** spent some part of their 14 years of exile at a village called Parnasala, a part of Dandakaranya forest near Bhadrachalam Temple.
- These group of temples are situated on the left bank of the Godavari River.

➤ Ramappa Temple:

- The **Ramappa temple of Lord Shiva, a perfect example of architectural brilliance**, was built in **1213 AD by the Kakatiya rulers** and has been inscribed on **UNESCO's World Heritage list**.
- This heritage temple attracts over 10 Lakh visitors every year and has a high visibility amongst the tourist circuit.

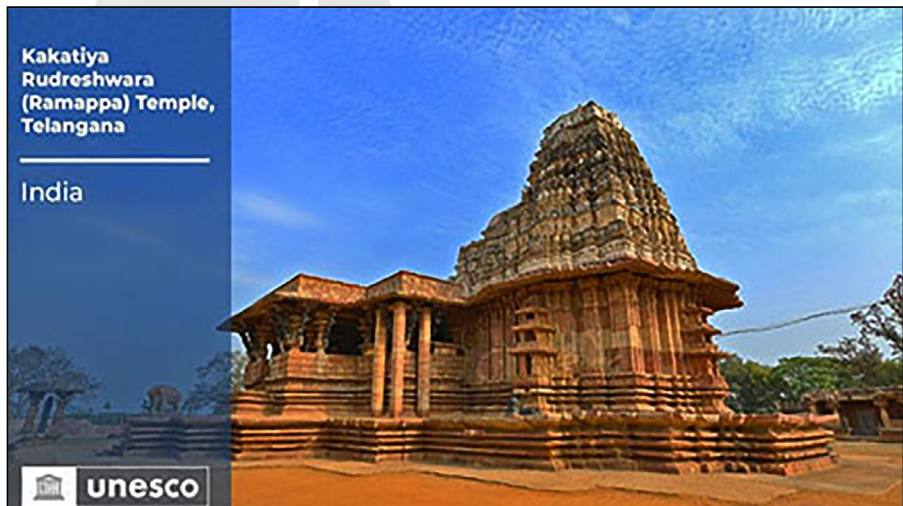
What is PRASHAD Scheme?

➤ About:

- The 'National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive' (PRASAD) was **launched by the Ministry of Tourism in the year**

2014-15 with the objective of holistic development of identified pilgrimage destinations.

- The name of the scheme was **changed from PRASAD to "National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD)"** in October 2017.
 - After the discontinuation of the HRIDAY scheme of the Ministry of Housing and Urban Development, the development of Heritage destinations was included in the PRASAD Scheme, changing it to PRASHAD.
- Under the PRASHAD Scheme, **several religious cities/sites in have been identified for development such as Amaravati and Srisailem** (Andhra Pradesh), Kamakhya (Assam), Parasuram Kund (Lohit District, Arunachal Pradesh), Patna and Gaya (Bihar), etc.



➤ Implementation Agency:

- The projects **identified under this scheme shall be implemented through the identified agencies** by the respective State/ Union Territory Government.

➤ Funding Mechanism:


- The Central Government provides 100% funding for the project components undertaken for public funding.
 - This scheme seeks to leverage the voluntary funding available for **Corporate Social Responsibility (CSR) and the Public-Private Partnership (PPP)** for improved sustainability of the projects under this scheme.

Note:


Temples in India

Temples in India


- Nagara Style (Pink Circle):**
 - Dashavatara Temple (5th Century)
 - Chausath Yogini Temple (9-11th Century)
 - Dilwara Temple (12th Century)
 - Modhera Sun Temple (11th Century)
 - Kandariya Mahadev Temple (11th Century)
 - Lakshmana Temple (10th Century)
 - Kamakhya Temple (8th-17th Century)
- Dravidian Style (Blue Circle):**
 - Kailasa Temple (8-10th Century)
 - Lad Khan Temple (5th Century)
 - Badami Cave Temple (6-7th Century)
 - Doddabasappa Temple (12th Century)
 - Virupaksha Temple (7th Century)
 - Hoysaleswara Temple (11-14th Century)
 - Chennakeshwara Temple (11-14th Century)
 - Vittalaswami Temple Complex (15th Century)
 - Venkateswara Temple (4th Century)
 - Kailashnath Temple (7-8th Century)
 - Shore Temple (8th Century)
 - Gangaikondacholapuram Temple (11th Century)
 - Brihadisvara Temple (11th Century)
 - Meenakshi Temple (16th Century)
- Vesara Style (Green Circle):**
 - Arasavalli Sun Temple (7th Century)
 - Lingaraj Temple (10th-11th Century)
 - Mukteswara Temple (10th Century)
 - Konark Sun Temple (13th Century)
 - Jagannath Temple (12th Century)
 - Rajarani Temple (11th Century)




Nagara Style



Dravidian Style



Vesara Style



Note:

Security

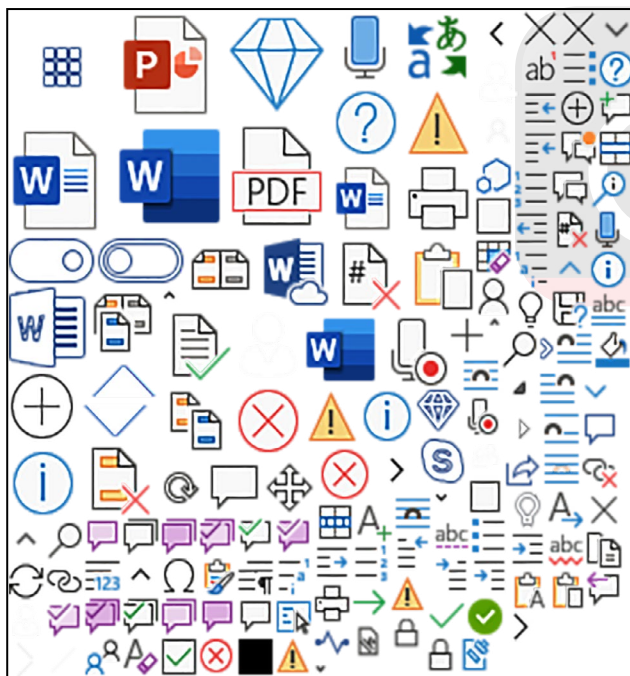
Highlights

- Agni-5 Ballistic Missile
- INS Vagir
- Kazind – 2022
- Surya Kiran XVI
- Prahari App
- Peace in North East India

Agni-5 Ballistic Missile

Why in News?

Recently, India successfully carried out the night trials of the Agni-5 nuclear-capable **ballistic missile**.



What are the Features of the Missile?

- Agni-5 is an **ingeniously built advanced surface-to-surface ballistic missile** developed under the **Integrated Guided Missile Development Programme (IGMDP)**.
- It is a **fire-and-forget missile**, which cannot be stopped without an interceptor missile.
- The missile has the capability of hitting targets beyond the range of 5000 km and is crucial for India's self-defense systems.

What are Agni Missiles?

➤ About:

- The Agni missile class is the backbone of India's nuclear launch capability, as are **Prithvi** short-range ballistic missiles, submarine-launched ballistic missiles, and fighter aircraft.
- Agni-1 to 5 missiles are designed & developed by **Defence Research and Development Organisation (DRDO)**.

➤ Other Ranges of Agni Missiles:

- Agni I: Range of 700-800 km.
- Agni II: Range more than 2000 km.
- Agni III: Range of more than 2,500 Km
- Agni IV: Range is more than 3,500 km and can fire from a road mobile launcher.
- Agni-V: The longest of the Agni series, an Inter-Continental Ballistic Missile (ICBM) with a range of over 5,000 km.

What is the Integrated

Guided Missile Development Programme?

- IGMDP was the **brainchild of renowned scientist Dr. APJ Abdul Kalam**.
- It was **intended to attain self-sufficiency** in the field of missile technology.
- After keeping in mind, the requirements of various types of missiles by the defense forces, the program recognized the need to develop five missile systems.
- The IGMDP formally got the approval of the Indian government in 1983.
- It **brought together the country's scientific community**, academic institutions, R&D laboratories, industries and the three defence services in giving shape to the strategic, indigenous missile systems.
- **The missiles developed under IGMDP are:**

Note:

- Short-range surface-to-surface ballistic missile – Prithvi
- Intermediate-range surface-to-surface ballistic missile – Agni
- Short-range low-level surface-to-air missile – Trishul
- Medium-range surface-to-air missile – Akash
- Third generation anti-tank missile – Nag

INS Vagir

Why in News?

Recently, the 5th **Scorpene class submarine of Project-75** named **INS 'Vagir'** has been delivered to the Indian Navy today.

- It is a Kalvari class diesel-electric attack submarine, Yard 11879, which when commissioned will be christened INS Vagir.



What is INS Vagir?

- **Background:**
 - The first Vagir, a submarine from Russia, was commissioned into the Indian Navy on 3rd December 1973 and was **decommissioned on 7th June 2001** after almost three decades of service to the nation.
 - Public shipbuilder **Mazagon Dock Ltd (MDL)** gave a new incarnation to the submarine with the same name.
- **About:**
 - It is named after the **Sand Fish, a deadly deep-sea predator** of the Indian Ocean.
 - It is a part of the six **Kalvari-class submarines being built in India.**

- The Kalvari-class submarines **have the capability of operating in a wide range of Naval combat including anti-warship and anti-submarine operations**, intelligence gathering and surveillance, and naval mine laying.
- The **state-of-art technology used** in the submarine has ensured:
 - Superior stealth features such as advanced acoustic absorption techniques, low radiated noise levels, and hydro-dynamically optimised shape.
 - The ability to attack the enemy using precision guided weapons.

➤ Features:

- The submarine is designed to **operate in all theatres of operation**, showcasing interoperability with other components of a Naval Task Force.
- It can launch attacks **with both torpedoes and tube launched anti-ship missiles**, whilst underwater or on surface.
- It can undertake multifarious types of missions i.e Anti-Surface warfare, Anti-Submarine warfare, Intelligence gathering, Mine Laying, Area Surveillance, etc.

➤ Significance:

- Construction of these submarines in an Indian yard is another step towards '**Aatmanirbhar Bharat**' and **enhances self-confidence** in this field, a notable achievement is that this is the third submarine delivered to the Indian Navy in a span of 24 months.

What is Project-75?

➤ About:

- It is a **programme by the Indian Navy** that entails building six Scorpene Class attack submarines.
 - Scorpene is a **conventional powered submarine** weighing 1,500 tonnes and can go up to depths of 300m.
- The Mazagon Dock Shipbuilders Limited (MDL) is manufacturing **six Scorpene submarines with technology assistance from Naval Group of France** under a USD 3.75 bn deal signed in October 2005.
- Project 75 includes the **indigenous construction of six submarines.**

➤ Other submarines of the ongoing Project-75:

- **The first submarine INS Kalvari** was commissioned into Indian Navy December 2017, **second submarine**

Note:

INS Khanderi in September 2019, third one **INS Karanj** in March 2021 and the fourth one **INS Vela** joined service in November 2021.

- The sixth and last submarine, **Vagsheer**, is expected to be delivered to the Navy by end 2023.

Kazind – 2022

Why in News?

The 6th Edition of India - Kazakhstan joint training exercise "KAZIND-22" is being conducted at Umroi (Meghalaya).



What is Kazind – 2022?

- **About:**
 - It is a joint annual training exercise with the Kazakhstan Army and was **instituted in 2016 as Exercise Prabal Dostyk**, which was later upgraded to a company level exercise and renamed as Ex Kazind in 2018.
- **Aim:**
 - To build positive military relations, imbibe each other's best practices and promote the ability to operate together while undertaking counter terrorist operations in semi urban / jungle scenario.

How is Kazakhstan Important for India?

- Surrounded by the Caspian Sea in the west to Russia in the North and China in the East, Kazakhstan, the largest country in Central Asia and the ninth largest country in the world asserts great strategic importance.
- Kazakhstan holds **great significance to India especially in terms of energy resources** and its economic potential and also due to its geo-strategic location.
- From the perspective of energy resources, **Kazakhstan is the world's largest producer of Uranium.**

- India and Kazakhstan actively cooperate under the aegis of various multilateral fora including **Confidence-Building Measures in Asia (CICA)**, **Shanghai Cooperation Operation (SCO)** and the **United Nations (UN)** organisations.

Surya Kiran XVI

Why in News?

The 16th Edition of Indo-Nepal joint training Exercise "**Surya Kiran**" between India and Nepal is being conducted at Saljhandi, Nepal.



What is Surya Kiran?

- It is a **military exercise conducted annually** between India and Nepal.
- The objective of this exercise is to:
 - **Establish military relations** in inaccessible mountainous areas by the soldiers of both countries,
 - **Provide humanitarian assistance** under disaster management,
 - **Get training in anti-terrorist operations,**
 - **Build interoperability and sharing expertise** between the two countries.
- The 15th edition of **Surya Kiran** took place at Pithoragarh in Uttarakhand, India.

Prahari App

Why in News?

Recently the Union Home minister launched 'Prahari' app for **Border Security Force (BSF) Jawans.**

Note:

- The Ministry also revised 13 BSF manuals to increase the understanding of the administration, training and operations of the border guarding organization.
- These manuals will help speed up the tasks of the BSF jawans. They will ease the work of all ranks of BSF jawans and officers.

What are the Key Features of the App?

- Through the 'Prahari' app, jawans can get **personal and service-related information, housing, Ayushman-Central Armed Police Forces (CAPF)** and leave related information on their mobile.
- **Other Features of the App Include:**
 - Availability of Bio Data
 - Grievance redressal on **"Centralized Public Grievance Redress and Monitoring System" (CP-GRAMS)"**
 - Information on various welfare schemes
- The app will also connect the Jawans with the **portal of the Ministry of Home Affairs.**

What is BSF?

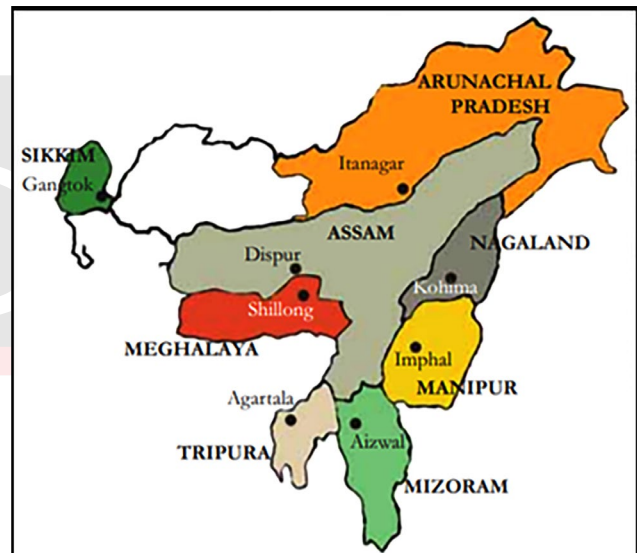
- The BSF was raised in 1965, after the India-Pakistan war.
- It is one of the **seven Central Armed Police Forces** of the Union of India under the administrative control of the Ministry of Home Affairs (MHA).
 - Other Central Armed Police Forces are: Assam Rifles (AR), Indo-Tibetan Border Police (ITBP), Central Industrial Security Force (CISF), Central Reserve Police Force (CRPF), National Security Guards (NSG) and Sashastra Seema Bal (SSB).
- It is deployed on Indo-Pakistan International Border, Indo-Bangladesh International Border, **Line of Control (LoC)** along with Indian Army and in **Anti-Naxal Operations.**
- It has an air wing, marine wing, an artillery regiment, and commando units.
 - BSF has been defending **Sir Creek** in Arabian Sea and **Sundarban delta** in the Bay of Bengal with its state of art fleet of Water Crafts.
 - BSF has an instrumental role in helping state administration in maintaining Law and Order and conducting peaceful elections.
 - BSF has been crusading against natural calamity to save precious human lives as and when warranted.
- It contributes dedicated services to the **UN peacekeeping Mission** by sending a large contingent of its trained manpower every year.

- It has been termed as the **First Line of Defence of Indian Territories.**
- The Border Security Force has been awarded numerous gallantry awards including one **Mahavir Chakra**, 4 **Kirti Chakras**, 13 Vir Chakras and 13 Shaurya Chakras.

Peace in North East India

Why in News?

Recently, the Union Government has reported that there has been an **80% decline in civilian deaths** and **6,000 militants have surrendered** in North East India since 2014.



What are the Key Peace Developments in North East India?

- **Important Agreements:**
 - **Assam-Meghalaya Inter State Boundary Agreement, 2022:**
 - The agreement is for a **closure in six disputed sectors** that were taken up for resolution in the first phase.
 - While **Assam will get 18.51 sq. km** of the disputed areas, **Meghalaya will get the remaining 18.28 sq.km.**
 - **Karbi Anglong Agreement, 2021:**
 - **Karbi Anglong Agreement** is a tripartite agreement among five insurgent groups of **Assam**, the **Centre** and the **state government.**

Note:

- 5 militant organizations (KLNLF, PDCK, UPLA, KPLT and KLF) laid down arms and more than 1000 of their armed cadres have given up violence and joined the mainstream of society.
- **Bodo Accord, 2020:**
 - The **central government**, the **Assam government** and the **Bodo groups**, including all factions of the militant **National Democratic Front of Bodoland (NDFB)**, signed the **Bodo Accord** to redraw and rename the Bodoland Territorial Area District (BTAD) as the **Bodoland Territorial Region (BTR)**, in Assam.
- **Bru-Reang Agreement, 2020:**
 - Bru or Reang is a community **indigenous to Northeast India**, living mostly in Tripura, Mizoram and Assam. In Tripura, they are recognised as a **Particularly Vulnerable Tribal Group**.
 - The **Centre**, the **governments of Mizoram and Tripura** and leaders of **Bru organisations** signed the quadripartite agreement, **Bru-Reang Agreement** in January (2020).
 - Under the pact, the Home Ministry has committed to **incur the whole expenditure** of settlement in Tripura.
- **NLFT-Tripura Agreement, 2019:**
 - **National Liberation Front of Tripura (NLFT)** has been banned under the **Unlawful Activities (Prevention) Act, 1967** since 1997 and has been involved in violence, operating from their camps across the international border.
 - **NLFT Agreement 2019** resulted in the surrender of 88 cadres with 44 weapons.
- **Roll Back of Armed Forces Special Powers Act (AFSPA):**
 - Government withdrew AFSPA from a large part of the Northeast, including the whole of Tripura and Meghalaya.
 - In Arunachal Pradesh, **AFSPA** remains in force in only 3 districts.

What is the Significance of North East for India?

- **Strategic Significance:**
 - North-East India is the gateway to **South-East Asia** and beyond. It is India's **land-bridge to Myanmar**.

- India's **Act East Policy** places the northeastern states on the **territorial frontier** of India's eastward engagement.
- **Cultural Significance:**
 - North East India is one of the most culturally diverse areas of the world. It is **home to over 200 tribes**. Popular festivals include the **Hornbill Festival of Nagaland**, **Pang Lhabsol of Sikkim**, etc.
 - North-east India is a **Dowry-Free Zone**.
 - The **rich tapestry of cultures of Northeast** is reflected in its highly developed Folk dance forms like **Bihu** (Assam).
 - Manipur has a tradition of **worshipping nature in sacred groves**, called **UmangLai**.
- **Economic Significance:**
 - Economically, the Region is **rich in natural resources of "TOT"** (Tea, Oil, and Timber).
 - It is a veritable powerhouse with a potential of 50000 MW of **hydroelectric power** and an abundant **reserve of fossil fuels**.
- **Ecological Significance:**
 - North East is a part of **Indo-Burma biodiversity hotspot**. It represents one of the highest avian and plant biodiversity of the Indian subcontinent.
 - This area has the prestige of having all the bear species present in India.

What are the Government's Other Initiatives for the North East?

- **Infrastructure:**
 - **Bharatmala Pariyojana**
 - **Regional Connectivity Scheme (RCS)-UDAN**
- **Connectivity:**
 - **Kaladan Multi-Modal Transit Project**
 - **India-Myanmar-Thailand Trilateral Highway**
- **Tourism:**
 - **Swadesh Darshan Scheme**
- **Other:**
 - **Digital North East Vision 2022**
 - **National Bamboo Mission**



Note:

Ethics

Highlights

- Corporate Governance

- Dark Patterns

Corporate Governance

Why in News?

Chanda Kochhar (Ex-ICICI Bank CEO) serves as a cautionary tale of the dangers of greed in the corporate world.

- The **Central Bureau of Investigation (CBI)** has alleged that ICICI Bank had sanctioned credit of Rs 3,250 crore to the companies of the Videocon Group promoted by Dhoot in violation of the **Banking Regulation Act, RBI guidelines**, and credit policy of the bank.

What is Corporate Governance?

- **About:**
 - Corporate governance, **which refers to the system of rules, practices, and processes** by which a company is directed and controlled, plays a crucial role in ensuring that businesses are run ethically and in the best interests of their stakeholders.
 - One of the key responsibilities of corporate governance is to **prevent corporate greed and ensure that businesses are operated in a responsible and transparent manner**.
 - By enforcing strong ethical standards and holding individuals accountable for their actions, corporate governance can **help to curb greed and protect the interests of shareholders, customers, and the broader community**.

Principles of Corporate Governance

- **Fairness:**
 - The board of directors **must treat shareholders, employees, vendors, and communities fairly** and with equal consideration.
- **Transparency:**
 - The board **should provide timely, accurate, and clear information** about such things as financial

performance, conflicts of interest, and risks to shareholders and other stakeholders.

○ Risk Management:

- The board and management **must determine risks of all kinds and how best to control them**. They must act on those recommendations to manage them. They must inform all relevant parties about the existence and status of risks.

○ Responsibility:

- The board is **responsible for the oversight of corporate matters** and management activities.
- It must be aware of and support the successful, ongoing performance of the company. Part of its responsibility is to recruit and hire a CEO. It must act in the best interests of a company and its investors.

○ Accountability:

- The board must **explain the purpose of a company's activities and the results of its conduct**. It and company leadership are accountable for the assessment of a company's capacity, potential, and performance. It must communicate issues of importance to shareholders.

What are the Ethical Issues with Corporate Governance in India?

➤ Conflict of Interest:

- The challenge of managers potentially enriching themselves at the cost of shareholders e.g., the recent case of former ICICI bank head Chanda Kochhar approved a loan to Videocon for a quid pro quo deal for her husband.

➤ Weak Board:

- Lack of diversity of experience and background represents a major area of weakness for these boards. There have been questions about the board performing in the larger interests of the shareholders.

Note:

- **Separation of Ownership and Management:**
 - In case of family-run companies, the separation of ownership and management remains a key challenge in the majority of companies including some of India's top ones.
- **Independent Directors:**
 - Independent directors are partisan and are not able to check promoters unethical practices.

What are the Related Initiatives?

- The Ministry of Corporate Affairs (MCA) and **Securities and Exchange Board of India (SEBI)** is responsible for corporate governance initiatives in India. The corporate sector of India faced major changes in the 1990s after liberalization.
 - SEBI monitors and regulates corporate governance of listed companies in India through Clause 49.
- **The Companies Act, 2013** provides a formal structure for corporate governance by enhancing disclosures, reporting and transparency through enhanced as well as new compliance norms.

How Corporate Governance in India can be Improved?

- **Diverse Boards are better Boards:**
 - In this context, 'diverse' is all-encompassing, including gender, ethnicity, skills and experience.
- **Robust Risk Management Policies:**
 - Adoption of effective and robust risk management policies for better decision making as it develops a deeper insight into the risk-reward trade-offs that all Corporations face.
- **Effective Governance Infrastructure:**
 - Since the board is ultimately responsible for all the actions and decisions of an organisation, it will need to have in place specific policies to guide organisational behaviour.
 - To ensure that the **line of responsibility between board and management is clearly delineated**, it is particularly important for the board to develop policies in relation to delegations.
- **Evaluation of the Board's Performance:**
 - Boards should improve their **governance processes by addressing weaknesses revealed in board evaluations.**
- **Communication:**

- Facilitating shareholder communication with the board is key. There is a need to provide a contact person with whom shareholders may discuss any issue.

Dark Patterns

Why in News?

Recently, an increase in the cases of "**Dark Patterns**" or "**Deceptive Patterns**" have been noted where internet-based companies have been **tricking users into agreeing to certain conditions or clicking a few links.**

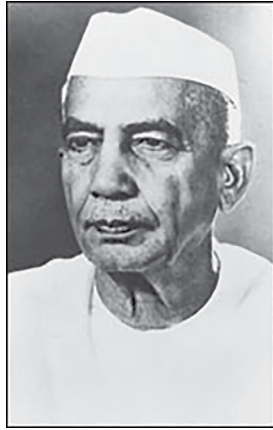
- Such acceptances and clicks are **flooding inboxes of the users with promotional emails** they never wanted, making it hard to unsubscribe or request deletion.

What are Dark Patterns?

- **About:**
 - Dark Patterns are **unethical UI/UX (user interface/ user experience) interactions**, designed to mislead or trick users to **make them do something they don't want to do.**
 - In turn, they benefit the company or platform employing the designs.
 - By using dark patterns, digital platforms **take away a user's right to full information** about the services they are using and their control over their browsing experience.
 - **Examples of Dark Patterns include** "baseless" countdowns for online deals, conditions in fine print that add on to costs, making cancellation buttons hard to see or click, making ads appear as news reports or celebrity endorsements, auto-playing videos, forcing users to create accounts to finish a transaction, silently charging credit cards after free trials end, and using dull colours to hide information that users should know about.
- **Usage by Companies:**
 - Social media companies and Big Tech firms such as **Apple, Amazon, Skype, Facebook, LinkedIn, Microsoft, and Google** use dark or deceptive patterns to **downgrade the user experience** to their advantage.
 - Amazon came under fire in the **European Union** for its confusing, multi-step cancelling process in Amazon Prime subscription.

Note:

- After communicating with consumer regulators, Amazon, in 2022, made its cancellation process easier for online customers in European countries.
- In social media, LinkedIn users often receive unsolicited, sponsored messages from influencers.
 - Disabling this option is a difficult process with multiple steps that requires users to be familiar with the platform controls.
- Another dark pattern on social media platforms



like Instagram is **sponsored video ads getting scattered between reels and stories** users originally opted to view, tricking them for several seconds before they can see the small “sponsored” label.

- **Google-owned YouTube** nags users to sign up for YouTube Premium with pop-ups, obscuring final seconds of a video with thumbnails of other videos.
- **Harm to Users:**
 - Dark patterns **endanger the experience of Internet users** and make them more vulnerable to **financial and data exploitation** by Big Tech firms.
 - Dark patterns confuse users, introduce online obstacles, make simple tasks time-consuming, have users sign up for unwanted services/products, and force them to pay more money or share more personal information than they intended.



Note:

Miscellaneous

Highlights

- Kisan Diwas
- National Mathematics Day
- FIFA World Cup Qatar 2022
- HPV Vaccine for Cervical Cancer
- City Finance Rankings 2022

Kisan Diwas

Why in News?

As many as 13 farmers known for innovative farming were felicitated to mark **Kisan Diwas or National Farmers Day** on 23rd December, 2022.

- The **Kisan Diwas** is observed across the country to **celebrate the birth anniversary of Chaudhary Charan Singh**, the former Prime Minister of India.

What are the Key

Facts about Chaudhary Charan Singh?

- He was born in 1902 at Noorpur in Meerut district of Uttar Pradesh and **was the Prime Minister of India from 28th July 1979 to 14th January 1980**.
- Being a proponent of rural and agricultural development, he made continuous efforts for keeping agriculture at the centre of planning for India.
- He was given the nickname **'Champion of India's Peasants'** for his work towards upliftment of farmers and development of agriculture throughout the country.
- He took a **leading part in formulation and finalisation of the Debt Redemption Bill 1939**, in order to give relief to the peasantry from moneylenders.
- He was instrumental in bringing about the **Land Holding Act, 1960** which was aimed at lowering the ceiling on land holdings to make it uniform throughout the Uttar Pradesh.
- He **left Congress in 1967** and formed his independent party known as the **Bharatiya Lok Dal**.
- He served **twice as Chief Minister of Uttar Pradesh**. He became **Prime Minister of India in 1979**.
- He was the author of **several books and pamphlets**, including **'Abolition of Zamindari'**, **'Co-operative**

Farming X-rayed', 'India's Poverty and its Solution', 'Peasant Proprietorship or Land to the Workers' and 'Prevention of Division of Holdings Below a Certain Minimum'.

What are the Related Initiatives for Farmers?

- **PM-KISAN:** Under the scheme, the Centre transfers an amount of Rs 6,000 per year, in three equal instalments, directly into the bank accounts of all landholding farmers irrespective of the size of their land holdings.
- **National Mission for Sustainable Agriculture:** It aims at promoting sustainable agriculture practices best suitable to the specific agro-ecology.
- **Pradhan Mantri Krishi Sinchayee Yojana:** It has three main components namely Accelerated Irrigation Benefit Programme (AIBP), Har Khet ko Pani (HKKP), and watershed development components.
- **Rashtriya Krishi Vikas Yojana (RKVY):** It was initiated in 2007, and allowed states to choose their own agriculture and allied sector development activities as per the district/state agriculture plan.
- **Nutrient Based Subsidy (NBS) Programme:** Under this programme, fertilizers are provided to the farmers at the subsidized rates based on the nutrients (N, P, K & S) contained in these fertilizers.
- **Rashtriya Gokul Mission:** It is being implemented for development and conservation of indigenous bovine breeds since December 2014.
- **Pradhan Mantri Fasal Bima Yojana:** It provides a comprehensive insurance cover against failure of the crop thus helping in stabilising the income of the farmers.
- **Paramparagat Krishi Vikas Yojana:** Launched in 2015, it is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA).

Note:



- **Kisan Credit Card** : The scheme was introduced in 1998 for providing adequate and timely credit support from the banking system, under a single window with flexible and simplified procedure to the farmers.

National Mathematics Day

Why in News?

National Mathematics Day (NMD) has been celebrated every year on **22nd December** to mark the birth anniversary of **Srinivasa Ramanujan**.

- On the 125th birth anniversary of Ramanujan, NMD was announced by the **then-Indian Prime Minister Manmohan Singh** in 2012.
- The day is celebrated annually with the aim to **make people aware of the importance of mathematics** and advancements and developments made in the field.

Who was Srinivasa Ramanujan?

- **About:**
 - Born on **22nd December, 1887** in Erode, Tamil Nadu.
 - In **1903**, he secured a scholarship to the **University of Madras** but lost it the following year because he neglected all other subjects in pursuit of mathematics.
 - In 1911, Ramanujan published the first of his papers in the **Journal of the Indian Mathematical Society**.
 - In **1913**, he began a correspondence with the **British mathematician Godfrey H. Hardy** which led to a special scholarship from the University of Madras and a grant from Trinity College, Cambridge.
 - In **1918**, he was elected to the Royal Society of London.
 - Ramanujan was one of the youngest members of Britain's Royal Society and the **first Indian to be elected a Fellow of Trinity College, Cambridge University**.



Contributions to Mathematics:

- **Formulas and Equations:**
 - Ramanujan compiled around **3,900 results consisting of equations and identities**. One of his most treasured findings was his infinite series for Pi.
 - He gave several formulas to calculate the digits of Pi in many unconventional ways.
- **Game Theory:**
 - He discovered a **long list of new ideas to solve many challenging mathematical problems**, which gave a significant impetus to the development of game theory.
 - His contribution to **game theory is purely based on intuition and natural talent** and remains unrivalled to this day.
- **Ramanujan's Book:**
 - One of Ramanujan's notebooks was **discovered by George Andrews in 1976** in the library at Trinity College. Later the contents of this notebook were published as a book.
- **Ramanujan number:**
 - 1729 is known as the Ramanujan number.
 - It is the **smallest number which can be expressed as the sum of two different cubes** in two different ways.
 - 1729 is the sum of the cubes of 10 and 9 - cube of 10 is 1000 and cube of 9 is 729 adding the two numbers results in 1729.
 - 1729 is also the sum of the cubes of 12 and 1, cube of 12 is 1728 and cube of 1 is 1 adding the two results in 1729.
- **Other Contributions:**
 - Ramanujan's **other notable contributions include hypergeometric series**, the Riemann series, the elliptic integrals, mock theta function, the theory of divergent series, and the **functional equations of the zeta function**.
- **Death:** He died on April 26th 1920, at the age of 32, just after returning to India after a long illness.

FIFA World Cup Qatar 2022

Why in News?

Recently, **Argentina** won the **FIFA (Fédération internationale de Football Association) World Cup 2022 held in Qatar** by defeating France.

Note:

What is the FIFA World Cup?

- **About:**
 - The most prestigious tournament in the world - taking place **quadrennially**.
- **First FIFA WC:**
 - Held in Uruguay in **1930**; **Won by Uruguay**.
- **Trophy:**
 - The trophy cup awarded from **1930 to 1970** was the **Jules Rimet Trophy**, named for the **Frenchman who proposed the tournament**.
 - A new trophy called the FIFA World Cup was put up for competition in 1970.
- **Key Highlights of FIFA WC 2022:**

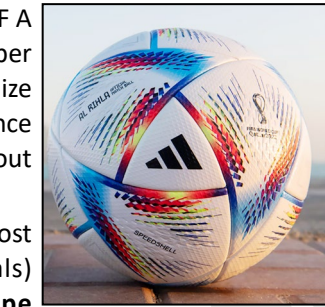
- **Awards:** FIFA announced a number of awards to recognize the great performance of players throughout the WC including

- **Golden Boot** (Most number of Goals) - **Kylian Mbappe** (France)
- **Golden Glove** - **Emiliano Martinez** (Argentina)
- **Golden Ball** (Performer of the Tournament) - **Lionel Messi** (Argentina)
- **Young Player** - **Enzo Fernandez** (Argentina)
- **FIFA Fair Play Award** - **England**

- **FIFA WC Official Ball:**

- **Al Rihla** (means - 'the journey') - a reference to a travelogue written by **Ibn Battuta**, the 14th-century explorer.
 - Al Rihla is the first World Cup ball to be made exclusively with water-based inks and glues.
 - Al Rihla was to be used in the event until the quarterfinals; **Al Hilm'** replaced Al Rihla **FIFA WC 2022 semi-finals and final**.

- At the time of **First FIFA WC (1930)**, there was **no official ball** and both the finalists - **Uruguay (T**



Model ball) and Argentina (Tiento) - brought their own balls.

- **Pakistan produces more than 2/3rd** of the world's footballs, with **Sialkot** being the hub of manufacturing.

- **Official Mascot:**

- **La'eeb** was the Official Mascot for FIFA WC 2022.
 - 'La'eeb' in Arabic translates to '**super-skilled player**'.



FIFA WORLD CUP

The most prestigious Football tournament in the world; takes place quadrennially

About FIFA:

- Fédération Internationale de Football Association
- Highest governing body of football in the world
- Founded in 1904
- HQ - Zurich (Switzerland)

All-India Football Federation (AIFF) - Manages game of association football in India

FIFA World Cup:

- First - Held in Uruguay in 1930; Won by Uruguay
- Trophy - Jules Rimet Trophy (1930-70); FIFA WC Trophy (1970 - present)
- Jules Rimet - Frenchman who proposed Football tournament

FIFA World Cup 2022

Held in Qatar - First Arab Nation to host FIFA WC

Winner: Argentina won (defeated France) for the 3rd time (previously in 1978 & 1986)

Official Ball

● Al Rihla (the journey) A reference to Ibn Battuta's travelogue

● Al Hilm' (the dream) Official ball for semi-finals and final

Al Rihla

Al Hilm'

At the time of First FIFA World Cup (1930), there was no official football; the finalists brought their own balls - Model ball (Uruguay) and Tiento (Argentina)

Official Mascot

● La'eeb (Arabic for 'super-skilled player')

La'eeb

Awards

- Golden Boot (Most number of goals) - Kylian Mbappe (France)
- Golden Glove - Emiliano Martinez (Argentina)
- Golden Ball (Performer of the Tournament) - Lionel Messi (Argentina)
- Young Player - Enzo Fernandez (Argentina)
- FIFA Fair Play Award - England

Drishiti IAS

Note:

HPV Vaccine for Cervical Cancer

Why in News?

India is expected to roll out the indigenously developed **CERVAVAC vaccine** for the prevention of cervical cancer among girls aged 9-14 years through their schools by mid-2023.

- The decision was based on the **National Technical Advisory Group for Immunisation (NTAGI)** recommendation to introduce the **Human Papillomavirus (HPV) Vaccine** in the **Universal Immunisation Programme**.

What is CERVAVAC?

- **About:**
 - It is India's first indigenously developed quadrivalent human papillomavirus (qHPV) vaccine that is said to be effective against four strains of the virus - **Type 6, Type 11, Type 16 and Type 18**.
 - A quadrivalent vaccine is a vaccine that works by stimulating an **immune response against four different antigens**, such as four different viruses or other microorganisms.
 - CERVAVAC is based on **VLP (Virus-Like Particles)**, similar to the **Hepatitis B** vaccination.
- **Approval:**
 - The vaccine has received the **Drugs Controller General of India's approval** and has been cleared by the government advisory panel NTAGI for use in the public health programme.
- **Significance:**
 - It has a significant potential to **eliminate cervical cancer** and it would be helpful if included in national HPV vaccination efforts and offered at a **lower cost** than existing vaccinations.
 - The vaccine is extremely **effective only when it's administered before the first sexual intercourse**.

What is Cervical Cancer?

- Cervical cancer develops in a **woman's cervix**. It is the **4th most common type of cancer among women, globally and 2nd most common among women in India**.

- **India contributes the largest share of the global cervical cancer burden**; nearly 1 in every 4 deaths globally due to cervical cancer (as per The Lancet study).
- Almost all cervical cancer cases (**99%**) are linked to **infection with high-risk HPV**, an extremely common virus **transmitted through sexual contact**.
- Effective primary (HPV vaccination) and secondary prevention approaches (screening for and treating precancerous lesions) will prevent most cervical cancer cases.
- When diagnosed, cervical cancer is **one of the most successfully treatable forms of cancer**, as long as it is detected early and managed effectively.
 - Cancers diagnosed in late stages can also be controlled with appropriate treatment and palliative care.
 - With a comprehensive approach to prevent, screen and treat, **cervical cancer can be eliminated as a public health problem within a generation**.

City Finance Rankings 2022

Why in News?

Recently, the **Ministry of Housing & Urban Affairs** has launched guidelines for a new **City Finance Rankings 2022**.

- A '**City Beauty Competition**' initiative was also launched to encourage and recognise the **transformational efforts** made by cities and wards in India towards creating **beautiful, innovative and inclusive public spaces**.

What is City Finance Rankings 2022?

- **About:**
 - All the Participating cities will be evaluated on **15 indicators across three key municipal finance assessment parameters**, namely:
 - Resource Mobilization
 - Expenditure Performance
 - Fiscal Governance.
 - The cities will be ranked at the national level based on their scores under any one of the following four population categories:

Note:

- Above 4 million
 - Between 1-4 million
 - 100,000 to 1 million
 - Less than 100,000
 - The top 3 cities in each population category **will be recognized and rewarded at the national level as well as within each state/state cluster.**
- **Significance:**
- It will help **identify** areas in the financial performance of the cities **where they can make further improvements.**
 - It will motivate city/state officials and decision-makers, to implement municipal finance reforms.
 - It will enable them to **deliver quality infrastructure and services, and hence a good quality of life to citizens.**
 - At a state- and national level, the rankings will **highlight the outcomes achieved by municipalities and provide critical insights** to key policymakers into the state of finances of urban local bodies.



Note:

Rapid Fire Current Affairs

Highlights

- Mangdechhu Hydroelectric Power Project
- Chillai Kalan
- Netanyahu Returns as Israel PM
- Dhanu Jatra
- India's Youngest Grandmaster
- India's WAPCOS Ranked Amongst Top Consulting Services
- Brain-Eating Amoeba
- Ethylene Glycol in Cough Syrups
- No-Confidence Motion
- India-Saudi MLAT
- RBI Macro Stress Test
- Increase in Core Sector Output

Mangdechhu Hydroelectric Power Project

Recently, the India-assisted **720 Megawatts Mangdechhu Hydroelectric Power Project (on Mangdechhu River)** was handed over to **Druk Green Power Corporation (DGPC), Bhutan**. The project was conceived in 2010.

With this project, the two have successfully completed **4 mega hydroelectric power projects**. The other three include - **600 MW Kholongchhu Hydropower Project** (on Kholongchhu river) and **1200 MW Punatsangchhu-1 & 1020 MW Punatsangchhu-2 Projects** (Punatsangchhu River).

Cooperation in the hydropower sector between India and Bhutan is an example of mutually beneficial cooperation, providing clean electricity to India, generating export revenue for Bhutan.

Chillai Kalan

Currently, Kashmir valley is going through the **hardest winter period of 40 days** famously known as '**Chillai Kalan**' (persian for major cold). The minimum temperature of Kashmir is **below the freezing point (-5.7°C to -2.5°C)** and the continuous cold wave has resulted in **freezing the Dal Lake along with the water supply**.

Chillai Kalan usually occurs from 21st December to 30th January. The cold waves will then carry forward with a **20 day stretch of "Chillai' Khurd' (small cold)** followed by 10 days long "**Chillai-Bacha' (baby cold)**."

Netanyahu Returns as Israel PM

Recently, **Benjamin Netanyahu was again sworn in as Israel's PM (replacing Yair Lapid)**. The country of Israel is **currently in conflict with Palestine over issues related to Jerusalem and West Bank**. In 2020, the **Abraham Accords** were signed between Israel Bahrain and UAE, mediated by the USA to decouple the Arab countries from the Palestine question.



Note:

In the beginning of the year 2022, India and Israel marked the **30th anniversary of the establishment of diplomatic ties** between the two. India is **Israel's 3rd largest trade partner in Asia** (7th largest globally) and the **largest buyer of military equipment from Israel**.

Dhanu Jatra

Recently, the **Dhanu Jatra** - considered to be the **world's largest open-air theatre**, began. It came into existence in **Bargarh (Odisha) in 1947-48** as part of the celebration of the country's Independence and is held annually.

The Yatra relates to the episode of **Lord Krishna's visit to Mathura (UP)** to witness the ceremony of 'Bow' organised by **Kansa** as described in the '**Bhagavata Purana**'. The fest continues for **7-11 days** preceding **Pausa Purnima** (falling in Dec-Jan every year).

A similar festival, **Jagannath Rath Yatra** (also called **Chariot Festival**) is also held in Orissa.

India's Youngest Grandmaster

With 8 wins in a row at the **Chess Olympiad 2022**, **Dommaraju Gukesh (or Gukesh D)** became the new poster boy for Indian chess. In 2019, he became the **youngest Indian and then-second-youngest Grandmaster ever** (youngest - **Abhimanyu Mishra**). Recently, (at the age of 16) he won gold at the Chess Olympiad. **Gukesh won the Under-9 category of the Asian School Chess Championships** in 2015 and won **5 gold medals** at the **2018 Asian Youth Chess Championships (Under-12)**.

India's WAPCOS Ranked Amongst Top Consulting Services

The **Asian Development Bank (ADB)** released two reports - one on **Annual Procurement (AP)** and another - **Members' Fact Sheet (MFS) 2022** on which **WAPCOS was ranked top (AP) and among top 3 (MFS)**.

In AP, WAPCOS was ranked amongst Consulting Services Firm in Water and other Infrastructure Sectors with the **highest sanctioned financed amount**.

In MFS, WAPCOS was in **India's top 3 Consulting Services involved in Contracts under ADB Loan, Grant & Technical Assistance Projects** (in Energy, Transport and Water & other Urban Infrastructure Sectors).

WAPCOS Limited is a "**MINI RATNA**" **Public Sector Enterprise** under the **Ministry of Jal Shakti**. Apart from India, it has **projects completed/on-going in 51+ Countries** (covering Asia, Africa, Pacific Islands and South America).

Brain-Eating Amoeba

Recently, S Korea reported its **first case of infection and death from *Naegleria fowleri*** or "**brain-eating amoeba**".

Naegleria is an amoeba, a **single-celled organism**, and only **one of its species - *Naegleria fowleri*, can infect humans**. It was **first discovered in Australia (1965)** and is commonly found in **warm freshwater bodies** (hot springs, rivers and lakes). It enters the human body through the nose and then travels up to the brain.

The infection caused by this amoeba is **PAM (Primary Amebic Meningoencephalitis)** which **destroys brain tissues**. It has a **very high mortality rate**. Currently, **no vaccine** is available, but PAM can be treated with proper drug combinations.

Ethylene Glycol in Cough Syrups

The Health Ministry of **Uzbekistan** has reported the **death of 18 children** (with acute respiratory disease) from **taking excessive doses of a cough syrup - Doc-1 Max manufactured by an Indian firm**.

The **cough syrups contained ethylene glycol**, a substance that ought not to be present in cough syrup. Earlier, **Gambia also reported "unacceptable levels" of diethylene glycol (DEG) and ethylene glycol (EG)** in India manufactured cough syrups.

DEG and EG are **highly toxic colourless and viscous liquids** which have a **sweetish taste**. They are **often found as contaminants in glycerin**, which is used as a sweetener in formulations of many pharmaceutical syrups ingested orally. **Acute poisoning from EG may result in Ataxia, Slurred speech, Restlessness, Disorientation, Myoclonic jerks, Convulsions, Coma and Death**.

Note:



No-Confidence Motion

The Opposition party in Maharashtra moved a **no-confidence motion** against the Speaker of the State's Legislative Assembly (SLA).

A no-confidence motion means that one or more **members of the Parliament/State Legislature have lost confidence in the appointed government**. It can be moved **only in LS/SLA by an LS/SLA member**. It needs to be **supported by at least 50 MPs** to be accepted by the Speaker.

If the motion is accepted, then the party in power has to prove its majority in the House (Floor Test). **If the government fails to prove its majority in the House, then it has to resign**.

India-Saudi MLAT

India and Saudi Arabia are in talks to sign a **Mutual Legal Assistance Treaty (MLAT)** to obtain **formal assistance from each other in investigations related to criminal cases**.

MLAT is a mechanism whereby countries cooperate with one another in order to provide/obtain formal assistance in **prevention/investigation/prosecution of crime to ensure that the criminals don't escape/sabotage the due process of law**.

So far, **India has signed MLATs with 45 countries**, but Saudi is one of the many other countries with whom India does not have an MLAT. The **countries that do not share such a mechanism** serve summons, notices and

judicial processes on the basis of an "assurance of reciprocity".

RBI Macro Stress Test

The **RBI in its latest Financial Stability Report (FSR)** conducted **macro-stress tests** indicating marginal improvement in the **Gross NPA ratio** of all **Scheduled Commercial Banks** by Sept 2023.

Macro-stress testing on the banking sector is **undertaken to assess the resilience of the banking system to exceptional but plausible stress events**. These tests cover **credit risk, interest rate risk, liquidity risk** and the **resilience of commercial banks** in response to these shocks.

Generally, **RBI considers three scenarios** for stress tests: **baseline and two adverse - medium and severe scenarios**. The baseline is derived from the steady state forecast values of key macroeconomic variables (**GDP growth, combined fiscal deficit-to-GDP ratio, CPI inflation, weighted average lending rate, export-to-GDP ratio** and current account balance-to-GDP ratio).

Increase in Core Sector Output

Production of 8 core sectors increased by 5.4% in November 2022 against a 3.2% (Nov 2021). The 8 core sectors include - **Coal, Crude Oil, Natural Gas, Refinery Products, Fertiliser, Steel, Cement, Electricity**. These sectors have **40.27% share in the overall Index of Industrial Production (IIP)** (decreasing order - Refinery Products> Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement> Fertilisers).



Note:

