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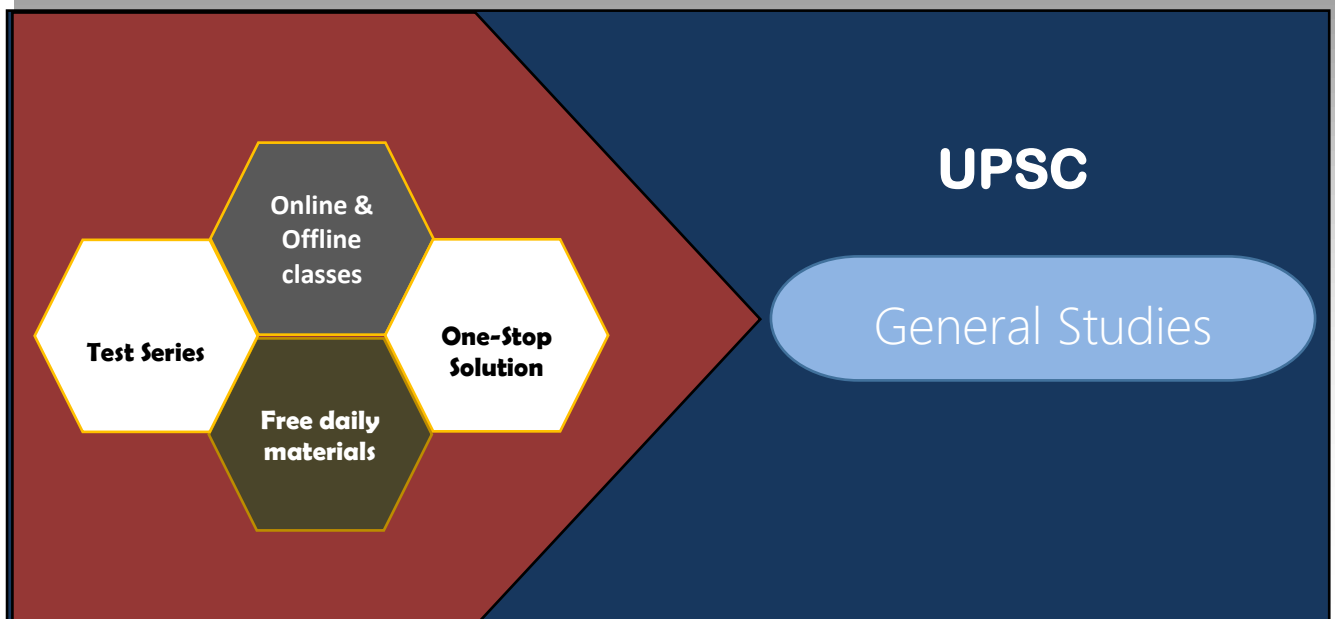
Monthly current affairs magazine

SHIKSHA

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THE HINDU & INDIAN EXPRESS**



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GS 1 : Heritage, culture ,Geography of the World and Society

1. Archaeological Survey of India (ASI)

Recently, the Parliamentary Standing Committee on Transport, Tourism and Culture has presented the '359th Report on the Functioning of ASI' before the Parliament.

ASI

- Premier organization for the archaeological researches and protection of the cultural heritage of the nation.
- **Ministry** - Ministry of Culture
- **Prime functions** - Custodian of all Centrally Protected Monuments (CPM) in India.
- Maintenance of ancient monuments, archaeological sites and remains of national importance.
- The recently added Hoysala Temples in Karnataka and Santiniketan in West Bengal in UNESCO World Heritage List were conserved and protected by ASI.

India has a total of 3,693 Centrally Protected Monuments or Sites with Uttar Pradesh having the largest number in the country at 743, followed by Tamil Nadu which has 412.

- **Regulating functions** - It regulates all archaeological activities in the country as per the provisions of the,
 - Ancient Monuments and Archaeological Sites and Remains Act, 1958.
 - Antiquities and Art Treasure Act, 1972.
 - Ancient Monuments and Archaeological Sites and Remains (AMASR) (Amendment) Act, 2010.
- Takes actions against encroachments and issues demolition orders to the Collector requesting for the demolition of the encroachments.

Recommendations of the parliamentary committee

- **To rationalise the list** - Centrally Protected Monuments (CPM) list should be categorised on the basis of their national significance, unique architectural value and specific heritage content.

- This is based on government's decolonisation agenda where monuments glorifying colonial era would be taken out while that reflecting Indian ethos will be included in the list.
- Deletion of some of the kosminars (milestones of Mughal era) may also be considered in the way of road-widening exercises.
- **Ease restrictions around monuments** - The provision of 100-metre prohibited area and 300-metre regulated area around ASI protected monuments leads to public inconvenience.
- In some cases, the entire village is within a radius of 300 metres, making it difficult for them to repair their residential houses.

The ASI through AMASR Act, prohibits and regulates all activities like mining and construction around 100 metres and 300 metres of all the protected monuments.

- **Fixing ASI's core mandate** - The committee recommended the ASI to
 - Develop preservation plans for all its work, especially before excavations.
 - Establish clear strategies for documenting findings, conserving artefacts, and restoring structures to ensure minimal impact on the site's integrity
 - Focus on areas that have the potential of historical significance and contribute to a deeper understanding of India's rich past
 - Use advanced technologies such as LiDAR, ground-penetrating radar and 3D scanning
- Some of these techniques were recently used inside the Gyanvapi complex in Varanasi by the ASI for its court-mandated non-invasive survey.
- It also advised bifurcation of the ASI where the ASI can look after the core mandate while the India Heritage Development Corporation (IHDC) can deal with ASI's revenue.
- **Prioritising conservation** - On the backdrop of the CAG report which had declared 92 CPMs as missing, the committee recommend ASI to prioritise the physical security of all CPMs.
- It said that ASI should maintain digital log books that include textual and photographic/ video records with location coordinates to check encroachment of any CPMs at an early stage.
- **Enhance financial resources** - The panel said that India spends a little amount on the protection and upkeep of monuments.

India spends around Rs 11 lakh per monument of national importance (Rs 428 crore for 3693 monuments) in 2019-20.

- **Strengthen human resources** - There is an issue of shortage of human resources when it comes to conservation.

- Outsourcing some work has its own limitations as such expertise is not available even outside.
- **Preference to original relevance** – Some restoration is being done without taking cognizance of the original design/beauty of the monument.
- Indigenous traditional practices and sustainable practices such as using eco-friendly materials, energy-efficient techniques need to be emphasised.
- **Engagement with other stakeholders** – It recommended that only experienced Monument Mitras (under Adopt a Heritage scheme) may be hired as lack of experience in this arena have resulted in avoidable damage or destruction.

Monument Mitras are businesses (Private firm or PSU) that enter into agreements with the Union Ministry of Culture to adopt and maintain State-owned archaeological sites or monuments.

2. Hoysala Temples in World Heritage List

Recently, 3 Hoysala-era temples were added as to UNESCO's World Heritage List thus becoming the 42nd site from India.

UNESCO World Heritage Site

- **World Heritage Site (WHS)** – These are the sites are designated as having “outstanding universal value” under the Convention Concerning the Protection of the World Cultural and Natural Heritage.
- It was adopted by UNESCO in 1972 and formally took effect in 1975.
- The list of WHS is maintained by the International World Heritage Programme, administered by the UNESCO World Heritage Committee.
- The 3 types of site are Cultural, Natural, and Mixed.

What is the procedure for including a site in the WHS list?

- **Selection criteria** - To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of 10 selection criteria of UNESCO.
- Only countries that have signed the World Heritage Convention can submit nomination proposals for properties on their territory to be considered for inclusion in UNESCO's World Heritage List.

- **Tentative List** – The first step a country must take is to make an ‘inventory’ of its important natural and cultural heritage sites located within its boundaries, known as the Tentative List.
- The World Heritage Committee cannot consider a nomination for inscription on the World Heritage List unless the property has already been included on the State Party's Tentative List.
- **Evaluation**- A nominated property is independently evaluated by
 - The International Council on Monuments and Sites (ICOMOS)
 - The International Union for Conservation of Nature (IUCN)
 - The International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)
- **Deciding authority** - Once a site has been nominated and evaluated, it is up to the intergovernmental World Heritage Committee to make the final decision on its inscription.

What constitutes the Sacred Ensembles of Hoysalas?

- It includes 3 temples- Chennakeshava temple (Belur), Hoysaleswara Temple (Halebidu), and Keshava Temple (Somanathapura) of Karnataka.

What makes Hoysala architecture stand out?

- **Unique confluence of styles** – These temples are amalgamation of three distinctive temple styles prevalent in India.
 - **Dravidian** style represented in Pallava and Chola temples
 - **Vesara** style, the variant of the Dravida style that emerged in the Chalukya and Rashtrakuta temples
 - **Nagara** style of North India
- **Construction material** – The use of **soapstone**, a malleable stone has made it easy to carve and contributed to abundant intricate sculptures on the temple walls.
- **Elevated platforms** – The temples are generally built on stellate (star-shaped) platforms.
 - Kesava temple in Somanathapura is built in the shape of a 16-point star.
- **Beautiful Sculptures** – The sculptures themes include animals, scenes of daily life, as well as depictions from the epics and the Puranas.
- It demonstrates their creativity in translating religious beliefs and stories into sculpture.
- **Differentiated Pillars** – The total number of pillars in Chennakesava temple at Belur is 46.
- All of them, except the four in the central bay are of different designs.

- **Signed temples** - The temples are given with information of the sculptors and masons who were involved in its construction.
- **Religious significance** - These Vaishnava and Shaivya shrines were built at the time Jainism was prominent in the region.
- It thus mark a turn towards Hinduism.
- **Social significance** - The jewellery, headgear, clothes, etc. of the detailed sculptures give an idea of the society of the times.
- One of the sculptures, **Darpana Sundari** (lady with the mirror), is modelled on Shantala Devi, the queen of Vishnuvardhana who had the built the Chennakesava temple.
- **Other details**- No known monuments other than temples, like palaces or forts, survive from the Hoysala period.
- The non-temple buildings were all built in either mud or brick or wood and not stone.
- So, except for some ruins in Hampi, nothing has survived in the form of architecture of Hoysalas.

3. Ancient Red Sea Route

In the G20 Summit 2023, Prime Minister Narendra Modi on Saturday announced the launch of the historic India-Middle East-Europe mega economic corridor.

India Middle East-Europe Economic Corridor

- **Infrastructure corridor**- The rail and shipping corridor is part of the Partnership for Global Infrastructure Investment (PGII) – a collaborative effort by G7 nations to fund infrastructure projects in developing nations.
- **Aim**- To enable greater trade among the involved countries, including energy products
- **Member countries**- India, the UAE, Saudi Arabia, the European Union, France, Italy, Germany and the US.
- **Proposed corridors**-
 - **East Corridor**- It connects India to West Asia/Middle East
 - **Northern Corridor**- It connects West Asia/Middle East to Europe.
- **Railway link**- The project involves the laying of a railway link through the Arabian Peninsula that could then link up with shipping passages to India and Europe.
- **Proposed projects**- The corridor will include
 - Electricity cable and high speed data cable,
 - Hydrogen pipeline
 - A green and digital bridge across continents and civilizations.
- **Significance**- The use of the land route in the Arabian Peninsula could bypass the congested Suez Canal that cargo ships currently take.

- The project eventually aims at laying out a seamless corridor running all the way from South East Asia to Europe
- It is seen as a weighty ideological alternative to China's Belt and Road Initiative.

What is the ancient Red Sea trade route?

Before Common Era

- **Meluha**-There are evidences of Indian diaspora in the Middle East even at the time of Meluha (the Indus Valley Civilisation, c. 3300-1300 BCE).
- It seems to have been more coastal and involved small quantities of goods.
- **Roman times**- The trade expanded with huge cargo ships moving directly between the subcontinent and the Roman Empire.

After Common Era

Roman Empire covered from lowland Scotland to the borders of Persia, and from the Sahara to the banks of the Rhine and Danube.

- **Conquest of Egypt**- The trade picked up in the 1st and 2nd centuries after the Romans conquered Egypt, opening up for Roman merchants, who were adventurous enough to try to sail to India.
 - Sir Mortimer Wheeler's excavations at Arikamedu, Pondicherry in the 1930s and 40s, had established the existence of Indo-Roman trade in the 1st century CE.
- **Muziris Papyrus**- This document gives details of one particular cargo sent to the Egyptian port of Berenike from Muziris port, India.
- According to latest estimates, custom taxes on the Red Sea trade with India, Persia, and Ethiopia may have generated as much as one-third of the income of the Roman exchequer.
- **Maritime link**- In the 1st and 2nd century CE, maritime highway linked the Roman Empire and India through the Red Sea, with many hundreds of ships going in both directions each year.

What was being traded on this route?

- **Exports**- There was a great demand across the Roman Empire for luxuries from India.
 - Cinnamon-like plant called malabathrum whose leaves were pressed to create perfume
 - Luxury items such as ivory, pearls, and precious gemstones
 - Ivory figures such as Yakshi fertility spirit
 - Exotic goods especially wild animals like elephants and tigers

- Spices such as pepper have been found during excavations at Berenike
- **Import-** The flow of goods in the other direction was more limited.
 - The Roman historian **Pliny the Elder** (23-79 CE) says it was mainly gold that went to India and the balance of trade was firmly in India's favour.
 - There was some trade in olive oil and Garum, an ancient Roman fermented fish paste, evidence of which has been found in Arikamedu and in Kerala.
- **Trade organisation-** The evidence points that the trade being highly organised.
- **Contracts-** They were written between merchants in Kerala and shippers in Alexandria. There are even references to insurances.

What roles did Indians have in this trade?

- **Role of monsoon winds-** The Indians were quick to grasp that the heating of the Tibetan Plateau meant that the monsoon winds blow in one direction in winter and the other in summer.
- **Paintings-** The pictures in Ajanta had large double-masted ships.
- **Coins-** Ships were a common insignia in many early Indian coins.
 - For example- Satvahana coins
- **Graffiti evidence-** It is found in the Hoq caves on the Socotra island, at the mouth of Gulf of Aden, left by Indian sailors (mostly Gujaratis from Barigaza, modern-day Bharuch)
- **Images-** There are images of Buddhist stupas, Shaivite tridents, swastikas, Syrian Christian crosses, and pictures of large three-masted Indian ships, as well as prayers to Krishna and Radha.
- **Recent evidences-** There is a lot of evidences in places like Muziris in Kerala and Berenike in Egypt.
- Recently, the head and torso of a magnificent Buddha, the first ever found to the west of Afghanistan, was discovered at the site in Berenike along with a triad of early Vaishnav deities.

How does the Red Sea Route differ from the Silk Route?

Silk route is an overland trade route stretching all the way across Asia from Xian in China to Antioch in Turkey.

- **Absence of record** - The Silk Road was completely unknown in ancient or mediaeval times.
- It certainly existed during the Mongol period (13th and 14th centuries CE).
- However, during the Roman period, there's no evidence that China and Europe knew of each other's existence.

- **Usage of Indian ports-** Chinese silk seems to have reached Rome during this period via the ports of India.
 - For instance, overland through Kushana territory in northern India, to the ports of Gujarat and the mouth of the Indus.
- **China factor-** China has politicised the Belt and Road initiative and actively mobilised the idea as part of Chinese foreign policy, to make China the end of a worldwide trade network.

GS 2 : Polity, Governance, International Relations

1. PM-PRANAM Scheme

Promotion of PM-PRANAM scheme will help the government reduce subsidy bills and fiscal deficits.

Fertiliser Requirement of India

- The *Department of Agriculture and Farmers Welfare* assesses the requirement of fertilisers each year before the start of the cropping season and informs the *Ministry of Chemicals and Fertilisers* to ensure the supply.
- **Fertilizer season-** The Kharif season (June-October) accounts for nearly half the year's production of foodgrains, one-third of pulses and approximately two-thirds of oilseeds.
- A sizable amount of fertiliser is required for this season.
- **Fertilizer Consumption** - India has consumed about 500 LMT of fertilizer over the last ten years.
- In 2020, the overall consumption of fertilisers stood at about 61 million tonnes, of which urea consumption increased exponentially.
- India is a *major buyer of Diammonium Phosphate (DAP)*.
- India is the 2nd largest consumer and the 3rd largest producer of urea in the world.
- India consumes around 33 million tonnes of urea annually, of which almost 70% is domestically produced and the rest is imported from other countries.

PM- PRANAM

- **Launch-** PM-PRANAM (PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) was launched in Union Budget 2023–24.

- **Aim-** To promote the balanced use of chemical and alternative fertilisers, generating awareness of regenerative agriculture (RA).

Regenerative Agriculture is an outcome-based food production system that

- Nurtures and restores soil health,
- Protects the climate, water resources and biodiversity, and
- Enhances farms' productivity and profitability.
- **Objective** - To incentivise the States and UTs to promote usage of alternative fertilizers and balanced use of chemical fertilizers.
- **Budget** - While the PRANAM scheme has *no separate budget*, a 50% subsidy savings will be provided to States/UTs.
- *70% of the grant* provided under the scheme can be used for asset creation related to technological adoption of alternate fertilisers and alternate fertiliser production units.
- *30% grant money* can be used for incentivising farmers, panchayats, farmer producer organisations, self-help groups, etc.
- **Data-** iFMS (Integrated fertilisers Management System) data available in the Fertiliser Ministry dashboard will be used for this purpose.

Why was the scheme introduced?

- **Increased demand-** The total requirement of 4 fertilisers – Urea, DAP (Di-ammonium Phosphate), MOP (Muriate of potash), NPKS (Nitrogen, Phosphorus and Potassium) – increased by 21% between 2017-2018 and 2021-2022.
- **Increase in subsidy-** Due to increased demand for fertiliser in the country over the past 5 years, the overall government expenditure on subsidy has also increased.
- Reduced use of chemical fertiliser will reduce the burden on the exchequer.
 - In 2022-23, the government has allocated Rs 1.05 lakh crore, but the fertiliser subsidy could cross Rs 2.25 lakh crore during this year.
- **Eco-friendly-** It seeks to reduce the use of chemical fertiliser, in line with government's focus on promoting the balanced use of fertilizers.

What lies ahead?

- **Reduce subsidy-** The gradual phase-out of subsidies on chemical fertilisers can stimulate alternative or bio-fertiliser adoption.
- **Phase out retention pricing scheme-** Retention pricing scheme which safeguards chemical fertiliser (urea) manufacturers, can be phased out to promote alternative fertiliser production.

- **Provide incentives-** The margin on bio-fertiliser sales should be worked out to incentivise sales and distribution networks.
- **Lesson from Sri Lankan food crisis-** Demonstrating alternative fertilisers on farmer fields is critical, to showcase higher productivity.
- Proper certification of such products can help farmers or their organisations realise a remunerative price.
- **Improve infrastructure-** In Budget 2023-24, the government said that 10,000 Bio-Input Resource Centres will be set up over the next three years.
- It will create a national-level distributed micro-fertiliser and pesticide manufacturing network.

2. Prime Minister's Development Initiative for North Eastern Region (PM-DevINE)

The revised guidelines of the PM-DevINE scheme issued in the 2022-2023 Union Budget are restructuring the Ministry of Development of Northeast Region (MDoNER) schemes.

PM-DevINE scheme:

- It is a **centra sector scheme** to support **North-East infrastructure and social projects** aligned with PM GatiShakti.
- It covers all 8 North Eastern Indian states, namely **Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura.**
- It focuses on generating **youth and women's livelihoods** while **addressing sector gaps.**

Ministry of Development of Northeast Region (MDoNER):

- MDoNER is a **Competent Authority** of the scheme, which will collaborate with State Governments, North Eastern Council (NEC), and Central Ministries for project selection, approval, and monitoring.
- The guidelines outline includes **project identification, selection, Detailed project report (DPR) preparation, sanction, fund release, monitoring, and completion.**
- **Vision: Accelerating sustainable development** in the North Eastern Region to ensure improved living standards for its citizens.
- It encompasses **rapid and comprehensive growth** through infrastructure and social projects, promotes youth and women's livelihoods, and address developmental gaps across sectors.

Empowered Inter-Ministerial Committee (EIMC):

- An **Empowered Inter-Ministerial Committee (EIMC)** will be established.
- It will be chaired by the Secretary of the **Ministry of Development of North Eastern Region**.
- This committee will include **representatives from pertinent line Ministries, the North Eastern Council, and other relevant entities.**

Functions of EIMC:

- It assesses **initial project proposals** based on quality, viability, and socio-economic impact.
- It recommends **project selection** from these proposals.
- It evaluates **final project proposals** received from State Level Empowered Committees (SLECs), **incorporating feedback** from central Ministries or Departments.
- It provides suitable **recommendations for approval** by the Competent Authority.
- It proposes **effective monitoring and evaluation methods**, which may involve **on-site inspections** through third-party agencies.
- It **oversees project progress** through NEC or SLEC or Central Agencies, ensuring **accountability**.
- It addresses any issues forwarded by NEC or SLEC regarding **project implementation challenges** or guideline clarifications.
- It offers **recommendations**, potentially suggesting **minor adjustments to Scheme** provisions to alleviate difficulties.

State Level Empowered Committee (SLEC):

- It will be established **by state governments** with Finance and relevant Secretaries from State Government Departments and necessary technical experts.
- The NEC will have representation through its **Planning Adviser** or **delegate**.
- The MDoNER will be represented by the **Senior Economic Adviser** or **Financial Adviser** or their representative or **Joint Secretary responsible for PM-DevINE**.
- **External representatives** from reputable institutions may also be invited to SLEC meetings.

Functions:

- **Reviewing and prioritizing preliminary project proposals** for PM-DevINE.
- Ensuring **alignment with guidelines**.
- **Approving DPRs** or techno-economic evaluations.

- Monitoring **project implementation** and enhancing project **management systems**.
- Establishing **effective Operation and Maintenance** mechanisms.
- Addressing **implementation issues**, and proposing modifications if required.

Project selection at PM- DevINE scheme:

- Project selection will be based on **alignment with scheme guidelines** and project quality, viability and socio-economic impact.
- **Economic, social infrastructure** and **livelihood** activities are the focus sectors.
- Proposals may come from NE States **recommended by SLEC, or Central Ministries** or Departments.
- Planning and selection should align with **State-wise GatiShakti Master Plans**, converging with the **National GatiShakti** approach.
- NE States must establish **Gati Shakti implementation** mechanisms (Empowered Group of Secretaries, Network Planning Group, and Technical Support Unit).
- States not meeting these criteria **won't receive new PM-DevINE project** sanctions from 2023-24 onwards.

Ineligible projects under PM-DevINE scheme:

- Projects that provide **long-term individual benefits** or **Direct Benefit Transfer** elements.
- Projects **already funded by relevant Ministries** (to avoid duplication), land or site acquisition, and staff expenses are not covered.
- Projects for **administrative buildings of government offices** or institutional needs.
- **Sectors already covered** by other MDoNER schemes.
- Any sector-specific projects specified in the **Negative List by the Ministry of DoNER** are not considered under PM-DEVINE.

Project Selection at MDoNER:

- MDoNER shares project proposals with concerned **Central line Ministries** or Departments, **NITI Aayog**, and the **Integrated Finance Division (IFD)** of MDoNER (where applicable) for preliminary comments.
- Preliminary comments should be received within **2 weeks**.
- For projects in regulated sectors like **power and water**, input from relevant authorities may be sought.
- The preliminary comments include:
 - **Possibility of funding** under existing schemes,

- **Technology** options,
- **Cost** norms,
- Convergence considerations for **DPR preparation** and
- **General project recommendation** for inclusion in PM-DevINE.

About PM-Gati Shakti:

- Prime Minister Gati Shakti (National Master Plan for Multi-modal Connectivity) is an Indian megaproject to **provide multimodal connectivity infrastructure** to all economic zones of India.
- It aims to bring all relevant ministries and departments of Government of India together and create a digital platform for **holistic and integrated planning of projects**.
- It will provide a competitive advantage for manufacturing in India.

Government of India Initiatives for North East Region development:

- North-East Venture Fund (NEVF)
- North East Special Infrastructure Development Scheme (NESIDS)
- Science & Technology Interventions in the North East Region (STINER)
- North East Road Sector Development Scheme (NERSDS)
- Schemes of North Eastern Council (NEC)
- North East Gas Grid (NEGG) Project

3. Revisions to the Process for the Sale of SIM Cards

Ministry of Communication has introduced reforms (revision of norms for bulk procurement of SIM cards and registering the final point of sale (PoS) by the licensees) to tackle the menace of cybercrime and financial fraud.

Need for reforms

- **Suspicious connections**- Sanchar Saathi, a citizen centric portal analysed 114 crore active mobile connections.
- Of these, 66 lakh connections were flagged as suspicious, and 52 lakh connections were disconnected because they failed re-verification.
- **Blocked accounts**- Around 66,000 WhatsApp accounts have been blocked.
- **Frozen accounts**- Around 8 lakh bank/wallet accounts used by fraudsters were frozen.
- **Fraudulence**- As per the Department of Telecommunication (DoT), more than 300 FIRs have been filed against more than 1,700 dealers.

Reforms for Bulk SIM Cards

- It is observed that 20% of bulk procured SIMs were misused, to make automated calls using SIM-box.
- **Limited procurement-** The latest provisions would replace the system of 'bulk procurement' of SIM cards by businesses, corporates etc.,
- **Comply with KYC norms-** Businesses can procure any number of connections, but it would be subject to completing KYC requirements for all end-users.
- This would help recognise each end user.
- **Activation of SIM-** The SIM would be activated only after successful KYC of the user and physical verification of the premise/address.
- **Prevent Aadhaar misuse-** The provisions **mandate** that demographic details would need to be captured by scanning the QR code of the printed Aadhaar.
- **Provisions to replace SIM-** Subscribers would also have to undergo the entire KYC procedure for replacing their SIM.
- For a period of 24 hours, all outgoing and incoming SMS facilities would be barred.
- **Authentication procedure-** As a part of E- KYC process,
 - Thumb impression
 - Iris-based authentication
 - Facial based biometric authentication are permitted.
- **Disconnection-** In case of disconnection of a mobile number, it would not be allocated to any other customer for 90 days.

What are the reforms regarding Point of Sale (PoS)?

- **Registration-** It is **mandatory** to register all PoS with licensees or the telecom network operator for franchisee, agents and distributors of SIM cards.
- **Operator role-** It is the duty of the operator to carry out an "indisputable" verification of the PoS.
- **Police verification-** The police verification of the dealer is **mandatory**.
- **Agreement-** The formal agreement for the sale of SIM cards between the PoS and licensees must be put down in writing.
- **Deadline to register-** Existing SIM card providers have been given 12 months to comply with the registration requirements.
- **Penalty-** If the PoS is found to be involved in any illegal activity, the agreement would be terminated with the entity being blacklisted for 3 years. It would also draw a penalty of Rs 10 lakh.
- **Safety-** It will minimise instances where dealers have by fraudulent practices issued SIM cards to "anti-social/anti-national elements".
- The DoT holds that these provisions would help in identifying, blacklisting and eliminating rogue PoS, from the licensees' system and provide and encouragement to the upright PoS.

4. Tibetan Democracy Day: A Legacy of Struggle and Resilience

- Tibetan Democracy Day on September 2 marks the founding of the Tibetan government-in-exile in Dharamshala.
- It signifies the establishment of Tibetan democracy after forced displacement.

Tibetan Govt in Exile: Historical Genesis

- In 1960, a year after Tibetans were displaced, the first elected representatives of the Tibetan Parliament-in-exile were sworn in.
- His Holiness the 14th Dalai Lama's influence led to the enactment of the Tibetan constitution in 1963, emphasizing democracy.

Role of Central Tibetan Administration (CTA)

- The CTA, based in Dharamshala, manages over 100,000 Tibetan refugees globally.
- It is the heart of Tibetan self-governance and resilience.
- CTA's Evolution:
 1. The first women representatives were elected in 1963 under the Tibetan constitution.
 2. In 1975, the CTA declared September 2 as the founding day of Tibetan democracy.
 3. The Charter of the Tibetans in exile was adopted in 1991, followed by the Tibetan Supreme Justice Commission in 1992.

CTA's Functioning

- The CTA, led by the President (Sikyong), operates through departments: Religion and Culture, Home, Finance, Education, Security, Information and International Relations, and Health.
- The Tibetan Parliament-in-exile has 45 members representing various aspects of the Tibetan community.

Leadership Transition

- The Dalai Lama's shift to semi-retirement led to direct elections of the executive head, Kalön Tripa.
- In 2011, His Holiness delegated political authority to Sikyong, the President of the CTA.

Bodh Gaya's Role

- In 1960, the first elected Tibetan representatives took their oaths in Bodh Gaya, marking the inception of the democratic system.
- Bodh Gaya played a pivotal role in the early days of Tibetan democracy.

India's perception of Tibet

- India respects the Dalai Lama as a spiritual leader but does not officially recognize the CTA as a government.
- It balances diplomatic considerations while supporting Tibetan refugees.

Global Recognition

- The US stands as a vocal supporter, with bipartisan backing and specialized coordinators for Tibet.
- While global recognition is limited, Tibetans value India's consistent support.

5. Mercy Petition

The Bharatiya Nagarik Suraksha Sanhita (BNSS) 2023, the proposed replacement for the Criminal Procedure Code (CrPC), contains a new provision on mercy petitions in death sentence cases, thus changing the fundamental nature of the provision.

- **Maru Ram case-** In Maru Ram vs. Union of India case 1981, the Supreme Court held that while deciding mercy petitions under Article 72, the President must act on the advice of the council of ministers (CoM).
- President is bound by the Cabinet's advice and can only return the plea for reconsideration once under Article 74 (1).
- After this, if the Council of Ministers decides against the changes suggested by the President, she/he has no option but to accept them.

New provisions under BNSS

- **Advice of CoM** - It does not include any requirement for the President to act in line with the advice given by the council of ministers in death sentence cases.
- **Time frame** - It allows a convict under the sentence of death or his legal heir or any relative to file a mercy petition under Article 72 or under Article 161 within 30 days after the date
- **Duties of Jail Superintendent** - The Jail Superintendent informs about the
 - Dismissal of the appeal or special leave to appeal by the Supreme Court or

- Date of confirmation of the death sentence by the High Court and
- Time allowed to file an appeal or special leave in the Supreme Court has expired.
- **Report-** Following this, the petition may be presented to the Centre or the State Government's Home Department.
- **Petition to Governor-** Rejection or disposal of the petition by the Governor will result in it being forwarded to the President within 60 days from such rejection or disposal of the plea.
- **Multiple convicts-** The jail superintendent or the officer-in-charge shall ensure that every convict makes a mercy petition within 60 days.
- **Role of Centre-** The Centre will seek the State Government's comments, consider the petition along with the case records, and then "make recommendations to the President within 60 days.
- **Time limit-** It has not been prescribed for the President to dispose of the mercy petitions.
- **Lack of appeal-** No appeal shall lie in any Court against the order of the President made under Article 72 of the Constitution.
- It shall be final, and any question as to the arriving of the decision by the President shall not be enquired into in any Court.

How this provisions contravenes with the existing legal precedent?

- **Judicial review-** In, *Epuru Sudhakar & Another vs Andhra Pradesh and Others, 2005*, the SC held that the powers of the President or Governor under Articles 72 and 161 are subject to judicial review.
- The decision can be challenged on grounds that
 - It was passed without application of mind
 - It is mala fide and was passed on extraneous or wholly irrelevant considerations
 - Relevant materials were kept out of consideration
 - If the decision suffers from arbitrariness
- **Article 21-** In *Shatrughan Chauhan and Anr vs Union of India (2014)*, SC observed that "Article 21 inheres a right in every prisoner till his last breath and the Court will protect that right."
- The SC guidelines provide a minimum period of 14 days between the rejection of the mercy petition being communicated to the prisoner and his family and the scheduled date of execution.
- However, no such period has been mentioned in the BNSS.
- **Delay-** If there is undue delay in execution due to pendency of mercy petitions or the executive/constitutional authorities have failed to take consider the relevant aspects, the Court can hear the grievance of the convict and commute the death sentence into life imprisonment under Article 32.

- But under the BNSS, there is no time limit for the President to decide the mercy pleas.

6. HC allows Stem Cell Therapy for autistic kids

- The Delhi High Court granted permission for two children with autism spectrum disorder (ASD) to undergo Stem Cell Therapy for their condition.
- The court's decision followed a challenge against the Ethics and Medical Registration Board's (EMRB) recommendation against stem cell treatment for ASD.

Understanding Stem Cells

- Stem cells are the foundational cells that can differentiate into specialized cells with distinct functions.
- Two main categories: **pluripotent stem cells** (can differentiate into various adult cells) and **adult stem cells** (tissue/organ-specific).
- Pluripotent stem cells are found in embryos; reprogramming of adult cells leads to induced pluripotent stem cells.

Stem Cells in Medicine

- Stem cells' regenerative properties make them valuable in regenerative medicine.
- Hematopoietic stem cell transplantation treats conditions like leukaemia.
- Challenges: Limited adult stem cells post-removal, focus on making them pluripotent.

Autism Spectrum Disorder (ASD)

- ASD is a neurological and developmental disorder affecting communication, behaviour, and interactions.
- Conventional therapies focus on symptom management, social skills training, behaviour analysis, and speech and occupational therapy.

Potential of Stem Cell Therapy for ASD

- Some experts suggest stem cells could enhance immune system regulation and neural connectivity in the brain.
- Current clinical trials show mixed results; treatment is experimental, lacks sufficient data.

- EMRB recommendations against stem cell therapy due to limited evidence, risks, side effects, and absence of established protocol.

EMRB's Concerns

- EMRB's recommendation stemmed from "predatory marketing" of stem cell therapy, giving false hope to parents about "curing" ASD.
- The Delhi HC ruling doesn't assess the general validity of stem cell therapy but permits ongoing treatment for specific cases.

Conclusion

- The court's verdict allows continued stem cell therapy for ASD, acknowledging the ongoing uncertainty and potential of the treatment.
- The decision underlines the need for further research and data to establish stem cell therapy's efficacy and safety for treating autism.

7. National Judicial Data Grid

National Judicial Data Grid works as a monitoring tool to identify, manage and reduce pendency of cases.

National Judicial Data Grid (NJDG)

- It is a database of **orders, judgments and case details** of 18,735 District & Subordinate Courts and High Courts.
- It is created as an online platform under the **eCourts Project**.
- Its data is updated on a **near real-time basis** by the connected District and Taluka courts.
- It provides data relating to **judicial proceedings/decisions** of all **computerized district and subordinate courts** of the country.
- **All High Courts** have also joined it through **web services**, providing easy access facilities to the litigant public.
- Case data for both **civil and criminal cases** are available on NJDG with the ability to perform **drill-down analysis** based on the **age of the case** as well as the **State and District**.
- To track cases related to **land disputes, Land Records** data of 26 States have been linked with NJDG.

Functions:

- It works as a **monitoring tool** to identify, manage and reduce pendency of cases.

- It helps to **provide timely inputs** for making policy decisions to **reduce delays** in disposing of cases and helps in reducing case pendency.

Significance:

- It facilitates **better monitoring of court performance** and systemic bottlenecks and, thus, serves as an **efficient resource management tool**.
- It will allow the institutional litigants to **access the NJDG data** for their **evaluation and monitoring** purposes.
- It has proposed to expand the facility to **non-institutional litigants** as well in future.

Achievements:

- **World Bank** praised the National Judicial Data Grid in the **Ease of Doing Business report for 2018**, that it made possible to **generate case management reports** and made it easier to enforce contracts.
- **An open Application Programming Interface (API)** has been provided to the Central and state Government in accordance with the **National Data Sharing and Accessibility Policy (NDSAP)** issued by the Government of India.
- It will provide **simple access to the NJDG data** using a departmental ID and access key.

eCourts Services Platform:

- It is an app that provides information related to **cases filed in the Subordinate courts and most of the High Courts** in the country.
- This can be used exclusively for **District Courts or High Court or both**.
- Litigants access case status for over **23.58 crore cases** and **22.56 crore orders** via **elastic search technology** in computerized courts.

8. Autonomous District Councils in Manipur

The Manipur State has proposed the Centre to give more autonomy to the existing autonomous hill councils in solving the ongoing conflict in Manipur.

Autonomous District Council

Pre-Independence

- **Colonial rule-** When the British took over the then Assam, their imposition of formal laws on the land was resisted ferociously by tribal populations living in the hills, who had their own customary laws.

- **Government of India Act 1935-** To avoid confrontation the British divided the hill regions of Assam into “excluded” and “partially excluded” areas as they were only interested in economic exploitation of the region.
- **Limitations-** In these areas, federal or provincial laws would not apply until the Governor felt they were needed for peace and development.
- **Aim-** To allow tribal populations to govern themselves.

Post-Independence

- **Bardoloi committee-** It recommended to adopt GoI Act 1935 with improvements into the Sixth Schedule of the Constitution.
- It had recommended creation of autonomous district councils (ADCs) in the 6 hill districts of Assam.
- The Committee recommended creation of regional councils under ADCs to cater to the needs of minor tribes in the jurisdiction of those ADCs.
- **Sixth Schedule-** It contains provisions related to the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram.
 - Currently, there are 10 ADCs under the Sixth Schedule in the North East.

How was it adopted in the Constitution?

- **Article 244-** The Sixth Schedule was adopted under Article 244 of the Constitution.
- It has the provisions for formation of autonomous administrative divisions within a state.
- **Autonomy-** The ADCs were granted certain legislative, judicial and administrative autonomy within the state.
- **Composition-** ADCs within a state have 30 members with a term of 5 years.
- **Powers-** It can make laws, rules and regulations with regard to land, forest, water, agriculture, village councils, health, sanitation, village and town level policing, inheritance of property, marriage and divorce, social customs, and mining, among other issues.
- They have the judicial power to form court to hear cases where
 - Both parties are members of Scheduled Tribes
 - Maximum sentence is less than 5 years in prison
- **Exception-** The Bodoland Territorial Council in Assam is an exception to this with more than 40 members and rights to make laws on 39 issues.
- **Purpose-** To protect the tribal life which was free from gender inequality, castesim and communalism, etc.

Manipur Hill Council

- Manipur has 6 ADCs, these came into existence in 1971 under an act of Parliament.
- **Colonial rule-** The hill areas of Manipur went through the same phase of governance division when the British took over the region in 1891.
- **Administration-** The Maharaja of Manipur had in 1939 agreed with the British to exclude the hill areas of the region from his direct control and governance.
- The demand for a separate administration for hill areas has been raised in the region since the early 1960s.
- **The Manipur (Hill Areas) District Council Act 1971-** It paved the way for creation of ADCs in Manipur's hill areas. At that time Manipur was a Union Territory.
- These regions constituted 90% of its geographical area, inhabited by tribes such as Nagas, Kukis, Zomis, Hmars, etc.
- **Aim-** To grant the hill people a chance at self-governance, protect their identity and culture, and to give them rights over the management of their resources.
- **Composition-** The councils are to have not more than 18 members who are to be elected.
- **Power-** They have the powers of taxation, maintenance of properties, allotment of land, management of forests, regulation of cultivation, and legislative authority on matters of marriage, inheritance, social customs and appointment of chiefs.

How have the ADCs evolved in Manipur?

- **Inclusion in 6th schedule-** The tribals in Manipur have long agitated for inclusion in the Sixth Schedule, and thus, the creation of ADCs through a special Act was protested.
- **Boycott of elections-** Disappointed with the provisions and the alleged non-cooperation of the state government, the hill people boycotted the ADC elections between 1990 and 2010.
- **Haphazard amendments-** Attempts to bring amendments either fizzled out or were stalled in the Assembly.
- Since 2021, a Bill proposing amendments to grant more autonomy to the ADCs has not been introduced in the Assembly due to resistance from sections in the Valley.
- **Poor power devolution-** Many powers enshrined in the act were not devolved to the ADCs after Manipur became a state in 1972.
- **Ministry of Home Affairs (MHA) -** It said the ADCs in Manipur never functioned properly.

- It has been so disorganized and the budgetary allocation by the state has been so poor at times that some ADCs have not even been able to pay salaries.
- For all practical purposes, ADCs in Manipur are non-functional.

9. National Mission for Clean Ganga (NMCG)

In the seven years, since the government unveiled its ambitious NMCG, it has installed treatment plants capable of treating just 20% of the sewage.

- These plants are **capable of treating 20% of the sewage** to be generated in the five major States that lie along the river- **Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.**
 - This is expected to increase to about 33% by 2024; and 60% by December 2026.

National Mission for Clean Ganga (NMCG)

It was registered as a society in 2011 under the **Societies Registration Act 1860.**

- It acted as the implementation arm of **National Ganga River Basin Authority (NGRBA)** which was constituted under the provisions of the **Environment (Protection) Act (EPA), 1986.**
 - NGRBA has since been dissolved with effect from 2016 consequent to the constitution of **National Council for Rejuvenation, Protection and Management of River Ganga** which is referred as **National Ganga Council.**
- National Ganga Council under the **chairmanship of Prime Minister of India.**
- NMCG has a two-tier management structure and comprises of:
 - Governing Council
 - Executive Committee
- Both are headed by **Director General, NMCG.**

Significance of Namami Gange programme:

- **Creating sewage treatment capacity:** 48 sewage management projects are under implementation and 98 sewage projects have been completed in the basin states.
- **Biodiversity conservation:** One of NMCG's long-term visions for Ganga rejuvenation is to restore viable populations of all endemic and endangered biodiversity of the river, so that they occupy their full historical range and fulfil their role in maintaining the integrity of the Ganga River ecosystems.

- **Creating river-front development:** 68 Ghats/Crematoria projects for construction, modernization, and renovation of 267 Ghats/Crematoria and Kunds/Ponds have been initiated.
- **River surface cleaning:** River Surface cleaning for collection of floating solid waste from the surface of the ghats and river and its disposal are afoot and pushed into service at 11 locations.
- **Afforestation:** The process involves enhancement of productivity and diversity of the forests in head water areas and all along the river and its tributaries.
- **Ganga gram:** Ministry of Drinking Water and Sanitation identified 1674 Gram Panchayats situated on the bank of River Ganga in 5 States (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal).

Challenges of the mission:

- **Sludge control:** While the containment of human waste has been largely achieved by **Swachh Bharat Mission (SBM)** through construction of toilet in Ganga grams, its safe disposal still poses a huge challenge.
 - Faecal sludge is a bigger pollutant than sewerage.
- **Sewage treatment:** Despite initiatives, there are challenges like delay in new projects because of land acquisition and other procedural requirements, poor performance of **Sewage treatment plants (STPs)** and lack of sewerage network in cities.
 - Industries find it easy to dispose their entire waste in the common drain which carries both domestic as well as industrial waste into the river.
- **Restoring the flow:** With enough flow, a river acts as self-purifying system. However, the Ganga fails this basic test except during monsoons.
 - Due to restrictions and decrease in flow, the velocity of water decreases and siltation increases and the self-purification capacity decreases.
- **Cost overruns:** The costs of the programme have increased as a result of delays in multiple projects, and ineffective financial management.
- **Governance Issues:** The Ganga Action Plans lacked the coordination of various Ministries.
 - Lack of coordination results in faulty execution, delays and cost overruns.

Way Forward:

Therefore, monetization of sludge and treated water is one of the focus areas of Namami Gange Programme under the banner of '**Arth Ganga**', which means linking people with Ganga through a '**Bridge of Economics**'. A targeted dissemination of information must be done to bring about the desired change. There

is a need to create a “generation with cleanliness conscious’ and everything else will automatically fall into place.

10. Women led Climate Action

Emerging countries need women-led climate action as they are more vulnerable to climate change because of their dependence on natural resource and labour-intensive work.

Why there is a need of women led climate action?

- **Foster SDG-** Organisation for Economic Co-operation and Development (OECD) has said that gender equality and environmental goals are mutually reinforcing that will accelerate the SDGs achievement.
- **Global challenge-** Its impact is one that has profound consequences for humans and has emerged as one of the biggest global challenges in recent decades.
- **Loss of work hours-** As per International Labour Organization (ILO) study in 2019, around 2.2 % of total working hours worldwide will be lost to high temperatures, a productivity loss equivalent to 80 million full time jobs in 2030.
- **Women at disadvantage-** United Nations highlighted that across genders, women are considered to be highly vulnerable and disproportionately affected by climate change than men.

Why it is felt more in low-income countries?

- Women across the world face severe risks to their health, safety, and quality of life.
- **Dependence-** Women in developing and less developed countries are more vulnerable to climate change because of their dependence on natural resources and labour-intensive work.
- **Poverty-** Women are more likely to live in poverty than men, one of the variables that makes them more susceptible to the effects of climate change.
- **Responsibility-** It is because women from low-income households are more at risk because they are more responsible for food, water, and other homely unpaid work.
- **Regional divide-** Due to the climate crisis, more time and effort are needed to obtain basic necessities.
- Rural women often shoulder the burden of ensuring access to clean water, adequate cooking fuel, and nutritious food for their families.
- **Health risk-** Women may be at increased risk for health and safety because they must travel long distances every day to collect water and fuel.

- **Inadequate rainfall-** Turkana County is one of the most arid areas of Kenya.
- Women not only struggle to collect enough water, but when food is scarce, they eat less than men.
- **Climate vulnerable jobs-** Women in low-income countries engage in climate-vulnerable occupations such as farming and other labour-intensive work.

According to the ILO, over 60% of working women in southern Asia and sub-Saharan Africa are still in agriculture, where they are often underpaid and overworked.

- **Low asset-** Despite being the backbone of the food production system, women own only about 10% of the land used for farming.
- **Climate refugees-** A McAllister (2023) study has highlighted how there could be 1.2 billion climate refugees by 2050.

Gender-specific issues

Climate change is a “threat multiplier”, meaning it escalates social, political and economic tensions in fragile and conflict-affected settings.

- **Climate disasters-** According to a UN study, 80% of those displaced by climate-related disasters are women and girls.
- **Women inequality-** According to estimates, 130 million people could be pushed into poverty by 2050 due to climate change risks, natural disasters, and food inflation.
- **Stereotypes-** Women, especially those from vulnerable communities, face particular difficulties during and after natural disasters as they are more susceptible to prejudice and exploitation.
- **Impact on health-** Research indicates that extreme heat increases incidence of stillbirth.
- Climate change is increasing the spread of vector-borne illnesses such as malaria, dengue fever, and Zika virus, which are linked to worse maternal and neonatal outcomes.
- **Feminisation of agriculture-** Women make up a disproportionately large portion of the agricultural workforce in emerging countries.
- **Extreme weather-** Heat stress affects workers a lot in this sector, especially in South Asia and Africa.
- **Unequal access-** Women engaged in agriculture do not have access to quality inputs and possess low education and technical knowledge.

What lies ahead?

- There is a need for investments in women's education, training, and access to resources for increased resilience against vulnerability.
- Sustainable practices reduce the negative impacts of climate change on people's living standards.
 - In India, the Self-Employed Women's Association (SEWA) teaches women farmers how to respond to shifting climate patterns to support themselves better financially.
- Women's participation in climate policy decision-making at all levels is crucial for effective climate change mitigation and adaptation strategies as well as getting decent employment.

Gender and Climate Change Development Programme is a program in South Asia which aims to increase women's influence in policymaking by providing them with a stronger voice.

11. Black Sea Grain Initiative

- The Black Sea grain deal lapsed on July 17. Turkey now seeks to resume the treaty.
- Russia though had not agreed to renew the deal, citing unmet promises and difficulties in its own agricultural exports due to Western sanctions.

Black Sea Grain Initiative

- The Initiative eased Russia's naval blockade and saw the reopening of three key Ukrainian ports.
- The UN and Turkey brokered the deal in July 2022, allowing cargo ships to travel between Ukrainian ports and undergo inspections to ensure they were not carrying arms.
- The deal has been extended twice but is set to expire on July 17, 2023.
- The agreement created procedures to safely export grain from certain ports to attempt to address the 2022 food crisis.
- It provides a safe maritime humanitarian corridor for Ukrainian exports (particularly for food grains) from three of its key ports: **Chornomorsk, Odesa and Yuzhny/Pivdennyi** in the Black Sea.

Outcomes of this deal

- Approximately 9.8 million tonnes of grains have been shipped so far since the deal was brokered.

- People hoarding the grain in the hope of selling it for a sizable profit owing to the supply crunch were now obligated to sell.
- The initiative has also been credited for having made a huge difference in the global cost of living crisis.

Why was this deal launched?

- **Ukraine's Role:** Ukraine is a significant exporter of food grains, including wheat and corn, and contributes to the UN's food aid programs.
- **Impact of Russian Invasion:** Russia's invasion and blockade of Ukrainian ports raised concerns about food security and soaring prices globally.

Russia's Opposition and Reasons

- **Claims of Unmet Promises:** Russia argues that promises made under the deal have not been fulfilled, affecting its own agricultural exports and fertilizers due to Western sanctions.
- **Obstacles to Agricultural Exports:** Russia faces challenges with payment platforms, insurance, shipping, and logistics, even though there are no direct restrictions on its agricultural products.
- **Frustration and Goodwill:** Russian President expressed frustration and stated that Russia has shown goodwill in extending the deal but feels enough is enough.
- **Shift in Grain Destinations:** Russia claims the deal was meant to ensure global food security, but Ukraine has mainly exported to high- and middle-income countries, while the UN notes that food prices have cooled down, benefiting poorer nations.

Impact on Grain Exports and Production

- **Russian Wheat Export Dominance:** Russia remains the world's top wheat exporter, primarily targeting the Middle East, North Africa, and Central Asia.
- **Ukraine's Declining Shipments:** Ukraine's grain shipments are projected to more than halve, with production at an 11-year low.
- **Shifting Markets:** Ukraine's grain markets have shifted from Asia and North Africa to Europe, driven by ease of shipment, causing a glut of Ukrainian grain and protests from farmers in Eastern European countries.

12. MoU between India and New Zealand

India and New Zealand signed **Memorandum of Understanding (MoU)** to boost cooperation in **Civil Aviation**.

About the MoU:

- The MoU will cover the **scheduling of new routes, code share services, traffic rights and capacity entitlement.**
- It will boost the **bilateral ties in civil aviation** between the **two countries.**
 - An **Air Services Agreement** was signed between New Zealand and India in **2016.**
- The **designated airline(s)** of **New Zealand** may operate any number of services with **any type of aircraft**, with **third** and **fourth** freedom traffic rights to/from **six points in India.**
 - The **third freedom** is the **right** to carry passengers or cargo from **one's** own country to another.
 - The **right to carry passengers** or cargo from **another** country to one's own is the **fourth freedom.**
- Both parties may operate any number of **all-cargo services** with **any type of aircraft** with **3rd, 4th and 5th freedom traffic rights** to/from any points in the territory of the other party via any intermediate point(s) and to any **beyond** point regardless of its mention in the **Route Schedule.**
 - The **5th freedom** is the **right to carry passengers** from **one's own country** to a **second country**, and from that country onward to a **third country** (and so on).

Bilateral ties between India and New Zealand (NZ):

Trade:

- India is NZ's **11th largest two-way trading partner** with total two-way trade valued at **US\$1.80 Billion** during 2020.
- Education and tourism are **NZ's growth sectors** with **India.**
- **Indian students** are the **2nd largest source** of **international students** for NZ.
- **India imports** logs and forestry products, wood pulp, wool and edible fruit & nuts from NZ.
- **Indian exports** to NZ mostly are pharmaceuticals or medications, precious metals and gems, textiles and motor vehicles and non-knitted apparel and accessories.
- The **India New Zealand Business Council (INZBC)** plays a critical role in **enhancing trade** and **investment** ties between India and New Zealand.

Cooperation in Education Sector:

- An **MoU** was signed with the **universities** in NZ to establish a **NZ centre** at the institute in, **2020** in areas such as cancer, waste management, cyber security, robotics, autonomous vehicles, and medical technology.
- In **2019**, an agreement was signed to offer **joint PhD programmes** in areas- computational modelling, cyber security, advanced materials, precision-driven medicine, and cancer research.

13. Nurturing Teachers

Teacher's Day is celebrated on September 5 (birthday of former President Dr. Sarvepalli Radhakrishnan) to appreciate teachers' selfless efforts, dedication and commitment to shaping the future of society.

NEP 2020

National Education Policy is a comprehensive framework to guide the development of education in the country.

- **NEP 2020**- It envisaged a plan to
 - Restructure the recruitment and induction of teachers into schools, their continuous development,
 - Career management and progression, and
 - The environment and culture of schools.
- **Efficient HRM practices**- NEP 2020 also spelt out the strategy to initiate efficient HRM (Human Resource Management) practices.
- It is introduced to motivate and energise capable faculty in higher education institutions.
- **Role of teachers**- The teacher must be at the centre of the fundamental reforms in the education system.
- **Empower teachers**- The new education policy must help re-establish teachers, at all levels, as the most respected and essential members of our society, because they truly shape our next generation of citizens
- **Strengthen TET**- Teacher Eligibility Tests (TETs) will be strengthened to inculcate better test material, both in terms of content and pedagogy.
- **Continuous Professional Development**- Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions.

- **Professional standard for teachers-** A common guiding set of National Professional Standards for Teachers (NPST) will be developed by 2022, by the National Council for Teacher Education.
- **National Mission for Mentoring-** It shall be established, with a large pool of outstanding senior/retired faculty including those with the ability to teach in Indian languages.
- **Autonomy-** They will be given more autonomy in choosing aspects of pedagogy, so that they may teach in the manner they find most effective for the students in their classrooms.
- **Special educators-** There is an urgent need for additional special educators for certain areas of school education.
- **Teacher Education Institutions (TEIs)-** Stringent action will be taken against substandard stand-alone TEIs running in the country, including shutting them down, if required.
- **New curriculum-** By 2021, a new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021 will be formulated by the National Council Teachers Education in consultation with NCERT, based on the principles of NEP 2020.
- **Career Management and progression-** A robust merit-based structure of tenure, promotion, and salary structure will be developed, with multiple levels within each teacher stage, that incentivizes and recognizes outstanding teachers.

What are the issues that need to be addressed?

- **Strengthen HRM Education-** Human Resource Management (HRM) which is in nascent stage in India need to be fostered.
- **Research and development-** It is crucial to inculcate research curiosity among young talents at the school and college levels.
- **Institutional support-** Institutions provide their best support for good ideas and innovative research, particularly those solving national and global problems.
- **Funding-** There is a need to ensure smooth funding grant processes and to speed up the procurement process to meet the research project deadlines.
- **Promising collaboration-** Academics must promote a promising research agenda for collaborating with government, industry, startups, and investor partnerships.
- **Industry-Academia nexus-** The industry should value PhD and contribute to the research agenda of education institutions.
- Academia must reciprocate by fulfilling the industry's research demands.

- **Technology support-** The infrastructure support should be upgraded with state-of-the-art technological infrastructure and the Industry 4.0 framework in today's digital world.
- **Reduce admin burden-** A teacher's primary responsibility is to deliver knowledge, mentor students, and do research.
- However, teachers are often burdened with unnecessary administrative tasks, especially in schools.
- **Clear job description-** The non-teaching staff should perform routine jobs while teaching and professional staff should perform only unavoidable administrative tasks, such as accreditation ranking framework duties.
- **Proper incentives -** Reports have identified severe problems with the working conditions and the compensation paid to ad-hoc teachers.
- It is essential to retain talents and keep them motivated with appropriate salary and other incentives at par with the regular employees.
- **Focused training programmes-** Rigorous, intensive and regular training programmes should be imparted to teachers to equip them with the knowledge, tools and skills necessary to deal with students.
- Teachers should also receive training in learner-centric pedagogy and the latest technology.
- **Leadership programmes -** It is crucial for grooming principals, academic administrators and vice-chancellors.

What lies ahead?

- Professionalization, modernisation and digitisation are vital to educational institutions.
- Prioritising the NEP 2020 recommendations and appointing skilled and trained professionals will ease many challenges teachers face.

14. Direct Trade between India and Pakistan

The cessation of India-Pakistan direct trade for a significant period is a result of enduring political tensions and conflicts between the two.

Why the bilateral trade between India and Pakistan banned in the past?

- **Trade relation-** As per data trade with Pakistan stood at USD 329.26 million in 2020-21 and USD 830.58 million in 2019-20.
- **Issue of Jammu and Kashmir-** Pakistan banned bilateral trade with India in 2019 when India abolished Jammu and Kashmir's special status.
- **Cut in diplomatic relations-** Pakistan had stated that it was reducing diplomatic relations with India and planned to remove India's high commissioner to Islamabad.

- **Issues over tariff** - In 2012, India announced reduction of 30% in its SAFTA Sensitive List for non-Least Developed Countries of SAFTA [including Pakistan] but Pakistan continued to follow restrictive trade policy towards India.
- **Most Favoured Nation**- India had accorded MFN status to Pakistan in 1996.
- Pakistan's MFN designation was removed in the aftermath of the Pulwama terrorist incident.

MFN status means the country which is the recipient of this treatment must nominally receive equal trade advantages as the "most favoured nation" by the country granting such treatment

- **Hike in custom duty**- India imposed 200% tariff on Pakistani imports in 2019.
- Subsequently, as part of its unilateral measures, Pakistan suspended the bilateral trade with India.

How about the condition post the bilateral trade suspension?

- **Indirect trade**- A few relatively less freight sensitive products such as dry dates began coming via indirect channels to enter each other's markets.
- **Indian merchandise popularity**- Products such as fabric, skincare products, and jewellery freely made their way into Pakistani markets, gaining popularity among local consumers.
- **Other countries**- The gap created in the cross-border trade was filled by Indian goods entering Pakistan through Afghanistan, China and Dubai.
- Dubai has enabled trade between the two countries by acting as a neutral ground for the respective enterprises to conduct business without being hampered by political tensions and border crossings.
- **High cost of imports**- It compelled Pakistan to lift the ban on cotton imports from India as importing cotton and sugar from countries like the US and Brazil is expensive and time-consuming.
- **Major exports**- During the first quarter of fiscal 2022, India's exports to Pakistan is primarily driven by sugar, organic compounds and pharmaceutical products.
- **COVID-19** - Pakistan permitted import of pharmaceuticals and drugs following the outbreak of the pandemic in 2020.
- **Low volume trade**- Jewellery, machinery, medications and chemicals are examples of low-volume, high-value commodities. Businesses can afford to take a longer route, particularly via Dubai, because the increased cost are passed directly to consumers.
- **Vegetable imports**- Pakistan decided to allow vegetable imports from India via Wagah due to destruction of onion and tomato harvests by torrential rains in 2022.

- **Pakistan's commitment-** India's trade with Pakistan increased dramatically in the June 2022 quarter, due to Pakistan's willingness to restore commerce (mostly of necessities), with India.
- **Other reasons -** Some experts link the surge in direct commerce to Pakistan's new leadership and the country's mounting economic crisis, compounded by high global commodity prices

What lies ahead?

- **Reduce import duty-** India can consider reducing its import duties (currently at 200%) on products that can benefit its industries.
- **Foster cooperation-** Pakistan's commitment, though driven by necessity, have sparked hope for additional measures to improve bilateral relations, including the
 - Resumption of sports-related visas by India after a 3 year interval,
 - Scheduling of a long-delayed meeting between the Indus Water Commissioners, and
 - Establishment of peace at the Line of Control (LoC) following over 5,000 ceasefire violations.
- **Resume trade-** India and Pakistan trade should resume through the land crossing at Attari (India)-Wagah (Pakistan), for a win-win situation.
- **Better value-** Since, wheat flour prices in Pakistan have risen dramatically in recent months, North Indian farmers can sell it at a better price in Pakistan.
- **Enhance direct route-** Indirect trade routes like Dubai entail additional intermediaries, increasing transaction costs. Direct trade could have brought additional benefits like
 - Reducing transportation costs,
 - Expediting delivery schedules,
 - Facilitating interaction among businesses, and
- Establishing direct trade channels that could unlock potential economic cooperation and foster beneficial trade relationship.
- **Engagements-** Through direct economic engagements, both countries can promote people-to-people exchanges, cultural interaction, and business collaborations, paving the way for improved bilateral ties.

15. India- South Korea Relations

The historic Camp David Summit held in August 2023 gives India and South Korea a unique opportunity to enhance their strategic partnership.

History of India-South Korea relations

- **Historical relation-** According to the 13th century Korean historical text "SamgukYusa" or "Heritage History of the Three Kingdoms", Princess Suriratna from Ayodhya (India) came to Korea in the year 48 AD.
- She married King Kim-Suro of the erstwhile Gaya Confederacy in ancient Korea and became Queen Heo Hwang-ok. Many Koreans trace their ancestry to this lineage.
- **Buddhism-** Some scholars believe that Buddhism reached Korea via the maritime route with the arrival of Princess Suriratna and her brother Monk Jangyu.
- **Literature-** Nobel Laureate Rabindranath Tagore composed a short but evocative poem titled 'Lamp of the East' in 1929 about Korea's glorious past and its promising bright future.
- **Political relations-** India played an important role in the Korean peninsula after Korea's independence in 1945.
- Former Indian diplomat Shri K P S Menon was the Chairman of the 9-member UN Commission set up in 1947 to hold elections in Korea.
- In 2018, both countries issued a statement outlining a "Vision for People, Prosperity, Peace and our Future"
- **Diplomatic relations-** Consular relations were established in 1962. Both established diplomatic relations on 1973.
- **Economic relations-** They both formed a "Strategic Partnership" in 2010, which was elevated to "Special Strategic Partnership" in 2015.
- **Korea plus-** This initiative aims to facilitate Korean investments in India.
- **Bilateral trade-** In 2022, it reached record levels of 27.8 billion dollars.
- India's import volume stands 18.8 billion dollars, while the export volume is 9 billion dollars.
- **Defence-** In 2020, India and South Korea signed a Roadmap for Defence Industries Cooperation.
- **Cultural relations-** In 2011, the Indian Cultural Centre was established in Seoul to showcase India's rich cultural heritage and promote cultural exchanges between both countries.

Significance of Camp David meet

- **Regional security-** It indicates a much-needed repair in South Korea and Japan relations.
- **Strengthen US alliance structure-** The summit reflect the multipolar urges of the contemporary international system in East Asia along with groupings such as
 - **AUKUS-** U.S, United Kingdom, Australia
 - **Quad -**India, Japan, Australia, U.S
 - **CHIP 4 Alliance-** U.S., Japan, Taiwan, and South Korea

- **New strategic direction-** It has the potential to set South Korea on strategic direction in Indo-Pacific with
 - Improved relations with Japan
 - More synergy with the American view on China
 - Enhance the engagement of Indo- Pacific
- **China challenge-** It marks a strategic shift in Seoul's traditional approach of not offending China at any cost.
- **QUAD grouping-** This summit mooted the South Korea's keen desire to join the group, it might apply for a membership in Quad Plus in 2024.
- **New foreign policy-** The main goal is to make South Korea a "global pivotal state".

How the summit would strengthen India-Korea relations?

- **Natural partner-** Korea is a natural partner for India in Indo-Pacific. It is due to number of reasons.
 - South Korea's location in the Indo-Pacific, close to China.
 - It is a U.S. ally provides India with a like-minded strategic partner.
 - For both, the rise of China and its unilateral attempts at reordering the Asian security architecture are of great concern.
- **Regional partner-** For India, Seoul can be an important regional partner at a time when India is closer to the U.S. and is concerned about Chinese intentions and power like never before in history.
- **Enhance the relation** - It provides a unique opportunity for India and ROK to enhance their strategic partnership in the 50th year of their diplomatic relationship.
- **Diplomatic relations-** The partnership could also benefit from reciprocal visits by Prime Minister Narendra Modi and Mr. Yoon to each other's country.

What lies ahead?

- **Political cooperation-** The two sides should consider establishing an annual summit at the level of
 - Foreign Ministers Meet
 - 2+2 format dialogue

India currently has 2+2 dialogues with the U.S., Japan, Australia and Russia.

- **Foster technology-** Both could explore the possibility of negotiating a South Korea-Japan-India-U.S. initiative on Critical and Emerging Technology (iCET), along the lines of the recently-concluded India-U.S. iCET.

- **Defence** -South Korea's willingness and ability to cater to India's defence needs within the ambit of India's 'Make in India' programme must be utilised.
 - Example-The K9 Vajra, a 155 mm self-propelled howitzer, built by L&T with technology from South Korea's Hanwha Defense
 - South Korean-built K2 Black Panther tanks could also be co-produced in India for the Indian Army or third countries.
- **Nuclear energy**- Given Seoul's remarkable track record in supplying cheaper and faster nuclear reactors India could consider purchasing Korean-built reactors so as to expand the share of nuclear energy in the country's energy basket.

16. Amitava Roy Committee report

Recently, the Supreme Court sought the views of the Centre and the states on the Justice **Amitava Roy Committee report**.

- On August 29, the Supreme Court sought the views of the Centre and the states on the Justice Amitava Roy Committee report submitted on December 27, 2022, underlining that the correctional justice system is "evidently gender exclusionary".

Amitava Roy Committee report:-

- **Formation: 2018.**
- **Formed by: Supreme Court of India.**
- In September 2018, the **Supreme Court** formed a Committee on Prison Reforms chaired by former judge, Justice Amitava Roy.
- **Objective:** To examine the various problems plaguing prisons in the country, from overcrowding to lack of legal advice to convicts to issues of remission and parole.

Historical Background:-

- The decision was taken based on a **letter from former Chief Justice of India R.C. Lahoti** highlighting the overcrowding in prisons, unnatural deaths of prisoners, gross inadequacy of staff, and the lack of trained staff.
- The court asked the committee to complete the collection of data and information and submit the report in a year.
- The committee submitted the final report in **December 2022**.

Functions of the committee:-

- Examine the extent of **overcrowding in prisons** and correctional homes & and **recommend remedial measures**.
- Grant of remission, parole, and furlough.
- **Reasons for violence** in prisons and correctional homes.
- **Recommend measures to prevent unnatural deaths**.
- Assess the **availability of medical facilities** in prisons and correctional homes.

Key Findings of the Committee:-

- Globally, **one in three prisoners are undertrials**.
- In India, **three out of four, or about 77%** of the total prison population in 2021, were undertrials.
 - **Undertrials:** people waiting for the completion of a trial or investigation.
- Women prisoners face far **worse conditions than men** in terms of **access to basic facilities**.
- Prisons **only in Goa, Delhi, and Puducherry allow female inmates to meet their children** without any bars or glass separation. (National Commission for Women)
- Less than 40% of prisons provide **sanitary napkins** to female inmates.
- **Only 18% of female prisoners get exclusive women's prison facilities**.
- Prison authorities of **only 13 states and two Union Territories** have designated a '**complaint officer**' to deal with complaints of **violation of rights of transgender inmates in prisons**.
- Majority of the states and Union Territories have **not formulated welfare schemes** for transgender prisoners.
- Suicide is a **major cause of the 817 unnatural deaths** reported in jails across the country between 2017 and 2021.
- **Uttar Pradesh** recorded the highest number of suicides at 101 during this period.

Key Recommendations of the Committee:-

- Speedy trials.
- Lawyer to prisoner ratio: There should be at least **one lawyer for every 30 prisoners**.
- **Special courts** should be set up to deal exclusively with petty offenses.
- **Accommodative Transition:** Every new prisoner should be allowed a free phone call a day to his family members to see him through his first week in jail. (Police & Prison Reform)
- **Legal aid** must be provided.
- Use of **video-conferencing** for trial.

- **Modern cooking facilities** and canteens to buy essential items.
- The Supreme Court should pass directions asking authorities to start the **recruitment process** against permanent **vacancies within three months** and the process should be completed in a year.

17. Key outcomes of the G-20 summit in New Delhi

- **Inclusion of African Union:**
 - G-20 also decided to include the 55-nation African Union, the second regional bloc to join the group after the European Union. This will boost the representation of developing countries in the G-20.
- **Finance:**
 - The declaration also includes agreements on strengthening multilateral development banks (MDBs), regulating cryptocurrencies, and using digital public infrastructure for financial inclusion.
 - Endorsement of the Financial Stability Board's recommendations for the regulation, supervision, and oversight of crypto-assets activities and markets.
 - Agreement on the need for "better, bigger, and more effective" multilateral development banks to meet high developmental demands from around the world
 - Implementation of recommendations of an independent panel on the capital adequacy framework of the MDBs, potentially yielding additional lending capacity of approximately \$200 billion over the next decade.
- **Ukraine Conflict:**
 - G-20 members agreed to a joint statement on the Ukraine war, diluting the harsh criticism of Russia contained in last year's statement.
 - The final document refers to different "national positions" of the G-20 members on the war, with a generic reference to the need for all states to refrain from the threat or use of force. This was a major diplomatic victory for India, which had been under pressure from the West to take a tougher stance against Russia.
 - The agreement was reached after tough negotiations led by Indonesia, India, Brazil and South Africa. These countries were also part of the Non Aligned Movement and hence have a history of working together.
 - The EU and G-7 countries agreed to the text in order to avoid a "no text" scenario, which would have led to comparisons to the recent BRICS Summit and concerns that the G-20 might be replaced by blocs such as the BRICS or G-7.
- **Food Security:**
 -

- The declaration laid emphasis on ensuring global food and nutritional security for all, in line with the G-20 Deccan High-Level Principles on Food Security and Nutrition 2023.
- To achieve these goals, the leaders agreed to strengthen the Agricultural Market Information System (AMIS) and the Group on Earth Observations Global Agricultural Monitoring (GEOGLAM) for greater transparency to avoid food price volatility
- **Climate change:**
 - The declaration calls for a “quantum jump” in climate financing from billions of dollars to trillions of dollars.
 - The statement suggests that developing countries will require approximately \$5.9 trillion in investments between now and 2030, while an additional \$4 trillion per year is needed for clean energy technologies by 2030 to achieve net-zero emissions by 2050.
 - India launched the **Global Biofuels Alliance** on Saturday and the Prime Minister urged G-20 nations to join the initiative and increase ethanol blending in petrol to 20% globally.
 - The alliance aims to secure the supply of biofuels, ensure they are affordable, and promote sustainable production.
 - Besides India, the founding members of the alliance include Argentina, Bangladesh, Brazil, Italy, Mauritius, South Africa, the UAE, and the US. Canada and Singapore are observer countries.
 - The Prime Minister thanked the member nations who joined the alliance and emphasized the importance of international cooperation in the field of fuel blending to address climate change.
 - India also proposed the launch of the **G-20 Satellite Mission for Environment and Climate Observation**. The climate and weather data obtained from this will be shared with all the countries, especially the countries of the Global South.
 - The PM highlighted the need for an inclusive energy transition and stressed that trillions of dollars are required to achieve it, with developed countries playing a critical role. He also acknowledged the willingness of developed countries to fulfill their commitment of \$100 billion for climate finance.
 - At the 2009 Copenhagen UN climate talks, developed countries agreed to provide \$100 billion annually by 2020 to help developing countries address climate change. However, they have consistently failed to meet this commitment.

18. India and ASEAN Relations

Recently the Prime Minister of India attended the **20th ASEAN-India Summit** and the **18th East Asia Summit (EAS)** in Jakarta, Indonesia.

India and ASEAN Relations:

Political:

- India has been actively engaged with ASEAN in various regional forums and initiatives, such as the **ASEAN Regional Forum (ARF)**, **ASEAN Defence Ministers' Meeting + (ADMM+)**, and the **East Asia Summit (EAS)**.
- In recent years, they share interests in cooperation in sectors, such as **trade and investment, energy, infrastructure, and people-to-people contacts**.
- **India's Act East Policy**, which was formally enunciated in 2014, is a key pillar of its foreign policy and is focused on expanding its engagement with ASEAN and other countries in the region.
- **Mission to ASEAN 2015** with a dedicated Ambassador to strengthen engagement with ASEAN and ASEAN-centric processes
- **Delhi Dialogue hosted by India annually**, traditionally inaugurated jointly by India and ASEAN at the **Foreign Minister's level**, serves as the main Track 1.5 mechanism for our engagement.

Trade and Investment:

- India and ASEAN have **signed an FTA** that has boosted trade and investment between the two.
- **ASEAN is India's 4th largest trading partner.**
 - Total trade stood at \$110.4 billion in 2021-22.
- **ASEAN-India Business Council (AIBC)** was set up in 2005 with the aim of fostering closer business linkages.
- India's export to ASEAN stands at **28% of our total exports**.
- ASEAN accounting for approximately **28% of investment flows** into India since 2000.

Multilateral and Bilateral Engagements:

- Bilaterally, India has signed 'strategic partnerships' with four ASEAN countries, namely, **Indonesia, Malaysia, Singapore and Vietnam**.
- At the multilateral level, India is a member of multiple ASEAN-led fora, including the **East Asia Summit, the ASEAN Regional Forum, and the ASEAN Defence Ministers Meeting**.

Maritime cooperation:

- **India's flagship MILAN naval exercise**, started in the 1990s, includes several ASEAN members.
- India also conducts bilateral coordinated patrols with several ASEAN countries, as well as exercises such as the **Singapore-India Maritime Exercise**, which completed 25 years in 2018.

Socio-cultural cooperation:

- India and ASEAN have promoted cultural exchanges to enhance people-to-people ties.
- Inviting ASEAN students to India each year for the **Students Exchange Programme**, Special Training Course for ASEAN diplomats, Exchange of Parliamentarians, ASEAN-India Network of Think Tanks, ASEAN-India Eminent Persons Lecture Series, etc.
- India has established the **ASEAN-India Centre at the Research and Information System for Developing Countries (RIS)** to promote research and studies on ASEAN-India relations.

Significance of ASEAN partnership for India:

- **Significant market size:** ASEAN constitutes the 3rd largest market in the world.
 - This can help India utilize its export potential.
- **Way for countering China's influence:** Strengthening relations with ASEAN countries can serve as a counterbalance to China's influence in the region.
- **Convergence with Indo-Pacific strategy:** ASEAN is a crucial component of India's "Act East" policy and its "Indo-Pacific" strategy, reflecting the convergence of interests in the region.
- **Significance of rule-based order:** ASEAN plays a central role in promoting a rules-based security architecture in the Indo-Pacific region, which is essential for the region's stability and prosperity.
- **Development of North East region:** Connectivity initiatives with ASEAN can boost economic development in India's northeastern states by positioning them as a hub for regional trade and commerce.

India – ASEAN challenges:

- **Slow implementation of projects:** The lack of time-bound implementation of projects, such as the **India-Myanmar-Thailand trilateral highway** and **Kaladan multimodal project**, which would enhance connectivity between India and the ASEAN region.

- **Trade and economic ties remain low:** Despite efforts to strengthen economic ties, **India's trade and economic ties with ASEAN** are much below their potential.
 - But **China remains the largest trading partner** of the regional grouping, followed by the European Union and the United States.
- **Quadrilateral Security Initiative:** ASEAN has not been very favourable to the rise of QUAD as a significant security institution in the region.
 - It is neither willing to be entangled in the possible power transition taking place in the Indo Pacific.
- **Low FDI:** India's FDI in ASEAN is also low in comparison to China, with China's FDI to ASEAN standing at a much higher figure.
- **Territorial disputes hindering the progress:** ASEAN member states are enmeshed in territorial disputes with interested powers for a long time, which creates a challenge for maintaining peaceful relations.
- **Wobbling geopolitics:** The geopolitical tension in the Indo-Pacific is producing geoeconomics consequences where issues of trade and technology cooperation as well as supply chain resilience are at peak.
 - This is happening at a time when ASEAN remains a divided organization internally on how to manage these challenges.
- **Indo-Pacific rivalry:** The rivalry between major powers in the Indo-Pacific region, such as China and the United States, threatens the underlying stability on which rested the regional growth and prosperity.

Way Forward:

While the two sides have made tremendous progress in the last few decades and built strong linkages with each other, the potential for further growth and connections is immense. There is a bright future ahead for the ASEAN and India relations. As with the US and China, the ASEAN member states will need to seek to balance and pursue their interests in the developing India-China dynamic in the region.

19. False Promises to Marry

In the recently proposed Bharatiya Nyaya Sanhita (BNS) bill 2023, if a man promises to marry a woman but never intends to, and still has 'consensual' sex with her, it will amount to a criminal offence under Section 69.

What does Section 69 say?

- **Chapter 5 of the Bill-** It is titled as "Offences against woman and children" and describes sexual intercourse by employing deceitful means.

- **Section 69** - Whoever, by deceitful means or by making promise to marry to a woman without any intention of fulfilling the same, and has sexual intercourse with her, shall be punished with imprisonment of either description for a term which may extend to 10 years and shall also be liable to fine.
 - **Deceitful means**- It will include false promise of employment or promotion, inducement or marrying after suppressing identity.
 - **False promise to marry**- It will be attracted only when a man makes a promise to marry a woman, with the intention of breaking it, for the purpose of getting her consent and sexually exploiting her.
- **Penalty**- Both offences will attract a penalty of up to 10 years of imprisonment.

How has IPC dealt with cases of 'false promise to marry'?

- **Causes**
 - When rape is committed and the promise of marriage is used to silence the victim or
 - Where the promise is made to 'convince' the person into entering a sexual relationship.
- **IPC**- They were dealt with joint reading of Sections 375 and 90 of the IPC.
- **Section 375**- It defines rape and defines consent as "an unequivocal voluntary agreement when the woman by words, gestures or any form of verbal or non-verbal communication, communicates a willingness to participate in the specific sexual act."
- This section lists 7 types of consent which would amount to rape if violated including the consent taken through fear of death, hurt or intoxication.
- **Section 90**- Consent, given under "fear of injury" or "misconception of fact," cannot be considered as consent.
- **Court rulings**- In 2021, the Supreme Court reiterated that under Section 375, a woman's consent must involve an active and reasoned deliberation towards the proposed act.
- Karnataka Court has said that educated women in a pre-marital relationship cannot claim rape after the relationship is over for she is 'mature' enough to be aware of the consequences of being in a premarital relationship.

What is the difference between false promise of marriage' vs 'breach of promise'?

- Both are distinguished on the basis of proving if the man intended to marry at the time of engaging in sex. They are dealt under two parameters.

- **Rape-** If the promise was false, with the intention of being broken later on, this would disregard a woman's consent through a misconception of fact and would be considered rape.
- **False promise-** The false promise itself must be of immediate relevance, or bear a direct nexus to the woman's decision to engage in the sexual act, as argued in Sonu alias Subhash Kumar vs State of U.P. And Another in 2019.
- **Supreme Court observations-** It observed that
 - **False promise-** It is given on the understanding by its maker that it will be broken.
 - **Breach of promise-** It is made in good faith but subsequently not fulfilled.
- **Activists argument-** 'Circumstances' are shorthand for social norms that uphold the status quo, reinforcing gender roles, patriarchy and caste lines.
- **Consensual sex-** The Supreme Court in 2022 held that consensual sex on genuine promise of marriage does not constitute rape.
- The court, in such cases, must very carefully examine whether the complainant had actually wanted to marry the victim or had mala fide motives and had made a false promise to this effect only to satisfy his lust.

What are the issues involved in proving 'intention' to marry?

- **Central issue-** It involves
 - How consent is obtained – through deceitful means, or by misconception
 - Whether the man ever intended to marry the woman.
- **Codification of offence-** Section 69 in the BNS codifies the offence instead of creating a new one.
- In its present form, the Bill doesn't dissolve the confused distinction between 'false promise' and 'breach of promise'.
- **Affect women autonomy-** Section 69 if unscrutinised may promote restrictive ideas about women, marriage and consent which hinder women's autonomy and re-victimise them.
- **Victim blaming lens-** Delhi High Court verdict on pre-marital sex shifts the burden to women to prove their consent is vitiated.
- **Law as weapon-** The women may use the law as a weapon for vengeance and personal vendetta.
- **Promotes endogamy-** The law shifts the conversation away from the real harm and abuse that women face.
- **Caste factor** – Taking the "impossibility of an inter-caste marriage" as a ground to acquit the accused of rape in fact amounts to upholding the archaic practice of marrying within one's own caste.

20. Creche Facilities in India

Despite the significant role the crèches play in regulating women's mobility within the economy, inadequate funding and poor compliance with rules are plaguing the childcare infrastructure.

How the crèche scheme evolved in India?

- A crèche is a facility which enables parents to leave their children while they are at work and where children are provided stimulating environment for their holistic development.
- **RGNCs-** The Rajiv Gandhi National Crèche Scheme (RGNCs) was launched in 2006 by the Ministry of Women and Child Development to provide affordable childcare facilities to working mothers.
- **National Crèche Scheme (NCS)-** From 2017, RGNCs is being implemented as a Centrally Sponsored Scheme to provide day care facilities to children of working mothers.
- **Mission Shakti-** In 2022, National Crèche Scheme (NCS) was revised and subsumed as part of the 'Palna' scheme under Mission Shakti.
- **Aim-** To provide day-care facilities for children (6 months to 6 years) of working mothers and to improve nutrition and health status of children.
- The NCS falls under the umbrella of Integrated Child Development Services (ICDS) under the Ministry of Women and Child Development (MWCD).
- It provides support to women of low-income groups who go to work at least 15 days a month, or 6 months a year.
- **Availability-** 7.5 hours a day, 26 days a month
- **Fee-** The subsidised facilities charge
 - Rs 20, a month per child for families below the poverty line
 - Between Rs 100-200 for other families.
- **Function-** Each crèche is required to provide
 - Holistic development of children
 - A space tasked with providing quality nutrition, sleep, education and stimulation activities.
 - A crèche of 25 children should at least have one crèche worker, helper and doctor.
- **Funding-**
 - 60% from Union Government,
 - 30% from State Government
 - 10% from individual NGOs.
- **Role of State Governments-** They were made responsible for making, enforcing and monitoring the relevant rules.

What are the laws that govern childcare facilities?

- **MGNREGA**- It is the only Act in the country that legalises support for childcare in the unorganised sector, by including the provision for crèches.
- It recognises both the work-related rights of women, as well as their right to provide adequate nutrition and care for their infants.
- **Maternity Benefit (Amendment) Act of 2017** - It was enacted to include provisions for crèche facilities at the place of work in every establishment with 50 or more employees.
- **Rules for crèche facility**-
 - **Eligibility**- To all employees including temporary, daily wage, consultant and contractual personnel,
 - **Timing**- The facility should operate on an 8 to 10-hour shift.
 - **Visits**- It also entitles women to 4 visits a day and intervals for rest.
- **New Labour Code on Social Security**- It requires the governments, NGOs or private entities to provide crèche facility located within the establishment or at an easily accessible distance for employees including a woman working from home.
- **The Factories Act of 1948**- Employers of factories with more than 30 women workers shall maintain a suitable room for the use of children under the age of 6 years.
- **The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996**- It requires a facility if 50 female building workers are employed in a construction site.
- **Shops Establishment Acts**- States like Maharashtra and Gujarat have identified crèche-related provisions in their respective Shops and Establishment Acts.

What are the issues faced by India's crèche system?

- **Non-Functioning**- Between 2015 and 2020, more than 72% of functioning crèches have shut down, per government data.
- **Fund deficit**- Insufficient and delayed allocation of funds has remained a key hindrance to the scheme's functioning.
 - Revised budget estimates for NCS were brought down to Rs. 65 crore from Rs.200 crore.
- **Lack of utilisation**- Only a small proportion of the allocated budget was utilised.
 - Out of the revised budget allocation of Rs 4 crore, no money was spent in FY 2022.
- **Intense lockdown**- The crèches were closed during the COVID-19 lockdown and hence no funds were allocated during 2021-22.

- **Poor compliance-** 2018 report found that 75% of the employers in the formal sector interviewed said that there are no crèche facilities provided in their establishments.
- **Lack of data-** There is no centralised data maintained by the firms employing more than 50 employees and crèche establishment centres.
- **Unavailability-** In a survey of 300 women it found that they made a negligible use of childcare facilities due to lack of availability.
- **Lack of awareness-** The 2018 study, looked at creche facilities in Uttar Pradesh and Rajasthan, found that 53% of women in Udaipur were aware of the provision of crèche facilities.
- **Operational challenges-**
 - Inadequate staffing in some day-care centres.
 - Infrastructure deficit to manage young children who need a special diet or close supervision.
 - Incompatible working times of women in varied sectors
 - Space constraints
- **Familial acceptance-** Women were told they would be responsible “if anything happens to the child,” which discouraged them from using these facilities.
- **Eligibility criteria-** They are not universal, leading to the exclusion of several women workers such as home-based workers, vendors, domestic workers, self-employed etc.,

How do childcare impact working women?★

- **Triple burden-** Women face a ‘triple burden’ of house chores, paid labour and child care.
- **India’s Time Use Survey Analysis-** It showed that the working women between 15 to 60 years old spend twice the amount on unpaid domestic work like caregiving, cleaning, cooking.
- **Motherhood -** World Bank report found that the urban women with children less than 6 years of age had lower participation in the workforce.
- **Drop out from workforce-** The pandemic, and subsequent closure of schools and day care centres caused further dropping out from the labour force.
- **Informal sector-** ‘Motherhood penalty’ plays out differently, where women make concessions by taking up flexible, low-paying work or being self-employed.
- **Value to women work-** A global review of policies in low- and middle-income countries found that welfare schemes sees women as more than ‘mothers’ and assigns value to ‘women’s work’.

What lies ahead?

- There is a need to go beyond recognising and reducing unpaid care work for women to redistribute the gendered burden of children.
- Accessible and affordable creche facilities can reap a “triple dividend” where
 - Women’s work and mobility are encouraged
 - Women are integrated into the economy
 - Maternal and child health is simultaneously looked after

21. G20 Summit 2023 key takeaways

The recently concluded G20 Summit at New Delhi saw the participation of leaders from the most powerful nations leading to the adoption of New Delhi Declaration.

G20

The G20 countries together account for 85% of the global GDP, over 75% of global trade, and about 2/3rd of the world population.

- It is an international forum that brings together the world's leading industrialised and emerging economies.
- **Launch-** Established in 1999 after the Asian financial crisis as a regular forum for Finance Ministers and Central Bank Governors.
- **Aim-** To study, review, and promote high level discussion of policy issues pertaining to international financial stability.
- **Objectives-**
 - Policy coordination between its members in order to achieve global economic stability, sustainable growth;
 - To promote financial regulations that reduce risks and prevent future financial crises; and
 - To create a new international financial architecture
- **Member-** It comprises of 19 countries (Canada, France, Germany, Italy, Japan, UK, US, Russia, Australia, Canada, Saudi Arabia, India, South Africa, Turkey, Argentina, Brazil, Mexico, China and Indonesia) and European Union.
- The group does not have permanent secretariat.
- **Presidency-** The President is chosen by a rotation system amongst the member countries.
 - India holds the Presidency of the G20 from December 2022 to 30 November 2023.
- **Troika-** It comprises of the past, present, and future presidents.
 - Troika 2023 includes Indonesia, India, and Brazil.
- **Guest-** Every year, the host country chooses other guests.

- Spain always participates in the G20 summits.
- **Working structure-**
 - **Finance track-** Meets 4 times in a year.
 - **Sherpa track-** Established after the inception of G20 Leaders' Summit in 2008. It covers non-financial issues.
 - **Engagement groups-** An unofficial track comprising non-government participants from each member country.

What does G20 Presidency entail?

- The Presidency
 - Is responsible for bringing together the G20 agenda, organising its workings
 - Gets to host various meetings and the G20 Leaders' Summit
 - Is in charge of all logistics and in absence of a permanent secretariat, provides the human and material resources to successfully conduct the workings of the forum
 - Has the prerogative to send invitations to guest countries and organisations to take part in G20 processes for the year
 - Allows the country to determine the workings of the group for a year.
- India's G20 presidency resulted in adoption of **New Delhi Declaration**.

Key outcomes of New Delhi Declaration

- India achieved a unanimous "New Delhi Leaders' Summit Declaration" on all developmental and geopolitical matters.
- The declaration reflects India's motto of "Sabka Saath, Sabka Vikas, Sabka Vishwas" – "Together with all, Development for all, Trust of all", which resonates with the spirit of multilateralism and inclusiveness.

Major misses in the G20 Summit

- **Transport corridor** - There were no details about financing or a time frame for the project that involved laying down railway lines in the Middle East and then connecting them to India by port.
- **Biofuel Alliance** - India currently battles deep malnutrition, hyper food inflation and bad harvests.
- Converting arable land for ethanol production seems to please the US which has major interest in biofuel.
- **Climate change** – The G20 nations collectively contribute to approximately 80% of global emissions.

- However, the leaders at the G20 Summit did not reach a consensus on the phase-out of fossil fuels.
- It also did not provide any plan to amend existing policies and targets in order to achieve the target of ramping of renewables.
- **Absence of leaders**- This year's summit is notable for the absence of Chinese President Xi Jinping and Russian President Vladimir Putin.
- **Global financial system reforms** - The summit talked about restructuring the global financial system that was devised in the Bretton Woods Conference at the end of World War II but there are no timelines or an action plan.
- **Debt** - Relief is needed for the countries struggling with debt row, but no concrete steps were announced.
- International aid agency Oxfam called the summit “uninspiring and underwhelming” with no action being taken to tackle poverty, inequality and climate change.
- **Russia Ukraine War**- Ukraine criticised the New Delhi Leaders' Declaration as it did not explicitly mention Russia's aggression towards Ukraine.

What lies ahead?

- **2024 Presidency**- India has formally handed over the G20 presidency to **Brazil**.
- The next G20 summit is in Rio de Janeiro, Brazil, in 2024, with President Luiz Inacio Lula da Silva taking over the presidency.
- **Agenda priorities**-
 - Social inclusion and the fight against hunger
 - Energy transition and sustainable development in its social, economic and environmental aspects
 - Reform of the global governance institutions

22. Citizenship, Corruption, Reservation: three major cases before Supreme Court

The Supreme Court has constituted a Constitutional Bench to hear cases related to Citizenship, Corruption and Reservation.

What are these cases?

- **Challenge to the constitutional validity of Section 6A of The Citizenship Act, 1955.**
- **Extension of reservations in Lok Sabha and state legislatures for the Scheduled Castes (SCs) and Scheduled Tribes (STs).**
- **The legal immunity enjoyed by Members of Parliament (MP) and Members of Legislative Assembly (MLA) from being prosecuted for offences such as offering or accepting bribes for casting votes.**

Section 6A of The Citizenship Act, 1955:

- Section 6A was introduced in the **The Citizenship Act, 1955** law after the **Assam Accord** was signed between the **Government of India** and the **leaders** of the **Assam movement** in **1985**.
- It describes “**Special provisions** as to citizenship of persons covered by the **Assam Accord**”.
- All those who **Entered Assam** on or **after January 1, 1966**, but **before March 25, 1971**, from the **specified territory** and since then are **residents of Assam**, **must register themselves** under specified rules for citizenship.
 - Specified territory include **all territories of Bangladesh** at the time of commencement of the **Citizenship (Amendment) Act, 1985**.

About The Citizenship Act, 1955:

- The Citizenship Act, 1955 provides **various ways** in which **citizenship** may be **acquired**.
- It provides for **citizenship by birth, descent, registration, naturalization** and by incorporation of territory into India.
- It regulates the registration of **Overseas Citizen of India Cardholders (OCIs)**, and their rights.
 - An OCI is entitled to some benefits such as a **multiple-entry, multi-purpose lifelong visa to visit India**.

Reservation of seats and special representation in Lok Sabha and Assemblies:

- The Constitution (**79th Amendment**) Act, 1999 allowed **reservations** given to **SCs, STs, and Anglo-Indians** in **Lok Sabha** and **state legislative assemblies** to be **extended beyond the 10-year period**, as provided under **Article 334 of the Constitution**.

Article 334:

- Article 334 deals with the **reservation of seats and special representation** in Lok Sabha and Assemblies.
- It was initially meant to continue for a **period of 10 years**, but subsequent **amendments** like **The Constitution (95th Amendment) Act, 2009**, extended reservations to groups like the **Anglo-Indians, SCs, and STs**.
- In 2020, through **The Constitution (104th Amendment) Act, 2019**, reservations were extended to **SCs and STs** for again, but the **reservations for the Anglo-Indian groups** were **discontinued**.

Article 194 (2) of the Constitution:

- **Article 194 (2) of the Constitution** confers **immunity** on the **Members of the Legislative Assembly** from being **prosecuted in a criminal court** for an offence involving the **offering or acceptance of a bribe**.
- Article 194 (2) states:
 - **No member of the Legislature** of a State shall be **liable to any proceedings** in any court in respect of **anything said** or any **vote given** by him in the Legislature or any committee thereof.
 - No person shall be **liable in respect of the publication** by or under the authority of a House of such a Legislature of any report, paper, votes, or proceedings.
- In **P V Narasimha Rao v. State** court ruled that under the Constitution, parliamentarians were entitled to **immunity against criminal prosecution** concerning their **speech** and **votes** in the **House**.

23. Fake News

Recently, a TV anchor was booked by Karnataka Police for allegedly spreading misinformation and fake news.

Fake news

- **Fake news** - It refers to false reports or misinformation shared in the form of articles, images, or videos which are disguised as real news.
- **Aim-** To manipulate people's opinions for political or commercial gain.
- **Types-** There are 4 common types of fake news.
 - **Targeted misinformation-** Fictitious piece of information shared for self-serving interests.
 - **Fake headlines-** Headlines depicting fictitious facts to generate attention called as clickbait headlines.
 - **Viral posts-** The large social networks favour shares, likes, and followers.
 - **Satire-** Satirical news pick up on current affairs and news items and mix them with fictitious, and often irrational events.

Consequences of fake news

- **Infodemic-** It is too much information including false or misleading information in digital and physical environments during a disease outbreak.
 - For example, rumours about COVID vaccine, made public hesitant to put vaccine.

- **Mob lynching-** The 24-year-old Tabrez Ansari was brutally beaten by a mob in Jharkhand for alleged theft, eventually leading to his death.
- **Communalism-** Targeting particular religion tends to create unrest situation.
 - Example- Rumours that Muslims were spreading COVID.
- **Media distrust-** It disrupts the public confidence over the media.
- **Undermine democracy-** It erodes the public trust in democracy, people are the core in a country if they are delivered fake news, it erodes public trust in the institution of democracy.
- **Spread hatred-** Fake news act as a platform for harmful conspiracy theories and hate speech.
- **Digital wildfire-** World Economic Forum's Global Risks Report in 2013 warned that misinformation could spark "digital wildfires" in our hyper-connected world.

What are the legal provisions available to tackle fake news?

Legislative measures

- Fake news is considered as a crime under both the Indian Penal Code and the Information Technology Act, 2000.
- **Disaster Management Act, 2005-** Section 54 says that if any person circulates any fake news or warning as to disaster, or regarding its severity or magnitude, which leads to panic among the public, then such person shall be punished with one year of imprisonment or with fine.
- **The Digital Personal Data Protection Bill 2023** - It has provisions to curb the misuse of individuals' data on online platforms.

Other Measures

- The Government has set up of a Fact Check Unit under the Press Information Bureau.
- It has notified the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, under the Information Technology Act, 2000.
- Some well-known initiatives are, the launch of a chatbot named 'MyGov Corona Helpdesk' by WhatsApp in partnership with the health ministry to provide accurate information.
- The government has also imposed limitation on the forward of WhatsApp messages.

The **Shreya Singhal v. Union of India** case has exempted the intermediaries from incurring any liability for the content posted by the third parties.

What lies ahead?

- Karnataka oversight panel was constituted to curb fake news and menace of misinformation especially in digital platforms, without curbing the freedom of expression.
- It is necessary to enlist the support of social media in calling out fake speech.
- The principle must be to identify what is false and trust the people.

24. Relevance of Constitution Benches in the Supreme Court

- CJI D.Y. Chandrachud, took a moment to address a lawyer's misconceptions regarding the purpose of Constitution Benches in the Supreme Court.

Constitution Bench

- The constitution bench is the name given to the benches of the Supreme Court of India.
- The Chief Justice of India has the power to constitute a Constitution Bench and refer cases to it.

Constitution benches are set up when the following circumstances exist:

1. **Interpretation of the Constitution:** Article 145(3) provides for the constitution of at least five judges of the court which sit to decide any case "involving a substantial question of law as to the interpretation" of the Constitution of India.
 2. **President of India seeking SC's opinion:** When the President has sought the Supreme Court's opinion on a question of fact or law under Article 143 of the Constitution. Article 143 of the Constitution provides for Advisory jurisdiction to the SC. As per the provision, the President has the power to address questions to the apex Court, which he deems important for public welfare.
 3. **Conflicting Judgments:** When two or more three-judge benches of the Supreme Court have delivered conflicting judgments on the same point of law, necessitating a definite understanding and interpretation of the law by a larger bench.
- The Constitution benches are set up on ad hoc basis as and when the above-mentioned conditions exist.
 - Constitution benches have decided many of India's best-known and most important Supreme Court cases, such as:

1. K. Gopalan v. State of Madras, 1950 (Preventive detention)
2. Ashoka Kumar Thakur v. Union of India, 1972 (OBC reservations) etc.
3. Kesavananda Bharati v. State of Kerala, 1973 (Basic structure doctrine) and

Critique and Response

- **A Lawyer's Concern:** A litigant had expressed concerns in a letter to the top court's Secretary General, suggesting that the court was investing excessive time in Constitution Bench cases, neglecting public interest petitions that directly impact common individuals.
- **Court's Defense:** CJI challenged this notion, emphasizing that not all Constitution Bench cases revolve around the interpretation of the Constitution.
- **Examples Matter:** He provided an example of a recent Constitution Bench case concerning whether a person holding a light motor vehicle license can operate a commercial vehicle. This directly affects the livelihood of countless drivers across the nation.

CJI Dispelling Misconceptions

- **Not Just "Fancy" Matters:** CJI clarified that the Supreme Court doesn't convene Constitution Benches solely for matters detached from the everyday concerns of ordinary citizens.
- **Voice of the Nation:** He highlighted instances like the Article 370 abrogation challenge, where the court engaged with the "voice of the nation." Stakeholders from the Valley actively participated in extensive hearings.

Arguments against such hearings

- **People's Perspective:** The Advocate clarified that his objection wasn't against the court hearing Constitution Bench matters but rather the court's engagement in public policy issues without adequate public input.
- **Court's Response:** CJI countered this argument, citing the Article 370 case as an example where groups of individual interveners from the Valley actively presented their perspectives to the court.

Conclusion

- **Balancing Act:** CJI's remarks underscore the delicate balance between addressing constitutional matters and matters of public interest, highlighting that both have their place in the Supreme Court's agenda.
- **Inclusive Justice:** The exchange between the Chief Justice and the lawyer reflects the importance of ensuring that the court's decisions consider the

perspectives and concerns of the broader public, especially in cases with significant societal impact.

25. Committee on Prison Reforms

The Supreme Court sought views of the Centre and the States on Justice Amitava Roy committee report which was submitted in 2022.

Key findings of the committee

- **Overcrowding-** The highest rate of overcrowding was observed in district prisons (148%, central prisons (129%) and sub-prisons (106%).
- **Urgent action-** The living conditions in jails are not comparable to those envisaged under the Model Prison Manual, 2016 and require urgent and result-oriented attention.
- **Infrastructural deficit-** The lodging areas in almost all the jails visited, though in varying degrees, did present a pitiful state of affairs.
- **Regulatory constraints-** Many construction projects are pending approval at the higher levels after having been forwarded by the departmental heads.

Gender disparity in prison

- **Prison population-** By 2019, women accounted for 4.2% of the total prison population.
- **Infrastructural deficit-** 75% of female wards in prison have to share kitchens and common facilities with male wards.
- **Women exclusive prison-** Only 18% of women prisoners are allotted exclusive women's prison facilities, as only 15 states and UTs have functional women's prisons.
- **Access to sanitary napkin-** Less than 40% of prisons in the country provide napkins to female inmates.
- **Training-** There is a lack of gender-specific training, the matrons haven't been instructed on how to search women.
- **Poor grievance redressal mechanism-** It also states that women inmates are allowed to file complaints against the jail staff for any form of abuse or harassment only in 10 states and 1 UT.
- **Poor health access-** There is a lack of separate medical and psychiatric wards for women inmates, "basic minimum facilities" for child delivery, and healthcare professionals.

26. UN Cyber Crime Convention

- The Union Home Ministry recently reviewed the draft of the UN Cyber Crime Convention.
- The purpose of this review was to assess the necessary changes in India's existing systems if the convention is signed and ratified by the country.
- India enacted the Digital Personal Data Protection Act in August, ushering in a framework for personal data protection within the country.
- This legislation allows personal data to be processed in the interest of India's sovereignty, integrity, and state security while fulfilling legal obligations.
- Notably, it also mandates that firms disclose to users the identity of other firms entrusted with their data for processing.
- However, the Act explicitly exempts firms from disclosing or sharing data in the case of lawful interception of data.

India's position on the Convention

India put forth several key positions:

1. **Deleting Data Transfer Clause:** India advocated for the deletion of a clause that encourages state parties to "establish bilateral or multilateral arrangements" to facilitate the transfer of personal data. This underscores India's emphasis on the sovereignty of its data and its desire to maintain control over cross-border data transfers.
2. **Authorization for Data Transfer:** India expressed its agreement with the clause stating that state parties may transfer personal data to a third country or an international organization only with the prior written authorization of the original transferring state party, subject to effective and appropriate safeguards. This reflects India's commitment to ensuring data security and responsible handling.
3. **Designation of Points of Contact:** The draft convention outlines that each state party should designate a point of contact available 24/7 to provide immediate assistance for investigations, prosecutions, or judicial proceedings related to cyber criminal offenses. This demonstrates India's commitment to effective cooperation in addressing cybercrimes.

27. The New Post Office Bill, 2023

The new Post Office Bill (2023) recently introduced in the Rajya Sabha seeks to replace the **Indian Post Office Act (1898)** in the light of the changing role of post offices.

Key features of the bill:

- **Exclusive privileges of the central government:** The Act provides that wherever the central government establishes posts, it will have the exclusive privilege of conveying letters by post, as well as incidental services such as receiving, collecting, sending, and delivering letters.
- **Services to be prescribed:** The Act specifies the services provided by the Post Office to include:
 - The delivery of postal articles including letters, postcards, and parcels, and money orders.
 - The Bill provides that the Post Office will provide services prescribed by the central government.
- **Powers to intercept shipments:** The Act allows for the interception of a shipment being transmitted through the post on certain grounds.
 - An interception may be carried out on the occurrence of any public emergency, or in the interest of public safety or tranquillity.
 - Such interceptions may be carried out by the central government, state governments, or any officer specially authorised by them.
- **Director General to make regulations regarding services:** The Act, as well as the Bill, provides for the appointment of the Director General of Postal Services.
 - Under the Act, the Director General has powers to decide the time and manner of delivery of postal services.
 - Under the Act, the central government can notify charges for postal services through notifications.
- **Examination of shipment prohibited under law or liable for duty:** Under the Act, an officer in charge of the Post Office may examine a shipment if he suspects that it contains goods which are prohibited, or are liable to be paid duty upon.
 - The officer must send a notice to the addressee inviting him to attend the examination in person or by agent.
 - The Director General may direct the presence of two witnesses in the absence of the addressee.
 - The Bill removes the powers of examination instead provides that in such cases, the central government may empower an officer of the Post Office to deliver the shipment to the customs authority or any other

specified authority. The authority will then deal with the item in question.

- **Removal of offences and penalties:** The Act specifies various offences and penalties. For instance, theft, misappropriation or destruction of postal articles by an officer of the Post Office is punishable with imprisonment up to seven years and a fine.
 - Sending certain prohibited items through post is punishable with imprisonment up to one year, a fine, or both.
 - The Bill does not provide for any offences or consequences, except one.
- **Exemptions from liability:** The Act exempts the government from any liability related to the loss, mis delivery, delay or damage to a postal article.
 - This does not apply where the liability is undertaken by the central government in express terms.
 - Officers are also exempt from such liability unless they have acted fraudulently or wilfully.
 - However, it provides that instead of the central government, the Post Office may prescribe the liability regarding its services.

Significance of the bill:

- **Authority:** While the 1898 Act had focused only on mail services, the new post office Bill authorized the Director General of Postal Services to make regulations related to activities necessary for providing various such other services as the central government may prescribe, and to fix charges of them.
- **Revision of Charges:** This provision is important as parliamentary approval will not be a prerequisite for revision of charges for any service offered by post offices, including traditional mail services.

Challenges associated with the new Post Office Bill (2023):

- **Differing Legislation:** There is no similar legislation for courier firms.
- **High Control of the Government:** The provision to intercept and open parcels in the course of transmission by the couriers would have given teeth to the Bill to control the movement of contraband goods in parcels.

Way Forward:

The bills brings welcome flexibility and modernization to India's postal services. The Bill represents a positive step towards modernizing India's postal services and adapting to contemporary communication needs challenges like differing legislation for courier firms remain. It balances the need for security with the demands of a competitive market.

28. Constitutional Amendments for State's Ratification

The Law Ministry has recommended the Ram Nath Govind panel to examine if the constitutional amendments required to facilitate simultaneous elections would require ratification by the States.

How the Constitution is amended?

Article 368 in Part XX of the Constitution deals with the powers of Parliament to amend the Constitution and its procedure.

- **Article 368-** It states that the Parliament may, in exercise of its constituent power, amend by way of addition, variation or repeal any provision of the Constitution in accordance with the procedure laid down for the purpose.
- **Limitation-** In the Kesavananda Bharati case (1973), the Supreme Court ruled that the Parliament cannot amend those provisions which form the 'basic structure' of the Constitution.
- **Procedures of Constitutional Amendments-**
- **Simple majority-** It does not require specific quorum.
- It is applicable to
 - **Article 4-** It is related to changes in the organisation of states,
 - **Article 169-** It deals with abolition or creation of Legislative Councils in States,
 - **Schedule VI-** Provisions for the administration of Tribal Areas in the States of Assam, Meghalaya, Tripura and Mizoram.
- **Special majority -** The requirement is applicable only to the final voting stage.
- Lok Sabha rules prescribe adherence to special majority at all effective stages of the Bill.
- It is applicable to
 - Fundamental Rights
 - Directive Principles of State Policy
 - All other provisions which are not covered by the 1st and 3rd categories.
- **Special majority + States ratification-** The moment half of the states give their consent, the formality is completed.
- There is no time limit within which the States should give their consent to the bill.
- **Revoking the ratification -** There is no specific mention in the Constitution about the States revoking their ratification.
- States Ratification was applied for

- **99th Amendment Act**- Established the National Judicial Appointments Commission (NJAC) for the appointment of Supreme Court judges
- **101st Amendment Act 2016**- Introduced GST regime
- **Federal structure**- Specifically listed in Article 368(2) and are commonly referred to as 'entrenched provisions'

The Constituent Assembly debates show that Dr. B.R Ambedkar was in favour of ratification by States for amending certain constitutional provisions to ensure that the federal structure of the Constitution remains unaltered.

Can a constitutional amendment be struck down for want of ratification?

- **Anti-Defection case**- In *Kihoto Hollohan v. Zachillu* (1992), the constitutional validity of the 10th Schedule of the Constitution inserted by the 52nd Amendment Act, 1985 was challenged on the ground that the amendment was not ratified by the States.
- The Court upheld the validity of the Tenth Schedule but declared Paragraph 7 of the Schedule invalid for want of ratification.
- **97th amendment act, 2011**- In *Union of India v. Rajendra N. Shah*, the Court held that the amendment required ratification by at least one-half of the State legislatures as per Article 368(2), since it dealt with an exclusive State subject under 7th Schedule.

52nd Amendment Act, 1985 - Introduced anti-defection law in India which became the part of 10th Schedule of the Constitution.

97th Amendment Act, 2011 - Gave constitutional status to Cooperative Societies.

29. Treaty on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore.

Member countries of the **World Intellectual Property Organization (WIPO)** ended meeting the meeting about a new treaty regarding Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore.

About the Treaty:

- It is a treaty that seeks could ensure **benefits to indigenous communities** that have protected genetic resources and are knowledge holders of how these can be used.

- It addresses issues pertaining to **genetic resources** and **associated traditional knowledge**.
- It mandates **patent applicants** to disclose their utilization of **genetic resources** and **associated traditional knowledge**.

Aims:

- To enhance the **efficacy, transparency and quality** of the patent system with regard to genetic resources and associated traditional knowledge, and
- Prevention of patents being granted for inventions that are not novel or inventive.

Criticism:

- The treaty fails to address the **problem of the biopiracy of genetic resources** and associated traditional knowledge using patents.
- The base text categorically excludes any provision that is already addressed by **other international instruments**.
- This means that **access and benefit-sharing and misappropriation**, which are already dealt with in the **CBD** and other agreements, are **not part of the new treaty**.

Amendments submitted by India:

- The amendments provide a **definition for traditional knowledge** associated with genetic resources.
- Traditional Knowledge associated with Genetic Resources" refers to **evolving, collectively preserved, and generation-transmitted from generation-to-generation knowledge** related to GRs.
- India wants is for **researchers** to disclose the exact source of the **GR**, instead of merely mentioning the country of origin as the **draft treaty stipulates**.

International Opinions

- Generally, countries such as the **US, Japan, and South Korea** oppose any mandatory disclosure requirement.
 - These groups also oppose strong sanctions on patent owners for **non-compliance**.
- On the other hand, the **EU, Australia, and New Zealand** are broadly in favour of such requirements.

Scope of the Treaty

- The scope of the proposed international instrument is **very narrow** as it leaves out Digital Sequence Information.
- This omission means that **disclosure requirements for patents** are based on Digital Sequence.

History of the Intergovernmental Committee:

- The Intergovernmental Committee was **established in 2000** but struggled to **finalize a draft text for this treaty for decades**.
- Text-based negotiations began in **2010** but did not make significant progress.
- Discussions in **2019** led to the preparation of a draft text by the then-IGC Chair.

India's Candidacy

- India withdrew its candidacy to host the **Diplomatic Conference** where the text will be negotiated.

30. Strategic Partnership Council of India-Saudi Arabia

Saudi Arabia's Crown Prince and Indian Prime Minister have recently co-chaired the **first summit-level meeting** of the **India-Saudi Arabia Strategic Partnership Council (SPC)**.

India-Saudi Arabia Strategic Partnership Council (SPC):

- It was set up in **2019** to establish a **high-level council** to steer the **Indo-Saudi relationship**.
- Saudi Arabia has formed such partnerships with **UK, France, China** and **India**.
- **Two main pillars**:
 - Committee on **Political, Security, Social** and **Cultural** Cooperation
 - Committee on **Economy** and **Investments**.
- SCP came just after announcement of the India-Middle East-Europe Economic Corridor (IMEC).

India-Middle East-Europe Economic Corridor (IMEC):

- It is an Eastern Corridor, connecting **India** to the **Gulf region** and a Northern Corridor connecting the **Gulf region** to **Europe**.
- It will include a **railway and ship-rail transit network** and road transport routes.

- It is signed by India, USA, Saudi Arabia, UAE, European Union (EU), Italy, France and Germany.

Key highlights of the meeting:

- Implementation of the **\$50-billion West Coast refinery project**, and identified energy, defence, semiconductor and space as areas for intensified cooperation.
- Agreement to diversify the current status of their **hydrocarbon relationship** into a “**comprehensive energy partnership**” and signed pacts to boost cooperation in areas of **digitisation** and **investment**.
- Areas of cooperation such as energy, **defence**, security, education, **technology**, **power** grid, gas grid, optical grids, **fibre** networks, transportation, **healthcare**, **tourism** and **culture** were identified in the talks.

West Coast refinery project:

- It is a **\$50 billion trilateral project** between **ARAMCO**, **ADNOC** and **Indian companies**.
- It is India's **first and largest** greenfield refinery project with a production capacity of **60 million tonnes per annum** to be built on the **Maharashtra coast**.
- It will be built by Indian Oil Corporation (**IOC**), Bharat Petroleum Corporation Ltd (**BPCL**) and Hindustan Petroleum Corp Ltd (**HPCL**) from India, and Saudi Arabian Oil Co (Saudi Aramco) and Abu Dhabi National Oil Co (ADNOC).

31. India's Support for a Multipolar World : **Success at the G-20 summit**

- India Shines at the G-20 Summit, Champions Multilateralism and Multipolarity
- The recent G-20 summit held in India, especially the New Delhi Leaders' Declaration (NDLD), has reaffirmed the vitality of multilateralism on the global stage. Despite challenges, India's diplomatic efforts, rooted in its principles of multilateralism, multipolarity, and the middle way, bore fruit at the summit.

“In a world that often resembles a dysfunctional global family, India's diplomatic approach at the G-20 serves as a beacon of hope for effective global governance.”
UN Secretary-General António Guterres

Multilateralism: The Key Driver

- **Concessions for Consensus:**
 - The commitment to uphold multilateralism was pivotal in achieving consensus at the G-20. The Western bloc, including G-7 countries, the European Union, and allies like Australia and South Korea, made significant concessions by agreeing to omit direct references to Russia in paragraphs concerning the Ukraine conflict.
 - This collaborative approach was driven by the shared goal of preserving the G-20 as a crucial platform for global cooperation.
- **Preservation of the G-20:**
 - The absence of a joint declaration would have cast doubt on the G-20's future, potentially leading to fragmentation into distinct blocs, including the G-7 and BRICS.
 - The G-7 and BRICS had already expressed their positions on the Ukraine conflict. Thus, achieving consensus at the G-20 reinforced its relevance as a forum encompassing diverse perspectives.
- **Role of Developing Nations:**
 - The Troika-Plus, consisting of Indonesia, India, Brazil, and South Africa, all of which are hosting or future hosts of the G-20, played a crucial role in formulating a winning approach to the Ukraine issue.
 - This highlighted the multilateral heft of emerging economies and their contribution to consensus-building.

India's Support for a Multipolar World

- **India's Advocacy:** India's consistent support for a multipolar world order stood out at the G-20. In a world where the U.S. pursued unipolarity, China aimed for bipolarity, and India championed multipolarity, India's stance gained prominence.
- **Global Shifts:**
 - The recent history of international relations saw the U.S. temporarily withdraw from various multilateral agreements and organizations during the Trump era, causing concern about a potential decline in U.S. global leadership.
 - China's rapid ascent brought both influence and unease due to its actions during the COVID-19 pandemic and aggressive behavior toward neighboring countries, including India.
- **The Rise of the Global South:**

- The Global South, comprising over 125 countries, emerged as a potent voice in global affairs. Despite disparities in wealth, the Global South's collective influence reshaped global priorities in areas such as development, climate change, health, and digital access.
- India's active involvement with the Global South, including its membership in the African Union, bolstered its position at the G-20.

The Middle Way: A Key to India's Diplomatic Success

- **India's Tradition:**
- India's diplomatic success at the G-20 can be attributed to its long-standing tradition of eschewing alliances and pursuing a middle path in global disputes.
- This approach sometimes requires making compromises, such as maintaining ties with Russia and not inviting Ukraine's president to address the G-20.
- However, it positions India as a bridge between the Global South and North, East and West.
- **A Balancing Act:** In a polarized world, the role of bridging divides is indispensable. India's ability to balance between diverse interests makes it a valuable mediator and consensus-builder on the global stage.

Conclusion

- The G-20 summit in India exemplified the enduring importance of multilateralism, multipolarity, and the middle way in diplomacy. India's success in fostering consensus and maintaining the unity of the G-20 underscores the significance of these principles in addressing global challenges.

32. Regulatory Mechanism and Selective Banning of OTT Services

Recently, Telecom Regulatory Authority of India (TRAI) released a consultation paper on 'Regulatory Mechanism for Over-The-Top (OTT) Communication Services, and Selective Banning of OTT Services'.

OTT

- OTTs are Over-The-Top media services that provides audio-visual streaming services directly to customers over the web/internet.
- Examples- Disney+, Hulu, HBO Max, Amazon Prime Video, etc.

Significance of OTT

- **No pauses** - OTT technology will adjust to the network performance of the entire chain in real-time so that the video and audio are delivered without pauses caused by buffering.
- **Multitude of options** - With OTT video delivery technology, people have the ability to view content on a variety of platforms such as: Smart TVs, Roku, computers, tablets, mobile phones, or gaming consoles.
- **Control over choosing the content** - They also have the option to access multiple distributors for specialized programs and view channels by “app switching”.
- **Overcomes the limitations of STB** - OTT systems overcome the limitations of the single operator set top box (STB) technology required by IPTV.

Legality of internet shutdowns in India

Selective Banning is the concept of blocking certain OTT services in specific regions or geographies during times, such as that of public unrest or public disorder.

- **Section 144 of CrPC** - Till 2017, shutdowns were imposed largely under Section 144 of the Code of Criminal Procedure (CrPC).
- It gave the police and the District Magistrate the powers in order to prevent unlawful gathering of people and also to direct any person to abstain from a certain activity.
- **The Telegraph Act** - The method to suspend telecom services in case of public emergency or public safety and the suspension of Internet services in India was notified under Section 7 of The Telegraph Act, 1855, in 2017.
- The rules were named Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017.
- The efficient authority who are able to order such directions are:
 - The Secretary in the Ministry of Home Affairs (Central Government)
 - The Secretary of the Home Department to the concerned State Government (State Government)
- The rules mandate that the order passed by the efficient authority must contain reasons for such direction and a copy of the order must be forwarded to a Review Committee by the next day.
- The Review Committee is bound to meet within next 5 working days of the issuance of order and make a record that whether the suspension has been made conforming with the provisions under section 5(2) of the Indian Telegraph Act.
- **Section 69 of the IT Act, 2008** - It allows the government to issue content-blocking orders to online intermediaries such as Internet Service Providers (ISPs), telecom service providers, etc.

Issues with selective banning

- **Effect on fundamental right** – Selective banning of OTTs impinges on the right to speech and trade under Article 19.
- **Technical issues** – OTT service providers often use dynamic IP addresses to thwart cyber-attacks and may even host multiple apps or OTT services on a single IP.
- Blocking of any such specific IP address may lead to unintended blocking of other apps which are using the same IP address as well.
- **Fake information/ misinformation-** Without access to familiar apps, the affected populace may fall prey to disinformation/misinformation or rumours.
- **Disruption of commercial operations** - It would severely disrupt commercial operations of MSMEs, entrepreneurs, exporters, etc. as they often rely on OTT apps for orders, logistics, taxation, and payments.
- **Unsuccessful** - Selective banning is not likely to be a successful policy tool to counter malicious actors at times of public unrest because the banned apps can be accessed using proxy servers or 'virtual private networks'.
- This may lead to copycat versions of popular apps which may not have any local presence within India and might be non-compliant with Indian regulations.

What about the constitutional validity of selective banning?

- **Anuradha Bhasin case 2020**– The court declared the internet to be essential in today's life and thereby freedom of speech and expression and freedom to practice any profession, occupation or trade on the internet is a part of fundamental right under Part III of the Constitution.
- The apex Court further stated that imposition of Section 144 can not be used as a mechanism to avoid genuine protest which is permitted under the Constitution.
- **Proportionality principle** - The court ordered to follow the test of Proportionality to satisfy that no kind of violation of natural justice exists.
- **Supreme Court's triple test** – Lawfulness, necessity, and proportionality are to be analysed to qualify as a 'reasonable restriction' under Article 19 (2) of the Constitution.

What steps can be taken?

- A more balanced and nuanced approach favouring minimal interventions may be adopted by the government.
- The government under Section 69A of the IT Act can direct OTT services to remove specific pieces of content from their platforms than selectively banning entire app or services.

33. Abraham Accords

September 2023 marks an important milestone for West Asia and North Africa - 3 years since the signing of the Abraham Accords.

Abraham Accord

- **Signed in** - 2020
- **Agreement between** - United Arab Emirates, Bahrain and Israel.
- **Mediated by** - The US
- **Objective-** To normalise ties between these Arab Gulf states and Israel.
- Following the signing of the Abraham Accords in 2020, 5 Arab states (**Egypt, Jordan, UAE, Morocco and Sudan**) have established diplomatic ties with Israel.

Background of Israel- Arab relation

- Arab governments refused to extend diplomatic recognition to Israel after its independence in 1948.
- A series of Arab-Israeli wars took place in the decades that followed which includes the Six-Day War (1967) and the Yom Kippur War (1973).
- In 1979, **Egypt** became the first Arab country to conclude a peace treaty with Israel (**Camp David Accords**).
- Israel later agreed to a **two-state solution** with the Palestine Liberation Organization (PLO) in 1993, and, as a result, Jordan concluded a peace agreement with Israel in 1994.
- However, the two-state solution failed to materialize within the intended time frame.
- In 2002, the **Arab League** endorsed a Saudi proposal (known as the **Arab Peace Initiative**) for its member states to establish normal relations with Israel in exchange for an independent Palestinian state.
- Negotiations between Israel and the Palestinian Authority soon dissipated, the proliferation of Israeli settlements compounded the challenges of creating a viable state in the West Bank and the Gaza Strip.

How Abraham Accords promote regional ties among the parties?

- **Diplomatic ties** - It had led to normalising diplomatic ties of Israel with the UAE and two other countries in the region, marking an important shift in the stance of West Asian countries on Israel.

- **Security** - Normalization has opened new opportunities for defense and security cooperation, especially among Israel, Bahrain, and the UAE, which share a common perspective on the security threat posed by Iran.
- **People to people connect** - - It not only connects governments but also brings people together, despite the differences in their language, religious beliefs, cultures and more.
- **Trade** - The scope of trade between Israel and other West Asian countries increased 74% between 2021 and 2022.
- **Tourism** -Number of visits from Israel to the UAE & Bahrain has increased largely.
- **Collaborative projects** -The Prosperity Green & Blue agreement was signed between Israel, the UAE, and Jordan.
- A solar field in Jordan to supply 600 megawatts of electricity to Israel in return for water from Israel.
- **Programmes for Youth** - Youth delegations between two nations have been initiated, encouraging bonds between tomorrow's leaders.
- **Educational collaboration** - Shared educational activities and advance student and professor exchange programme were started.
- **Foster coexistence and religious tolerance** - UAE has incorporated Holocaust education into its school curriculum as a mandatory subject.

How the Abraham Accords benefits India?

- India holds a significant position among Abraham Accord partners.
- **Improved connectivity** - Greater convenience of direct flights between the UAE and Israel, as well as between Israel and Bahrain.
- **Indian students** - They are enjoying increased ease of travel, gaining improved access to Israeli universities and the opportunity to explore international study programmes.
- **Trade** - The normalisation has increased the flow of economic opportunities reaching India.
- Companies from the UAE, Israel, Bahrain, and the U.S., are partnering with the Indian private sector.
- New joint ventures were set in Bahrain, Israel, UAE and India in critical sectors such as clean energy, health, innovation, technology, agriculture, water, trade, tourism, etc.
- **Promoted the I2U2 Group** - I2U2 group, which has been called the "West Asian Quad", comprises of India, Israel, the U.S., and the UAE.
- Its primary focus will be on joint investments in critical areas such as water, energy, transportation, space, health, and food security.

What are the shortcomings of the Accord?

- **Engaging other countries** - Despite some softening in its position on bilateral relations, Saudi Arabia has held firm in its commitment to the pre-existing Arab Peace Initiative (API).
- **For Palestinians** - The stalemate between Israel and the Palestinians is still a hindrance to expanding the circle of normalization.
- None of these deals changed the situation on the ground in the Middle East's hotspots, particularly in Palestine.
- Israel continues to be engaged in systematic ethnic cleansing of Palestinians.
- **Public opinion** - Despite the normalisation efforts, surveys indicate that Arab publics continue to view Israel in a negative light.

34. Immunity of Legislators

Important Question: The Supreme Court of India is trying to answer a significant question: Can lawmakers be prosecuted in criminal courts for taking or offering bribes despite the legal protection they enjoy under Articles 105(2) and 194(2) of the Constitution?

- **Background:** This question arises from a need to re-evaluate a past Supreme Court ruling in the 1998 PV Narasimha Rao vs. State case, which said that lawmakers can't be prosecuted for bribery related to their speeches or votes in Parliament.

Understanding Lawmaker Immunity

- **Constitutional Safeguard:** Constitution provides special protection for lawmakers through Articles 105(2) and 194(2). These articles deal with the powers and privileges of Parliament and state legislatures, and they say that lawmakers can't be taken to court for anything they say or vote on in these bodies.
- **What It Means:** This means lawmakers are safe from legal action for their words and actions inside the Parliament or state legislatures. For example, they can't be sued for defamation for something they say during a debate.

Current Case in the Supreme Court

- **How It Started:** This matter began when, a member of Jharkhand politician, was accused of taking a bribe in exchange for her vote in the 2012 Rajya Sabha elections.

- **Legal Journey:** Soren asked for her case to be dropped, saying she was protected by Article 194(2). But the Jharkhand High Court disagreed in 2014. So, she approached the Supreme Court.
- **Referral to a Bigger Panel:** During the case, it was clear that the issue was very important. In 2019, a Supreme Court Bench suggested that it should be heard by more judges (a larger Bench) because it relates to the 1998 Narasimha Rao decision.
- **What the Supreme Court Just Did:** On September 20, 2023, a five-judge Bench, led by Chief Justice DY Chandrachud, decided to send this issue to a seven-judge Bench for a fresh look. They said it's vital to reconsider the PV Narasimha Rao ruling because it impacts our country's politics.

Why Lawmaker Immunity Matters

- **Protecting Lawmakers:** Articles 105(2) and 194(2) aim to make sure lawmakers can speak and vote freely in Parliament and state legislatures without worrying about legal trouble.
- **Not a Get-Out-Of-Jail Card:** But remember, these rules don't mean lawmakers are above the regular laws of our country. They just make sure lawmakers can do their job without fear.

Reviewing the 1998 PV Narasimha Rao Decision

- **The Big Case:** The PV Narasimha Rao case is all about the 1993 JMM bribery scandal. The politician, who is related to the petitioner in this case, and some MPs were accused of taking money to vote against a no-confidence motion.
- **Different Opinions:** Some judges thought immunity shouldn't cover bribery cases. But most judges thought lawmakers should be protected to make sure they can talk and vote freely.
- **What Happened:** The 1998 ruling in the Narasimha Rao case made it hard to prosecute lawmakers for bribery linked to their work in Parliament.

Conclusion

- **Big Legal Question:** The Supreme Court's decision to send this issue to a seven-judge Bench shows how important it is. They want to decide if lawmakers can be prosecuted for bribery without affecting their ability to do their job.
- **Keeping Democracy Running:** Articles 105(2) and 194(2) are here to make sure our Parliament and state legislatures work smoothly. They let lawmakers speak without fear, but they don't mean lawmakers can break the law.

- **Balancing Act:** What the bigger Bench decides will shape how lawmakers can be prosecuted for bribery, a matter that's incredibly important for India's democracy.

35. One district one product (ODOP) on GeM portal

The Central government recently decided to promote 'One District One Product' (ODOP) on Government e-Marketplace (GeM), an online public procurement platform.

One district one product (ODOP):

- The initiative is aimed at **fostering balanced regional development** across all districts of the country.
- It would enable **selection, branding, and promotion** of at least One Product from each District of the country for enabling **holistic socioeconomic growth** across all regions.
- It was started in **Uttar Pradesh (2018)** by **Ministry of Food Processing Industries** and is derived from the concept of Japan.
- It identified about **1102 products** from **761 districts** across India.
- All products are selected by States/UTs under **Districts as Export Hubs (DEH)**, and **GI-tagged products**.
- The finalized list is communicated to **Department for Promotion of Industry and Internal Trade (DPIIT)** by the relevant state governments.
- It can include perishable Agri produce, cereal-based product, or a food product widely produced in a district and their allied sectors.

Government e-Marketplace (GeM):

- It is a **one stop portal** to facilitate **online procurement** of common use Goods & Services required by **Government Departments, Organizations and Public Sector Underakings (PSUs)**.
- It was launched in **2016**, by the **Ministry of Commerce and Industry**.
- GeM aims to **enhance transparency, efficiency and speed** in public procurement.
- It provides tools of **e-bidding, reverse e-auction** and **demand aggregation** to facilitate the government users achieve the best value for their money.
- The purchases through GeM by Government users were authorized and **mandated by Ministry of Finance** by adding a new Rule No. 149 in the **General Financial Rules, 2017**.

Advantages of GeM for buyers:

- Offers **listing of products** for individual categories of Goods/Services online.

- Makes available **search, compare, select and buy facility**.
- Provides **transparency and ease of buying**.
- Ensures continuous **vendor rating system**.
- Up-to-date **user-friendly dashboard** for buying, monitoring supplies and payments.
- Provision of **easy return policy**.

Advantages of GeM for sellers:

- **Direct access** to all Government departments.
- **One-stop shop** for marketing with minimal efforts.
- One-stop shop for **bids or reverse auction** on products and services.
- **Dynamic pricing**: Price can be changed based on market conditions.
- **Seller friendly dashboard** for selling, and monitoring of supplies and payments.
- **Consistent and uniform** purchase procedures.

Significance of the move:

- It would **brisk business** across government departments and PSUs, and **spread network** of GeM to the **state level**.
- Products like handicraft and pottery (**Moradabad brass and Khurja pottery**) are expected to be pushed in **festivals for corporate gifting**.
- Nearly **350 categories** have been created on GeM and estimated **purchases of ODOP products** and farmer producer organisations (FPOs) could be Rs 878 crore.
- Orders made by government includes **Robusta coffee** from **Wayanad** (Kerala), **Pattachitra** products from **Puri**, **Saharanpur woodcraft** and **silk sarees from Bhagalpur**.
 - **Pattachitra (Odisha)**: It is a **12th century folk art** painted on cloth, reflecting **lord Jaggannath** and **temple traditions** of **Puri**.
 - **Saharanpur woodcraft (Uttar Pradesh)**: It is a **400-year-old** wooden craft mainly done on **sheesham** wood by migrant artisans from **Kashmir**.
 - **Bhagalpuri sarees (Bihar)**: Traditional sarees are prepared from **Tussar silk** for **200 years**.

36. Women's Reservation Bill 2023

Recently, the **Nari Shakti Vandan Adhiniyam (Women's Reservation Bill)**, 2023 was passed in Lok Sabha.

Women's Reservation Bill 2023:

- The Bill seeks to provide a **33% reservation** to women in the **Lok Sabha**, state legislative **assemblies**, and the **Legislative Assembly** of the **National Capital Territory of Delhi**.
 - This will also apply to the **seats reserved for SCs and STs** in Lok Sabha and states legislatures.
- The reservation will be provided for a period of **15 years**, which shall then continue till such date as **determined** by a law made by **Parliament**.
- The quota can come into force only by **2029** since it has to be **implemented** after the **delimitation** of **constituencies** that will be conducted only after the next census
- **Seats reserved** for women will be **rotated** after each delimitation, as determined by a law made by Parliament.

Need for the bill:

- Women account for almost half of India's **950 million** registered voters but make for only **15%** of **parliament** and around **10%** of **state legislatures**, pushing India to the bottom of the **global list** on **gender parity** in legislatures.

Timeline of the Bill:

- **1996:** Bill introduced in **Lok Sabha** by government but after it failed to get approval, it was referred to a **Joint Parliamentary Committee** chaired by **Geeta Mukherjee**.
- **1999:** Re-introduction of the bill in the **13th Lok Sabha session**
- **2002:** It moved the Bill again amid pandemonium in 2002
- **2003:** Bill re-introduced
- **2008:** Bill re-introduced but referred to a **standing committee**
- **2023:** Lok Sabha passed women's reservation bill

37. SDG Summit 2023

In the High-level Sustainable Development Goals (SDG) Summit 2023 held in New York, the world leaders endorsed a resolute political declaration, outlining their shared commitment to create a sustainable and inclusive world by 2030.

SDG Summit

- The 2030 Agenda on Sustainable Development and its 17 SDGs is a global plan of action to drive economic prosperity and social well-being while protecting the environment.
- Countries established the **High-level Political Forum on Sustainable Development (HLPF)** to boost efforts to achieve the goals.
- The HLPF meets every year under the auspices of the **Economic and Social Council**, to review progress, examine obstacles, exchange best practices, and recommend new actions to achieve the 2030 Agenda.
- Countries agreed that every four years, the HLPF will meet under the auspices of the **General Assembly** at the level of Heads of State and Government.
- In 2019, the 1st SDG Summit – the HLPF under the auspices of the General Assembly was convened in **New York** since the adoption of the 2030 Agenda in 2015.
- The 2nd SDG Summit was held in New York and was chaired by the **President of the General Assembly**.
- It resulted in the adoption of the Political Declaration, “Gearing up for a decade of action and delivery for sustainable development”.

Key highlights of the summit

- **Themes**
 - Our shared commitment
 - Our changed world - Progress and remaining gaps and challenges.
 - Call to action – turning our world towards 2030

38. India - West Asia Relations

Recently at the G-20 summit in New Delhi, U.S.-backed infrastructure project was unveiled to connect India, West Asia and Europe with shipping lanes, rail networks, pipelines and data cables.

What is India and West Asia relations all about?

- **West Asia-** It has two distinct regions: Levant and Gulf region.
 - **Levant region-** It includes Israel, Jordan, Lebanon, Palestine, and Syria, and some would include the northern part of Iraq - the area that became part of the Islamic State.
 - **Gulf region-** It comprises the 6 Gulf Cooperation Council (GCC) countries namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates (UAE), Iran, and Iraq.

- **Historical ties** - India had a distinct unique historical relationship with Arab, Turkish, Jewish and Persian civilisations.
- **High profile diplomatic dynamism**- West Asia is a region for India to augment its power rather than to display or assert.
- **Support Palestine cause**- India has always supported the Palestine aspiration for Independent State since Mahatma Gandhi.
- **Comprehensive Security Partnership**- It is a joint India-UAE initiative to promote security and stability in West Asia which was signed in 2017.
- **Economic cooperation**- A Framework Agreement on Economic Cooperation between Republic of India and GCC was signed in 2004.
- **Maritime connectivity**- Development of Chabahar port in Iran would help India bypass Pakistan and increase trade relations with Afghanistan and Iran.
- **Huge remittances**- The remittances from Gulf States contribute a major chunk in India's total share.
- **Abraham Accords**-India's presence in a grouping of the Abraham Accords countries was seen as a legitimate recognition of India's presence in the region.
- **India-Middle East-Europe Corridor**- Announced at the G-20 Summit, the corridor enhances India's standing and also brings India and Europe closer.
- **Compete China**- US wanted to bring India as a bigger, stable partner to write new rules of economic engagement and integration, to compete with China and India seems to utilise this opportunity.
- **International North-South Transport Corridor (INSTC)**- INSTC is a 7,200-km multi-modal transport corridor that connects Russia and India via central Asia and Iran.

What lies ahead?

- India's overall policy towards the region should stay anchored in the idea of multi-engagement – not in appeasing or containing any great power.
- With or without the U.S., or irrespective of China's presence in the region, India should strive to play a major geopolitical role in West Asia, its extended neighbourhood, without upsetting its traditional balance.

39. Tobacco Warnings on OTT Platforms

- The Central government's regulations mandated long-duration smoking warnings for films and TV series on OTT platforms like Hotstar, Amazon, and Netflix.
- Streaming websites voiced objections, raising concerns about user experience.

Recent Development

- According to a recent report, the government has agreed to find “pragmatic solutions” for stricter tobacco warnings on OTT platforms.
- A closed-door meeting saw streaming executives engage with Health Ministry and Information and Broadcasting (I&B) Ministry officials.

Why Smoking Warnings in Indian Entertainment?

- **Linking Health Impact and Public Perception:** The introduction of smoking warnings in Indian entertainment stems from the connection between smoking’s health impact and its portrayal to the public. The goal is to communicate clear information about the health risks associated with smoking and discourage its use.
- **Regulation Evolution:** The Indian government has a history of regulating how smoking is portrayed. The Cinematograph Act of 1952 prohibited the “glamorization” of tobacco in movies, and the Cable Television Networks Amendment Act of 2000 banned tobacco and alcohol advertising on cable TV.

Historical Context

- **Factors Leading to Consensus:** Several factors contributed to a growing national consensus on tobacco control, including increased health awareness, new laws and enforcement, judicial rulings (e.g., the 2008 ban on public smoking), civil society efforts, global support for tobacco control, and the influence of the World Health Organization.
- **COTPA and Health Ministry Notification:** Under the Cigarettes and Other Tobacco Products Act (COTPA), signed into law in May 2003, the Health Ministry introduced a notification prohibiting the display of tobacco products in cinema and television programs.
- **Content Rules:** This notification required films and shows produced before it to include health warnings regarding smoking as a prominent scroll at the bottom of the screen. It also recommended prohibiting smoking in public places and using pictorial health warnings covering 85% of tobacco product display areas.
- **Legal Challenges:** Legal challenges arose as some filmmakers and actors argued that these rules violated their freedom of speech. The Delhi HC quashed the notification in 2009, but the Supreme Court later upheld the rules.

Introduction of Health Spots

- **Consensus-Building Efforts:** Amid legal disputes, I&B Ministry appointed a new minister, leading to attempts to reach consensus. In 2011, the Health

Ministry introduced new rules after consultations with I&B Ministry, aiming to make them more practical and implementable.

- **Health Spots in Old Content:** For films and shows made before these rules, anti-tobacco health spots or messages were required at the beginning and middle of television programs, made available to the Central Board of Film Certification (CBFC).
- **Requirements for New Content:** New films and TV shows with smoking scenes were to provide an “editorial justification” to the CBFC, include anti-tobacco health spots, display a prominent static message during tobacco product scenes, and feature an audio-visual disclaimer on the ill effects of tobacco use.

Implementation Challenges

- A study revealed that while many movies implemented at least one element of the film rules on tobacco imagery, few fully complied.
- Compliance with other aspects of COTPA, such as restrictions on selling cigarettes near schools, has also been lacking.

Debate over OTT Smoking Warnings

- **Content Library Concerns:** I&B Ministry which regulates streaming platforms, expressed concerns about implementing warnings in existing content, foreign content, and health spots. It suggested displaying an appropriate health warning when users log in.
- **OTT Industry Concerns:** In May, India ordered OTT platforms to insert static health warnings and anti-tobacco disclaimers. OTT executives raised concerns about the potential need to edit vast amounts of existing content, impacting user experience and creators’ freedom of expression.

40. India-Canada Relations: The Need for Constructive Engagement

- Indian and Canadian leaders and diplomats have a history of failing to engage constructively, often talking past each other. This disconnect persists today, fueled by differing perceptions and unresolved issues. The recent Nijjar case has brought these tensions to the forefront.
- In the realm of international diplomacy, the relationship between India and Canada has often been marked by a lack of genuine engagement and mutual understanding. Both nations have harbored grievances, with India feeling that Canada has disregarded its concerns, particularly regarding the Khalistan issue, while Canada believes that India fails to grasp its legal and governance framework.

Canada's Stance in the ongoing India-Canada diplomatic tensions

- **Emphasis on the Rule of Law:** Trudeau has emphasized that Canada is a nation founded on the rule of law. He underscores the importance of upholding a rules-based world order.
- **Nijjar Case as a Test:** Canada has made the murder of Hardeep Singh Nijjar a test case for upholding the rule of law and global order. It asserts that harming any of its nationals is unacceptable, irrespective of any grievances India may have.
- **Support from Allies:** Canada's stance in the Nijjar case has garnered support from its allies, including the United States, the United Kingdom, and Australia. These countries endorse Canada's position and call on India to cooperate with Canada in the investigation.
- **Demand for Specific Evidence:** Canada has shared credible allegations with India regarding the Nijjar case. While India dismisses these allegations.

India's Response

- **Rejection of Allegations:** The Indian government has rejected Canadian Prime Minister Justin Trudeau's allegations regarding the Nijjar case as absurd and motivated. India disputes the claims made by Canada and seeks concrete evidence to substantiate these allegations.
- **Offer to Address Concerns:** Despite dismissing the allegations, India has expressed a willingness to examine Canadian concerns if specific evidence is provided. India maintains that it is ready to cooperate on any genuine issues related to its citizens.
- **Assertion of National Laws:** India insists that its national laws cannot serve as a shield for promoting secession or staging protests that glorify violence. It calls for Canada to take legal action against Khalistani propagandists and individuals involved in hate speech and violence on Canadian soil.
- **Open to Diplomacy:** India remains open to diplomatic engagement with Canada to address the Nijjar case and other ongoing issues, emphasizing the importance of resolving disputes through dialogue and cooperation.

Challenges to Constructive Engagement

- **Perceived Racism in Governance:** Some Indians view Canada's approach to governance systems in countries like India as colored by racism. Intrusive questions posed to Indian visa seekers from security services are seen as unacceptable and warrant bilateral discussions.
- **The Khalistan Issue:** India's frustration with Canada regarding the Khalistan issue dates back over four decades. The Canadian Security Intelligence

Service (CSIS) was established in 1984, yet Khalistani activities were not taken seriously, even after instances of terror emerged.

- **Response to Recent Charges:** Trudeau's use of harsh language and the expulsion of a senior Indian diplomat strained the relationship further. A measured Indian response was replaced by a more confrontational approach.
- **Evidence and Judicial Scrutiny:** Canadian officials claim to possess intelligence implicating India in Nijjar's murder but have not revealed details. For a meaningful resolution, this intelligence needs to be converted into evidence suitable for judicial scrutiny.

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- **Canada's Trust Issue:** The Canadian law enforcement system appears to lack trust in the Indian legal system. This is evident in Canada's reluctance to extradite individuals accused of violence and murder in India, especially those with ties to Khalistani activities.
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Way Forward: Need for quiet and constructive diplomacy

- **Private Dialogue:** Both nations should prioritize private, behind-the-scenes dialogue to address their grievances and misunderstandings. Public posturing should be replaced with discreet diplomatic channels where concerns can be discussed openly and candidly.
- **Evidence-Based Engagement:** Canada should provide specific evidence regarding the Nijjar case to India, allowing for a fair and transparent examination of the allegations. India, in turn, should be open to reviewing this evidence objectively.

- **Respect for Sovereignty:** Respect for each other's sovereignty should be paramount. Issues related to visa applications and extradition should be approached in a manner that aligns with international norms while respecting national sovereignty.
- **Cultural Sensitivity:** Both nations should exhibit cultural sensitivity in their interactions. Questions and actions that may be perceived as insensitive should be avoided to prevent further strain on relationships.
- **Leadership Role:** Leaders in both India and Canada should play a key role in setting a tone of constructive engagement. Diplomacy should be marked by measured language and a commitment to dialogue.

Conclusion

- To rebuild strained Indo-Canadian relations, both nations must shift towards a more constructive engagement that acknowledges their respective concerns and grievances. Quiet and mature diplomacy should replace confrontational tactics. In the pursuit of a harmonious relationship, mutual respect and understanding are essential, and only through constructive engagement can these goals be achieved.

GS 3 : Economy, Science and Technology, Environment

1. The Debt-Fossil Fuel Trap

Indebted countries may find it impossible to **phase out fossil fuels** and their transition to **renewable energy**.

The Debt-Fossil Fuel Trap report:

- **Poor countries** with **heavy debts** have been forced to **rely on fossil fuels** for **generating revenue** to **return the loans** taken from richer countries and private lenders to meet various economic exigencies like the pandemic.
- Countries, mostly in the **global south**, may **find it impossible to phase out fossil fuels** and transit towards **renewable energy** as **revenues from fossil fuel projects** are often **overinflated** and require **huge investments** to reach expected returns, leading to further debt.

Understanding the “debt-fossil fuel trap”:

- The global south countries are increasingly being **burdened by enormous debts**.
 - Global south is a term used for **developing, less developing and underdeveloped countries**, located in Africa, Latin America, and Asia.
- Their **external debt payments** (money borrowed from **developed** countries, or multilateral creditors like the World Bank, or private lenders) has gone up by **150%** between 2011 and 2023, reaching their **highest levels in 25 years**.
- The situation is worsened by **extreme weather events**, which force these countries to **borrow more money** as they **lack adequate finances and resources** for adaptation, mitigation and tackling loss and damage.

Extracting more fossil fuels:

- To deal with the mounting debts, these countries have turned to **extracting more fossil fuels**.
- The IMF has also **backed these projects**.
 - **Foreign currency** could be **saved by supplying oil and gas** domestically while additional **foreign currency** can be generated through **oil and gas exports**.
- Proposed benefits may **not** materialize given the **risks of relying on fossil fuel revenues** and huge amount of **investment required** to scale up extraction in the next few years, which will require **taking on more debt** from external creditors.
- The country’s strategy to reduce debt may end up **adding to debt** levels without generating adequate revenue to repay.
- To stop investing in fossil fuels in global south countries, **richer countries and multilateral and bilateral lenders** have financed **fossil fuel projects**, through **loans, adding to debt burdens** and keeping countries **locked in fossil fuel production**.
- **Loan contracts** like **resource backed loans (RBLs)** in which repayment is guaranteed by a **resource-related income stream**, or where a **natural resource asset serves as collateral**.
- In RBLs, **repayment** is either **made directly in natural resources** (in kind) such as oil or minerals, or from a resource-related future income stream.

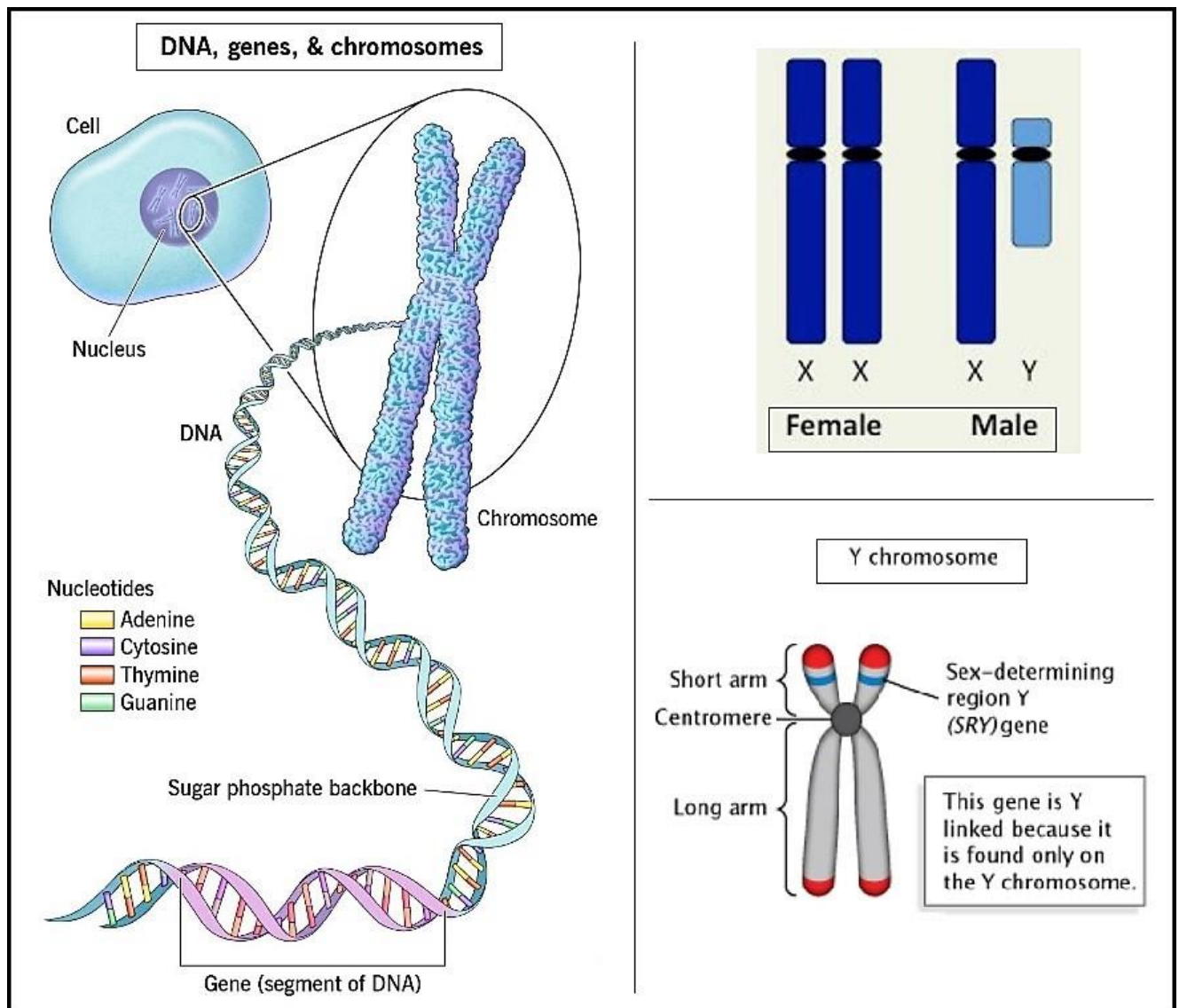
2. Sequencing the Y Chromosome

Scientists have fully sequenced the Y chromosome for the first time, uncovering information that could have implications for the study of male infertility and other health problems.

Y chromosome

DNA is a molecule that carries genetic information for the development and functioning of an organism.

- In the nucleus of a human cell, each DNA molecule is packaged into a long thread like structure called chromosome.
- Most human cells contains 23 pairs of chromosomes. One half of each pair of chromosomes from one parent, while other half comes from other parent.
- The 23rd pair are X and Y chromosomes, often called as *sex chromosomes*. The other 22 pairs called as *autosomes*.
- Females have a pair of X chromosomes, whereas males have X and Y chromosome.
- The Y chromosome is male-determining because it bears a gene called *SRY*, which directs the development of a ridge of cells into a testis in the embryo.
- The embryonic testes make male hormones, and these hormones direct the development of male features in a baby boy.



What is the difficulty in sequencing Y chromosome?

- **Repetition** - The Y chromosome was a particularly hard nut to crack because it is unusually repetitive.
- While all human chromosomes contain repeats, more than 30 million letters of the Y chromosome – out of 62.5 million – are repetitive sequences, sometimes called *satellite DNA* or *junk DNA*.
- Repetitive DNA complicates the assembling of data from genetic sequencing.
- **Palindromes** - The Y chromosome also contains palindromes – sequences of letters that are the same backward and forward, like radar.
- **Degeneration of Proto- Y** - The proto-Y is degenerating at a faster pace, losing about 10 active genes per million years, reducing the number from its original 1,000 to just 27.

- There has been great debate about whether this degradation continues, because at this rate the whole human Y would disappear in a few million years

The Y is the last human chromosome to have been sequenced end-to-end, or telomere to telomere (T2T)

How the scientists unravelled the complex Y chromosome?

- **Sequencing** - Advanced "*long-read*" *sequencing technology* and computational methods enabled researchers to achieve a complete reading of the Y chromosome.
- This accomplishment added over 30 million repetitive base pairs to the human reference genome.
- The new technology has allowed sequencing of bases along individual long DNA molecules, producing long-reads of thousands of bases.
- It effectively dealt with repetitive sequences and transformed raw sequencing data into a usable resource.
- These longer reads are easier to distinguish and can therefore be assembled more easily.
- **Findings**- Overall, the combined research determined that the Y chromosome has 106 protein-coding genes.
- 42 were found that were new, but many still appear to be repeats.

What is the importance of the study?

- **Advanced diagnostics**- The study empowers future sequencing endeavours to explore into health and disease aspects through comprehensive Y chromosome inclusion.
- To study whether loss of the Y chromosome is a biomarker of biological aging or has a direct effect on the health of men.
- **Infertility**- It will help to study conditions and disorders linked to the chromosome, such as lack of sperm production that leads to infertility.
- **Health**- Genes have been identified on the Y chromosomes that have been shown to be required for the prevention of cancer and cardiovascular disease.
- **Dark matter**- It represents the 'dark matter' of the genome. This analysis will allow us to better understand the regions of the Y chromosome that have regulatory functions and may encode mRNA and proteins.
- **Human evolution**- Assembling complete sequences of Y chromosomes across space and time not only helps to investigate sex chromosome evolution but also human evolution.
- **Gene therapy**- It will open up avenues to treat diseases that may be linked to Y chromosomes.

- **Future studies-** The findings provide a solid base to explore how genes for sex and sperm work, how the Y chromosome evolved, and whether as predicted will disappear in a few million years.

3. Curbs on Rice Exports

Recently, government has levied certain restrictions on rice export to check the domestic rise in prices and to ensure domestic food security.

Status of rice production in India

- **Production** - Globally, the top rice-producing country is China, followed by India.
- As per Second Advance Estimates, the estimated production of Rice for 2022-23 is 1308.37 Lakh Tonnes.
- West Bengal is the largest rice producer in India.
- **Rabi season-** According to the 3rd Advanced Estimate of the Department of Agriculture and Farmers Welfare,
 - 2021-2022: Rice production was 184.71 lakh tonnes
 - 2022-23: Rice production was 13.8% less, at 158.95 lakh tonnes
- **Kharif sowing data-** As on August 25, rice is sown on 384.05 lakh hectares this year.
- **Delayed sowing-** In States such as Tamil Nadu where the Samba crop sowing starts usually in August in the Cauvery delta area, there will be delayed sowing due to a shortfall in the south west monsoon.
- **Price rise-** During 2022, the paddy prices were ₹27 per kg, but now it stands at ₹33 a kg.
- **Export status-** India is the largest rice exporter globally with a 45% share in the world rice market.

What are the restrictions on rice export?

- **Categories of Rice export-**
 - Basmati rice
 - Parboiled non-basmati rice
 - Raw white rice
 - Broken non-basmati rice
- The Government has prohibited the export of white rice and broken rice.
- It levied a 20% duty on Parboiled non-basmati rice till October 15.
- It permitted the export of Basmati rice for contracts with value of 1,200 dollars a tonne or above.

- Rice is the 3rd major agricultural commodity in India to face restrictions on overseas sales in 2022-23.

How the restrictions will benefit farmers?

- **Increase in MSP-** The government has increased the Minimum Support Price (MSP) for rice.
- **Increase in price-** Paddy procurement by rice millers are at a price higher than the MSP.
- **Check in price rise-** The prices will not decline for farmers, restrictions on exports will ensure that there is no steep climb in rice prices in the market.
- **Benchmark price-** If the bench mark price set by the government is high, the farmers will realise better prices.
- **Domestic consumers-** Though there is a slight increase in rice prices at present, in the long run, availability is secured and prices are not expected to spiral.

How the restrictions will affect the world economy?

- **Global food crisis-** India's move could trigger a global food crisis as India is the world's top rice exporter, accounting around 40% of the global trade in the cereal.
- **Africa countries-** India has banned 100% of broken rice which few poor countries import for human consumption, though the variety is mainly used for feed purposes.
- **Food inflation-** Rice is the staple food for half of the population, with Asia producing and consuming about 90% of the global supply.
- This will further pressure on countries that are struggling with drought, heat waves and Russia invasion of Ukraine.
- **Ban on broken rice-** It is mainly used for animal feed, prices have jumped this year on increasing export demand.
- Top buyers including China uses it for livestock feed, some African countries import it for food. It accounts for almost 20% of the shipments abroad.
- **Shift to other countries-** With 20% duty Indian rice shipments may become uncompetitive in the market and buyers could shift to Vietnam and Thailand.
- **Exemption-** India has granted Singapore an exemption on rice export, stating that the country is its close strategic partner.

What is the opinion of the exporters?

- **High International demand-** The prices of Indian par-boiled rice in the international market is competitive even with the levy of a 20% duty.

- Countries such as Indonesia, which are rice exporters, are looking at raw rice imports now.
- **Issues with classification-** The government should look at classifying rice as common rice and speciality rice for export policy decisions rather than classifying as Basmati and non-Basmati.
- **Include GI recognition-** As many as 12 varieties of rice have Geographical Indication (GI) recognition and these should be insulated from general market interventions.
- **Basmati rice-** The government should have permitted exports to continue or fixed the minimum value for exports at \$900 a tonne.
- **Affect farmers-** Exporters will not buy paddy if there is no demand. This will only affect the farmers.
- **No need of restrictions-** Export demand raised as Indian rice quality and the consistency in supply is good.
- Basmati is a speciality rice and new crop arrivals will start soon and there is no need for restrictions.

4. Pragyan completed its tasks; rover safely parked and set into sleep mode, says ISRO

- The Indian Space Research Organisation (ISRO) announced that Chandrayaan-3's rover, **Pragyan**, had finished its tasks and was safely parked and put into sleep mode.
- The rover's Alpha Particle X-ray Spectrometer (APXS) and Laser-Induced Breakdown Spectroscopy (LIBS) have been switched off, and data from them has been sent back to Earth through the lander.
- APXS is developed by Ahmedabad's Physical Research Laboratory (PRL). It is used for analysis of the elemental composition of soil and rocks on the surface of planetary bodies having little atmosphere like the Moon. The instrument has radioactive sources which emit alpha particles and X-rays onto the surface sample to perform the analysis.
- On the other hand, LIBS instruments are developed at the Laboratory for Electro-Optics Systems (LEOS)/ISRO, Bengaluru.
- APXS and LIBS systems had earlier confirmed the presence of Sulphur on the surface of the moon.
- The rover's battery is fully charged, and its solar panel is positioned to receive sunlight when the next sunrise occurs on September 22.
- ISRO expressed hope for a successful awakening for further missions or else the rover would remain on the Moon as India's lunar ambassador.
- The rover has traveled over 100 meters from the lander Vikram across the lunar surface.

5. ISRO's Aditya-L1 Mission

- India's maiden solar observatory mission, Aditya-L1, was successfully launched by ISRO on September 2.
- Carried by the PSLV in its 59th flight, the spacecraft's mission aims to study the sun's behaviour and phenomena.
- Aditya-L1 will spend 16 days orbiting Earth, undergoing five manoeuvres for required velocity.
- Subsequent Trans-Lagrangian insertion will begin a 110-day journey towards L1 Lagrange point.
- Aditya-L1 will orbit around L1, a balanced position between Earth and the sun, 1.5 million km away from Earth.

Aditya-L1 Mission

- ISRO introduces the Aditya-L1 mission, a novel space-based observatory designated for studying the Sun.
- The spacecraft will be positioned in a halo orbit around the Lagrange point 1 (L1) in the Sun-Earth system, approximately 1.5 million km from Earth.
- The L1 point's strategic location enables continuous solar observation devoid of eclipses, furnishing invaluable insights into solar activities and their real-time effects on space weather.
- Once Aditya exits Earth's sphere of influence, it will head towards the Lagrange point L1, a distance of 1.5 million km.

Significance of Lagrange Point 1

- Lagrange points are equilibrium positions where gravitational forces counteract centripetal forces, offering a stable environment for satellites.
- The spacecraft will be positioned around L1, affording an unobstructed view of the Sun for unhindered observation.
- Different Lagrange points offer unique advantages, such as L1's consistent view of the Sun, as demonstrated by the Solar and Heliospheric Observatory Satellite (SOHO).

Aditya-L1's Scientific Endeavors

- Aditya-L1 carries seven payloads to investigate the photosphere, chromosphere, and corona using a range of detectors.
- The payloads encompass instruments like Visible Emission Line Coronagraph (VELC), Solar Ultraviolet Imaging Telescope (SUIT), Solar Low Energy X-ray Spectrometer (SoLEXS), and more.

- Payloads examining solar dynamics in the interplanetary medium contribute to a better understanding of phenomena like coronal heating, mass ejections, and space weather.

Significance of Solar Study

- **Solar Influence on the System:** The Sun significantly shapes planetary evolution and weather, extending its impact to satellites, electronics, power systems, and even Earth's climate.
- **Predicting Solar Storms:** Continuous solar observations are essential for tracking Earth-bound solar storms and predicting their potential impacts.
- **Gateway through L1:** All solar storms heading towards Earth pass through L1, making it a crucial point for monitoring.

Key Feature: Mighty LAM Engine

- The Liquid Apogee Motor (LAM) engine, developed by ISRO's Liquid Propulsion Systems Centre (LPSC), is vital to the Aditya-L1 mission's success.
- LAM has played pivotal roles in missions like Mars Orbiter Mission (Mangalyaan) and Chandrayaan-3.
- LAM engines facilitate satellite and spacecraft orbital adjustments, conserving fuel and ensuring optimal positioning.

6. Global Biodiversity Framework Fund

The Global Biodiversity Framework Fund (GBFF) was finally **ratified** and **launched** at the **Seventh** Assembly of the **Global Environment Facility (GEF)** in Vancouver, Canada.

About the new Global Biodiversity Framework Fund (GBFF):

- The GBFF fund was formed to ensure that the world meets the goals of the **Kunming-Montreal Global Biodiversity Framework (GBF)** formulated by the Convention on Biological Diversity (CBD) by **2030**.
- **Governments, non-profit organizations** and the **private sector** can contribute their funds under **GBFF**.
- **20%** of the funds would support **Indigenous-led initiatives** to **protect and conserve biodiversity**.
- It will prioritize support for **Small Island Developing States** and **Least Developed Countries**, which will receive more than a **third** of the **fund's resources**.

- First time the **funds** would be **channeled** to **non-state actors** like the **indigenous communities**.
- First **GBFF Council meeting** will be held in **2024** to approve the **first** work programme.
- The first tranche of the fund will be disbursed after the **council meeting** to ensure that the **first projects** under the new Fund can be launched ahead of CBD's CoP16.

Benefits of involving Indigenous communities:

- Indigenous communities have deep **traditional knowledge** and long-standing practices of ecosystem management and land stewardship.
- Their territories remain the **most biodiverse** and **least degraded**.
- **Indigenous-led** strategies must be at the **heart** of **global conservation** policymaking and programming.
- **Direct involvement** of **Indigenous Peoples** will help achieve the targets of the Global Biodiversity Framework.

7. Maritime Infrastructure Perspective Plan (2023-37)

- The Maritime Infrastructure Perspective Plan (MIPP) 2023-37 was unveiled at the Naval Commanders Conference.
- It signifies a forward-looking strategy aimed at fostering sustainable maritime architecture.

MIPP

- Aligned with the overarching vision of the PM Gati Shakti project, this comprehensive plan was introduced by the Minister of State for Defence.
- The plan's objectives span over the next 15 years and strive to synergize the Navy's infrastructure requirements in a dynamic and encompassing model.

Features of the MIPP

1. Synchronizing Infrastructure Needs:

- The MIPP 2023-37 envisions an integrated approach to address the Navy's infrastructure requirements.
- It aims to harmonize naval infrastructure development over the next 15 years through a meticulously designed perspective plan.

2. Compliance with Broader Policies:

- The plan adheres to the broader policy directives of the PM Gati Shakti Project, Disaster Resilience, and Transition to Net Zero, among others.
- Sustainability and compliance with national policy priorities are key principles underpinning the plan's formulation.

3. **Modernization Efforts:**

- To accommodate technological advancements and promote self-reliance, the revised "IRS Rules and Regulations Handbook for Construction and Classification of Naval Combatants" was introduced.
- This handbook reflects the naval shipbuilding industry's growth and aligns with the philosophy of 'AatmaNirbharta' (self-reliance).

4. **Transformational Initiatives:**

- The release of the "Family Logbook for Defence Civilian Personnel of the Indian Navy" serves as a milestone in maintaining personal records efficiently.
- The launch of the "Electronic Service Document Project" is poised to revolutionize HR record-keeping within the Navy.

Strengthening Indigenous Shipbuilding

1. **Promoting Indigenous Warships:**

- Ajay Bhatt highlighted the Navy's commitment to self-reliance, stating that the last 33 warships were 'Made in India'.
- Of the 63 warships currently under construction, 61 are being built in Indian shipyards, showcasing the nation's shipbuilding prowess.

2. **Monumental Launches:**

- The President's launch of Vindhyagiri and the Vice President's launch of Mahendragiri underscored the strength of the indigenous warship-building enterprise.

Challenges and Preparedness

1. **Expanding Defense Horizon:**

- As the realm of defense extends beyond traditional domains to include space, cyber, economic, and social dimensions, a holistic approach is essential.
- A 'whole of a nation approach' is crucial to effectively address evolving security challenges.

2. Vision and Preparedness:

- Chief of Naval Staff Admiral R Hari Kumar emphasized the four-fold vision for the Navy.
- The Navy must successfully execute missions, uphold maritime security in the Indian Ocean Region, adapt to societal changes, and advance jointness and integration with other services.

Conclusion

- The Maritime Infrastructure Perspective Plan 2023-37 stands as a blueprint for India's maritime progress, exemplifying the commitment to self-reliance, sustainability, and modernization.
- With a focus on comprehensive development and adherence to national policies, the plan charts a course towards a stronger, more resilient naval infrastructure.
- It aligns with the evolving security landscape and the broader objectives of the nation.

8. Ecocide - A Crime

Recently, the Tribunal for the Rights of Nature said Mexico's Maya train project has caused "crimes of ecocide and ethnocide".

Ecocide

Ecocide, derived from Greek and Latin, translates to 'killing one's home' or 'environment'.

- Ecocide is defined as "extensive loss, damage or destruction of ecosystems such that the peaceful enjoyment by the inhabitants has been or will be severely diminished."
- "Inhabitants" here applies to all living creatures, not limiting crime to an anthropogenic legal view.
- **Destruction-** It destroys environment which include
 - Port expansion projects that destroy fragile marine life and local livelihoods
 - Deforestation
 - Illegal sand mining
 - Polluting rivers with untreated sewage etc.,
- **Crime-** In 1970, Biologist Arthur Galston is credited be the first to link environmental destruction with genocide, which is recognised as an international crime.

- It referred to the use of U.S. military's use of Agent Orange (a herbicide) during the Vietnam War.
- **1972-** Swedish Prime Minister Olof Palme, used the term in a speech at the United Nations, warning that unchecked industrialisation could cause irreversible damage to the environment.
- **2010-** British lawyer Polly Higgins urged the United Nations' International Criminal Court (ICC) to recognise ecocide as an international crime.
- **ICC-** At present Rome Statute of the ICC deals with 4 atrocities.
- **War crime provision-** It is the only statute that can hold a perpetrator responsible for environmental damage.
- **Stop Ecocide Foundation-** It proposed ecocide as unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environmental being caused by those acts.

Why should ecocide be a crime?

- **International regulatory landscape-** Ecocide is a crime in 11 countries, with 27 other nations considering laws around criminalising environmental damage.
- **European Parliament-** It voted unanimously this year to enshrine ecocide in law.
- **Ukraine-** It penalises mass destruction of flora and fauna, poisoning of air or water resources, and also any other actions that may cause an environmental disaster.
- **Georgia-** It penalises and defines ecocide as contamination of the atmosphere, soil, water resources, mass destruction of fauna or flora, or any other act that could have led to an ecological disaster. It also penalises ecocide during armed conflict.
- **Role of ICC-** The ICC and Ukraine's public prosecutor are investigating Russia's role in the collapse of the **Nova Kakhovka dam**, which unleashed a catastrophic flood drowning 40 regions, and caused oil spillage and toxic leakage into the Black Sea.

How is ecocide associated with Climate Change?

- **Species loss-** Over one-third of the Earth's animal and plant species could be extinct by 2050.
- **Increase in temperature-** Unprecedented heat waves have broken records globally.
- **Flood-** Changing monsoon patterns and anthropogenic causes have made floods the norm in States like Assam.

- **IPCC-** The Intergovernmental Panel on Climate Change reiterated that global climate action is “insufficient”.
 - Indiscriminate burning of fossil fuels,
 - Polluting land and waterways with plastics and fertilisers, and
 - Species loss have pushed us to a new geological epoch, the Anthropocene.
- Hence, criminalising ecocide can lead to a shift in social norms.
- **Catalyst-** The amendment in the Rome Statute could have a ‘catalysing’ impact across nations to formulate their own laws.
- **Past events-** As per Stop Ecocide International, deforestation of the Amazon, deep-sea trawling or even the catastrophic 1984 Bhopal Gas tragedy could have been avoided with ecocide laws in place.
- **Accountability-** Laws will hold individuals and corporations accountable, it provides boundaries and sanctions for investment.
- **Analysis-** 2019 report found that the 20 fossil fuel companies were responsible for a third of carbon emissions despite being aware of the industry’s hazardous impact.
- **Climate justice-** Small nation-states like Vanuatu and Barbuda are lobbying for the ICC to declare crimes against the environment as violations of international law.
- **India-** Some Indian judgments have affirmed the legal personhood of nature by recognising rivers as legal entities with the right to maintain their spirit, identity and integrity.

Limitations in defining ecocide

- **Varied arguments-** Regarding the need for a separate law and the definition of ‘ecocide’.
- **Ambiguous definition-** Words like “long-term” or “widespread damage” are abstract and leave room for misinterpretation.
- **Complexity-** This constructs a development-versus-environment narrative, with the implication that it is okay to destroy the environment as long as it benefits humans.
 - Great Nicobar Project is criticised for endangering indigenous communities and biodiversity. But the government claims the Project is in service of holistic development.
- **Threshold-** In 1948 genocide requires proof on two accounts
 - Mens rea (an intention to kill) and
 - Actus reus (a guilty act) – to prove a crime was committed.
- It creates confusion as some argue that environmental disasters are not caused intentionally or deliberately.
- **Limited power to ICC-** ICC has a low track record when it comes to converting prosecutions into convictions.

- The court's power is limited to "natural persons," and without any changes, ICC would be unable to hold corporate entities criminally liable.
- **Jurisdiction-** Crimes are transnational in nature, corporations have private or state owned corporations in other countries, making the definition of ecocide difficult.
 - For example, Coca-Cola was accused of poisoning the land in India with waste sludge and pushing thousands of farmers out of work by draining the water that feeds their wells.

What is India's position with respect to ecocide?

- **T.N. Godavarman Thirumulpad vs Union of India & Ors Case-** The Supreme Court argued that "environmental justice could be achieved only if we drift away from the principle of anthropocentric to ecocentric."
- **Single code-** India's environmental regime includes the Environmental (Protection) Act of 1986, Wildlife (Protection) Act of 1972, and Compensatory Afforestation Fund Act, 2016 (CAMPA) as well as separate rules to prevent air and water pollution.
- These separate laws have to be consolidated into a code, and institutions need to be streamlined, for debates like ecocide and rights of nature to find "their proper way through legal channels".
- **Widen the ambit of NGT-** National Green Tribunal, India's apex environmental regulatory body, does not hold jurisdiction to hear matters relating to the Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927 and other State-enacted laws.
- **Loss of forest areas-** Recently passed Forest Conservation (Amendment) Bill, 2023 and Biodiversity (Amendment) Bill, 2023, can dilute current legal protections and will lead to the loss of 20%-25% of forest area in the country.
- **Liability-** Critical challenge is to tackle problems of liability and compensation.
 - The survivors of Bhopal gas tragedy are still fighting for compensation.

What lies ahead?

- India needs to first bring its environmental laws in tune with ecocide idea before the ecocide laws come up internationally.
- An ecocide law should be a part of the broader process of changing public consciousness, recognising that we are in a relationship with our environment, we are dependent for our well-being on the wellbeing of the environment.
- There is a need to use various instruments, political, diplomatic but also legal to achieve the protection of the environment

9. The tax base is growing – government shouldn't waste the opportunity

- India sees a surge in taxpayer base amidst tax policy challenges; a stable tax-to-GDP ratio raises questions on fiscal maneuverability and economic growth prospects.
- In the lead-up to each budget, the Union government cites limited tax revenues as a spending constraint. Recent years have seen a surge in direct and indirect tax payers, challenging the idea that only a small segment contributes. This should ideally raise the tax-to-GDP ratio, yet tax rate cuts and pandemic disruptions have limited fiscal gains, hinting at a deliberate shift to a low-tax regime.

Fiscal maneuverability

- It refers to the government's ability to adjust its revenue and expenditure policies in response to changing economic conditions, budget constraints, and policy goals.

Tax-to-GDP Ratio

- The Tax-to-GDP ratio is a financial indicator that measures the total tax revenue collected by a government as a percentage of its overall GDP for a specific period, typically a fiscal year.
- This ratio is used to assess the level of taxation relative to the size of the economy.
- A higher Tax-to-GDP ratio suggests that a larger portion of a nation's economic output is being collected in the form of taxes.

What Factors Have Led to the Government's Limited Fiscal Maneuverability Before Budgets?

- **The common refrain:** Historically, the Union government has often cited its limited tax revenues as a significant constraint on its ability to maneuver effectively in the run-up to budgets.
- **Steady increase in tax base:** It's noteworthy that there has been a consistent increase in both direct and indirect tax payers over recent years.
- **Economic context:** This expansion in the tax base has occurred during a phase of slower, uneven economic growth.
- **Impact of tax cuts and disruptions:** Despite the increase in taxpayers, cuts in both direct and indirect tax rates (including GST) and pandemic-induced economic disruptions have limited the fiscal gains from this surge in taxpayers.

How Has the Taxpayer Base Evolved in Recent Years?

- **Growth in the taxpayer base:** The tax base has shown substantial growth in recent years, challenging the belief that only a small section of society pays taxes.
- **Direct tax base expansion:** The number of companies paying tax grew by about 43 percent, from 7.46 lakh to 10.7 lakh, between the assessment years 2014–15 and 2022–23.
- **Individual taxpayers:** Individual taxpayers increased by 65 percent over the same period, rising from 5.38 crore to 8.9 crore.
- **Role of small taxpayers:** It's important to note that a significant number of these new tax payers have incomes less than Rs 5 lakh.

Trends and Factors in the Expansion of the Indirect Tax Base

- **Indirect tax base growth:** The number of active GST payers increased from 1.2 crore in 2019 to 1.4 crore by June 2023.
- **Composition:** About 80 percent of these taxpayers are proprietorships, with another 10 percent being partnerships.
- **Incentives for registration:** Smaller establishments are incentivized to register under GST to avail of the input tax credit.
- **Indirect tax impact:** The growth in the indirect tax base may also be influencing the increase in direct tax payers.

Impact of Tax Rate Reductions

- **Corporate tax rate reduction:** In September 2019, the government announced a cut in the corporate tax rate for existing companies from 30 percent to 22 percent.
- **Impact on revenue:** As per government figures, the revenue loss on account of this corporate tax reduction was Rs 1.28 lakh crore in 2019–20 and Rs 1 lakh crore in 2020–21.
- **Corporate tax-to-GDP ratio:** The corporate tax-to-GDP ratio declined from 3.5 percent in 2018–19 to around 3.1 percent by 2022–23.
- **Personal income tax rebates:** In the interim budget of 2019, the government announced that individual taxpayers with taxable income up to Rs 5 lakh would get a full tax rebate.
- **Personal income tax-to-GDP ratio:** The personal income tax-to-GDP ratio increased from 2.5 percent in 2018–19 to 3 percent by 2022–23.
- **Increase in zero tax liability:** Notably, the number of individuals with zero tax liability also increased from 2.9 crore in 2019–20 to 5.16 crore in 2022–23, which may limit the gains from an expansion in the tax base.

What are the challenges?

- **Revenue Sustainability:** A challenge arises in ensuring that the gains from an expanding tax base translate into sustainable revenue streams. Despite the increase in taxpayers, tax cuts and disruptions may limit the fiscal benefits.
- **Tax Evasion and Avoidance:** Addressing tax evasion and avoidance remains a significant challenge. Although the formalization of the economy makes tax evasion more complicated, it requires effective measures to combat tax evasion further.
- **Balancing Tax Cuts:** The reduction in tax rates, such as the corporate tax cut, has implications for government revenue. Striking a balance between encouraging economic growth through lower taxes and maintaining adequate fiscal resources is a constant challenge.
- **Targeted Spending:** As the government's fiscal space expands with a growing tax base, it faces the challenge of allocating resources effectively. Prioritizing and targeting spending on key development objectives while avoiding wasteful expenditures is essential.

Future Prospects

- **Fiscal Sustainability:** With an expanding economy and tax base, there is potential for improved fiscal sustainability. If managed effectively, this can provide the government with more resources to meet its long-term financial commitments.
- **Development Opportunities:** The growth in the tax base offers opportunities for increased public investment in critical sectors, fostering economic development, and improving the overall quality of life for citizens.
- **Reduced Reliance on Borrowing:** An increased tax base can reduce the government's reliance on borrowing to meet budgetary needs, potentially leading to lower interest payments and debt management challenges.
- **Incentive for Formalization:** As more individuals and businesses enter the tax net, there's a natural incentive for greater formalization of the economy. This can reduce the size of the informal sector and promote economic stability.
- **Policy Flexibility:** A broader tax base can provide the government with greater policy flexibility. It can consider adjustments to tax rates, exemptions, and deductions to support specific policy goals, such as promoting investment or addressing income inequality.
- **Enhanced Economic Growth:** With appropriate fiscal policies, the increased revenue potential from a growing tax base can contribute to sustained economic growth, job creation, and poverty reduction.

Conclusion

- The government's strategic choices regarding tax rates have influenced the country's tax landscape, expanded the taxpayer base while maintained stable tax-to-GDP ratios. As India's economy continues to evolve, these gains should not be squandered through excessive giveaways but rather strategically allocated to promote sustainable development and economic growth.

10. Air Quality Life Index (AQLI) report, 2023

The Energy Policy Institute at the University of Chicago (EPIC), recently released **Air Quality Life Index (AQLI) report, 2023** indicating that air pollution shortens life of Indians.

About Air Quality Life Index (AQLI) report:

- AQLI is based on **frontier research** that quantifies **relationship** between **human exposure to air pollution** and **reduced life expectancy**.
- It combines research with **hyper-localized**, and **satellite measurements** of global **Particulate Matter (PM2.5)**.
- It illustrates that **pollution policies** can increase life expectancy if it meets **World Health Organization (WHO)** and existing national **air quality standards**.
- The life expectancy is relative to **WHO guideline** of **5 micrograms per cubic meters ($\mu\text{g}/\text{m}^3$)**.

Key Findings of AQLI 2023 on India:

- Particulate pollution is the **greatest threat to human health** in India.
- Particulate Matter **2.5 shortens** an average Indian's life expectancy by **5.3 years**.
- Cardiovascular diseases, caused by the pollution, **reduces** the average life expectancy by **about 4.5 years**.
- **Child and maternal malnutrition** reduce **life expectancy** by **1.8 years**.
- About **67.4%** of population live in areas exceeding India's national air quality standard of $40 \mu\text{g}/\text{m}^3$.
- **Particulate pollution** has **increased** from **1998 to 2021**.
- Average annual particulate pollution increased by **67.7%** reduces average life expectancy by **2.3 years**.
- **59.1%** of the **world's increase** in pollution came from **India** between 2013 to 2021.
- The **Northern Plains region** of India is the **most polluted (38.9%)**.

Scenario in South Asia:

- Increase in PM2.5 levels from **2013 to 2021**:
 - **South Asia**- 9.7%
 - **India**- 9.5%
 - **Pakistan**- 8.8%
 - **Bangladesh**- 12.4%

Policy Impacts of India:

- If India would reduce particulate pollution as per the WHO guidelines, residents in **Delhi** would gain **11.9 years** of life expectancy.
- India launched **National Clean Air Programme (NCAP)** in **2019** to reduce particulate pollution.
- NCAP aimed to reduce particulate pollution by **20-30% relative to 2017 levels** by **2024**.
 - It focused on **102 cities as non-attainment cities**- which **do not** match national annual average PM2.5 standard.
- **Revamp** reduction target for NCAP (2022) by setting goal of **40% reduction** in **2017 levels** for 131 non-attainment cities by **2025-26**.
- The average PM2.5 exposure would be **21.9 µg/m³** lower than **2017 levels** and add **2.1 years** of life, if new targets are achieved.

11. NPCI Unveils Innovative UPI Features

- The National Payments Corporation of India (NPCI) has introduced a range of groundbreaking features on the popular Unified Payments Interface (UPI) platform.

Hello! UPI: Voice-Enabled UPI Payments

- Hello! UPI, a remarkable addition, facilitates voice-enabled UPI payments in Hindi and English.
- Users can make UPI payments through voice commands via apps, telecom calls, and IoT devices.
- Future plans include expanding this feature to support several regional languages, further enhancing accessibility.

Credit Line on UPI: Streamlined Access to Credit

- The RBI Governor introduced Credit Line on UPI, an initiative aimed at promoting financial inclusion and innovation.
- This offering allows users to access pre-sanctioned credit from banks via UPI, simplifying the credit acquisition process.
- Features include interest-free credit periods, defined charges, and seamless customer engagement channels.
- The goal is to expedite the credit access process, driving economic growth and digital banking efficiency.

UPI LITE X: Offline Money Transfers

- UPI LITE X introduces offline money transfers, enabling users to send and receive funds even without internet connectivity.
- This feature empowers transactions in areas with poor network coverage.
- UPI LITE payments are known for their speed and efficiency, making them a preferred choice for users.

UPI Tap & Pay: Convenience Redefined

- UPI Tap & Pay offers a new way to complete payments at merchant locations.
- In addition to traditional scan-and-pay, users can now tap Near Field Communication (NFC)-enabled QR codes.
- This feature enhances convenience, making transactions swift and effortless.

Conversational Payments: AI-Enabled Transactions

- Conversational UPI Payments and Conversational Bill Payments represent a paradigm shift in human-machine interaction.
- These AI-enabled transactions aim to deepen the adoption of digital payments across India.
- Users can make voice-enabled UPI payments through UPI Apps, telecom calls, and IoT devices in Hindi, English, and regional languages.
- NPCI has collaborated with AI4Bharat at IIT Madras to develop language models for Hindi and English payments.

BillPay Connect: Simplified Bill Payments

- BillPay Connect introduces a nationalized number for bill payments across India.
- Customers can conveniently fetch and pay bills through messaging apps with a simple 'Hi.'
- Even users without smartphones or immediate data access can pay bills via a missed call, followed by a verification call.

- Voice Assisted Bill Payments via smart home devices offer added convenience and instant confirmation.
- This innovation enhances security and reassurance for both customers and collection centers.

Conclusion

- These pioneering features unveiled by NPCI mark a significant leap in India's digital payment landscape.
- They not only enhance accessibility but also redefine convenience, making digital transactions more user-friendly.
- With innovative offerings like voice-enabled payments and streamlined credit access, NPCI continues to play a pivotal role in India's technological advancement.
- The journey towards a digitally empowered India takes a giant stride forward with these game-changing UPI features.

12. TradeTrust Framework for India Singapore Trade

India and Singapore piloted the first live paperless transaction using the Trade Trust Platform marking another milestone in the digital connection between two countries.

Trade Trust Platform

It is a joint initiative to enable interoperable electronic Bills of Lading (eBLs) backed Letter of Credit (LC) transactions between Singapore and Indian banks and companies.

- It is a framework that comprises globally-accepted standards and enables trusted interoperability of electronic trade documents among governments and businesses across digital platforms.
- **Components-** There are 4 key components in trade trust
- **Legal harmonisation-** It provide legal validity for electronic negotiable documents through compliance to United Nations Commission on International Trade Law MLETR (Model Law on Electronic Transferable Records).
- **Standards development-** It develop international standards which is adhered by the trade trust.
- **Accreditation framework-** It certifies technical solutions to meet law requirements.

- **Software components-** A set of open-source software code that can easily integrate backend solutions to the Trade trust network.
- **eBLs** - They are digital versions of the traditional paper Bill of Lading. (A bill of lading is a contract issued by a transport company to a shipper that spells out the quantity, type, and destination of the goods being shipped).
- It is a document that
 - Serves as a receipt for goods that have been shipped
 - Serves as a contract between the shipper and the carrier.

Advantages of eBLs

- **Improves efficiency-** eBLs can be exchanged electronically, thus eliminating the need for paper documents to be physically transported.
- **Cost effective-**It helps to save time and money, and it can also reduce the risk of errors.
- **Authenticity-** eBLs are stored in a secure database which makes them less vulnerable to fraud and tampering.
- It is a legally valid performance obligation transfer.
- **Transparency-** All parties involved in a trade transaction can access the same information about the eBL, thus reduces the risk of disputes.
- **Genuine source-** The platform has genuine creators of documents like Carriers, Govt authorities.

What does trade trust platform offer both countries?

- **Real time transaction-** It is based on distributed ledger technology, which allows for the secure and transparent recording of transactions.
- This makes it possible to track the progress of a trade transaction in real time, and to ensure that all parties involved have access to the same information.
- **Improves efficiency-**It will help to reduce fraud and errors and improve the speed and efficiency of trade transactions.
- **Trade facilitator-** The framework is also interoperable with other trade finance platforms, which will facilitate trade between Singapore and India.
- **Economic growth-** It is expected to boost trade between Singapore and India's small and medium sized enterprises (SMEs), hence they are key drivers of economic growth
- **Secure-** In the past, trade between Singapore and India was often hampered by the lack of trust and transparency.
- This was due to the use of paper-based documents, which were often lost or misfiled.
- **Standard framework-**It is expected to be further adopted by more businesses in the coming years, as it becomes standard for trade finance in the region.

- **Interoperability-** The proposed innovative framework is interoperable with other trade finance platforms.
- This means that it can be used to connect businesses in Singapore and India with businesses in other countries as well.
- **Decentralization-** Key benefits of such a decentralized verifiable architecture-
 - Remove the need for expensive data exchange infrastructure to be put in place in between exchanging parties.
 - Remove tight coupling and inter-dependencies between exchanging systems.
 - This means exchanging parties can proceed to upgrade and make changes to their IT systems at their own pace according to their own priority.

13. Protect world heritage sites to conserve biodiversity

According to a joint assessment by UNESCO and IUCN, protecting World Heritage Sites can help **conserve biodiversity** and meet the targets set by the **Kunming-Montreal Global Biodiversity Framework (GBF)**.

Finding of the joint assessment by UNESCO and IUCN:

- UNESCO World Heritage sites are home to **75,000 species of plants**, and over **30,000 species** of mammals, birds, fish, reptiles and amphibians.
- These locations offer a **safe haven** for many **threatened species**.
- Up to **1/3 of remaining elephants, tigers and pandas** can be found in these sites, and at least one in **10 great apes, giraffes, lions and rhinos**.
- They are home to all remaining **Javan rhinos, vaquitas** (the world's smallest cetacean) and **pink iguanas**, more than **half of all Sumatran rhinos, Sumatran orangutans and mountain gorillas**.

Why is there a need for protection?

- These locations are **affected by climate change** and **anthropogenic pressures** like **agricultural expansion, infrastructure development, poaching, overexploitation of resources** and the **proliferation of invasive species**.
- Protecting them is essential in saving the **vulnerable species**, as every **1°C** rise in global temperature can **“double the number of species threatened by harsh climate conditions”**.

Importance of World Heritage sites

- The **World Heritage sites** are historically and culturally outstanding and are critical to the preservation of the diversity of life on Earth, maintaining **essential ecosystem services**, and **addressing climate disruption**.
- **Cultural World Heritage** sites can be an important ally in biodiversity conservation, since around **20%** of **them** are located in key **Biodiversity Areas**.
- These sites help maintain a **beneficial relationship** between **human beings** and **nature**.

World Heritage site managers:

- World Heritage sites managers play a crucial role in the **implementation** of the **World Heritage Convention**.
- They ensure the **recognition** and **preservation** of **World Heritage Site's** Outstanding Universal Value and emerge as the key responsibility holders who **oversees site-management decision-making**.
 - By **2025**, all **World Heritage site managers** will be **trained** in **climate change adaptation strategies** and by **2029** all sites will have a **climate adaptation plan**.
- This was announced by the UNESCO in 2022 at the **50th anniversary** of the **Convention**.

UNESCO world heritage sites:

- A **World Heritage Site** is a landmark or area with **legal protection** by an international convention, administered by the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**.
- World Heritage Sites are designated by UNESCO for having **cultural, historical, scientific** or other forms of **significance**.
- The sites are judged to contain "**cultural and natural heritage** around the world and are considered to be of **outstanding value to humanity**".

Kunming-Montreal Global Biodiversity Framework (GBF):

- The Kunming-Montreal Global Biodiversity Framework, aims to **halt and reverse biodiversity loss** by **2030**.
- It is an outcome of the **2022 United Nations Biodiversity Conference**.
- The GBF was adopted by the **15th Conference of Parties (COP15)** to the **Convention on Biological Diversity (CBD)** on 19 December 2022.
- It has been promoted as a "**Paris Agreement for Nature**".
- The GBF contains **4 global goals** ("**Kunming-Montreal Global Goals for 2050**") and **23 targets** ("**Kunming-Montreal 2030 Global Targets**").
- **Four overarching goals** to be achieved by 2050 focuses on:

- **Ecosystem and species health** including to **halt human-induced species extinction**
- **Sustainable use of biodiversity**
- **Equitable sharing of benefits**
- **Implementation and finance** to include closing the biodiversity **finance gap** of \$700 billion per year.
- The **23 targets** to be achieved by 2030 include **30 per cent conservation of land** and sea, **30 per cent restoration of degraded ecosystems**, **halving the introduction of invasive species**, and **\$500 billion/year reduction in harmful subsidies**.
 - "Target 3" is especially referred to as the "**30 by 30**" target.

14. Synthetic Human Embryo

Recently, Israeli scientists have successfully grown a "human embryo" in the lab without using an egg or sperm.

What is an embryo?

- An embryo is an initial stage of development of a multicellular organism.
- **Sexual reproduction-** In organisms that reproduce sexually, embryonic development is the part of the life cycle that begins just after fertilization of the female egg cell and the male sperm cell.
- Embryo can be defined as an organism in the early stages of development. It undergoes multiple stages of development to develop into a new organism.
- Embryonic development is called embryogenesis.
- **Foetus-** It is the development of a single-cell (zygote) to a multicellular organism (foetus) characterised by the processes of cell division and cellular differentiation of the embryo that occurs during the early stages of development.

How was the embryo model created?

- **Stem cell mix-** They used a mix of stem cells (early cells that have the ability to differentiate into other type of cells).
- **Foetus formation-** They used a mix of stem cells and chemicals, a small portion which was able to spontaneously assemble to form different types of cells that form the foetus.
 - Cells that provide nutrient to the foetus.
 - Cells that lay out the plan for development of the body, and

- Cells that create structures like placenta and umbilical cord to support the foetus.
- The naive-state stem cells were programmed to become certain types of body tissue, including
 - **Epiblast cells** - It become the foetus
 - **Trophoblast cells**- It become the placenta
 - **Hypoblast cells**- It supports the yolk sac
 - **Extraembryonic mesoderm**- It contributes to the overall embryo development
- **Early embryo**- This was able to spontaneously assemble into embryo like structure, mimicking molecular characteristics of an early embryo.
- **Complete model**- The scientists have called it one of the most complete models of a 14-day-old human embryo.
- None of them fully replicate the processes that happen during the early stages of embryo development, but all of them add to their understanding.
- **Issue faced**- Only 1% of this mixture actually assembled spontaneously, making the process not very efficient.

Why are embryo models important?

- **Aim**- To provide an ethical way of understanding the earliest moments of our lives.
- **Diagnostic accuracy**- The research is crucial because the initial days of embryo development is when the majority of miscarriages and birth defects occur.
- Studying the initial stages may help understand genetic and inherited diseases better.
- **Improve IVF**- Study of normal embryo development, proper genetic code retainment, and the proper implantation in the womb may help in improving success rates of in vitro fertilisation (IVF).
- **Embryonic research**- It is important because currently developing alternative models in the lab is the only way to study the early embryo process.
- **Effect on embryo**- It allows scientists to understand the genetic, epigenetic and environmental effects on a developing embryo.
- **Genetic medicines**- It brings us closer to understand how futuristic genetic medicines can be implemented for the treatment of certain conditions.
- **Error in DNA duplication**- These models have helped scientists understand why error arise when the DNA is duplicated.
- The model has shown that errors occurred much earlier before the separation of daughter cells, when DNA duplication is ongoing.

- **Chromosomal disorder-** It also helps to study why one of the daughter cells receives too many or too few chromosomes.
- **Role of genes-** It allows to manipulate genes and to understand their developmental roles in a model system.
- **Functional specifications-** This model will let us test the function of specific factors, which is difficult to do in the natural embryo.
- **Synthetic embryology-** It made a significant milestone by developing the first ever synthetic human embryos.

Can lab-grown embryos be used to get pregnant?

These models are meant to just study the early stages of development of a foetus. They cannot be used to get pregnant.

- **Regulation-** It is legally supported in most countries that these embryo models will be destroyed after studying the first 14 days. Attempts to implant are not allowed.
- **Genetic modification-** Researchers would also ensure that any model embryo created for donor tissue purposes would be genetically modified to prevent the development of a brain or nervous system.
- **Mimics the properties-** Although they mimic several aspects of development, they are not surrogates of actual embryos.

15. RBI to discontinue Incremental Cash Reserve Ratio (I-CRR)

- The Reserve Bank of India (RBI) announced the phased discontinuation of the Incremental Cash Reserve Ratio (I-CRR) on September 8, 2023.
- This measure aimed to absorb surplus liquidity created by factors such as the return of Rs 2,000 notes to the banking system.

RBI's Decision

- RBI conducted a review and decided to discontinue I-CRR in stages.
- The central bank aims to release the impounded amounts gradually to avoid sudden shocks to the system's liquidity, ensuring orderly money market functioning.

Understanding Cash Reserve Ratio (CRR)

- CRR is a fundamental concept before delving into Incremental Cash Reserve Ratio (ICRR).

- Banks are mandated to maintain a certain portion of their deposits and specific liabilities in liquid cash with the RBI.
- CRR serves as a crucial tool in the RBI's arsenal for managing liquidity in the economy and acts as a safety net during times of banking stress.
- Currently, banks are required to uphold 4.5% of their Net Demand and Time Liabilities as CRR with the RBI.

Introduction to ICRR

- I-CRR was introduced on August 10, 2023, as a temporary measure by RBI to absorb surplus liquidity.
- Banks were required to maintain an I-CRR of 10% on the increase in their Net Demand and Time Liabilities (NDTL) between May 19, 2023, and July 28, 2023.
- It came into effect from the fortnight starting August 12, 2023.
- The RBI has the authority to implement an additional measure called Incremental Cash Reserve Ratio (ICRR), in addition to the standard CRR.
- ICRR is employed during periods characterized by excess liquidity in the financial system.
- Essentially, ICRR mandates that banks park even more liquid cash with the RBI than what is required under CRR.
- This serves as a means to further manage and control liquidity in the banking system.

Reason for I-CRR

- Excessive liquidity emerged due to factors like the return of Rs 2,000 banknotes, RBI's surplus transfer to the government, increased government spending, and capital inflows.
- The daily liquidity absorption by RBI in July reached Rs 1.8 lakh crore.
- Managing surplus liquidity was necessary to maintain price and financial stability.

Impact on Liquidity Conditions

- I-CRR was expected to absorb over Rs 1 lakh crore of excess liquidity from the banking system.
- It temporarily shifted the banking system's liquidity from surplus to deficit on August 21.
- Factors like GST outflows and central bank selling of dollars contributed to tight liquidity.
- However, liquidity conditions reverted to surplus from August 24.

- On September 8, RBI absorbed Rs 76,047 crore of surplus liquidity from the system.

16. Extreme weather events lead to increase in child marriages

A study recently published in the journal **International Social Work** aims to find the relation between **child marriage, violence** and **extreme weather events**.

Key highlights of the study:

- **Droughts, floods** and other **extreme weather** events **intensify existing** problems of **gender inequality** and **poverty** that lead families to **marry their daughters early**.
- **Gender-based violence (GBV)** and **inequities** worsen in **extreme weather contexts**.
 - This **impacts** female resilience during weather extremes and disasters.
- Development initiatives might reproduce or **ignore gender disparities**, without concerted efforts accounting for gender and other social inequalities.
- **Child, Early and Forced Marriage (CEFM)** was used as an **adaptive coping strategy** to **reduce economic vulnerabilities** in extreme weather contexts.
- **Health professionals** and **social workers** must **recognize** the complexities and the links between child marriage and extreme weather, which will **worsen amid climate change**.

Global scenario:

- In **Bangladesh**, daughters were married early after **Cyclone Aila** in 2009 to reduce their economic and food burden on the household.
- In **Kenya**, young brides are sought, to help with **increased labor demands**, such as walking long distances to find food and water.
- In **Malawi**, girls exposed to **drought** were more likely to be **married early** as **compared** to those living in **non-drought areas**.
- In **sub-Saharan Africa** or **Vietnam**, the **groom's family** pays a **bride price** to the bride's family as **local custom** but it increases **probability of CEFM** during extreme weather events.
- In regions where **dowry** is common such as India, **girls** were **less likely** to get **married** during a drought year, because the **bride's family** could **not afford dowry payment**.

Protection from sexual violence:

- Parents resorted to **CEFM** to protect daughters from **sexual violence** and **avoid family dishonor**.

- Rates of **sexual assault** often **escalate** during crisis, particularly in evacuation camps or temporary shelters.

Worrying figures:

- Every year, **12 million girls** get married **before adulthood**.
 - While years of efforts had led to a **decline** in the **practice**, it is now at **great risk of rising**.
- Climate change, along with other environmental factors has **exacerbated modern slavery** in Africa as per the **Global Slavery Index 2023**.

Empowering women:

- **Education** and **financial control** are key to **empower women** and girls and allowing them to take their own decisions.
 - **Educational attainment** and CEFM were **inversely associated** for **girls** in **India** and **Malawi**.
- Girls in their **early** or **late adolescence** are **highly vulnerable** to **child marriage** and ensures that their **education** goes **uninterrupted** and they receive **adequate nutrition**.
- **Incidence** of CEFM **decreased** in **India** and Vietnam with increase in **parental education**.

International Conventions related to child marriage:

- The **Convention on the Elimination of All Forms of Discrimination against Women** covers the rights to protection from child marriage in **Article 16**.
- CEDAW is an **international treaty adopted** in 1979 by the **United Nations General Assembly** which was **ratified** by India.
- The **Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages** is a treaty agreed upon in the **United Nations** on the **standards of marriage**.
- India has **not ratified** this convention.

17. Ethics of neurotechnology: The intersection of neuroscience and military applications

- The rapid growth of neurotechnology, driven by advances in neuroscience and technology, has given rise to a field with immense potential and profound ethical implications.

- Neurotechnology encompasses various aspects, from Brain-Computer Interfaces (BCIs) to neuroimaging and neurostimulation. As this field expands, it poses challenges to human privacy, autonomy, and dignity. In this context, the need for ethical guidelines and governance becomes paramount.

Neurotechnology

- Neurotechnology is a multidisciplinary field that combines neuroscience, engineering, and technology to study, interact with, and manipulate the human nervous system, particularly the brain and its functions.
- It involves the development and application of various techniques, tools, and devices to better understand and interface with the brain and nervous system.

Neurowarfare

- Neurowarfare, also known as neurotechnology warfare, refers to the use of advanced neurotechnological tools, techniques, and agents in military operations and conflicts.
- It represents the convergence of neuroscience, neurotechnology, and warfare strategies, with the aim of gaining a tactical or strategic advantage on the battlefield or in intelligence operations.
- Neurowarfare explores the manipulation of the human nervous system, particularly the brain, for various purposes, both offensive and defensive.

The ethics of neurotechnology

- **Brain-Computer Interfaces (BCIs) and Brain-Machine Interfaces (BMIs):** BCIs offer direct communication between the brain and external devices, while BMIs integrate neural signals with machines for various applications, including prosthetics and exoskeletons. Ethical concerns arise regarding privacy, autonomy, and mental influence.

□ **Neuroimaging and Neurostimulation:** Neuroimaging provides access to neurological data, while neurostimulation modulates neural activity for therapeutic purposes. The potential for behavioral changes and privacy invasion necessitates regulation.

□ **Gathering and Use of Neurological Data:** The absence of guidelines for gathering, studying, and using neurological data requires immediate attention, especially in light of private sector developments such as Neuralink's brain implant chip.

Neurowarfare: The Emerging Threat

- **Neurotechnological Agents:** Advances in synthetic biology open doors to neurotechnological agents that can impact neurological abilities. This includes neuropharmacological agents like amphetamines and neurotechnological devices.
- **Dual-Use Nature:** Neurotechnology can have dual-use applications, both civilian and military. Neurowarfare refers to its use in military operations, potentially enhancing soldiers' cognitive abilities or disrupting the cognitive functions of adversaries.
- **Case Study: Havana Syndrome:** The mysterious Havana Syndrome experienced by US intelligence personnel raises concerns about directed energy weapons and intentional attacks. Similar cases have been reported in Guangzhou, China.

Ethical Concerns in Neurowarfare

- **Informed Consent and Privacy:** Ethical use of neurotechnology in warfare requires informed consent for soldiers and civilians. Oversight and restrictions on using such innovations for harm are essential.
- **Psychological Harm:** Studying the psychological impact of neurotechnology weapons is imperative to establishing limits on their deployment.
- **Protection of Non-Combatants:** Civilians must be shielded from neurotechnology applications, ensuring their privacy, consent, and protection from manipulation.

Importance of International Cooperation and Responsible Governance

- **International Cooperation:** Organizations like the OECD and UNESCO have initiated ethical guidelines for neurotechnology. However, global governance must extend to neurowarfare, with disarmament forums incorporating ethical oversight and transparency.
- **Accountability:** State actors should be held accountable through reporting systems, ensuring responsible research and the use of neurotechnology in warfare.

Conclusion

- Neurotechnology holds immense potential for human advancement but also raises profound ethical challenges in the context of neurowarfare. Striking a balance between technological progress and ethical considerations is crucial to safeguarding human rights and global security in the age of neurotechnology.

18. Agriculture Infrastructure Fund (AIF)

The Centre is promoting the Agriculture Infrastructure Fund (AIF), a financing facility launched in 2020.

AIF scheme

- It is a Central Sector Scheme approved by the Union Cabinet in 2020.
- It aims to provide a medium long-term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets.
- The duration of the Scheme shall be from FY2020 to FY2032.
- Eligible beneficiaries include:
 - Farmers, FPOs, PACS, Marketing Cooperative Societies, SHGs, Joint Liability Groups, Agri-entrepreneurs, Start-ups, and Central/State agency or Local Body sponsored Public Private Partnership Projects.
- Under the scheme, Rs. 1 Lakh Crore will be provided by banks and financial institutions as loans.
- The loans are provided with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to Rs. 2 crores.

Significance of the scheme

- It provides support facilities to farmers and value chain actors for risk sharing and market access.
- Improved marketing infrastructure will help farmers sell their produce directly.
- With investments in logistics infrastructure, post-harvest losses can be reduced.
- It also provides targeting State-specific APMCs and maintenance of sanitary and phytosanitary standards for organic produce marketing and exports.
- District, state or national level monitoring committees will reduce the turnaround time for file processing to less than 60 days.
- The scheme tries to mitigate spatial and temporal risks in the agribusiness ecosystem through adequate post-harvest infrastructure facilities.

How has the scheme performed till date?

- **Finance allocation** - The financing facility allocation to the States/UTs based on the value of the output of agriculture and allied activities is skewed.
- Over 65% of the total funds were allocated to only eight States: Uttar Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Gujarat, West Bengal, Andhra Pradesh, and Tamil Nadu.

- In contrast, the allocation of AIF to Punjab and Haryana is 9%, and in North-Eastern states, it is 3%.
- **Integration with debt** - AIF is integrated with debt, where the interest rate subvention is facilitated up to ₹2 crore.
- So, the scheme's success depends on the intention and ability of financial institutions.
- Bankers look at the projects from their credit assessment lens, where feasibility depends on the project and the promoter.
- **Credit guarantee** - Credit guarantee cover for eligible borrowers is available for ₹2 crore, which is small for a standard project.
- Although there is a renewed focus on inclusivity and equity in the scheme, offering grants-in-aid for underprivileged and women entrepreneurs may increase the default (credit) risk.
- Large-scale integrated projects cannot be installed singly under this scheme.
- Convergence with other schemes remains a crucial enabler for its success.
- This scheme will be successful for farm-gate-led hub-and-spoke models where the spokes with prescribed distance can be installed under this scheme.

19. Efforts to reduce disaster risks, Stocktaking calamity

- The world is at a crucial juncture, with disaster related risks increasing faster than they are being reduced which was acknowledged in the recent G-20 summit.

Increasing risk of disasters

- The COVID-19 pandemic, war, financial crisis, and food insecurity are testing the global ability to cope and mitigate.
- **Climate Crisis**
 - The climate crisis is increasing extreme weather events that are occurring more frequently and with greater intensity. Increase in disasters is a trend and not an exception. Examples include the flooding in China, wildfires in Europe and Hawaii etc.
 - The United Nations' Global Stocktake report has highlighted the significant challenges facing major economies in reducing greenhouse gas (GHG) emissions.
 - The report serves as a guide for discussions leading up to the 28th Conference of Parties in Dubai and assesses progress made by countries since 2015 in reducing GHG emissions.

- The world is currently on track to exceed the Paris Agreement's limit of a 2°C increase in global emissions, and much more effort is needed to achieve the goal of limiting warming to 1.5°C.
- Despite this recognition, little progress has been made in terms of energy transition, as G-20 countries account for 93% of global operating coal power plants and 88% of proposed ones.
- **Financial Distress**
 - Vulnerable countries and communities are being affected the most despite contributing the least to the climate crisis.
 - Most of the 50 countries vulnerable to climate change also suffer from severe debt issues.
 - In 2022, India faced multiple extreme weather events and severe monsoon has resulted in widespread loss of livelihood and lives.

Efforts at Adaptation and Mitigation of Disasters

- **Global Efforts:**
 - In the recent G-20 summit, leaders recognized the need for \$5.8-\$5.9 trillion in funding for developing countries between now and 2030 and \$4 trillion annually for clean energy technologies by 2030 to achieve net zero emissions by 2050.
 - The Sustainable Development Goals (SDGs) and commitments made in the Conference of Parties at Paris provide a global blueprint for peace and prosperity if implemented correctly.
 - The Sendai Framework for Disaster Risk Reduction sets a global framework for decreasing catastrophe risks, although progress has been slow. UN Member States have also agreed to accelerate resilience-building efforts along these lines.
 - Important lessons are being taken from the COVID-19 epidemic about the value of systemic disaster risk reduction, resilience, and adaptation. Digital technologies like computer modeling and India's CoWin digital vaccination platform have emerged due to the pandemic.
- **India's Efforts:**
 - India's leadership in disaster risk reduction has also been exemplary; all 28 states have created their disaster management strategies resulting in a significant decrease in extreme weather event fatalities.
 - India's early warning system for cyclones covers its whole coastline and has helped cut cyclone-related mortality by 90% over the previous 15 years.

- Local heatwave action plans have reduced heatwave deaths by more than 90%.
- Cyclone Biparjoy in Gujarat showed that effective preparation, reaction, and early warning and action systems may result in zero casualties during natural disasters.
- Significant changes to disaster risk financing have been implemented by the 15th Finance Commission in India. For disaster preparedness, response, recovery, and capacity building, the Indian government has allocated \$28.6 billion.
- On the international front, India supports disaster resilience and sustainability via initiatives like the Coalition for Disaster Resilient Infrastructure, a global alliance dedicated to making infrastructure more robust.
- Domestic calamities are met with responses from India's National Disaster Response Force, which is also sent abroad frequently.
- The first-ever working group on disaster risk reduction was formed under India's G-20 chairmanship, aligning with the SDGs.

Way Ahead:

- The Global Stocktake report emphasizes the importance of reversing deforestation and adopting electric vehicles as key components of a clean energy economy.
- To reduce global GHG emissions by 43% by 2030, 60% by 2035, and reach net zero CO₂ emissions by 2050, countries must significantly scale up renewable energy resources and move away from fossil fuels like coal, oil, and natural gas.
- Disaster risk must be integrated into how we build, invest, and live.
- Early warning systems for all are one of the most cost-effective risk reduction methods, spearheaded by the UN with India's support. For example, a 24-hour warning of a coming storm can reduce damage by 30%.
- A global multi-risk warning system for all types of hazards (biological, tectonic, or technological) will particularly help the least developed countries and Small Island Developing States.
- Improving global data capabilities will aid in predicting and responding to risks. India's G20 presidency has made progress on knowledge sharing, joint data infrastructure, and risk analysis.

Conclusion:

- International cooperation in disaster prevention, response, and recovery must be enhanced, particularly for countries of the Global South.

- The G20 summit and the outcomes of the Disaster Risk Reduction Working Group offer an opportunity to create a future where disaster risk mitigation is possible
- As stated by UN Secretary-General António Guterres, “Extreme weather events will happen. But they do not need to become deadly disasters.”

20. Issues with Paper Cups

Research has shown that a paper cup causes as much damage to nature as a plastic one, as they both contain toxic chemicals.

How are paper cups made?

- **Plastic film coating** - As paper is neither fat nor water resistant, the paper cups have a plastic film coating applied to its surface.
- The plastic film is often made of polylactic acid (PLA), a type of bioplastic commonly produced from corn, cassava or sugarcane.
- **Advantages** - PLA can decompose faster than petroleum-based plastics under the right conditions.
- It is made from renewable resources rather than fossil fuels, as are 99% of the plastics available on the market.
- **Toxicity** - Bioplastics do not break down effectively when they end up in the environment, in water.
- It remains in nature resulting in microplastics that can be ingested by animals and humans, just as other plastics.

What are the impacts of paper cups?

Impact on Environment

- **Landfill waste**- It takes 100 of years to decompose and release harmful greenhouse gases.
- **Plastic pollution**- They easily find their way to oceans and rivers, disrupting marine life and ecosystems.
- **Resource depletion**- It contributes to the depletion of resources like tree, oil and water usage which can have long term impact on environment and economy.
- **Littering**- Improper disposal leads to litter in parks, streets and natural areas.
- **Chemical exposure**- The cups are treated with chemicals to make them waterproof or durable which can leach into environment and harm wildlife.
- **Water usage**- The manufacturing of paper cups require more water than reusable cups.

- **Economic costs-** Cleaning and managing the cups can be costly affecting communities and government.

Impact on Humans

- **Direct Impact-** Use of disposable cups may directly influence your physical health due to the plastic chemicals used in their production.
- **Indirect Impact-** Pollution from manufacturing will influence global air quality.
- **Bio magnification-** Micro plastics can travel up through the food chain
- **Health hazard-** Recent IIT study revealed that drinking hot beverages from paper cups poses health risk
 - Reproductive defects
 - Cancer
 - Neurological disorder

What steps were taken to combat plastic pollution?

What lies ahead?

- Significant changes are necessary to lessen the ongoing harm to the environment and threat to our health resulting from the plastic pollution crisis.
- There is a need to address the potential hazards of food packaging.
- Adhere to the legally binding treaty to end plastic pollution of UN.

21. One Sun, One World, One Grid

Power Grid Corporation (POWERGRID) organized the "**Transnational Grid Interconnections for One Sun, One World, One Grid (OSOWOG)**" conference in New Delhi.

One Sun One World One Grid (OSOWOG):

- The One Sun One World One Grid (OSOWOG) is an initiative to provide power to about 140 countries through a common grid that will ensure the transfer of clean and efficient solar power.
- First proposed by **Prime Minister Narendra Modi** at the 2018 **International Solar Alliance assembly**, it was jointly launched with **the UK Prime Minister** at COP26 in Glasgow.

- The Green Grids initiative (GGI), launched by the United Kingdom (UK), aims to create a framework for global collaboration on using renewable resources for reliable, clean energy by 2030.
- At the COP-26 climate summit in Glasgow 2021, India and the UK jointly launched GGI along with the **ISA** and the **World Bank Group (WB)**, merging them into a single initiative named **GGI-OSOWOG** for global renewable energy transition.

Aims and Objectives:

- **Global Solar Energy Network:** OSOWOG's mission is to create a worldwide grid for efficient sharing of clean solar energy. This grid ensures a continuous, reliable energy supply across regions.
- **Reduced Need for Energy Storage:** OSOWOG allows solar energy to be generated in one place and used in another, reducing reliance on large-scale energy storage like batteries. Enhances solar power project efficiency and cost-effectiveness.
- **Cutting Carbon Footprint:** OSOWOG's primary aim is to cut carbon emissions linked to energy production. It promotes clean solar energy globally to reduce environmental impact and combat climate change.
- **Affordable Clean Energy:** OSOWOG intends to lower energy costs for participating nations by harnessing abundant solar energy. It aims to make clean energy accessible and affordable worldwide.
- **Supporting Developing Nations:** OSOWOG seeks substantial financing, targeting \$1 trillion by 2030, to aid developing nations in building solar power infrastructure. It Helps meet their growing energy needs while moving away from fossil fuels.
- **Energy Transition:** OSOWOG accelerates the shift from fossil fuels to clean, renewable sources like solar power. It is critical for reducing environmental impact and addressing climate change challenges.
- **Electric-Centric Consumption:** OSOWOG promotes electric-centric consumption patterns by enabling global clean energy distribution. It encourages electrification in sectors like transportation and heating.
- **Enhanced Energy Security:** A global grid system diversifies energy sources, reducing dependence on a single energy method or fuel. It Enhances energy security, making countries less vulnerable to supply disruptions.

Phases of OSOWOG:

- The first phase will include interconnectivity **within the Asian continent**.
- The second phase will add **Africa**.
- The third phase will globalize the whole project

Importance:

- Climate change is a **global concern**, driven by rising greenhouse gas emissions from non-renewable power sources.
- It leads to extreme **weather, temperature rise, floods, and droughts worldwide**, with examples like **Amazon deforestation** impacting Brazil's ecosystem and raising CO2 levels globally.

Challenges:

- **Grid Stability Concerns:** Maintaining a Reliable Grid Across Vast Areas.
- **Vulnerabilities to Disruptions:** Risks from Accidents, Weather, and Cyber-Attacks.
- **Complex Cost-Sharing:** Balancing Financial Contributions Across Diverse Participating Nations.

Government Initiatives to Promote Solar Power Production:

- Solar Park program
- Viability Gap Funding (VGF) programs
- Central Public Sector Undertaking (CPSU) program
- Defence Program
- Canal Bank and Canal Top program
- Bundling Program
- Grid Connected Solar Rooftop Program
- Production-Linked Incentive (PLI) Scheme for high-efficiency solar PV modules

Key Facts:

- **Ernst & Young (EY) report 2021** ranks India **3rd** in Renewable Energy Country Attractive Index (2021).
- **Karnataka, Telangana, Andhra Pradesh, Rajasthan, and Gujarat** are top Indian states with solar power parks, generating 7100-5000 MW of solar energy.

22. **Overhauling Defence Research and Development Organisation (DRDO)**

It is necessary to focus the Defence Research and Development Organisation (DRDO) that performs research activity for the Armed Forces.

DRDO

- **Ministry** - Department of Defence Research and Development, Ministry of Defence
- **Role**- Military's research and development
- **Headquarters**- New Delhi, India
- **1958**- It was formed by the merger of the
 - Technical Development Establishment
 - Directorate of Technical Development and Production of the Indian Ordnance Factories
 - Defence Science Organisation
- **1979**- Defence Research & Development Service (DRDS) was constituted in 1979.
- **Motto**- “Balasya Mulam Vigyanam” – “The source of strength is science”

The Integrated Guided Missile Development Programme (IGMDP) under A P J Abdul Kalam is the most prominent success of DRDO.

Issues in DRDO

- **Low performance**- Its performance has been low over the years causing much disappointment in the armed forces.
- **Organisational issues** - DRDO has done excellent work in flashes but this has been more due to individual brilliance and not because of organisational effectiveness.
- **Time constraints**- Electronic Warfare systems versions have also been successful, but the procedure to adopt have been slow.
- Product realisation timelines have been excessive and end products are often dated by the time they are fielded.
- **Long term trials**- The trials go on for years with little assurance that the desired end state will be reached. This situation needs correction.

Why DRDO needs ISRO overhaul?

- **Conflict of interest**- Once a prototype is successfully developed, there are production agencies and users that have separate responsibilities for serial production, trials and acceptance.
- The user groups change frequently during the development of a product by the DRDO, leading to a slowdown of projects.

What needs to be done?

- **Audit**- A thorough audit of all our DRDO laboratories, encompassing processes, organisation and workforce should be undertaken.
- **Review research**- The degree to which DRDO conducts fundamental research also needs review.

- **Proper examination-** Skewed teeth-to-tail ratios and the top-heavy nature of the organisation must be examined.
 - The tooth-to-tail ratio refers to the amount of military personnel ("tail") it takes to supply and support each combat soldier ("tooth").
- **Critical assessment-** DRDO laboratories' contribution towards enhancing the combat-readiness of our armed forces must be critically assessed.
- **Infrastructure regulation-** Laboratories which not serving their envisaged purpose should be wound up.
- **Productive agencies-** The performance of production agencies as also the involvement and value-addition by user groups must be evaluated and made more productive.
- **Widen the disciplines-** The armed forces must define niche disciplines in which DRDO should expend its efforts.
- **Technology share-** ISRO and DRDO must share technologies that overlap between space and defence domains.
 - Kalam's long association with ISRO and the continuity he provided to the IGMDP would have been two big reasons for the success of the programme.
- **Indigenization-** Self-reliance in the defence industry will enhance India's strategic independence and promote development in the country's domestic defence and aerospace industry.

23. **India vs. China in Smartphone Manufacturing**

- India's smartphone manufacturing industry has reached a noteworthy milestone with the production and launch of the iPhone 15.
- This development raises the question of whether India is on the path to becoming a rival to China in smartphone manufacturing.
- While India has made substantial progress, certain factors still set it apart from China.
- India has become the second largest mobile-producing nation as locally made mobile phone shipments crossed the 2 billion cumulative mark in the 2014-2022 period, registering a 23% growth compounded annually, according to a new report.
- The ramp up in local manufacturing came on the back of huge internal demand, increasing digital literacy, and government push.

A Shift in iPhone Manufacturing

(1) Historical Context:

- iPhones have been assembled in India since 2017.

- Previously, India's assembly lines lagged behind global launches.

(2) The iPhone Breakthrough:

- India's Foxconn plant in Chennai produced the iPhone 15 a month before its global launch.
- This signifies India's transition into a parallel manufacturing market alongside China.

Comparing India and China

(1) Not Yet Equals:

- India's achievement is commendable, but it hasn't completely caught up with China.
- Base iPhone 15 assembly takes place in India, while Pro iPhones are still produced elsewhere.
- Established supply chains in China pose a challenge for India.

(2) The Challenge of Supply Chains:

- Supply chain operations in India aren't as seamless as in China.
- Bridging this gap is expected to take at least two more years.

Understanding Smartphone Manufacturing in India

(1) High-Level Assembly:

- Key components like cameras, displays, and chips are imported.
- India primarily serves as a high-level assembly destination.
- In contrast, China's fabs (chip and display plants) provide a manufacturing advantage.

(2) Skill Development:

- Smartphone manufacturing has become highly automated.
- India's workforce is being upskilled to operate sophisticated assembly lines.
- Supply chain considerations impact Apple's decision to not assemble Pro iPhones in India.

Pricing Dynamics and Future Prospects

(1) Pricing Paradox:

- India isn't inherently a cheaper manufacturing destination compared to China.
- Apple's iPhone sales in India are growing, potentially by nearly 40%.
- Apple doesn't need to lower prices due to continued growth.

(2) Potential Price Revisions:

- India experiences a pricing disparity compared to the US and UAE.
- Price revisions may become necessary once iPhone shipments exceed 10 million units annually.

India's lacunae

(1) High-End Manufacturing:

- India aspires to host high-end smartphone and electronics manufacturing.
- However, this goal is distant due to the country's limited volume in this segment.
- To make this transition viable, firms would need to export around 500 million units annually, a target that seems distant.

(2) Semiconductor Fabrication:

- Semiconductor fabrication, a critical aspect of electronics manufacturing, remains outside India's grasp.
- Moving semiconductor fabrication to India isn't currently feasible for companies due to the lack of scale and infrastructure.

Conclusion

- India's ascent in smartphone manufacturing, exemplified by the production of the iPhone 15, is a significant achievement.
- While challenges remain, such as supply chain scale and workforce upskilling, India's progress underscores its potential to compete with China in the future.
- As smartphone sales continue to surge, pricing dynamics and local manufacturing may undergo further transformations, benefiting both the industry and consumers.

24. UNEP Report on Construction Emissions

The new UNEP report "Building Materials and The Climate: Constructing a New Future" outlines how developing, developed countries can reduce emissions from constructions.

Report about

The buildings and construction sector is by far the largest emitter of greenhouse gases, accounting for a staggering 37% of global emissions.

- **Launch-** The report is launched by UN Environment Program (UNEP) and Yale Centre for ecosystems and architecture.
- It highlighted the pressing need to establish innovative cooperation models to decarbonize building materials.
- These models are critical to achieve the world's ambitious target of net zero emissions from the built environment sector by mid-century.
- The report highlights the overarching strategies which need to be implemented together to decarbonize building materials.
 - **Avoid** unnecessary extraction and production
 - **Shift** to regenerative materials
 - **Improve** decarbonization of conventional materials

Key highlights of the report

- **Embodied vs Operational Emissions** - Indirect operational emissions from residential buildings make up a majority of emissions (11%), while embodied emissions from the use of concrete, steel, etc. account for at least 6%.
- The UNEP warns that embodied carbon is projected to surge from 25% to nearly 49% by 2050.
- The share of operational carbon emissions will shrink due to increased adoption of renewable energy and improvement of energy-efficient buildings.
- **Renovated building-** The report highlighted that a renovated building generates 50-75% fewer emissions than new construction.
- **Cement** - Processing of cement, the binding agent in concrete, contributes to 7% of global carbon emissions.

How to reduce the emissions?

- **Circular design** - The experts call for incorporating circular design strategies to reduce GHG emission by 10-50%.
 - Circular design process enables the recovery of products, parts and materials when a building is disassembled or renovated.
- **Recycled materials-** Avoiding raw material extraction by promoting steel reuse and producing steel from scrap (discarded steel or steel product) can save around 60-80% of the energy.

- If G7 countries and China use recycled materials, they could reduce emission in the material cycle of residential buildings by 80-100% by 2050.
- **Lifetime of buildings-** Increasing the lifetime of buildings creates significant opportunities to reduce aggregate embodied carbon.
- **Bio-based materials-** To reach net zero emissions in the built environment sector, the building materials of the future has to be procured from renewable or reusable sustainable sources.
 - **Mass timber** has emerged as an attractive alternative to concrete and steel due to scalability, sustainability, strength and flexibility in mid-rise urban buildings.
 - **Bamboo** can be processed and manufactured into engineered bamboo whose structural performance similar to that of cross-laminated timber and steel.
- **Decarbonise energy-** UNEP recommended electrifying and decarbonising the energy that is supplied to the production and maintenance of materials, buildings and urban infrastructure across their life cycle.
- **Sustainable alternatives-** Solutions such as reducing the clinker (produced from limestone and chalk)-to-cement ratio and increasing the share of cement alternatives, etc. could help in decarbonising the sector.
- **Carbon capture and utilisation (CCU)** - It is a process of removing carbon from the atmosphere and storing it within the building material itself over time.
 - It is estimated that CCU concrete can remove 0.1 to 1.4 gigatonnes of CO₂ by 2050.

25. A GM crop decision that cuts the mustard

- The zero-hunger target for 2030, as delineated in the 2019 Global Food Security and Nutrition Report, looms as an increasingly elusive goal. To overcome this pressing challenge, it is essential to expedite the genetic enhancement of crops.
- In a world grappling with the formidable challenge of ensuring global food security amid a changing climate, genetic engineering emerges as a beacon of hope. It has become an urgent necessity to complement conventional breeding methods with science-based technologies, particularly genetic engineering, for developing GM crops.

Extensive adoption and benefits of genetically modified (GM) crops

- **Increased Productivity:** Genetic modification of crops, in combination with traditional farming practices, has been extensively documented for its role in increasing agricultural productivity. This technology has made significant contributions to global food, feed, and fiber security.
- **Global Adoption:** According to a report by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) in 2020, a total of 72 countries have embraced GM crops for various purposes, including human consumption, animal feed, and commercial cultivation. This widespread adoption reflects the global significance of GM crop technology.
- **Developing Country Emphasis:** Notably, 56% of the total global GM crop area is found in developing countries, in contrast to 44% in industrialized countries. This highlights the importance of GM crops in addressing food security and economic challenges in the developing world.
- **Beneficiaries:** GM crops have had a positive impact on more than 1.95 billion people globally. Specifically, Argentina, Brazil, Canada, India, and the United States have realized substantial benefits from the adoption of GM crops, benefiting approximately 26% of the world's population.
- **Diversification of Traits:** Genetic modification has extended its reach beyond the major crops of maize, soybean, cotton, and canola. Other economically important food crops have also been modified to exhibit various traits, including resistance to insects and herbicides, improved climate resilience, and enhanced nutritional quality.

Economic Gains and Biosafety

- **Economic Gains:** The global economic gains attributed to GM crops between 1996 and 2018 have amounted to an impressive \$224.9 billion. These benefits have primarily accrued to more than 16 million farmers, with 95% of them residing in developing countries.
- **Proven Biosafety:** GM food crops, since their adoption in 1996, have established a solid track record of biosafety spanning over 25 years. This underscores the safety and reliability of GM crops for human consumption and the environment.

India's Success Story with Bt Cotton

- **Commercialization:** Bt cotton was introduced as the first genetically modified crop in India over 20 years ago, marking a significant milestone in biotechnology adoption in the country.
- **Economic Benefits:** Bt cotton adoption has provided economic advantages to Indian farmers. It has reduced the need for chemical insecticides, leading to cost savings for farmers and reducing their exposure to health risks associated with pesticide use.

- **Increased Yields:** Bt cotton's resistance to pests, particularly the bollworm, has resulted in increased cotton yields in India. Farmers have experienced reduced losses due to pest damage, leading to higher production and improved economic returns.
- **Environmental Impact:** The adoption of Bt cotton has had a positive environmental impact. Reduced pesticide usage in Bt cotton cultivation has led to lower chemical runoff and reduced contamination of ecosystems.

GM Mustard's Progress in India

- **Development of the DMH-11 Hybrid:** Extensive research was conducted at the Centre for Genetic Manipulation of Crop Plants (CGMCP), University of Delhi South Campus, to create a GM mustard hybrid known as DMH-11. This hybrid has been genetically engineered to exhibit higher vigor and yield.
- **Approval by the Genetic Engineering Appraisal Committee (GEAC):** On October 25, 2022, the Genetic Engineering Appraisal Committee (GEAC) of the Ministry of Environment, Forest, and Climate Change in India approved the release of DMH-11 and its parental line for cultivation. This approval represents a significant milestone in the regulatory process for GM crops in India.
- **Environmental Release:** The GEAC's approval for the environmental release of GM mustard indicates that the technology has passed regulatory scrutiny for safety and environmental impact, paving the way for potential commercial cultivation.

Significance for India in Terms of Edible Oil Sufficiency

- **Reduction in Edible Oil Imports:** India currently faces a substantial deficit in edible oil production, with a significant portion of its demand being met through imports. In 2020–21, India's edible oil imports reached approximately 13 million tonnes, with a total value of ₹1.17 lakh crore.
- **Increased Productivity:** GM mustard, particularly the DMH-11 hybrid, has been developed for higher vigor and yield. This increased productivity can play a crucial role in meeting the growing demand for edible oils in the country.
- **Resource Efficiency:** GM mustard's herbicide tolerance trait can lead to more resource-efficient cultivation practices. It helps conserve soil moisture and nutrients and reduces the need for chemical weed control, ultimately contributing to sustainable and self-reliant agriculture.

GM mustard's significance for India's self-reliance

- **Reduced Dependency on Imports:** By boosting domestic edible oil production, GM mustard can reduce India's dependency on edible oil imports. In 2020–21, domestic production of mustard oil was approximately 8.5 million tonnes, while domestic consumption of edible oils reached around 25 million tonnes.
- **Economic Growth:** Successful cultivation of GM mustard can contribute to economic growth in India. It can increase farm incomes and reduce the outflow of foreign exchange for edible oil imports. This is vital for strengthening India's self-reliance and economic stability.
- **Sustainability:** GM mustard's potential for resource-efficient cultivation aligns with sustainability goals. It ensures that agricultural practices are more self-reliant in terms of resource utilization and environmental impact, a critical aspect for long-term agricultural sustainability.
- **Crop Diversification:** The adoption of GM mustard, along with other crops, can diversify India's agricultural output. Reducing dependency on a limited number of crops enhances food security and reduces vulnerability to external factors.

Conclusion

- The approval of DMH-11 marks a significant step towards harnessing this technology for the benefit of Indian farmers and the nation's food security. However, this is just the beginning, and continued efforts to develop improved GM food crops are essential to enhancing the profitability of Indian agriculture.

26. Business Responsibility and Sustainability Reporting (BRSR)

Indian Institute of Corporate Affairs (IICA) recently, organized a workshop on **Business Responsibility and Sustainability Reporting (BRSR)**.

- The Indian Institute of Corporate Affairs (IICA), organized a workshop on Business Responsibility and Sustainability Reporting (BRSR) in collaboration with UNICEF and the National Stock Exchange at the NSE premises in Mumbai on September 12, 2023.
- The workshop aimed to **provide a comprehensive understanding of the BRSR framework**, which is based on the nine principles of the National Guidelines for Responsible Business Conduct (NGRBC).

Business Responsibility and Sustainability Reporting (BRSR):-

- The BRSR framework is a **mandatory disclosure mechanism for the top 1000 listed companies or businesses** to report their performance on environmental, social, and governance (ESG) aspects.
- It demonstrates their **commitment to responsible business practices**.
- It will be **applicable to the top 1000 listed entities** (by market capitalization), for **reporting on a voluntary basis** for FY 2021 – 22 and on a mandatory basis from **FY 2022 – 23**.
- It includes:-
- **Sustainability Reporting:** disclosure and communication of environmental, social, and governance (ESG) goals.
- It is intended to have quantitative and standardized disclosures on **ESG parameters** to enable comparability across companies, sectors, and time.
 - **Environmental criteria:** consider how a company performs as a steward of nature.
 - **Social criteria:** examine how it manages relationships with employees, suppliers, customers, and the communities where it operates.
 - **Governance:** deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights.
- The listed entities already preparing and disclosing sustainability reports based on **internationally accepted frameworks** (such as GRI, SASB, TCFD, or Integrated Reporting)
- **Significance:-**
- Such disclosures will be **helpful for investors** to make better investment decisions.
- It shall also enable companies to **engage more meaningfully with their stakeholders**, by encouraging them to look beyond financials and social and environmental impacts.

27. Pathways to Circular Economy in Indian Electronics Sector

The Indian Cellular and Electronics Association (ICEA) recently released a report on 'Pathways to Circular Economy in Indian Electronics Sector,' after government's effort with NITI Aayog to harness e-waste.

E-waste

- Electronic waste (e-waste) is **discarded electrical or electronic devices or components** that are **unwanted, not working, and nearing** or at the end of their **"useful life."**
- **Used electronics** which are destined for **refurbishment, reuse, resale, salvage recycling** through material recovery, or disposal are also considered e-waste.

Highlights of the “Pathways to Circular Economy in Indian Electronics Sector” report:

- **E-waste management** is largely **informal** in India.
 - Around **90%** of **collection** and **70%** of the **recycling** are managed by a **very competitive informal sector**.
- The informal sector is good at salvaging older devices for parts and profiting from repairs with them.
- There are industrial hubs, where many **printed circuit boards (PCBs)** arrive to recycle **gold** and **silver melted** out of them and sold.
- Phones getting cheaper and people using them more due to cheaper data plans may lead to an **increase** in level of e-waste.
- Facilities that recycle are generally **not equipped to extract the full potential value** of the products they handle, like **extracting minute but precious amounts of rare earth metals** in semiconductors.
 - The **Ministry of Electronics and Information Technology** launched a **scheme** to cover **25%** of the **capital expenditure** on such facilities.

Competitiveness in Informal sector:

- The informal sector relies on a number of tools and techniques to stay competitive.
 - **For example, cannibalization:** A euphemism for **repair shops buying whole devices and breaking them down to serve as spare parts** for repair.
- **Recommendation:** Change the outlook on e-waste management to build a system where **discarded electronics** can have a new life, either by themselves, or by **reintroducing components and precious metals** into new hardware.
- There could be an additional **\$7 billion market** opportunity in India in harnessing e-waste.

What is Circular economy?

- A circular economy is a model of **production** and **consumption**, where items and products are **reused** whenever possible rather than discarded.
- In such an economy, **all forms of waste**, such as clothes, scrap metal and obsolete electronics, are **returned to the economy** or used more efficiently.
- It is a **sustainable economic model** that focuses on **reusing** and **recycling materials** to **reduce the consumption of natural resources** and **avoid waste creation**.

Why is a circular economy important?

- Demand for electronics is rising across all price segments, even as the **production** of these devices entails the **use of scarce elements** and **high emissions**.
- Instead of salvaging electronics parts, a **circular economy** seeks to bring them back into the **electronics ecosystem**.
- There needed to be a policy push to encourage manufacturers to **reuse old components**.
 - For example, by **2019**, China ensured that **5%** of their **secondary raw material** went into manufacturing of new products.

How can e-waste be recycled?

- Through **public-private partnerships** to **distribute the costs** of setting up “**reverse supply chain**”.
 - It will be an **expensive prospect** that envisages **collecting** devices from users, **wiping** them **clean** of **personal data**, and **passing them** along for **further processing** and **recycling**.
- **Launching** an **auditable database** of materials collected, and creating geographical clusters where these devices come together and are broken apart.
- Incentivize ‘**high yield**’ **recycling centers**.
- Encourage **repair** and **making products last longer** by supporting **right to repair** by users may **reduce the environmental burden** of electronic waste.

Challenges in creating a circular economy:

- The informal sector that is **hard to track** or **hold to environmental norms**.
- Consumers are **reluctant** in **handing over** their **devices** after they stop using them.
 - Many consumers are concerned about what may happen to the **personal data** on their devices if they **hand them** in for **recycling**.
- Extracting the **full value of electronics** is **capital intensive**, and will require **better clustering** of **materials**, and a **viable business model**.
- The **challenge** is to be able to **replicate** the **success** of the **informal sector** in a **formalized** and **reliable** way.
 - Shrinking availability of ‘**virgin**’ **components** may not be a prospect that can be ignored for too long.

28. 1st African Climate Summit 2023

The 1st Africa Climate Summit (ACS23) held in Nairobi culminated in the 'Nairobi Declaration', giving the continent a common voice ahead of upcoming key global engagements.

African Climate Summit 2023

- **Theme-** Driving Green Growth and Climate Finance Solutions for Africa and the World
- **Location** - Nairobi, Republic of Kenya
- **Host-** Co-hosted by the Republic of Kenya, the African Union Commission (AUC)
- **Aim-** To position Africa in solidarity with the rest of the world for global climate action.
- **Participants** - Government representatives, policymakers, civil society organizations, the private sector, multilateral institutions, and youth representatives from Africa and beyond
- **Focus areas-** Nexus between climate change and Africa's development reality, with special emphasis on increasing investment in climate action in Africa.
- The event was dominated by discussions about how to mobilize financing to adapt to
 - Increasingly extreme weather,
 - Conserve natural resources and
 - Develop renewable energy.
- **Nairobi declaration-** It will form the basis of Africa's negotiating position at COP28 climate summit in United Arab Emirates.

What are the focus areas of the summit?

- **Thematic areas**
 - Nature Capital
 - Climate Finance
 - Renewable Energy and Energy Transition
 - Green Minerals and Manufacturing
 - Sustainable Agriculture
 - Land Use, Oceans and Water
 - Sustainable Infrastructure and Urbanisation
 - Adaptation and Resilience
- The summit committed to achieve 3 climate finance goals
 - More financing
 - Targeted financing

- Cheaper higher risk appetite financing

What are the key outcomes of Nairobi declaration?

- The summit culminated in the Nairobi Declaration, an eleven-point call to action proclaiming African States' unified stance on climate action.

Climate financing

- **Demands** - At the Summit, African leaders called for a significant overhaul of the global financial system and their demands included
 - Improved access to concessional loans
 - Fulfilment of a 14-year-old promise by developed nations to mobilize USD 100 billion annually for climate adaptation and mitigation
 - Establishment of a carbon markets initiative to fund renewable energy infrastructure.
- **Investments** - During the Summit, donor nations and multilateral organizations pledged approximately USD 26 billion for climate investments.

To meet the emission reduction targets outlined in the Paris Agreement, Africa requires a substantial USD 2.8 trillion by 2030.

Global taxes and funding mechanisms

- **Global Fossil Fuel Tax**- It advocated for targeted taxes on sectors like aviation and maritime, the removal of fossil fuel subsidies worldwide, and the implementation of a global fossil fuel tax.
- **Carbon Border Adjustment Mechanisms (CBAM)** - It can be deployed as a tax for targeted mitigation and adaptation efforts.
- **Financial Transaction Tax**- Exploring this tax on a global scale is another potential avenue for generating significant revenue.
- **Global Climate Finance Charter**- It will be developed through the UN General Assembly and the COP processes by 2025.
- **Debt** - It recommends extending the debt repayment period and instituting a 10-year grace period.

Decarbonisation

- **Urgent action**- The summit calling for immediate action by developed countries to reduce carbon emissions for equality and shared prosperity.
- **Steps to reduce emission**-
 - Adherence to Paris Agreement,
 - Accelerate phasing down coal and
 - Operationalise Loss and Damage facility agreed at COP27.

G20 countries are responsible for around 80% of global greenhouse gas emissions.

What are the shortcomings of the summit?

- **Western delegates** - The proliferation of Western delegates in the Summit is said to have compromised Africa's push for climate justice.
- **Carbon market**- Africa's endorsement to carbon market has been described by many countries as a "bogus solution," to the effects of climate change.
- A new report released by Power Shift Africa states that Africa should not adopt carbon credits as they are like a silver bullet and painkillers for rich polluters.
- **Exclusion of health**- Health is not included in the main agenda, despite extricable link with the climate change.
 - The exclusion happened against the backdrop of 23% of diseases globally being attributed to climate change, whilst the percentage is slightly higher in sub-Saharan Africa at 29%.

29. Reducing Greenhouse Gas Emission through construction

As per the report "Building Materials and The Climate: Constructing A New Future", the building sector is **one of the largest emitters of greenhouse gases**, responsible for at least 37% of global emissions.

- It was released by **United Nations Environment Programme (UNEP)**, and the **Yale Center for Ecosystems and Architecture**.

Key findings of the report:

- According to the report, about **37%** of global greenhouse gas (GHG) emissions can be traced back to the built **environment sector**, which includes **buildings**, the **distribution systems** that supply water and electricity, roads, bridges, and transportation systems.

"Avoid-Shift-Improve" strategies:

- It includes "**Avoiding**" emissions through **circularity** to ensure waste is eliminated while extending a building's life.
- "**Shifting**" to sustainable materials, and "**Improving**" the production of conventional materials such as concrete, steel, aluminium, plastics, glass and bricks.

Greenhouse gas emissions from buildings:

- GHGs from the built environment are categorised into two groups: **Embodied emissions** and **Operational emissions**.
- **Embodied emissions** are the emissions associated with the **construction and demolishing** of a building.
 - They also include emissions from **extraction, manufacturing, transport and on-site construction** of building materials and “end-of-life” demolition or reuse.
- **Operational emissions** are the emissions generated while maintaining the **building’s indoor “comfort levels,”** (by heating, cooling, lighting and electrical appliances).
- **11%** of emissions are from **Indirect operational emissions** from residential buildings while **embodied emissions** from the use of concrete, steel and aluminium account for **6%**.
- **Embodied carbon** (the amount of carbon dioxide across the life cycle of the built environment process) is projected to surge from **25%** to about **49% by 2050**.
- The share of **operational carbon emissions** will **shrink** due to increased adoption of **renewable energy** and improvement of **energy-efficient buildings**.

Renovation of a buildings:

- **Developed countries** should focus on **renovating** existing and ageing building stock as renovating a building generates **50-75%** less emissions than **new construction**.
- Incorporating circular design strategies can **reduce** greenhouse emissions by **10-50%**.
 - It is a **design process** that enables the recovery of products, parts and materials when a building is disassembled or renovated.

Use of recycled materials:

- By using recycled materials, **G7 countries** and **China** could reduce emissions in the material cycle of residential buildings by **80-100% by 2050** and the reductions could reach **50-70%** in **India**.

Switching towards bio-based materials:

- To reach **net zero emissions** in the built environment sector, the building materials of the future will need to be procured from renewable or reusable sustainable sources wherever possible.

- **Mass timber:** It has emerged as an attractive alternative to **carbon-intensive** concrete and steel due to its potential for scalability, sustainability, strength and flexibility in mid-rise urban buildings.
- **Bamboo:** It can be processed and manufactured into a variety of composite materials called engineered bamboo, it gives structural performance similar to that of **cross-laminated timber** and **steel**.

Methods of Decarbonization:

Processing of cement:

- Cement is the binding agent in concrete and contributes 7% of global carbon emissions.
- Solutions such as reducing the **clinker-to-cement ratio** and increasing the **share of cement alternatives** could help in decarbonising the sector.

Carbon Capture and Utilisation:

- **Carbon Capture and Utilisation** for concrete production (CCU concrete) is a process of removing carbon from the atmosphere and storing it within the building material itself over time.
- To achieve net zero emissions, around **95% of CO₂ emissions** from **cement** would need to be **stored by 2050**, up from just **5% by 2030**.
 - **Currently, less than 0.1%** of all global emissions are captured and stored.
 - It is estimated that CCU concrete can remove **0.1 to 1.4 gigatonnes** of CO₂ by **2050**.

Reuse of steel:

- **Avoiding raw material extraction** by promoting steel reuse and producing steel from scrap (discarded steel or steel product) can save around 60-80% of energy.
- It helps to **reduce steel demand** by **extending building lifetimes**, and switching to **circular bio-based materials** such as engineered timber and bamboo.
- Using **renewable energy for aluminium production** is important and producing aluminium from scrap can reduce the energy demand by 70-90%.

30. Child Rights and Environment

For the first time, the United Nations has recognised and affirmed children's rights to a clean, healthy and sustainable environment in a new guidance on children's rights and the environment.

UN guidance on children's rights and environment

- The UN guidance, formally known as **General Comment No. 26**, was adopted in 2023.
- It provides a legal framework to address the adverse effects of environmental degradation and climate change on the enjoyment of children's rights.
- It is to ensure a clean, healthy, and sustainable world now and to preserve it for future generation
- It encompasses their rights to information and participation.
- It allows access to justice to protect and receive remedies for the harms caused by environmental degradation and climate change.
- It details member states' obligations under the **Child Rights Convention (UNCRC)** to address environmental harms and guarantee that children are able to exercise their rights.

What about the UNCRC?

- United Nations Convention on the Rights of the Child (UNCRC) was approved by the United Nation General Assembly (UNGA) in **1989**.
- It outlined children's rights, which include the right to life, health, clean drinking water and survival and development.
- It has been ratified by **196 countries** including **India**.

Impacts of climate change on children

- Children, including adolescents under the age of 18, are often more vulnerable than the general population to the health impacts of climate change.
- **Displacement of children** – According to UNICEF report, extreme weather reports around the world lead to 12 million displacements of children in 2022.
- **Increases child mortality** – According to a study, Heat-related child mortality due to high emissions is projected to double in the continent by 2049, compared with 2005–2014.
- **Separation from family** – Climate change induced migration makes children highly vulnerable as they may get separated from their families or caregivers.
- **Increases child labour** – Climate change related industries like agriculture and mining contribute to child labour which can expose children to exploitation and violence.

- **Accelerates hidden hunger** – Infants will bear the increased burden of malnutrition as the temperature increases.
- **Increases disease Burden** – Children will suffer more from the rise of infectious diseases.
- **Less focus on human development** – Climate affected children are denied access to education and healthcare.

What is the relationship between extreme weather events and child marriage?

- Extreme weather events intensifies elements of structural oppression such as gender inequality and poverty.
- Gender-based violence and inequities have adverse impacts on girls' resilience leading to higher incidences of child, early and forced marriages (CEFM) in low and middle-income countries.
- **Reasons for child marriages** - It is often seen as a coping strategy to reduce economic vulnerability and food insecurity.
 - In Bangladesh, daughters were married early after Cyclone Aila in 2009.
- Parents resorted to child marriages to protect daughters from sexual violence and avoid family dishonour.
 - Rates of sexual assault often escalate during times of crisis, particularly in evacuation camps or temporary shelters.
- **Linkage with bride price/dowry** - Girls in sub-Saharan Africa or Vietnam have a local custom of bride price which had increased probability of CEFM during extreme events.
- But, in regions where dowry is common such as India, girls were less likely to get married during a drought year, because the bride's family could not afford dowry payment.

Bride price is the material or money entitlement that the groom's family is paying to the bride's family during marriage.

Dowry is the material or money entitlement that the bride's family is paying to the groom's family during marriage.

- **Other findings-** Education and financial control are key to empowering women and girls and allowing them to take their own decisions.
- Educational attainment and CEFM were inversely associated for girls in India and Malawi.
- Also, the incidence of CEFM decreased as parental education increased was observed in India and Vietnam.

31. India-Middle East-Europe Economic Corridor

The announcement at the G20 Leaders' Summit on the landmark India-Middle East-Europe Economic Corridor (IMEC) has the potential to make India an Asian hub in global supply chains.

IMEC

- **IMEC** - It is a network of transport corridors that aims to foster connectivity and economic integration between South Asia, Arabian Gulf and Europe.
- It is a part of the Partnership for Global Infrastructure Investment (PGII).
- **MoU Countries** - India, the US, Saudi Arabia, the European Union, the UAE, France, Germany and Italy.
- **Route** - IMEC will consist of 2 distinct corridors
 - The **Eastern corridor** linking India to the Arabian Gulf,
 - The **Northern corridor** linking the Arabian Gulf to Europe.
- The corridor will include a rail link as well as an electricity cable, a hydrogen pipeline and a high-speed data cable.
- The project is also called as "a green and digital bridge across continents and civilizations."
- **Significance** - It is being positioned as a modern-day Spice Route, and alternative to China's Belt and Road Initiative.
- The corridor also extends India's reach to North Africa and North America.
- It is expected to reduce the time and cost of transporting Indian goods to Europe by 40% and 30%, respectively, and vice versa.
- It complements the existing maritime and rail-road transport routes, such as the Suez Canal, North South Transport Corridor, and China's Silk Routes.

Supply chains refer to the geographical location of stages of production (such as design, production, assembly, marketing, and service activities) in a cost-effective manner.

Why are global supply chains moving from China?

- Rising wages in China
- Supply chain bottlenecks within China
- Investor concerns about tighter regulation of foreign firms
- China's trade war with the US
- Profitability of relocating production away from China

India, Japan and Australia has launched the Supply Chain Resilience Initiative (SCRI) in 2021 to attain strong, sustainable, balanced and inclusive growth in the Indo-pacific region.

Why is India being considered an attractive supply chain hub?

- **Cheap wages with more labours** - India surpassed China as most populous country in 2023 and also peaks in demographic dividend.
- **Fiscal incentives** - Production Linked Scheme (PLI) was launched to provide incentives on incremental sales from products manufactured in domestic units.
- **Improved logistics**- PM Gati Shakti, a national master plan synchronises connectivity infrastructure projects across modes of transport.
- National Logistics Policy 2022 was launched to achieve quick last mile delivery and end transport related challenges.
- Promoting Multimodal Logistics Park by laying foundation stone for country's first at Jogighopa in Assam.
- **High-end Technology in India**- India has ramped-up manufacturing of iPhones in the country.
- Foxconn Technology Group is developing a chip-making fabrication plant in Gujarat.
- **Investment promotion**- India's attractiveness to foreign investors is also linked to geopolitical and economic factors.
- **Improvement in trade** - The World Trade Organisation (WTO) lists India as the 6th largest importer of intermediate goods in last quarter of 2022.
- India could in the future, double its current 1.5% share of world exports of intermediate goods.
- **Sectoral advantage**
 - **Manufacturing sector**- Automotives, pharmaceuticals and electronics assembly
 - **Service sector**- Information and communications technology, back-office work, financial and professional services, and transport and logistics.
- **Improved bilateral ties**- The UAE-India Comprehensive Economic Partnership Agreement entered into force in May 2022.
- An Australia-India free trade agreement (FTA), talks are ongoing to conclude the full FTA by the end of 2023.
- Negotiations for a UK-India and EU-India FTA are in process.

What must India do going forward?

- **Encourage investments** - Facilitate investment at a high level, with competitive fiscal incentives.
- Promote export-oriented foreign direct investment (FDI) to participate in supply chains through trade liberalisation
- **Promote Ease of Doing Business** - Reduce business hassles through digitalisation of tax, customs, and business administration, and high-quality free trade deals is essential.
- Creation of modern special economic zones as public-private partnerships.
- **Strategize businesses** - Small and mid-sized enterprises should work as industrial suppliers and subcontractors to large exporters.
- Conglomerates can cross-subsidise investments and other costs among business units.
- **Improve quality standards**- Invest in domestic technological capabilities to achieve international standards of price, quality, and delivery.
- **Need of policy reforms**- Improving coordination between the central and state governments is need of the hour.

32. **Monoclonal antibody**

India is procuring **monoclonal antibodies**, specifically **m102.4**, from Australia to **potentially treat Nipah virus (NiV) infections in Kerala**, which were originally developed for **Henipavirus**.

Monoclonal Antibodies

- Monoclonal antibodies are **proteins made in a laboratory** meant to **stimulate humane immune system**.
- The word “**monoclonal**” refers to the fact that the **antibodies created** in the laboratory are **clones**.
 - They are **exact copies of one antibody**.
- **Body produces antibodies naturally** and help the **immune system recognize germs** that cause disease, such as **bacteria** and **viruses**, and mark them for destruction.
 - Like body’s own antibodies, monoclonal **antibodies** recognize **specific targets**.

What is the difference between monoclonal antibodies and polyclonal antibodies?

- **Monoclonal antibodies** are clones of just **one antibody**, and they bind to **one antigen only**.
- **Polyclonal antibodies** come from **several different types** of immune cells and **will bind to more than one antigen**.

Use case:

- Monoclonal antibodies are used for **diagnosis, disease treatment and research**. They're used:
 - As probes to **identify materials in laboratories** or for use in home-testing kits like those for pregnancy or ovulation
 - To **type tissue and blood** for use in **transplants**
 - For **diagnosis**
 - For **disease treatment**

About Monoclonal Antibody m102.4:

- The **monoclonal antibody m102.4** is a potent, **fully human antibody** that neutralises **Hendra and Nipah viruses** in vitro and in vivo.
 - **Nipah viruse** is a highly fatal **bat-borne disease** with mortality rates ranging from **40% to 70%**

33. Dedicated Coal Corridors for Indian Railways

The Railway Board has recently analysed and suggested creating “**strategic coal corridors**” to **relieve stress** on the existing network and prepare the **railway infrastructure** for a surge in demand.

Key highlights of the Study:

- With an anticipated population of **1.51 billion** in **2030**, per capita energy consumption in India is expected to hover around **2,000 units annually**.
- **Energy shortfall** could severely hamper the nation's growth, leading to shortages or outages across various sectors, including manufacturing, agriculture, and transport.
- A significant increase in **India's coal consumption** is projected to reach **1,853 million tonnes (mt)** by **2030**.
- This projection accounts for the **nation's robust economic growth rate** and the **per capita energy consumption** expected in **2030**.
- This revised estimate has surpassed the figures outlined in the **National Rail Plan**, which had initially pegged coal consumption at **1,547 mt**.

Coal Movement Zones in India:

- Most of the coal moves **from Odisha, Jharkhand and Chhattisgarh** to the north, west and southeast regions of the country.

- It is necessary to **create coal corridors** in these routes in line with **Dedicated Freight Corridor (DFC)** corridors.
- The **East-Coast Dedicated Freight Corridors (DFC)** and the eastern part of the **East-West DFC corridors** are to be developed “**on priority**”, the report mentions.
 - This will provide access to coal mainly from **Talacher, IB valley** and elsewhere to various ports located on the eastern coastline (**Paradip, Haldia, etc.**).

Need of Coal Corridors for Railways:

- It could help the Indian Railways “**in assisting the energy sector**” by meeting the aim of **generating 3,000 billion units (BU)** by **2030** and fueling the **economy’s growth**.
- **Thermal power** still accounts for a **majority** of energy consumption (and renewables being at **30%**).
- The Indian Railways predict that the **demand for coal** will increase at a drastic rate and **infrastructure** is needed to cater to such surge in demand

On-going Projects of Railways:

- The **Traffic, Transportation and Business Research (TT&BR) unit** has identified and listed **615 priority projects**.
 - **Super-Critical-I Projects (Completion by FY 2024-25):** This category comprises 132 projects, including track enhancements and yard remodelling, aimed at streamlining coal transportation.
 - **Super-Critical-II Projects (Completion by FY 2026-27):** This category comprises 184 projects, including track enhancements and automatic signalling works.
 - **Critical Projects (Completion by FY 2027-28):** A total of 299 projects fall into this category, involving track enhancements and yard remodelling.
- Thus, the development of India will depend on **thermal energy** and **coal transportation**.

34. New ‘string’ technology for extracting lithium

Researchers have developed an innovative lithium extraction technique, to revolutionize lithium production, reducing time and land requirements, and meeting growing battery demand.

How is lithium production changing and why?

- Large majority of the lithium produced in the world is extracted from “**brine reservoirs**” located in salt flats.
- This method of production can require hundreds of square kilometres, and it often takes **months** or **even years** to produce lithium that can be used in batteries.
- The total demand for lithium was **500,000 metric tons** of lithium carbonate equivalent in 2021.
- It is expected to grow to between **two to three million tons** in 2030, according to McKinsey.
- In 2015, less than **30 per cent** of the demand was for batteries, with the rest split between **ceramics and glasses, greases, metallurgical powders, polymers** and **other uses**.
- By 2030, batteries will account for **95 per cent** of the demand, growing with the penetration of **electric vehicles** and **energy storage devices**.

Innovative Technique for Efficient Lithium Production

- Researchers have developed a technique that can drastically **reduce the amount of land** and **time needed for production**.
- This can **improve production** at existing lithium factories in the world while also unlocking sources that may have been too small or diluted to have been worthwhile in the past.
- Researchers used a set of **porous fibres** twisted into strings and engineered them to have a **water-loving (hydrophilic) core** and **water-repelling surface**.
- When one end is **dipped in a salt-water solution**, the water travels up the string because of **capillary action**.
- This is the same process used by **trees to raise water from roots to leaves**.
- Then, the water evaporates quickly from the string’s surface. This leaves behind salt ions such as sodium and lithium.
- The water will continue to evaporate like this as the salts become increasingly concentrated, eventually forming sodium chloride and lithium chloride crystals.
- This can be **harvested relatively easily**.

How the strings can fit into conventional lithium production methods?

- The strings themselves are not very hard to make.
- The raw strings were treated with chemicals to make them more **hydrophilic inside** and **hydrophobic outside**.

- Conventional methods of extraction rely on a series of **massive evaporation ponds** that concentrate lithium from saltwater reservoirs, and salt flats of underground aquifers.
- This means that operations are only commercially viable in a **few locations** around the world that meet some important criteria:
 - High starting lithium concentration,
 - Abundance of cheaply available land, and
 - Hot and dry climate to maximise evaporation.
- The new technique can remove some of these prerequisites by essentially **“putting the pond on a string.”**
- It can cut the amount of land required by **90 per cent** while accelerating the evaporation technique by more than **20 times**.
- This could mean that initial lithium harvest can happen in **less than one month**, compared to the **months** and even years it takes now.

Can this technology revolutionize lithium extraction methods?

- It will also allow us to look into **new areas to extract lithium from**.
 - For example, **defunct oil and gas wells and geothermal brines** that are currently considered too small or too diluted for lithium extraction could become viable sources.
- It might even open the doors to **try extraction in humid climates**.
- But the technology has currently only worked on a **laboratory scale** and the researchers are working on making it commercially viable.
- They are also investigating if it can be used to extract lithium from seawater.

35. Collaborative Partnership on Forests (CPF)

The Collaborative Partnership on Forests (CPF) has launched the Joint Call to Action for Forests towards 2030.

Collaborative Partnership on Forests (CPF):

- The Collaborative Partnership on Forests (CPF) is an innovative **voluntary interagency partnership** focused on forests.
- It was established in **April 2001** in response to a resolution (2000/35) issued by the **Economic and Social Council of the UN (ECOSOC)**.
- It has **four focal areas**: Implementation and action; data, science and innovation; finance for forests; and communication and awareness-raising.
- This resolution also led to the creation of the **International Arrangement on Forests and the UN Forum on Forests (UNFF)**.

Mission:

- To enhance the contribution of various types of forests and trees outside forests to the **2030 Agenda for Sustainable Development** and other globally agreed development goals.
- To promote **sustainable forest management** and strengthen long-term political commitment to these objectives.

Functions:

- Supporting the work of the **UNFF** and its member countries.
- Providing scientific and technical advice to the Forum and governing bodies of other **CPF** members upon request.
- Enhancing **coherence, cooperation, policy coordination, and joint programming** among its member organizations.
- Promoting the implementation of the **UN Forest Instrument**, the **United Nations Strategic Plan for Forests**, and the contribution of forests and trees to the **2030 Agenda for Sustainable Development** and other significant forest-related agreements.

36. India's Falling Cotton Production

The pink bollworm has taken a toll on the fibre crop, even as new “mating disruption” technologies to control the pest are showing promise.

Cotton

- Cotton is one of the most important fiber and cash crop of India and plays a dominant role in the industrial and agricultural economy of the country.
- **Origin** - India is believed to be the home of cotton because the art of making cloth from cotton was first developed in India.
- **Cultivated Species** - There are four cultivated species of cotton viz.
 - **Old World Cottons (or) Asiatic cottons** - *Gossypium arboreum*, *G. herbaceum*,
 - **New World Cottons** - *G. hirsutum* (American Upland cotton), *G. barbadense* (Egyptian cotton)
- *G. hirsutum* represents 94% of the hybrid cotton production in India and all the current Bt cotton hybrids are *G. hirsutum*.

India is the only country in the world where all the four cultivated species are grown on commercial scale.

- **Climate & Soil-** Cotton is a semi-xerophyte that is grown in tropical & sub tropical conditions.
- It is grown on a variety of soils ranging from well drained deep alluvial soils to black clayey soils.
- Cotton is a Kharif crop in the major parts of the country and also monsoon based in southern zone.

What is the significance of cotton?

Ginning is the process of separating the fibres from the seed. The raw un-ginned cotton harvested by farmers is called kapas which has the white fluffy fibre or lint (36%) and seed (62%).

- Cotton has a roughly two-thirds share in India's total textile fibre consumption.
- It plays a major role in sustaining the livelihood of an estimated 6 million cotton farmers and 40-50 million people engaged in related activity such as cotton processing & trade.
- Cottonseed is the country's 3rd largest domestically-produced vegetable oil (after mustard and soyabean)
- Cotton seedcake, a protein-rich feed ingredient for livestock and poultry, is the 2nd biggest feed cake/meal (after soyabean).
- Due to its economic importance in India, cotton is also termed as "White-Gold."

What is the present issue with Cotton production?

- Between 2000-01 and 2013-14, India's cotton production, in terms of lint, almost tripled from 140 lakh to 398 lakh bales of 170 kg each due to Bt technology.
- However, the *Pectinophora gossypiella* or pink bollworm (PBW) have developed resistance Bt toxins over time and to fall in yields.
- This is because PBW is a **monophagous pest** that feeds mainly on cotton unlike American bollworm that is polyphagous, with alternative hosts.
- The PBW population that became resistant from **continuously feeding** on Bt hybrids, therefore, gradually overtook and replaced the ones that were susceptible.
- The **pest's short life cycle** (25-35 days) was conducive for it to complete at least 3-4 generations in a single crop season of 180-270 days, further accelerating the resistance breakdown process.

Bt cotton is the only GM crop that is allowed in India. Bt cotton has been genetically modified by the insertion of one or more genes from a common soil bacterium, *Bacillus thuringiensis*.

How to control the bollworm infestation?

- **Spraying insecticides** – Such as profenofos, chlorpyrifos, indoxacarb, and cypermethrin.
- **Mating disruption** – It involves deploying Gossyplure, a pheromone signalling chemical which attracts the male adult moths into lures and prevent from mating with females.
- The Central Insecticides Board & Registration Committee under the Agriculture Ministry has approved two mating disruption products.
 - **PBKnot** – It is a dispenser having a 20-cm hollow polyethylene pipe, into which Gossyplure is impregnated and gets released from over 90 days and reducing the scope for infestation.
 - **SPLAT-PBW** - A flowable emulsion formulation technology for delivering Gossyplure.

37. Agumbe forest

Agumbe in **Shivamogga** district of **Karnataka** has recently been witnessing **lower rainfall**.

Agumbe forest:

- The Agumbe forest is located on the **mountain** pass that connects the plains of **Karnataka** with the **coastal region**.
- The Agumbe forest or Agumbe Rainforest Complex (**ARC**) has been christened as the '**Cherrapunji of the South**' for receiving over **8,000 mm** of **rainfall** during the **monsoon**.
 - **Cherrapunji** of **Meghalaya** is one of the **rainiest** places in India.
- The **first rain gauge** was laid by **British** in **1882**.
- Rain in Agumbe **feeds** many **water bodies** that nurture rivers originating in the **Western Ghats**.
- It is the world's only **natural** habitat of the **King Cobra**.
 - **Romulus Whitaker** had set up a tropical research station called the **Agumbe Rainforest Research Station (ARRS)** to study the them.
- As part of the **Western Ghats**, **Agumbe** lies in a **UNESCO World Heritage Site**.
- These regions foster **thick bamboo groves**, which are **endemic** to the **Western Ghats**.

- These groves need **more rain** to **grow** such that it can house the **nests** of **King Cobras**.
- **Temples** located in the region- **Agumbe Venugopalakrishna** and **Sringeri Sharadamba** temple.
- **Flora**: *Dipterocarpus indicus*, *Dysoxylum malabaricum*, *Calophyllum apetalum*, *Vateria indica*, *Aristolochia tagala* etc
- **Fauna**: lion-tailed macaque, tiger, leopard, sambar, giant squirrel, dhole, gaur, Indian bison and barking deer.

Strengthening of Power Sector in India

The Central Electricity Authority (CEA) recently projects India's power sector demand to increase 1.8 times between 2021-22 and 2031-32. At this rate, India's annual per capita electricity consumption will be about 1,700-1,800 units in 2031-32.

Power Sector in India:

- India was ranked **4th in wind power, 5th in solar power and 4th in renewable power installed capacity**, as of 2020.
- **Installed Generation Capacity (Fuel wise)**: Fossil Fuel – 2,37,269MW (56.8%) in which Coal and Lignite has largest share 50.7%,
- India is the **only country among the G20 nations** that is on track to achieve the targets under the **Paris Agreement**.
- As of October 2022, India's installed renewable energy capacity (including hydro) stood at 165.94 GW, representing 40.6% of the overall installed power capacity.
- **Solar energy** is estimated to contribute **62 GW, followed by 41.84 GW from wind power, 10.70 GW from biomass, 4.92 GW from small hydropower, and 46.85 GW from hydropower.**

Challenges in India's Power Sector Transformation:

- **Policy and Regulation of power Sector**: Electricity is listed in a '**concurrent list**' in seven schedules, therefore there is lack of coordination and cooperation between centre and states.
- **Generation of electricity in the power sector**: In spite of the renewables push, coal still accounts for about 50% of India's installed power capacity.
 - **Central Electricity Authority (CEA)** identified land acquisition, fund constraints with contractors, and contractual disputes as some key issues leading to delays.
- **Subsidies: Government subsidy and cross-subsidy** from industrial and commercial consumers attempt to keep electricity affordable for residential and agricultural consumers.

- For example, in 2019-20, while **21% of the total electricity supply** was sold to agricultural consumers, their share in the **total revenue was only 2%**.
- **Transmission issue in power sector:** The country's weak transmission grid remains a serious hurdle.
 - For example: A planned approach to build huge solar plants in Leh was recently cancelled due to a lack of transmission infrastructure.
- **Climate Finance and decarbonization:** India's pledge at the COP-26 summit to have 500 GW of non-fossil generation capacity by 2030. These will require investments of about Rs 32 lakh crore.
- **Transmission lines overloading:** Due to higher loads during peak hours, transmission lines frequently experience issues.
- **Distribution in power sector:** Discoms are the weakest link in India's Power sector.
 - Discoms continue to register financial losses, technical and commercial losses remain high.
 - Although private participation is permitted, their presence among discoms is limited.
- **Underutilization of Renewable Energy Potential:** The National Electricity Plan (NEP) projects a compounded annual growth rate (CAGR) of 7% in energy demand from FY22 to FY27.
 - The report estimates that the pace of solar installations will need to double to over 30 GW per year to meet the NEP targets.

Solutions to tackle these challenges:

- **Fuel Reforms:** Various aspects like ramping up coal production by both public and private sector in a time-bound manner, increased participation of private sector in coal production and easing of regulatory framework etc need to be addressed while formulating such reforms.
- **Taxation:** Power-generating companies should not be saddled with the burden of cross-subsidising the renewable sector.
 - This can be borne by the society (through taxation) and not by the entities that are already in trouble.
- **Cooperative federalism:** To resolve water disputes, government must help states to come to a common ground.
 - Emphasis should be on cooperative federalism with shared benefit to all the states.
- **Balanced Regulatory Interventions:** Regulators need to be sensitised to the challenges faced by the sector and policy framework needs to be crafted and enforced to ensure a win-win situation for all the stakeholders.
 - They must pro-actively intervene to resolve the immediate issues ailing the power sector.

- **Increased Financing Facilities for Energy Sector:** A robust and sustainable credit enhancement mechanism for funding in Energy Sector needs to be put in place through increased participation by global funding agencies like The World Bank, ADB etc. in the entire value chain.
- **Merger of ministries:** There should be only one energy ministry to make coordination and implementation of policies better.
 - It will remove policy paralysis too.
- **Reduction of transmission losses:** This should be achieved by better infrastructure and technological efforts.
 - Old plants should be shut and should be replaced with new.

Way Forward:

Therefore India's growing economy demands an exponential increase in electricity supply, which requires a comprehensive reforms in policy, regulation, and the entire power sector are essential. By embracing decentralization, upgrading technology, and privatizing distribution companies, India can pave the way for a more efficient and sustainable power sector, ensuring a brighter future for its citizens.

38. Challenges in Tripling Global Renewable Energy Capacity

G20 countries have committed to work towards tripling global renewable energy capacity by 2030 but there are several challenges in achieving the target.

Climate actions taken in G20 meet 2023

The G20 nations collectively contribute to approximately 80% of global emissions.

- **Delhi Declaration on Climate Action (G20 2023)** - The only new and clear deliverable is tripling global renewable energy capacity by 2030.
- It recognised the need to accelerate efforts towards phase down of unabated coal power in line with national circumstances.
- For the 1st time, G20 nations agreed on requirements of \$5.9 trillion funds by 2030 to meet their climate goals.
 - According to IAEA, this could prevent 7 billion tonnes of carbon dioxide emissions by 2030.
- UK PM Rishi Sunak has announced \$2 billion to Green Climate Fund (GCF) to tackle climate change at G20 Meet.

The GCF, established by 194 countries (Copenhagen Accord at COP15) is the largest global fund dedicated to supporting developing countries to reduce global emissions and helping communities adapt to the effects of climate change.

- **Issues unaddressed** - The Summit avoided most of the contentious issues like greater emission cuts, phase-out of fossil fuels, and massive mobilisation of financial resources.
- It also did not provide any plan to amend existing policies and targets in order to achieve the target of ramping of renewables.

What are the challenges in tripling renewable energy capacity by 2030?

- **Capacity additions** - Annual capacity additions have more than doubled from 2015 to 2022, rising by about 11% per year on average.
- But, higher annual growth rate is required to put renewables on track to meet the 2030 capacity target.
 - To triple the total capacity by 2030, the world would have to add nearly 1,000 GW of new capacity every year.
- **Policy push** - A higher annual growth rate would require much stronger policy push from governments.
- **Availability of financial resources** - According to an IRENA outlook, investments of about 5.3 trillion USD would be required per year, till 2050, for energy transition to limit the global rise in temperatures to within 1.5 degree Celsius from pre-industrial times.
- **Achieving 1.5 degree Celsius goal**- Even if the tripling target is achieved by 2030, it alone would not be sufficient for the 1.5 degree Celsius goal.
- Renewable energy, if tripled, would be able to avoid only 7 billion tonnes of CO2 equivalent, or less than one third of what is required.

39 Circular Economy in Electronics Sector

Recently, The Indian Cellular and Electronics Association (ICEA) released a report on 'Pathways to Circular Economy in Indian Electronics Sector' to build a system where discarded electronics can have a new life.

What are e-wastes?

According to Global E-waste Monitor Report 2020, India is the third largest e-waste generator in the world.

- E-waste (electronic waste) is used to describe old, end-of-life or discarded electric and electronic appliances.
- **India's e-waste Management**
 - **Largely informal in India** - Roughly 90% of collection and 70% of the recycling are managed by a very competitive informal sector.
 - In India, Mumbai ranks first in generating e-waste followed by Delhi, Bangalore, Chennai.

- **Industrial hubs** – Like one in Moradabad, where printed circuit boards (PCBs) gold and silver melted out of them and sold.
- **E-Waste (Management) Rules, 2022** – digitise the process and provide more visibility to the movement of e-waste in the economy.

How can e-wastes be recycled?

- **Encourage manufacturers to use old components** – Like China which targets 35% of secondary raw materials in new products by 2030.
- **Promote public-private partnerships (PPP)** – PPPs can distribute the costs of setting of reverse supply chain.

Reverse Supply chain envisages collecting devices, wiping them clean of data and passing them along for further processing and recycling.

- **Launch an auditable database** – Maintain transparent record of materials collected for accountability.
- **Create geographical clusters**– Concentrate devices in specific areas for dismantling and recycling.
- **Incentivising high yield recycling centres** – Equipping centres can be set to extract the full potential value of the products they handle.
- **Right to repair**– Encourage repair and longevity to reduce the environmental burden of e-waste.

What are the challenges associated in recycling?

- **Lack of Infrastructure** – There is a lack of infrastructure for collection, treating and recycling e-wastes.
- **High costs** – Setting up of recycling centres requires high initial capital costs.
- **Idle e-devices** – Around 200 million devices are estimated to be lying at consumers' homes without getting recycled.
- **Lack of financial incentives** - There is the lack of public awareness of e-waste hazards in India, and recycling is, therefore, very low.
- **Less Information**- There is less understanding of a nature and amount of e-waste that gets imported into the country.
- **Unsustainable Informal Sector Practices**- The sector's waste management practices pose serious environmental and health hazards to the workers themselves as well as the larger public.

What lies ahead?

- **Enforcing legislation** – Stringent provisions under extended producer responsibility is needed.

- **Facilitate PRO** – Producer Responsibility Organisations (PRO) can be utilized to transfer responsibilities and liabilities.
- **Formal e-waste facility** – Boosting the formal e-waste facility is needed to protect the welfare of labours of informal sectors.
- **Inventories**– Inventories for e-wastes need to be set at both regional and at national level.
- **Clustering of materials** – For efficient recycling process, better clustering of materials is essential.
- **Viable business model** – Viable business model can be developed for better returns and sustainability of the business.

40. India to unveil 50-year Government Bonds

- India is set to make history by issuing its first-ever 50-year government bonds and 30-year green bonds.
- These offerings have piqued the interest of insurance companies and provident funds seeking avenues to invest their long-term funds.

Why such move?

- **Ambitious Target:** India aims to mobilize ₹6.55 trillion (\$78.73 billion) through bond sales from October to March. This includes a significant ₹300 billion allocation to the 50-year security, marking the central government's maiden auction of such bonds.
- **Natural Demand:** Long-term investors, particularly insurers, find the 50-year bonds appealing due to their alignment with asset-liability management requirements.

Government Bonds in India

- Government Bonds in India, fall under the broad category of Government Securities (G-Sec) and are primarily long term investment tools issued for periods ranging from 5 to 40 years.
- It can be issued by both Central and State governments of India. Government bonds issued by State Governments are also called State Development Loans (SDLs).
- The GB interest rates, also called a coupon, can either be fixed or floating and disbursed on a semi-annual basis.
- In most cases, GOI issues bonds at a fixed coupon rate in the market.

Advantages offered

- **Sovereign Guarantee:** Government bonds are backed by the government's commitment, offering stability and assured returns.
- **Inflation-Adjusted:** Inflation-indexed bonds protect investors from rising prices, maintaining the real value of their investments.
- **Regular Income:** Government bonds provide semi-annual interest disbursements, offering investors a source of regular income.

Limitations

- **Lower Income:** Apart from 7.75% GOI Savings Bonds, government bonds typically offer lower interest rates.
- **Lack of Relevance:** With maturity tenures ranging from 5 to 40 years, government bonds may lose relevance over time, particularly in the face of inflation.

