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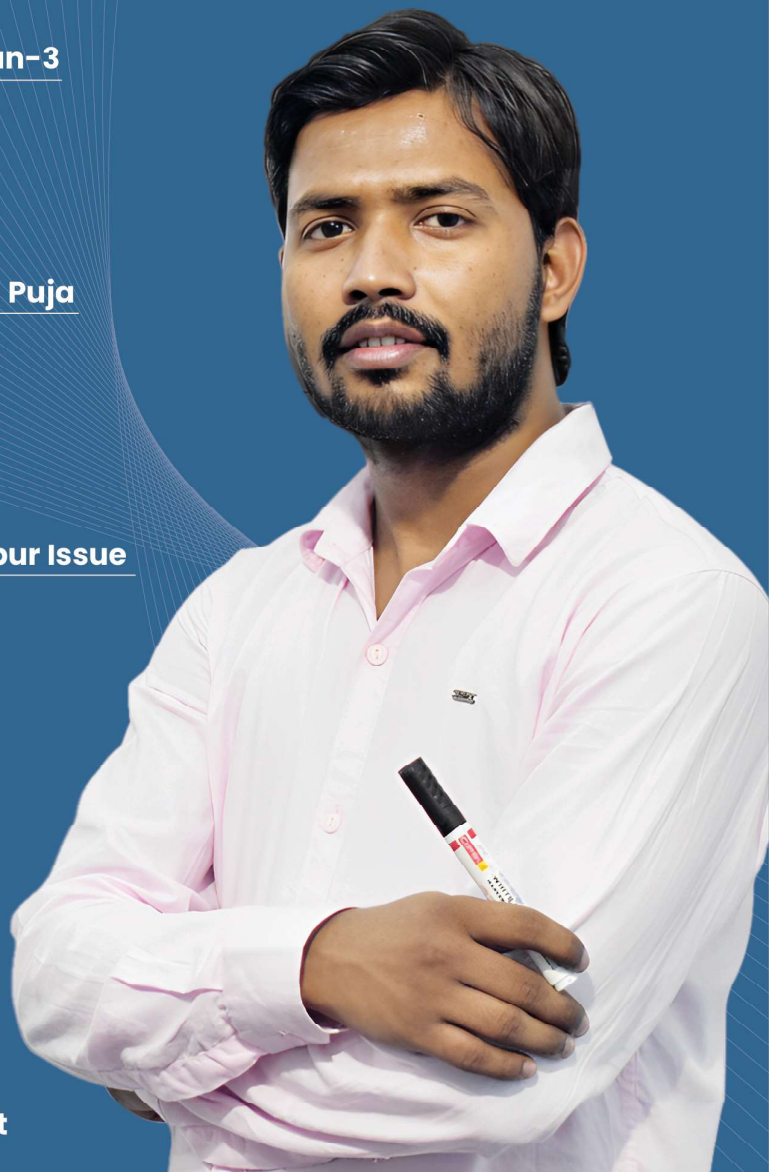
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HISTORY, ART AND CULTURE

1. Tamil Manuscript Found in Italy

Current Context

Palm manuscripts from the 18th century titled *"Gnanamuyarchi"* were found in an Armenian monastery in Italy.

About

- Tamil Bharathan, a doctoral scholar of the Special Centre for Tamil Studies in Jawaharlal Nehru University (JNU), was allowed access to the manuscripts.
- He was there on an invitation to participate in a seminar on Greek Palaeography at the headquarters of the Hellenic Institute of Byzantine and Post-Byzantine Studies in Venice.

Key Details

- This translation is most likely by Michele Bertoldi, known in Tamil as Gnanaprakasasamy.
- The library, which mistakenly categorized the manuscript as 'Indian Papyrus Lamulic Language–XIII Century', was not aware that it had been written in Tamil.

- It is a prose text from the early 18th Century and has a history of being printed several times in the 19th Century by the Mission Press in Puducherry.

Significance

- The discovery holds importance in context of Tamil literary and religious history as it could be a copy of the first translation of Ignatius' "Spiritual Exercise" in Tamil.
- Those in charge of the monastery hold the opinion that the Armenians in Chennai could have brought the manuscripts to Italy.
- Thus, it provides us with an interesting insight into the localization of Christianity in pre-modern Tamil Nadu by Roman Catholics.

2. Rock Art of Rudragiri Caves

Current Context

Archaeologists deciphered rock-cut paintings and murals in the Rudragiri hillock caves that date back to prehistoric times while some find origin during the era of the Kakatiya dynasty (12th to 14th Century AD).

About

- The three caves in the foothills of Rudragiri contain three different murals of the Kakatiya dynasty.
- At the southern end of the hillrock, two natural caves have been identified to host mural paintings from the Kakatiya Dynasty, which showcase the exceptional artistic brilliance of the period.

The Rudragiri Hillock

- The Rudragiri hillock is located in the **Orvakallu village**, Guntur district of Andhra Pradesh. The site is known to possess a celebrated historical past along with remarkable archaeological heritage.

- Geographically, Rudragiri is located in the Eastern Ghats and is characterized by the presence of five naturally formed rock shelters at the foothills of the mountain, facing towards the west.

Historical and Cultural Importance of the Hillock

- The site unveils a fascinating combination of rock paintings from the prehistoric era, especially during the Mesolithic age (around 5000 B.C.) as well as luminous rock paintings and murals that resemble Kakatiya art.
- Although some of them got naturally damaged, some managed to survive.

Rock Art Found in the Hillock

- The paintings are characterized by the use of various colors derived from different kinds of pigments, including white kaolin.
- The murals depict events from the epic Ramayana, such as:
  - A painting found in the southernmost end indicates the battle between the two Vanara brothers, Vali and Sugriva.
  - The middle cave contains a grand sketch of "Hanuman" along with sacred symbols of "sankha," or conch, and a "yagna vedi" (fire altar). In this mural, Hanuman is carrying the "Sanjivani Hills" in his hands, which indicates his mission to save the life of Lakshmana.
  - In the third cave, both prehistoric and Kakatiya paintings are found. The painting resembling Kakatiya art found in this cave depicts "Hanuman" sitting in the unique "Anjali" posture.

Captivating Scene: *Drawing depicting the intense battle between the Vanara brothers - Vali and Sugriva. Source: The Hindu*

Significance of the Rock Art

- The hillock is significant as it contains paintings from two different periods, which somehow indicate the **transition and transformation** of art and its **amalgamation with native cultures and religion.**
- The paintings give significant information about the religion patronized by the **Kakatiya rulers,** along with the nature of the colors and painting styles they used.

About Mural Paintings

- Indian mural paintings are **paintings found on the walls of caves and palaces or other historical relics.**
- Prominent examples of murals include the **beautiful frescoes painted on the caves of** Ajanta and Ellora, the Bagh caves and Sittanvasal cave.
- According to the Vinaya Pitaka, **the noted courtesan of Vaishali – Amrapali employed painters to paint the kings**, traders and merchants of that time on the walls of her palace.

About the Kakatiya Dynasty

- The Kakatiya dynasty was one of the important dynasties of medieval times that ruled over the Andhra and Telugu region.
- Earlier the Kakatiya rulers were the feudatories of the Western Chalukyas of Kalyana; however, the dynasty became sovereign under the rule of Prola II.
- The Kakatiya dynasty is known to have ruled over the majority of the eastern Deccan region from **12th to the 14th century A.D. Some of their important rulers are Ganapati Deva (1199-1262 AD), Rudrama Devi (1262-1295 AD) etc.**

Important Architectural Marvels of the Kakatiya Dynasty

- The Kakatiya style of temple architecture is known to have evolved from the later Chalukyan style of temple architecture and decoration called "Trikutaalayas".
- One of the most important and renowned architectural marvels of the Kakatiya dynasty is Rudreshwara temple, also called the Ramappa temple. It is recognized as a UNESCO's World Heritage Sites.
- Other notable examples include the Thousand Pillar Temple in Hanamkonda, Golconda Fort, Warangal Fort, and Kota Gullu in Ghanpur.

3. 81st Anniversary of the 'Quit India Movement'

Current Context

Rajya Sabha Chairman, Jagdeep Dhankhar, paid homage to freedom fighters on the 81st Anniversary of the historic 'Quit India Movement' on August 9, 2023.

Factors Responsible for the Build-up to the Movement

- **The failure of the Cripps Mission in April 1942:**
  - ✔ In March 1942, a mission led by Sir Stafford Cripps arrived in India to meet with leaders of the Congress and the Muslim League.
  - ✔ Despite the promise of "the earliest possible realisation of self-government in India", the mission placed an offer of Dominion Status, an autonomous community within the British Empire, rather than full independence.
  - ✔ This was not acceptable to Gandhi ji and Nehru; more importantly, the Congress was opposed to a provision that allowed for the Partition of India.
  - ✔ The failure of the Cripps Mission led Gandhi ji to wage a struggle against the British for the rights of Indians.
- **Rising anger and frustration among the people:**
  - ✔ High prices and shortage of goods during the World War-II had led to frustration.
  - ✔ Reports of selective British evacuations in areas overrun by the Japanese, taking out the Britishers while leaving the local people to the brutality of the invaders, triggered anger, outrage, and fear that the same would be done in the Indian mainland once the war reached home.
  - ✔ Gandhi was also concerned that in the absence of effective intervention, demoralisation and fatalism might set in, leading the people to simply collapse in the face of the Japanese invasion. This was a reason to launch a struggle, to raise spirits, and mobilise the masses.
- **Sense of Britain's vulnerability:**
  - ✔ News of the Allied defeats in the War, the arrival of letters from Southeast Asia, and reports and rumours that trains from Assam were bringing in massive numbers of injured and dead British soldiers, created a sense that the Britisher are not invincible and the end of the Raj was near.

The Quit India Movement

- **The Launching:**
  - ✔ In July 1942, at the Working Committee meeting in Wardha, the Congress decided to actively forward the freedom movement.
  - ✔ In August 1942, the All-India Congress Committee met in Gowalia Tank Maidan (August Kranti Maidan) in Bombay to ratify the Working Committee's decision.
  - ✔ After the meeting on August 8, 1942, Gandhi ji gave the call for **"Do or Die"** in his speech to end the British rule and launched the Quit India Movement.
  - ✔ The 'Grand Old Lady' of the Independence Movement, **Aruna Asaf Ali** hoisted the Indian flag at the Gowalia Tank Maidan in Mumbai during the **Quit India Movement.**
  - ✔ Yusuf Meherally, who had coined the slogan "Simon Go Back" earlier, coined the slogan 'Quit India.'
- **Demands:**
  - ✔ End of the British rule in India with immediate effect to get the cooperation of Indians in World War-II against fascism and formation of a provisional government after the withdrawal of the Britishers.
- **The Crackdown:**
  - ✔ Early on August 9, 1942, the government cracked down and the entire Congress leadership was arrested and taken to unknown destinations under "Operation Zero-hour."
- **Mass Upsurge Across the Country:**
  - ✔ In Bombay, Poona, and Ahmedabad, lakhs of people clashed violently with the police on August 9.
  - ✔ On August 10, protests erupted in Delhi, and across UP and Bihar.
  - ✔ There were hartals, demonstrations and

people's marches in defiance of prohibitory orders in Kanpur, Patna, Varanasi, and Allahabad.

- ✔ Major peasant rebellions took place, marked by attacks on government buildings or any other visible symbol of colonial authority and destruction of communication systems, such as railway tracks and stations, telegraph wires and poles etc.
- ✔ National or parallel governments were formed in Ballia, Tamluk, Satara etc.
- ✔ The government hit back with brute force, and gagging the press.
- **Brutal Repression:**
  - ✔ Police and soldiers fired indiscriminately at unarmed protesters, crowds were machine-gunned by military aircraft swooping low over them, protesters were picked up from the villages and held hostage by police, and collective fines were imposed on entire communities.
  - ✔ There was mass whipping of suspects, and village after village was burnt to the ground in punishment for their residents' actions.
  - ✔ In the five months up to December 1942, an estimated 60,000 people were thrown into prison. Some 26,000 people were convicted for small and large offences, and 18,000 were detained under the harsh Defence of India Act.

Significance of the Movement

- The Quit India Movement announced loud and clear that Indians are no more scared of British rule and India could not be governed without the support of the Indians.

- It placed the demand for Complete Independence as the immediate objective of the freedom movement.
- The common mass showed unparalleled heroism and survived cruel repression for independence that made them stronger and more determined for Independence.
- The rise of nationalism, women and students' participation and the change in negotiating strategies with Britishers were among significant achievements.
- Ram Manohar Lohia, J.P. Narayan, Aruna Asaf Ali, Biju Patnaik, Sucheta Kriplani, etc., who led mass movements in different areas during the movement, emerged as prominent leaders.
- It exposed the government's arrogance and brutality towards the Indians.
- The movement paved the way for the formation of constituent assembly and the independence of India.

Conclusion

- The Quit India Movement was a watershed movement in the sense, that it prepared the ground for future politics in India.
- Gandhi ji in his historic speech at Gowalia Tank Maidan had said, 'The power, when it comes, will belong to the people of India, and it will be for them to decide to whom it is placed.'
- It is in the Quit India Movement that freedom struggle was owned by 'We the People' who fought for India's freedom.

4. Yelagiri Hut Shelters

Current Context

Only a last standing antiquated tribal hut is now left in the Yelagiri of Tirupattur district, Tamil Nadu. Juxtaposed with concrete houses, the last standing hut indicates the transition of tribal people towards a more modern lifestyle.

About

- The hut, built on the Yelagiri hill in northern Tamil Nadu, is one of several huts built by around 200 Malaiyali tribals almost 200 years ago.
- The hut is known to develop an all-encompassing system for farming, cattle rearing, shelter, and storage.

- The earlier huts made by the tribe were of the makeshift type, which later got transformed into more permanent Yelagiri huts made of red loam clay.

Noticeable Features of Yelagiri Huts

- The Yelagiri hut is an example of tribal architecture. It is typically a one-room hut formed of red loam clay and has a dimension of 16 by 22 feet.

- The Yelagiri hut has a 4-foot-tall entrance and is constructed by placing the red clay over a frame of posts and beams made of teak wood.
- Though simple in appearance, the look of the hut becomes picturesque when a 12-foot roof is attached to its top.
- The roof of the hut was made of dried bamboo leaves and waxed with cow dung to prevent leakage.
- Thus, with enough space to house eight people, the hut also contained an attic to store household items.

Weather and rodent-proof nature of the hut:

- ✔ The huts or structures, such as Munn Veedu (a mud house) and Andara Kotai (a storage facility), were constructed on a bamboo-made stilt-like structure to keep the stored items protected from rodent attack and flood water in case of heavy rain.
- ✔ Despite extreme heat in the surroundings during the summer, the inner ambience of the hut remained cool.

- ✔ The hut could have a specialized space dedicated only for the storage of grains, and this feature indicates the importance of agriculture for the concerned tribe.

About the Malaiyali Tribe

- The Malaiyali tribe gets its name from the two terms 'malai' (which means hill) and 'yali' (which means people). The tribal population is known to spread across hilly areas of the state.
- The tribespeople, who were recognized as foragers, settled in the upper Nillavur region of Yelagiri and began cultivating this (Yelagiri) tabletop peak for food.

Other Tribes of Tamil Nadu

- Around 36 tribal sub-groups exist in Tamil Nadu.
- Some of the main tribal groups among these are Malayali, Kurumbas, Irular, Toda, Paniyan, Kattunayakan, Palliyan, Kanikkar, Kadar, etc.
- Among these groups, tribes such as **Toda, Kurumbas, Kota, Irular, Kattunayakan, and Paniyan** are designated as **'Primitive Tribes'.**

5. Kharchi Puja

Current Context

Kharchi Puja, the festival of 14 Gods, was celebrated by the people of Tripura recently.

About

- It is observed on the eighth day of the new moon in July or August every year.
- This year, the auspicious festival began on June 26 and culminated on July 2.

What is Kharchi Puja/Festival?

- The festival is centred around the worship of Chaturdasa Devata, the ancestral deity of the Tripuri people.
- Kharchi Puja is observed annually on the Shukla Ashtami day, which falls on the eighth day of the lunar month of Ashadha.
- Depending on the lunar calendar, the festival's exact dates change every year.
- The festival is carried out for seven days in a row.
- It holds immense religious and cultural importance

and showcases the rich history and traditions of the community.

- During the festival, the people of Tripura also worship the earth along with their 14 deities.
- Although the festival has tribal origins, it is celebrated by both tribal and non-tribal people of Tripura.
- The Tripuri names of the fourteen deities are Lampra, Akhata, Bikhata, Burasa, Thumnairok, Bonirok, Sangrongma, Mwtaikotor, Twima, Songatrama, Noksuma, Mailuma, Khuluma and Hachwkma.

History of Kharchi Puja

- The word 'Kharchi' is derived from two Tripuri words 'khar' or 'kharta' meaning 'sin' and 'chi' or 'si' meaning 'cleaning'.

- Kharchi Puja is devoted to the deity of the royal dynasty, Tripura Sundari, also known as Kharchi or Kharcha Baba.
- It is believed that the Mother Goddess or Tripura Sundari, the presiding deity of the land who protects the people of Tripura, menstruates during the time of Ambu bachi, which is observed in June.

Significance of Kharchi Puja

- This festival takes place 15 days after Ambu bachi or Ambu pechi.
- Ambu pechi symbolises the menstruation of the Mother Goddess or Earth Mother as per Tripuri folklore.
- There is a popular belief that the Earth becomes impure during the menstruation period of the Mother Goddess or Tripura Sundari.
- Hence, Kharchi Puja is observed to ritualistically clean the Earth after her menstruation is over and wash away the sins of the people in the land.
- It is a vibrant display of cultural heritage and religious fervour, which draws thousands of devotees from across the country.
- The festival also witnesses cultural performances, showcasing the diverse folk traditions of Tripura.
- The historical Kharchi Puja not only serves as a platform for spiritual rejuvenation but also as an occasion to foster community bonds and unity.

Important Festivals of Tripura

S.No.	Name of the Festival	Venue	Tentative Schedule
1	Garia Puja	All over the state	Seventh day of the bengali month of Baisakh (3rd week of April) for seven days
2	Asokastami Festival	Unakoti Archaeological Sites, Kailashahar, Unakoti District	Every year in the month of February
3	Pilak Festival	Pilak Archaeological Site, Jolaibari, South Tripura District	Every year in the month of February/ March.
4	Kharchi Festival	Khayerpur, Old Agartala, West Tripura	Every year in the month of July
5	Neermahal Festival	At Rudrasagar Lake, Rajghat, Melaghar, Sepahijala District	Every year in the month of August and December
6	Diwali Festival	At Tripura Sundari Temple, Matabari, Gomati District and all over the state	Every year in October/ November
7	Pous Sankranti Fair	Tirthamukh, Gomati District	Every year in the month of January

6. Indigenous Crafts of North-Eastern Region

Current Context

Union Minister for Ministry of Development of North-Eastern Region informed in the Parliament that the North Eastern Handicrafts and Handloom Development Corporation (NEHHDC) launched its e-commerce portal, operates mobile outlets "Purbashree on Wheels" and has also gone live on online marketing platforms to connect the artisans with markets in India and abroad.

About

- NEHHDC has signed over 30 MoUs with various entities; inter alia, Indian Institute of Management, Shillong; National Institute of Fashion Technology, Shillong; National Institute of Design, Jorhat etc.
- NEHHDC is also registered as a Training Partner (TP) with the National Skill Development Council (NSDC) under the flagship program of Skill India of Ministry of Skill Development and Entrepreneurship.

North Eastern Handicrafts and Handloom Development Corporation

- NEHHDC is an organisation that attempts to **develop and promote the indigenous crafts** of the region by connecting craftsmen to prospective markets and consumers and generating economic, cultural and social opportunities for creators while adding cultural value for consumers.
- The Corporation is under the administrative control of the **Ministry of Development of North Eastern Region** (DoNER), Government of India.
- The Ministry of Micro, Small & Medium Enterprises (MSME), and Government of India has nominated NEHHDC as 'Nodal Agency' for implementation of projects under the "Scheme of Fund for Regeneration of Traditional Industries (SFURTI)".
- It offers a range of products from all the **eight North Eastern states** namely Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The turnover of NEHHDC during the last three years was Rs 105.87 lakh (2020-21); Rs 369.22 lakh (2021-22) and approximately Rs 565.22 lakh (2022-23).

Why Union Government is Promoting Indigenous Crafts of North-Eastern Region (NER)?

- **Rich cultural heritage of the region:** The NER's diverse indigenous cultures showcase unique crafts; government promoting them to preserve cultural heritage for future generations.
- **Economic opportunities for the people of the region:** The NER relies on traditional crafts for livelihood, benefiting from government promotion to create economic opportunities and enhance quality of life.
- **Promote social inclusion:** Indigenous communities in North Eastern region face marginalization and discrimination; government promotes indigenous crafts for social inclusion and empowerment.
- **Employment generation:** The promotion of indigenous crafts can lead to the establishment of cottage industries and small-scale enterprises.

Challenges for Crafts of North-Eastern Region

- Non-availability of raw materials is a major problem for the growth and development of crafts sector in the NE region.
- Adequate finance is required for the crafts artisans to meet their business obligations. But necessary financial resources are not made available to the artisans from the financial institutions.
- Region's crafts face competition from organized industrial products like plastic, steel, and aluminium due to mass production growth and factory systems.
- Other problems in the development of crafts industry are absence of proper training facilities, high cost of production, design development, limited transport and communication facilities, outdated methods of production and absence of a good number of technical personnel in the NE region.

Government Initiatives for Crafts in NER

- **Weavers Mudra Scheme:** In NER, the Weavers Mudra Scheme has been highly successful. Around

1.5 lakh handloom weavers in the region have benefited from the scheme.

- **Amended Technology Up-gradation Fund Scheme (ATUFS):** The government is implementing ATUFS for technology up-gradation of the textile industry to incentivize production with an outlay of Rs.17,822 crore during 2016-2022.

- **Scheme for Integrated Textile Park (SITP):** Government of India grants with a ceiling limit of Rs. 40 crores for setting up textile parks for creation of world-class infrastructure facilities for setting up of textile units.

- **PM-Mega Integrated Textiles Regions and Apparel Park (PM-MITRA):** For development of Greenfield PM MITRA and Brownfield PM Park, there is a provision of Development Capital Support (DCS) @30% of the project cost with a maximum support of Rs 500 crore and Rs 200 crore per park for Greenfield and Brownfield PM MITRA respectively from the Government of India.

- **National Handicrafts Development Programme (NHDP)** and Comprehensive Handicraft Cluster Development Schemes aim at holistic development of handicrafts clusters through an integrated approach by providing support on design, technology up-gradation, infrastructure development, market support etc.

- **Silk Samagra:** An integrated scheme for development of silk industry with components of research & development, transfer of technology, seed organization and coordination, market development, quality certification and export.

Way Forward

- To promote indigenous crafts in the North-Eastern region, government should address the current issues and continue supporting initiatives to boost the crafts industry, empower local communities, and preserve the rich cultural heritage while fostering economic growth in the region.

POLITY AND GOVERNANCE

1. Digital Data Protection Bill, 2023

Current Context

Recently the Digital Personal Data Protection Bill, 2023, which seeks to provide for the protection of personal data and the privacy of individuals, has been passed by both the houses of the Parliament.

About

- The Bill upholds the vision of the landmark Puttaswamy Judgment of the Supreme Court in 2018 which recognized Right to Privacy as a Fundamental Right under Article 21 in Part III of the Indian Constitution.
- The fundamental framework finds origins in Justice Srikrishna Committee recommendations for the Data Protection Laws that may govern India.
- The legislation has undergone multiple iterations after nearly five years of negotiations involving the government, technology companies and civil society representatives and has just been unveiled, as a policy to govern non-personal data.
- It is a part of a larger policy framework which includes a comprehensive Digital India Act that would eventually replace the existing IT Act.

Need for Data Protection Legislation

- The purpose of the draft Bill is to provide for the processing of digital personal data in a manner that recognizes the balance between the right of individuals to protect their personal data and the need to process personal data for lawful purposes.
- The Bill is important because it provides guidance and best practice rules for organisations and the government to follow on how to use personal data including – regulating the processing of personal data.
- The Bill frames out the rights and duties of the citizen (Digital Nagrik) on one hand and the obligations to use collected data lawfully of the Data Fiduciary on the other hand.

- With massive digitization in the economy and society and data evolving to a status of being the currency of the digital revolution, data protection is an indispensable tool to securitize the rights of the citizens.

Key Features of the Bill

- The Bill provides obligations of Data Fiduciaries for data, the rights and duties of Data Principals and financial penalties for breach of rights, duties and obligations.
- The Bill also seeks to introduce data protection law with minimum disruption while ensuring necessary change in the way Data Fiduciaries process data; to enhance the Ease of Living and the Ease of Doing Business; and enable India's digital economy and its innovation ecosystem.
- The Bill attempts to represent the principle of consent, lawful and transparent use of personal data; principle of purpose limitation, data minimisation, accuracy, storage limitation etc.
- By using the word "she" instead of "he", for the first time it acknowledges women in Parliamentary law-making.
- The Bill provides for the right to access information about personal data processed; to correction and erasure of data, grievance redressal; and the right to nominate a person to exercise rights in case of death or incapacity.
- For enforcing his/her rights, an affected Data Principal may approach the Data Fiduciary in the first instance. In case he/she is not satisfied, he/she can complain against the Data Fiduciary to the Data Protection Board in a hassle-free manner.

- The Bill allows a Data Fiduciary to process the personal data of children only with parental consent. It does not permit processing which is detrimental to well-being of children or involves their tracking, behavioural monitoring or targeted advertising.
- There are certain exemptions provided in the Bill, like for notified agencies, in the interest of security, sovereignty, public order, etc.; for research, archiving or statistical purposes; to enforce legal rights and claims; to process in India personal data of non-residents under foreign contract; for startups or other notified categories of Data Fiduciaries; to perform judicial or regulatory functions; to prevent, detect, investigate or prosecute offences; for approved merger, demerger etc.; and to locate defaulters and their financial assets etc.

Significance

- The Digital Personal Data Protection Bill, 2023 will be able to keep the personal data of a user safe, and give them more liberty on how to port their personal data.
- Big corporations and consumers will be held accountable and charged a hefty fine if they fail to do so and don't follow the norms listed in the bill.
- Once approved, several entities, both public and private, will need to seek consent from users to collect and process their data.
- The right to privacy of each consumer will be valued more, and their data will be more safeguarded than before.

Challenges

- Wide-ranging exemptions to the government and its agencies, dilution of powers of the Data Protection Board, amendment to the Right to Information Act, 2005 etc. are contentious.

- The Bill overrides Section 43A of the Information Technology Act, 2000 which requires companies which mishandle user data to compensate users.
- The Centre is also empowered to appoint members to the data protection board, raising concerns over the control it could potentially exert on the institution in cases where it was an interested party.
- Provisions for the Central government to bypass norms around seeking express consent from citizens and the right to exempt "any instrumentality of the state" from adverse consequences citing national security, relations with foreign governments, and maintenance of public order etc. bring apprehensions of a restrictive State apparatus.
- The Members of Parliament from opposition parties objected to the introduction of the proposed law and called for it to be referred to a Parliamentary committee.

Suggestions

- International best practices like the landmark General Data Protection Regulations of the EU must be followed to fine tune the legislation.
- The bill must go through necessary Parliamentary scrutiny to build consensus and weed out potential drawbacks.
- As compared to point-blank exemptions, carve out principles with adequate scope of legal protections must be the way out for security agencies, agents of the State etc.
- The Data Protection Board must be empowered and made free of conflict of interest in the spirit of unbiased monitoring of government policies.
- The accountability apparatus of the legislation must be further strengthened to build public trust.

2. The GNCTD (Amendment) Bill, 2023

Current Context

Four days after the Lok Sabha cleared it, the Rajya Sabha passed the Government of National Capital Territory of Delhi (Amendment) Ordinance, **2023 to formally approve an earlier Ordinance passed by the President.**

About

- The ordinance **came after** the **Supreme Court** restored the control of services in Delhi, barring police, public order and land, to the elected

government. Consequently, it was tabled in Parliament for approval.

Notable Features of the Bill

- It **envisages setting up the National Capital Civil**

Service Authority **(NCCSA)** to handle the transfers, disciplinary proceedings against Group-A officers from services in the **National Capital Territory (NCT) of Delhi.**

- The legislation **empowers the Lieutenant Governor of Delhi** with control over services, challenging the elected government's authority in matters of personnel management.
- The bill allows ministers of the Delhi government to issue standing orders for matter disposal, post consultation with the concerned Department Secretary.
- It is the duty of Department Secretaries to bring certain matters to the notice of the LG, Chief Minister, and Chief Secretary, particularly ones that may lead to controversy with other state governments, courts, or the Central government.

Key Changes in the Bill as compared to the Ordinance

- The bill eliminates a provision from the ordinance that constrained the Delhi Assembly from creating laws related to 'State Public Services and State Public Service Commission.'
- The obligation to present the annual report to Parliament and the Delhi Assembly has been waived off for the National Capital Civil Service Authority (NCCSA).
- The bill dilutes provisions related to the appointment of chairpersons and members of various authorities, boards, commissions, and statutory bodies in Delhi, omitting the requirement for directions of ministers in matters to be sent to the Central government before the Lieutenant Governor and Chief Minister.
- The bill empowers the Lieutenant Governor to select members of the Delhi government's Boards and Commissions from a list of names suggested by the NCCSA, including recommendations from the Chief Minister.

Brief Timeline

- **May 11, 2023:** Constitution Bench of the Supreme

Court rules that Delhi government has control over services.
- **May 19, 2023:** Central government asks the President to promulgate an Ordinance to exclude "services" from Delhi legislature's purview.
- **August 1, 2023:** Ordinance introduced as GNCTD (Amendment) Bill 2023 in Lok Sabha
- **August 2, 2023:** Lok Sabha passes the GNCTD (Amendment) Bill 2023.
- **August 7, 2023:** GNCTD (Amendment) Bill 2023 passed by the Parliament after consequent approval by Rajya Sabha.
- **August 11, 2023:** GNCTD (Amendment) Bill 2023 receives President's Assent.

Key Details on Ordinances

- **Article 123** of Part V of the Indian Constitution empowers President to promulgate Ordinances.
- Ordinances need Parliamentary approval within 6 weeks to stay in force.
- **DC Wadhwa vs Bihar (1987)** had the Supreme Court lay out how Ordinance is an exceptional power to legislate, not to be used as a first resort.
- Governors of States can also promulgate ordinances as per Article 213 of Part VI of the Constitution.

Constitutional Provisions Related to NCT Delhi

- Article 239AA was inserted in the Constitution by the 69th Amendment Act 1991 and it provides for a special status to the National Capital Territory of Delhi (NCT).
- The article states that the NCT shall have a Legislative Assembly and a Council of Ministers headed by a Chief Minister. The Assembly shall have the power to make laws on all matters in the State List and the Concurrent List, except for those matters that are specifically excluded by the Constitution.
- Puducherry, Jammu and Kashmir and Delhi are the only 3 Union Territories constitutionally mandated to have a Legislature.

Issues

- It severs the "triple chain of accountability" which was explicitly recognized by the Supreme Court in May 2023, and thus fundamentally undermines the core constitutional principle of representative government, which is at the bedrock of our democracy.
- The ordinance led to a power struggle between the elected government and the Lieutenant Governor, going against the spirit of Cooperative Federalism.
- The bill expands the scope of the LG's discretionary powers, allowing him to override the decisions of the Council of Ministers, which could potentially impede the functioning of the democratically elected government.
- Opposition leaders voiced strong opposition to the bill, claiming that it undermines democratic heritage, the spirit of federalism, and the powers of an elected government.
- The ordinance created confusion and uncertainty among the civil service officers working in Delhi government departments which in the long run, affects the delivery of public services and welfare schemes in Delhi.

Consequences

- Creating a constitutional crisis and a power tussle between the Centre and the Delhi government over the control of civil services in the national capital is antithetical to our democracy.
- It undermines the autonomy and democracy of the Delhi government and the will of the people who elected it.
- The effective administration and governance of Delhi stands to be hampered, as the civil service officers may face uncertainty and confusion over their roles and responsibilities.
- It invites legal challenges and judicial scrutiny, as the ordinance is claimed to be violating the Supreme Court's judgment and Constitutional provisions.

Suggestions

- It is vital for all stakeholders to demonstrate a commitment for upholding constitutional principles, including democratic governance, separation of powers, and the rights of elected representatives as the legislation sees the light of the day.
- Meaningful dialogue and negotiation between the Central government and the Delhi

S.No.	Arguments in favour of the Bill	Arguments against the Bill
1	Necessary to balance local and national interests with representation of Delhi government in NCCSA while Centre's say in personnel allocation, key for administration of the capital.	Absence of executive responsibility as the Lt. Governor isn't required to answer to the Assembly, infringes upon Legislative Privilege of Assembly.
2	In line with Article 239AA (special status of Delhi) and Article 239AB (Presidential mandate to legislate for good governance).	Violates principle of Federalism, a basic feature of the Indian Constitution.
3	Within the scope of review of the Supreme Court's judgements with modifications for the better.	Disrupts harmonious relationship between Union and Delhi government while eroding away powers of CM and elected government.
4	Recognizes the unique requirements of a Union Territory which is also the National Capital.	Undermines Representative Democracy by taking away powers of elected government of Delhi to decide the fate of servicemen.

government is crucial from here on, to prevent policy paralysis concerning the Act and resolving the issue overall.

- Introspection into the Supreme Court's direction must be made to respect its role as the guardian and final interpreter of the Constitution.

3. New Bill on Election Commission Members' Appointments

Current Context

The government introduced a Bill removing the Chief Justice of India (CJI) from a three-member panel to select the Chief Election Commissioner (CEC) and Election Commissioners.

About

- The Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Bill, 2023, was introduced by Law Minister in the Rajya Sabha.
- The Bill seeks to establish a committee of the Prime Minister, the Leader of Opposition in the Lok Sabha and a Cabinet Minister nominated by the PM for selecting members of the Election Commission of India (ECI).

New Process for Appointment

- As per the Bill, a Search Committee headed by the Cabinet Secretary and comprising two other members, not below the rank of Secretary to the government, having knowledge and experience in matters relating to elections, shall prepare a panel of five persons who can be considered for appointment.
- Thereafter, a Selection Committee consisting of the Prime Minister, the Leader of Opposition in the Lok Sabha, and a Union Cabinet Minister to be nominated by the Prime Minister will appoint the CEC and other ECs.

Supreme Court Ruling

- On March 2, 2023, a 5-Judge Constitution Bench led by **Justice K.M. Joseph** modified the process for appointing members of the Election Commission of India (ECI).
- The Bench held that a committee comprising the Prime Minister, the Leader of the Opposition and the Chief Justice of India will advise the President

on ECI appointments.
- Previously, the President appointed the Chief Election Commissioner and Election Commissioners.

Can the Parliament undo a Decision of the Supreme Court?

- The Parliament has the power to nullify the effect of a Court ruling by addressing the concerns flagged in the judgement. The law cannot simply be contradictory to the ruling.
- In this case, the arrangement prescribed by the Supreme Court was specifically because the Court noted that there was a "legislative vacuum." Filling that vacuum is well within the purview of the Parliament.

Criticism of the Bill

- The composition of the Selection Committee in the Bill raises questions on whether the process is now independent or still rigged in favour of the Executive.
- With the PM and a Cabinet Minster nominated by the PM in the three-member panel, the LoP is outvoted even before the process begins.
- The bill proposes to remove the CJI from the Selection Committee and replace him with a Union Cabinet Minister, nominated by the Prime Minister.

Constitutional Provisions for Appointments of CEC and ECs

- There are just **six Articles (324-329) in Part XV (Elections)** of the Constitution.
- **Article 324:** Superintendence, direction and control of elections to be vested in an Election Commission.
- **Article 325:** No person to be ineligible for inclusion

in, or to claim to be included in a special, electoral roll on grounds of religion, race, caste or sex.

- **Article 326:** Elections to the House of the People and to the Legislative Assemblies of States to be based on adult suffrage.
- **Article 327:** Power of Parliament to make provisions with respect to elections to Legislatures.
- **Article 328:** Power of Legislature of a State to make provision with respect to elections to such Legislature.
- **Article 329:** Bar to interference by courts in electoral matters.

Appointments and Tenure

- The Constitution does not lay down a specific legislative process for the appointment of the CEC and ECs.

- The **President makes the appointment** on the advice of the Union Council of Ministers headed by the Prime Minister.
- All ECI members shall hold office for a term of six years from the date of assuming office or till they attain the age of 65 years, whichever is earlier.

Removal

- They can resign anytime or can also be removed before the expiry of their term.
- The CEC can be removed from office only through a process of removal similar to that of a SC judge by Parliament.

4. Delimitation in Assam

Current Context

The Election Commission published its final delimitation order for the Lok Sabha and Legislative Assembly constituencies of Assam. This order includes certain changes from the earlier draft that was published in June.

Key Highlights of the Published Delimitation Order

- According to the newly submitted report, the number of state assembly as well as parliamentary constituencies remains unchanged at 126 and 14, respectively.
- Around 19 assembly constituencies (earlier, this number was 16), along with 2 parliamentary constituencies, are reserved for Scheduled Tribes.
- Similarly, the number of assembly constituencies reserved for Scheduled Castes has been increased from 8 to 9. Further, the SC status of the Karimganj Lok Sabha seat has been removed.
- The number of seats has also been increased in autonomous councils such as Western Karbi (from 1 to 2) and the Bodoland territorial region (from 16 to 19).
- The names of several constituencies have been changed. For example, the name of Manas Assembly Seat is based on Manas National Park, and the name of Kaliabor Lok Sabha Seat is changed to Kaziranga.

What is Delimitation?

- Delimitation literally means the act or process of fixing limits or boundaries of territorial

constituencies in a country or a province having a legislative body. The job of delimitation is assigned to a high power body. Such a body is known as Delimitation Commission or a Boundary Commission. **Article 82** of the Indian Constitution deals with the delimitation of parliamentary constituencies, while **Article 170** deals with the delimitation of legislative assembly constituencies.

Delimitation Commission

- After each census is conducted, a Delimitation Act is enacted by the Parliament in accordance with articles 82 and 170 for dividing constituencies.
- After the Act comes into effect, a Delimitation Commission is created by the Union government.
- This Delimitation Commission works in collaboration with the Election Commission of India and draws the boundaries of constituencies in the concerned state or the entire nation in accordance with the latest census.
- Appointed by the Indian President, this commission is an independent body, consisting of a retired Judge of the Supreme Court or High Court as the chairperson, the Chief Election Commissioner of India, and the State Election Commissioner.

- Currently, the delimitation is done on the basis of the census of 2001 by the Delimitation Commission established through the Delimitation Act, 2002.
- According to Article 329A of the Indian Constitution, the validity of any law associated with the delimitation of constituencies or the allocation of seats to those constituencies, etc., cannot be questioned in a court of law.

Why is Delimitation Required?

- The boundaries of the parliamentary as well as assembly constituencies need periodic updating to ensure that the population size remains the same in each constituency.
- The fundamental idea of delimitation is to ensure that, irrespective of the constituency, each vote should carry the same value.
- Along with population, boundaries of administrative units, geographical characteristics, and connectivity are also considered during the limitation process.
- **Assam's delimitation**
  - ✔ In Assam, the last delimitation was carried out in 1976. During 2008, when the nation-wide delimitation was completed, Assam was among the five states left out of the exercise. For this, the government cited reasons associated with law and order and security concerns. Later, in December 2022, this delimitation was initiated.

Significance of this Delimitation

- The delimitation exercise is considered legitimate and needed by many stakeholders to sync constituency status with an increased population.
- Many tribal and autonomous councils have supported it as it increases their representation in the legislature.
- The increment in seat reservations for SCs and STs is considered important for their adequate representation.

Concerns associated with it

- The selection of the 2001 census is considered inappropriate as more recent 2011 census data is available.
- The NRC was among the reasons behind keeping Assam out of delimitation, which is still not finalized.

Conclusion

- This delimitation can be considered a positive step towards increasing representation of tribals, scheduled castes, and autonomous councils.

5. No-Confidence Motion

Current Context

The speaker of the Lok Sabha, Om Birla admitted a no-confidence motion proposed by the deputy leader of the Congress Party, Gaurav Gogoi against the current NDA Government.

About

- The move was aimed at seeking answers from the Prime Minister regarding various issues, including the violence in Manipur.
- The motion was supported by all the parties of newly formed I.N.D.I.A alliance and Bharat Rashtra Samiti.

What is a "No-Confidence Motion"?

- A no-confidence motion is considered as a tool of parliamentary democracy through which the government can be made accountable in the popular house, that is, Lok Sabha.
- The motion is not mentioned in the Constitution of India, rather it is provided in the Rules of Procedure and Conduct of Business of Lok Sabha.
- This motion is also recognized as "motion of no-trust" and "vote of no-confidence" and can only be introduced in the Lok Sabha. If this motion stands passed, the government has to resign as it is supposed that the government (executive) has lost the trust of the house (the legislature).

Historical Background

- The first "no-confidence motion" was brought against the government led by Pandit Jawahar Lal Nehru in 1963 by JB Kriplani. However, it was not passed as the majority voted against the motion.

How the Motion is Brought?

- The motion can only be brought in the Lok Sabha under Rule 198 of Rules of Procedure and Conduct of Business of Lok Sabha.

- As per the rule, to bring a motion of no-confidence, a minimum of 50 members are required to accept the motion. After this, the speaker will announce the date on which the motion can be proposed and discussions can be done on the same.

- The allotted date by the speaker should be within 10 days from the date of acceptance of the motion otherwise, the motion will fail. In such case, the next such motion can be brought only after a period of 6 months from rejection of the previous motion.

Passage of No-Confidence Motion

- To pass the no-confidence motion, a simple majority is required, that is, more than 50 percent of the members present and voting. For example, if there are 300 members present in the house and out of them, 270 vote (and 30 abstain from voting), then the motion stands passed if 136 members will vote in the favour of the motion.

- Even in case of a full-strength house, the number of votes required to pass the no-confidence motion is 272 or more.

What happens if the Motion Stands Passed?

- If the motion of no-confidence stands passed then it is assumed that the government has lost the trust or confidence of the house and in that scenario, the government must resign.

Relevance of this Motion in the Current Scenario

- It is evident that the current NDA-led government has more number of MPs (331) than required to vote against the motion. Thus, the aim of bringing this motion is not to topple the government as it is not possible in the current scenario.

- Still the opposition is bringing this motion with an objective to seek an official statement from Prime Minister on the Manipur incident.

What Could have Been Done instead of Bringing this Motion?

- Since the objective of bringing this no-confidence motion, as specified by the opposition, is to get idea about the current situation in Manipur and how the government is dealing with the same, therefore, rather than bringing such motion, the opposition could have requested the speaker to consider the concerned issue for discussion.

- Further it becomes the responsibility of the Prime Minister as the "Head" of a "responsible government" and the Home Minister (as he has to maintain law and order in the country) to answer the questions of MPs and provide correct information to the house about the current scenario and the measures taken by the concerned state and Central governments to manage the situation.

- The only mechanism through which the situation can be resolved and appropriate steps could be taken is a productive "discussion".

6. The ISO Bill, 2023

Current Context

The Lok Sabha passed the Inter-Services Organization (Command, Control, and Discipline) Bill, 2023. This step is advocated by the Government as a step in the direction of modernizing the armed forces.

Some of the Key Features of the Bill

- The Bill aims to improve the functioning of the integrated theatre commands and joint commands by ensuring more integration and jointness among the three armed forces.

- The Bill seeks to give all the administrative as well as disciplinary powers associated with the Inter-Services Organizations (ISOs) to the Commander-in-Chief as well as the Officer-in-Command of the respective ISOs with respect to personnel serving in or attached to such organizations for maintaining discipline and ensuring proper discharge of their duties, regardless of the service to which they belong.

- In the absence of the commanding chief or the

officer in command, the officiating incumbent on whom the command develops will enjoy the same powers as those provided to the Commander-in-Chief.

- The Bill will be applicable to all the personnel of the army, air force, and navy, as well as personnel of other forces serving in such inter-service organizations, as notified by the Union Government.

- The Commander-in-Chief will have the administrative and judicial powers to initiate all administrative as well as disciplinary actions against the personnel who are appointed, deputed, posted, or attached to that ISO. In this case, Commander-in-Chief means only the actual officer in command.

- According to the Bill, the Union government is empowered to constitute an Inter-services organization.

Need for this Bill

- **Current Scenario of Integrated Theatre Commands in India**
  - ✔ An integrated theatre command is defined as a specialized command that involves the pooling or integration of resources from all the armed forces and is unified under a single commander. These commands are designed with a specific geographical theatre or region in mind. Thus, a single military commander can harness the resources of all the armed forces to tackle a security threat.
  - ✔ The demand for such commands arose after the Kargil War. Currently, there are two Integrated theatre commands in India: one is Andaman and Nicobar Command, and the other is Strategic Forces Command, which handles India's nuclear assets.
  - ✔ The significance of these commands lies in the availability of all the required resources and specializations, which can be positioned in all the desired locations according to the need, thereby ensuring high efficiency in the operations.

- **Challenges associated with the administration of these commands include:**
  - ✔ Since the command includes the resources and personnel of all the services, there is a problem of different chains of command, i.e., who will

report to whom, which creates miscommunication.

- ✔ Personnel belonging to different armed forces were governed by their specific parent laws, such as the Army Act of 1950, The Air Force Act of 1950, and The Navy Act of 1957. Thus, personnel need to report to their parent service units in case of disciplinary proceedings.

- ✔ This also results in delays in administration and disciplinary procedures and even increases administrative costs.

- ✔ Despite the operationality of such integrated commands, the Commander-in-Chief or the Officer-in-Command of the concerned ISOs were not empowered to carry out disciplinary or administrative powers in the case of personnel belonging to other armed services units.

Significance of the Bill

- With the enactment of the Bill, the Commander-in-Chief or Officer-in-Command of the concerned ISOs will get the authority to exercise disciplinary or administrative powers granted to him by the Act over the personnel of that integrated command, irrespective of its parent command.

- This power will ensure speedy decision-making in administrative and disciplinary cases because all the decisions will be made by the Commander-in-Chief of the ISOs.

- The personnel will be working under the command of the Commander-in-Chief or the Officer-in-Command of the ISO, and thus, there will be a single chain of command for the personnel.

- India is planning to constitute three more Integrated theatre commands to be positioned on the northwest (Pakistan) border and on the frontiers with China. This step will ensure their smooth functioning as well.

Way Ahead

- The approval of the Bill by the parliamentary standing committee without any amendments itself indicates that this Bill is very important for the strengthening of Indian frontiers and ensuring a robust defense mechanism against hostile neighbors like Pakistan and China.

- China divided its PLA army into five integrated commands in 2016. Thus, this significant step will help India effectively manage its proposed plan of five integrated commands to effectively counter China.
- More tri-service exercises will also increase the coordination among the services and help in the

personnel recruitment of integrated commands and ease their management.
- These integrated commands should be provided with enough autonomy to counter any sort of emergency situation at the prescribed theatres effectively.

7. Swachh Bharat Mission (Urban) 2.0

Current Context

The Ministry of Housing & Urban Affairs (MoHUA) conducted an annual survey called 'Swachh Survekshan' to assess the overall implementation of sanitation and waste management in cities.

About

- Cities undergo annual certifications for being Open Defecation Free (ODF) and Garbage Free Cities (GFC) through evaluations by third-party agencies.
- The progress of the Swachh Bharat Mission (SBM-U) in States/Union Territories (UTs) is monitored through periodic reviews, and assessments conducted via video conferences, webinars, workshops, and dedicated SBM-U portals.

Swachh Bharat Mission (SBM)

- On 2nd October 2014, Swachh Bharat Mission was launched to ensure a 'Clean India' by 2nd October 2019 as a fitting tribute to Mahatma Gandhi on his 150th Birth Anniversary.
- SBM is being implemented by the Ministry of Housing and Urban Affairs (MoHUA) and by the Ministry of Drinking Water and Sanitation (MoDWS) for urban and rural areas respectively.

Swachh Bharat Mission-Urban (SBM-U)

- The Swachh Bharat Mission-Urban (SBM-U) was launched on 2nd October, 2014 for a period up to 30 September 2021 in all Urban Local Bodies (ULBs) of the country.
- The primary objectives were to achieve 100% Open Defecation Free (ODF) status through construction of Individual Household Latrines (IHHLs) and Community/Public Toilets (CT/PTs).

Swachh Bharat Mission-Urban 2.0

- SBM-U 2.0, launched on October 1, 2021, is a five-year initiative aimed at achieving Garbage Free Status for all cities.
- The vision includes 100% source segregation, door-

to-door waste collection, and scientific management of all waste fractions, ensuring safe disposal in scientific landfills.
- The Government had announced the Urban SBM 2.0 in the Budget 2021-22.
- With a total financial allocation of over Rs 1.4 lakh crore, the mission will be an exemplar for the world, and especially for South Asian countries working towards safely managed sanitation facilities.
- The Government aims to make all urban local bodies across the country ODF+ and ODF++ certified by 2024-25.
- The estimated cost of implementation of SBM-U 2.0 for its various components is Rs 1,41,600 crore. The Central share will be Rs 36,465 crore.
- For the SBM-U 2.0 initiative, Rs. 15883 crores have been allocated as Additional Central Assistance (ACA) for UWM, and Rs. 10884.80 crores have been earmarked for the Solid Waste Management (SWM) component.

Objectives of Swachh Bharat Mission-Urban

- It focuses on preventing the discharge of untreated fecal sludge and used water into the environment.
- All used water, including sewerage, septage, grey water, and black water, should be safely contained, transported, treated, and maximally reused.
- An additional component called Used Water Management (UWM) has been introduced for cities with a population of less than one lakh.
- Moreover, the mission aims to remediate all legacy dumpsites and transform them into green zones.

Financial Provisions

- Under SBM-U 2.0, financial assistance is provided to States/UTs for establishing various types of Municipal Solid Waste (MSW) management plants such as Waste-to-Compost (WtC), Waste-to-Energy (WtE), Bio-methanation, Material Recovery Facilities (MRF), and remediation of legacy waste dumpsites, construction & demolition waste, etc.
- Under the UWM component, financial support is given for setting up Sewage Treatment Plants (STPs)/ STP-cum-Fecal Sludge Treatment plants (FSTPs), laying Interception and Diversion (I&D) structures with pumping stations and pumping mains/gravity mains up to STP, and procuring adequate numbers of septic tank desludging equipment.

Achievements of Swachh Bharat Mission-Urban

- **ODF+ and ODF++ protocol:** The Mission is moving on the path of sustainable sanitation with over 3500 cities and over 1100 cities being certified ODF+ and ODF++ respectively.
- **Water+ protocol:** 14 cities certified Water+, which entails treatment of wastewater and its optimum reuse.
- **Star Rating Protocol:** In Garbage Free Star Ratings for cities, 234 cities have 1-Star Rating, 199 are with 3-Star Rating and 11 cities with 5-star Ratings.
- For all cities to achieve 3-Star garbage-free rating by 2026, accelerated efforts are required through regular planning, monitoring, evaluation and implementation of corrective measures.
- **Waste management:** The thrust on scientific waste management is evident with waste processing in India going up by over four times from 18% in 2014 to 76% till date.
- **Sanitation workers:** More importantly, the Mission has been able to bring about a marked difference in the lives of sanitation workers, informal waste workers and Safai Mitras.

Challenges of Swachh Bharat Mission-Urban (SBM-U)

- **Lack of disposal of solid waste:** Disposal of solid waste has three main key components. First, waste collection, then transfer of the waste, and lastly, proper disposal at the landfill site.
  - ✔ The task of waste collection and its transfer to the landfill site requires both manpower as well as an efficient transportation system.
  - ✔ The waste management in India is the main concern and there is lack of landfill sites in the cities where waste could be dumped.
  - ✔ The decomposition of human waste should be made pathogen free.
- **Lack of water supply:** The supply of basic services, such as water and sanitation, has fallen miserably short of its demand in urban areas. The situation is worse in informal settlements as the majority of them lack water connections and sanitation facilities.
- **Lack of data collection:** The lack of credible on-ground data and the absence of institutionalised tracking mechanisms to measure the health benefits of impacts of proper sanitation, or the adverse impacts of the lack of sanitation.
- **Poor construction of toilet:** A sizable number of toilets built under the SBM(U) are not being used due to lack of water supply and that many public toilets are in a pathetic condition in terms of cleanliness.

Conclusion

- In the last 8 years, the Mission has changed the narrative to revolutionise sanitation and waste management and catapulted behaviour change in countless citizens. The second phase of the Swachh Bharat Mission-Urban became a people's movement and helped in the large-scale mobilization and involvement of citizens. It was a significant step forward in the march towards effectively addressing the challenges of rapidly urbanizing India, while contributing towards achievement of the Sustainable Development Goals 2030. SBM-U2.0's focus is to establish sustainable infrastructure for efficient & scientific processing of waste besides promotion of Waste to Wealth and Circular Economy.

8. PM PVTG Development Mission

Current Context

The Government, in Budget 2023-24, has made announcement of Pradhan Mantri PVTG Development Mission for improving socio-economic condition of particularly tribal Group C.

About

- The mission is aimed to improve socio-economic conditions of the particularly vulnerable tribal groups (PVTGs) by saturating PVTG families and habitations with basic facilities such as safe housing, clean drinking water and sanitation, improved access to education, health and nutrition, road and telecom connectivity, and sustainable livelihood opportunities.
- It envisages availability of Rs.15,000 crore from the Development Action Plan for the Scheduled Tribes, for activities to be undertaken in the next three years under the Mission.

PVTG (Particularly Vulnerable Tribal Groups)

- PVTGs are more vulnerable among the tribal groups who are in need of greater support and development. India has the second-largest tribal population in the world. As per the Census 2011, the tribal population constitutes about 8.9% of the total population in India.
- The Dhebar Commission in 1973 created Primitive Tribal Groups (PTGs) as a separate category, who are less developed among the tribal groups.
  - ✔ In 2006, the Government of India renamed the PTGs as PVTGs.
  - ✔ In 1975, the Government of India initiated to identify the most vulnerable tribal groups as a separate category called PVTGs and declared 52 such groups.
  - ✔ An additional 23 groups were added to the category in 1993.
- Out of the 705 Scheduled Tribes in India, 75 have been identified as PVTGs and are spread across 18 states and one Union Territory (Union Territory of Andaman & Nicobar Islands).
- Odisha has the highest 13 PVTGs followed by 12 in Andhra Pradesh and nine in Bihar.
- Government of India follows the following criteria for identification of PVTGs:
  - ✔ Pre-agricultural level of technology
  - ✔ Low level of literacy
  - ✔ Economic backwardness
  - ✔ A declining or stagnant population.
- Some examples of PVTGs are Khond Porja, Asur, Birhor, Kadar, Saharia, Kurumbas, Baiga, Toda, Jarawa, Shompen, Sentinelese, etc.

Pradhan Mantri PVTG Mission

- The mission will be launched as part of 'Reaching the Last Mile- Leaving No Citizen Behind', one of the seven Saptarishi priorities enlisted in the Budget 2023-24.
- A Budget of Rs 15,000 crore will be dedicated to this mission in the next three years. The scheme will benefit 3.5 lakh tribals.
- **Saptarishi priorities (seven priorities) enlisted in the 2023-24 budget:**
  - ✔ Inclusive Development
  - ✔ Reaching the Last Mile
  - ✔ Infrastructure and Investment
  - ✔ Unleashing the Potential
  - ✔ Green Growth
  - ✔ Youth Power
  - ✔ Financial Sector

Other Initiatives under "Reaching the Last Mile"

- A mission to **eliminate sickle cell anaemia** by 2047 will be launched for affected tribal areas.
- Recruitment of 38,800 teachers and support staff for the 740 **Eklavya Model Residential Schools** over the next three years.
  - ✔ The Eklavya Schools, which come under the Ministry of Tribal Affairs, cater to around 350,000 tribal students in remote areas across the country.
- **Aspirational Districts and Blocks Programme:** This Programme has been launched covering 500 blocks

for saturation of essential government services across multiple domains such as health, nutrition, education, agriculture, water resources, financial inclusion, skill development, and basic infrastructure.

- **PM Awas Yojana:** The outlay for PM Awas Yojana is proposed to be enhanced by 66 per cent to over Rs.79,000 crore.
- **Water for Drought Prone Region:** In the drought prone central region of Karnataka, Central assistance of Rs.5,300 crore is proposed to be given to Upper Bhadra Project to provide sustainable micro irrigation and filling up of surface tanks for drinking water.
- **Bharat Shared Repository of Inscriptions (Bharat SHRI)** will be set up in a digital epigraphy museum, with digitization of one lakh ancient inscriptions in the first stage.

Challenges

- **Habitation:** PVTGs such as Bonda, Dongria Kondh and Kutia Kondh live in high mountainous altitude and connecting their habitations with all-weather road infrastructure and health and educational institutes, would be a challenge for the respective governments.
- **Left Wing Extremism (LWE):** Mission faces a major implementation challenge in left wing extremism affected areas.
- **Lack of capital:** The fund provided by the government for the PVTGs is insufficient for their survival and development. They don't even have basic amenities.
- **Dense forest:** Tribes particularly live in very dense forest area, which makes building infrastructure and accessing these difficult geographical terrains almost impossible.

9. Indian Institutes of Management (Amendment) Bill, 2023

Current Context

The Indian Institutes of Management (Amendment) Bill, 2023, introduced in the Lok Sabha, seeks to make changes in the law that governs the administration and running of IIMs.

About

- The draft Bill introduced in the Parliament during the ongoing monsoon session by the Union Education Minister to undo many of the provisions of the earlier IIM Act of 2017.
- The Bill seeks to take back from the IIMs the powers that the government ceded in 2017.

About Indian Institutes of Management Act, 2017

- IIM Act was passed in 2017 to declare certain Institutes of management to be institutions of national importance, with a view to empower these institutions to attain standards of global excellence in management, management research and allied areas of knowledge.
- The IIM Act, which came into force in January 2018, granted the premier B-schools greater autonomy.
- All key appointments such as appointment of the Chairperson and Board Members, the Director and the Chairperson of the Coordination Forum of the IIMs were left to the Board of Governors (BoG).
  - ✓ The Board of Governors of each institute has 19

members, including one representative each from the Central and State Governments.

Need for the Amendment

- There has been turbulence in the IIM system in recent years and the government has been unhappy with the IIMs for their lack of responsiveness to queries and suggestions.
- The IIM Act created a situation where there were no meaningful checks and balances on the director.
- The absence of norms on key matters, such as the appointment of dean.
- The director became accountable to a BoG in which the two government nominees played a passive role. Individuals from industry, alumni, etc., who comprise the rest of the Board, have no stakes in their respective institutions and no incentive to exercise the necessary oversight.

Provisions of the IIM (Amendment) Bill, 2023 Post of Visitor:

- The Bill creates the post of Visitor. The President of India shall be the visitor of every institute.

Appointments and removal of IIM Directors:

- The Visitor will appoint the Chairperson of the BoG, one nominee on the selection committee for the Director, and the Chairperson of the Coordination Forum for the IIMs.
- The Bill mandates the Board to obtain the prior approval of the Visitor before appointing and removing an Institute Director.
- The procedure for selecting the Director will be prescribed by the Central government.
- The Bill reduces three members to two (in Search committee), and adds another member to be nominated by the Visitor.
- The Bill also grants the Visitor the authority to terminate the services of the Director, as may be prescribed.

Appointment of Chairperson of BoG:

- The Bill amends the provision and provides that the Chairperson of the Board will be nominated by the Visitor.
- **The Bill prescribes three primary roles for the Visitor:** to make appointments, to audit the working of institutions, and to conduct an inquiry.

Enquiry into the affairs of IIMs:

- The Visitor can initiate any review of or inquiry into the affairs of an institute and remove the director on his or her own.
- The Visitor may appoint persons to review the work of any Institute and hold inquiries into its affairs.
- Based on the report of inquiries, the Visitor may issue directions which will be binding on the Institute.
- The Board may also recommend the inquiries to the Visitor.

Dissolution of the Board:

- The Bill provides that the Central Government may prescribe the conditions and procedure for dissolving or suspending an Institute's Board.
- If a Board is suspended or dissolved, the Central Government will constitute an interim board for six months or until a new Board is constituted.

Co-ordination Forum:

- The Bill amends to provide that Chairpersons of all Institutes will be ex-officio members of the Forum.

Incorporation of Institutes:

- The Bill excludes the Director of such institutions from the provision where every employee of such institution will retain the same tenure, salary, pensions as before.

NITIE, Mumbai:

- The Bill classifies the National Institute of Industrial Engineering (NITIE), Mumbai as IIM, Mumbai.

Purpose of the IIM (Amendment) Bill, 2023

- This Amendment Bill essentially seeks to give the government an expanded role in the appointment of the IIM Director.
- The Bill represents the Government's rethink on the autonomy of the IIMs. Over the last four years, the Government and the IIMs have been at loggerheads on several key appointments.
- IIMs are public institutions, answerable to the people of India (through parliament). The Bill ensures that they shouldn't turn into private fiefdoms.

Major Concern of the IIM (Amendment) Bill, 2023

- **Government control:** Introduction of the concept of a Visitor may be a way for the Government to exert direct control over the institutions.
- **Potential impact on autonomy:** The Bill may dilute the autonomy in the name of fixing accountability.
- **Balancing accountability and autonomy:** IIMs should remain accountable to the public and not become private "fiefdoms," as the critics point out the importance of maintaining the autonomy that allows these institutions to thrive.
- Enforcement of ideological conformity: The Government seeking to maintain the tightest control and enforce ideological conformity through this amendment.
- Tussle between Centre and IIMs: The amendments seek to give the Government a say in the initial selection process as well.

Conclusion

- As the amendment bill progresses through the legislative process, it remains to be seen how stakeholders, including IIMs, policymakers, and education experts, engage in the discussion to find the most suitable balance between accountability and autonomy for these premier B-schools.

10. Five Years of Ayushman Bharat

Current Context

The ambitious flagship health protection scheme of the Union Government, Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), is going to complete five years in September 2023.

About the Scheme

- The **AB-PMJAY** scheme was launched in September 2018 with the objectives of reducing the out-of-pocket expenditure of people and ensuring access to quality healthcare facilities for identified beneficiaries.

- The scheme provides a health cover of **Rs. 5 lakh per family every year for secondary as well as tertiary care hospitalization.**

- The scheme is envisioned to achieve **Sustainable Development Goal 3.8**, which is associated with universal health coverage. It is a Centrally sponsored program.

Achievements and Significance of the Scheme

- The scheme provides health coverage to **around 12 crore families**, which constitute around **40% of the population.** With this, the scheme became the largest health assurance scheme in the world.

- More than **15 crore families** are covered under this scheme, along with the convergent implementation of states' schemes.

- Almost **half of India's population** is covered under this scheme, and **around 11 states and UTs** have pushed for **full coverage** of their populations.

- Through the Ayushman Card, the beneficiary can avail themselves of free treatment at **more than 27,000 empanelled hospitals.** So far, around **24 crore such cards** have been created.

- The scheme has reduced out-of-pocket expenses by almost half for the beneficiaries.

- Almost 31 treatments are done per minute, with authorization **for almost 45,000 hospital admissions daily.**

- **48% of** the total beneficiaries of the scheme **are women.**

Effective Implementation of the Scheme So Far

- The reasons for these achievements is the effective implementation of the scheme and cooperation from all the stakeholders.

- The government introduced health benefit packages to ensure private sector participation. This package also included all the inpatient treatment. This package was also revised periodically, and the latest package also included cancer treatment.

- A mechanism was developed to ensure **claim settlement within 15 days,** and for some states like Uttarakhand, it was **reduced to even 7 days.**

- Focusing on the actual beneficiaries of the scheme, the poor and deprived sections, it was designed in such a way to provide them healthcare facilities without any difficulty.

- Every hospital was mandated to have dedicated **"PM-Arogya Mitras"** to guide the beneficiaries.

Existing Challenges for the Scheme

- Many state governments are not implementing the scheme in their concerned states, either citing budgetary constraints or due to some tussle with the Union government. Ultimately, the patients suffer.

- Even in the states where the scheme is implemented, many private healthcare service providers still do not accept the Ayushman Card, citing delayed payment and reimbursement by the government.

- Many beneficiaries lack the documents required to avail themselves of this benefit.

- Fraudulent activities have also been reported while claiming the benefits of the Ayushman Bharat scheme.

Way Forward

- Rather than competition, the Union and state governments should promote cooperative federalism to ensure the benefit of citizens. And if budgetary constraints become a hurdle, then appropriate funding should be provided by the concerned governments.

- Real-time monitoring and social auditing should be done to identify the loopholes and fix them.
- The government should provide timely compensations and reimbursements to the private healthcare centres so that trust can be built among them and the scheme can run smoothly.

- If the empanelled healthcare centers do not accept the Ayushman Card, appropriate actions should be taken accordingly.
- More transparency and accountability should be maintained to prevent fraudulent activity.

11. Minimum Age to Contest Polls

Current Context

A Parliamentary Standing Committee has recommended reducing the minimum age for contesting Lok Sabha and Assembly Elections from 25 years to 18 years, which is the minimum age of voting in India.

About

- The recommendation was made in the 132nd report on "Specific aspects of election process and their reform', in the Parliament by the department related Standing Committee on Personnel, Public Grievances, Law and Justice.
- The Committee suggested that reducing the minimum age to contest vote in India may enable the greater youth participation in decision-making process. However, the Election Commission of India is against this view.

Qualifications for Contesting Elections in India

- The Parliament has laid down the provisions for qualification for contesting elections in India in the Representation of People Act, 1951.
- The person must be an elector in the constituency.
- The person must belong to the Scheduled Caste or Scheduled Tribe in any State or UT if he or she wants to contest a seat reserved for them.
- **Current age to contest elections:**
  - ✔ 25 years for Lok Sabha and Assembly elections.
  - ✔ 30 years for Rajya Sabha or the State Legislative Council.
  - ✔ 21 years for Panchayat and Municipal level elections.

Minimum Age of Voting in India

- The 61st Amendment of the Constitution of India, officially known as The Constitution (Sixty-first Amendment) Act, 1988, lowered the voting age of elections to the Lok Sabha and to the Legislative Assemblies of States from 21 years to 18 years.

Voting Age Around the World

- In 1946, Czechoslovakia became the first country to lower their minimum voting age to 20, and over twenty years later 17 countries too lowered their voting age.
- By the end of the 1900s, 18 had become the most common voting age, and it remains the same today.
- The minimum voting age around the world ranges from 16 to 25 years old.
- Most of the countries around the globe have a minimum voting age requirement of 18 years old.

Arguments made in Favour of Reduction of Age

- **Reliable and responsible political participants:**
  - ✔ After examining various countries' practices, such as Canada, the United Kingdom, and Australia, the Committee observed that the minimum age for candidacy in national elections needs to be 18 years. These nations' examples demonstrate that young individuals can be reliable and responsible political participants.
- **Political consciousness among young people:**
  - ✔ The younger candidates can help connect different generations, facilitating discussions and cooperation. This can boost the credibility and faith in the political process.
- **Policy deliberations:**
  - ✔ The Committee believes that this measure can promote a wider range of viewpoints in policy deliberations and results.

- **Equal opportunity in democracy:**
  - ✔ Reducing the minimum age requirement for candidacy in elections would give young individuals equal opportunities to engage in democracy.
- **Civic education programmes:**
  - ✔ The ECI and the Government should prioritise providing comprehensive civic education programmes to equip young people with the knowledge and skills necessary for political engagement.
- **To adapt Finland's citizenship education:**
  - ✔ The Government and ECI can consider successful models from other countries, like Finland's citizenship education, and adapt them accordingly.

Arguments made Against Reduction of Age

- **Not mature enough for such responsibility:**
  - ✔ 18 years old might not possess the necessary experience and maturity to shoulder the responsibilities of parliamentary and state legislative roles.
- **Unrealistic:**
  - ✔ The Election Commission of India said that it was "unrealistic" to expect 18-year-old to possess the necessary "experience and maturity" for being Members of Parliament and State legislative bodies.

- ✔ However, the parliamentary panel quotes from a report by PRS Legislative Research, according to which in 2019, 47 percent of Lok Sabha MPs were over the age of 55. This is disconcerting, given that India's median age is only 27.9 years. Further, only 2.2 percent of Lok Sabha MPs are under the age of 30, while less than 1.7 percent of MPs worldwide are under 30.
- **Lacking in experience:**
  - ✔ The political parties had in the past favoured experienced candidates for public office, while dismissing younger candidates as lacking in experience.

Conclusion

- Various surveys indicate that youth globally have significant political awareness and knowledge. This is evident through youth-led movements such as Fridays for Future and March for Our Lives, highlighting their capacity to rally and champion critical social and political concerns. The political competence comes with age, a notion that Plato argued for over two thousand years ago. However, in the 21st century, this belief is increasingly being considered outdated. Due to increased education, globalisation and digitalisation, younger individuals are now more than capable of running for office in all countries.

12. Achievements of SVAMITVA Scheme

Current Context

The Ministry of Panchayati Raj has recently released a data explaining the state-wise and year-wise details of Drone Survey Villages conducted in 31 States and Union Territories under the SVAMITVA Scheme.

About the Scheme

- Survey of Villages and Mapping with Improvised Technology in Village Areas (abbreviated as SVAMITVA Scheme) is a Central sector scheme under the Ministry of Panchayati Raj with an objective to provide the 'Record of Rights' to village household owners who possess houses in inhabited areas in the villages and to issue the legal ownership rights, that is, Property cards or Title deeds.
- To achieve these objectives, the land parcels in the villages are mapped by the Survey of India (SoI)

with the help of drone technology.
- Currently, this scheme is being implemented by Ministry of Panchayati Raj in collaboration with other departments like State Panchayati Raj Department, State Revenue Department, and Survey of India (SoI).
- To implement this scheme at the village levels, the governments of states and union territories have to sign a memorandum of understanding with the SoI so that the survey of villages could be conducted.
- The scheme is supposed to cover more than 6 lakh

villages throughout the nation in the time period of over 5 years.

Achievements of the Scheme

- Around 31 States and Union Territories have now signed a MoU with the Survey of India (SOI) to implement the scheme. However, it is worth noting that this scheme was started as a pilot project in 1 lakh villages of six states namely Uttar Pradesh, Uttarakhand, Karnataka, MP, Haryana and Maharashtra.

- Since the launch of the scheme in 2021, the survey has been conducted for the financial year 2020-21, and subsequently for FY2021-22, FY2022-23 and FY2023-24.

- In these four years, the number of surveyed villages have increased significantly. For example, in the FY2020-21, around 39376 villages were surveyed. Consequently, in the financial years 2021-22, 2022-23, and 2023-24, the number of surveyed villages increased to 123868, 237428 and 269279 respectively. Thus, significant increase in the number of surveyed villages have been witnessed.

Total Number of villages surveyed
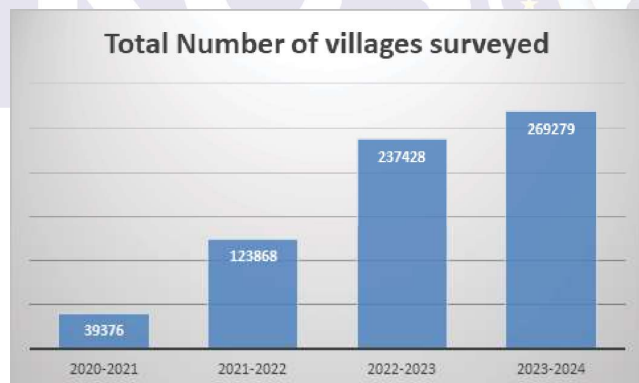
- Out of the total 269279 villages which are supposed to be surveyed in FY2023-24, around 90,902 villages (highest number of villages) are supposed to be surveyed in Uttar Pradesh through the drone survey mechanism, followed by Madhya Pradesh (43014 villages) and Maharashtra (36499 villages).

Significance of the Survey and Released Report

- Since more than 2.5 lakh villages are supposed to be surveyed in the current financial year, this scheme is ensuring a robust rural area development through mapping and village property demarcation.

- Since the demarcation program is being implemented effectively, the task of giving ownership rights to the people could be done properly.

- The scheme also has a provision of distributing the property cards to the eligible owners of property so that they can avail loans easily.

- The governments can also target the beneficiaries for their future programs and initiatives using the concerned surveyed data.

Challenges

- The scheme was supposed to cover around 6 lakh villages, from all the rural inhabited areas or Abadi areas of those concerned States that have signed the MoU with Survey of India. However, the actual number of villages to be surveyed has been revised due to certain reasons that are mentioned hereunder.

  - ✔ It was found that the number of "villages with Abadi" is relatively less than the number of villages specified in the Local Government Directory by the state governments.

  - ✔ Many states like Bihar, Nagaland, West Bengal, and Meghalaya have not signed the MoU, therefore, the number of villages decreased significantly.

  - ✔ In some states like Sikkim, Telangana, Tamil Nadu and Jharkhand, the program is being implemented in pilot phase only.

  - ✔ In the States like Assam and Odisha, this scheme is being implemented only in such villages that do not possess any prior "records of rights".

- However, many states have not signed the MoU and the survey will not be conducted in those villages without their approval.

- This ultimately will lead to a delay in the process of property demarcation and recognition of property rights of the actual owners of property.

13. Members of Parliament Local Area Development Scheme (MPLADS)

Current Context

Under the New MPLADS Guidelines, 2023, MPLADS funds can **be used for purchase of IT systems, including hardware and software for educational purposes.**

About

- The list is not exhaustive and new works can be added to the list on the recommendations of a Member of Parliament subject to overall principles of the Scheme given in the Guidelines.

What is MPLADS?

- MPLADS is a Central government scheme under which Members of Parliament can recommend development programmes of expenditure of Rs 5 crore every year in their constituencies.
- MPLADS was introduced in 1993.
- Initially, this scheme was administered by the Ministry of Rural Development. Later, in October 1994, the Ministry of Statistics and Programme Implementation (MOSPI) has been looking into its work.
- In 2012, the MOSPI announced a new scheme **'One MP – One Idea'** under the MPLADS.

Objectives

- The objective is to enable the MP to suggest and get executed developmental works of a capital nature based on locally felt needs with an emphasis on the creation of durable assets.
- Right from inception of the Scheme, durable assets like drinking water, primary education, public health, sanitation and roads, etc. are being created.

How does the Scheme Work?

- MPs and MLAs do not receive any money under these schemes. The government transfers it directly to the respective local authorities.
- The legislators can only recommend works in their constituencies based on a set of guidelines.
- For the MPLAD Scheme, the guidelines focus on the creation of durable community assets.
- Recommendations for non-durable assets can be made only under limited circumstances. For example, the government allowed use of MPLAD funds for the purchase of personal protection equipment, coronavirus testing kits etc.

- The guidelines for use of **MLALAD funds** differ across states. For example, Delhi MLAs can recommend the operation of fogging machines (to contain dengue mosquitoes), installation of CCTV cameras etc.
- After the legislators give the list of developmental works, they are executed by the district authorities as per the government's financial, technical and administrative rules.

Features

- The MPLADS is a Plan Scheme fully funded by Government of India. The annual MPLADS fund entitlement per MP constituency is Rs. 5 crores.
- MPs are to recommend every year, works costing at least 15 per cent of the MPLADS entitlement for the year for areas inhabited by Scheduled Caste population and 7.5 per cent for areas inhabited by ST population.
- In order to encourage trusts and societies to build assets for the betterment of tribal people, a ceiling of Rs.75 lahks is stipulated for building assets, subject to scheme guidelines.
- Lok Sabha Members can recommend works within their constituencies, Rajya Sabha members can recommend works within the election state, and nominated members can recommend works anywhere in the country.

Significances of MPLADS Scheme

- MPLADS has helped to improve the infrastructure and facilities in many rural and urban areas.
- MPLADS empowers MPs to take a proactive role in constituency development, improving accountability and resulting in a more responsive and efficient government.
- The scheme promotes transparency in development project implementation through transparent bidding processes and government monitoring, ensuring project progress and accountability.

- It saves government funds by allowing MPs to choose projects in their constituencies, ensuring alignment with people's needs and cost-effective implementation.

Issues and Challenges

- **Corruption:** There have been cases of widespread corruption and misappropriation of funds. In a lot of cases, private contractors (which are not permitted) are engaged to implement the works. The Comptroller and Auditor General has on many occasions highlighted gaps in implementation.
- **Funding:** There are large amounts of unspent balances rising over the years, low utilisation of funds and an expenditure bias towards a particular sector.
- **Delivery:** There are weaknesses in the process of sanction. The District Authorities tend to execute works without receiving any recommendations from MPs concerned or on the recommendation of the representatives of the MPs rather than the MPs themselves.
- **Sustainability of the scheme:** There have been charges that the scheme goes against the spirit of the 73rd and the 74th Amendment, with MPs enjoying the privilege of an uninterrupted yearly flow of funds to do the work that local bodies are better placed to deliver.
- The constitutionality of the scheme has also been questioned, with the argument that the scheme erodes the notion of separation of powers, as the legislator directly becomes the executive.
- **Lack of adequate information available to MPs,** which sometimes leads to a disproportionately large amount of money flowing into one district.
- The **National Commission** to Review the Working of the Constitution (2000) and the Second Administrative Reforms Commission, headed by Veerappa Moily (2007), recommended discontinuation of the scheme.

Way Forward

- The MPLADS scheme requires addressing corruption and misappropriation issues through strict monitoring and transparency measures. Enhancing cooperation with local authorities and promoting community participation can ensure better project execution. A thorough review of guidelines and utilization patterns will help improve the scheme's effectiveness while exploring alternatives to empower local bodies for sustainable development.

14. Forest Conservation (Amendment) Bill

Current Context

Recently the Forest Conservation (Amendment) Bill, which provides for contentious exemptions for constructions on forest land, was passed by the Parliament and received President's assent on August 4, 2023.

About

- It was necessary in order to broaden the horizon of the Act to keep its provisions in tandem with the dynamic changes in the ecological, strategic and economic aspirations of the country.
- The Bill was passed to achieve the objective of the country to increase the forest cover for creation of carbon sink of additional 2.5 to 3.0 billion tons of CO equivalent by 2030.

About Forest Conservation Act, 1980?

- The Forest Conservation Act (FCA), 1980 was introduced by the Parliament to control deforestation and conserve forests and their resources.
- The Act came into force on 25 October 1980.
- It is an Act to provide for the conservation of forests and for matters connected there with or ancillary or incidental.
- The FCA, which is also called the Forest Protection Act, also aims to prevent forest lands from
- being converted for other purpose.

Features of the Forest Conservation (Amendment) Bill

- **Applicability**
  - ✔ The Bill amends the short title of the Act to be called the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980.
  - ✔ It clarifies the scope of applicability.

- **Land under the purview of the Act**
  - ✔ The Bill extends to the applicability of the Act to certain types of land. These include land notified as a forest under the Indian Forest Act, 1927 or in government records after the 1980 Act came into effect.
  - ✔ The Act will not be applicable for land converted to non-forest use before December 12, 1996.
- **Exempted categories of land**
  - ✔ It also exempts certain types of land from the purview of the Act. These include land within 100 km of India's border needed for national security projects, small roadside amenities, and public roads leading to a habitation.
- **Permitted activities in the forest land**
  - ✔ The Act restricts the de-reservation of forests or use of forest land for non-forest purposes. Such restrictions may be lifted with the prior approval of the Central government.
- **Leasing of forest land**
  - ✔ The State Government/Union Territories requires prior approval of the Central Government to assign any forest land to a private entity.
  - ✔ The Bill extends this to all entities, and allows the assignment to be made on terms and conditions specified by the Central Government.

Power to issue directions

- The Central Government may issue directions for the implementations of the Act to any authority/organisation under or recognised by the Centre, State, Or Union Territory.

Need of Forest Conservation (Amendment) Bill

- The primary objective of this Bill is to increase the forest area of the country to meet our goals of conservation of forests, conservation of biodiversity and the challenges posed by climate change.
- The major feature of the Bill is the encouragement provided for private forests and agro-forestry projects.
- The amendments ensures that private forests and agro-forestry would not be considered forests in the traditional sense, which means these too would be exempt from the provisions of the original Act.
- It would ensure that farmers or owners of these private forests can harvest their lands, for commercial or other uses, without the need for acquiring forest clearance.

- By lifting the restrictions on the cultivation of private forests, the government is hoping for a significant increase in forest cover, which will help India in achieving its international commitment and also inch towards the stated objective of putting one-third of its area under forest cover.
- The Amendment also allows small constructions, up to a maximum area of 0.1 hectares, on forest land situated alongside a railway line or a highway that provides access to a habitation, or to a railway or roadside facility.

Major Concern of the Forest Conservation (Amendment) Bill

- **Restricting applicability:** The Bill excludes two categories of land from the purview of the Act i.e., land recorded as forest before October 25, 1980 but not notified as a forest, and land which changed from forest-use to non-forest-use before December 12, 1996. This provision may go against a 1996 Supreme Court judgement on preventing deforestation.
- **Exemptions of certain land:** Exempting land near border areas for national security projects may adversely impact the forest cover and wildlife in north-eastern states.
- **Focus on plantations:** The natural forests, lost from the diversion, cannot be replaced with the plantation as the Bill encourages plantations in private lands to enhance the carbon sink.
- **Purpose of zoo inside the forest:** A blanket exemption for projects like zoos, eco-tourism facilities, and reconnaissance surveys may adversely affect forest land and wildlife.
- **Forests lies outside the recorded forests areas:** The Bill potentially excludes 28% of India's forests– 1,97,159 sq km of 5,16,630 sq km of the forests lie outside Recorded Forest Areas– from the purview of the FCA.
- **Violation of Forest Rights Act:** The Bill violates provisions of the Forest Rights Act as it does not clearly speak of prior informed consent of village councils on forest clearances.

Way Forward

- The Centre states that such a Bill will enable it to fast-track strategic and security related projects of national importance so as to ensure development of vital security infrastructures, especially along the international border areas such as Line of Actual Control, Line of Control and Left-Wing Extremism affected areas.

15. Gig Workers

Current Context

On July 24, the Rajasthan government passed the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill, 2023.

About

- It is the first legislation of its kind in India outlining welfare schemes for the State's approximately three lakh gig workers.
- The Bill applies to "aggregators" (digital intermediaries connecting buyers and sellers) and "primary employers" (individuals or organisations engaging platform-based workers).
- The Bill proposes a Welfare Board comprising State officials, five representatives each from gig workers and aggregators, and two others from civil society.
- The Board will set up a welfare fund, register platform-based gig workers, aggregators and primary employers, facilitate guarantee of social security to platform-based gig workers and to provide for matters connected therewith or incidental thereto.
- The Board will maintain a database of companies and workers and each worker will receive a unique ID which "shall be valid in perpetuity."
- In their recommendations to the government, labour unions have objected to vague terminologies in the Bill that may offer loopholes to companies.

What is Gig?

- A gig worker is a professional who, instead of receiving a regular income, receives payment based on completing one-time projects or gigs.
- The NITI Aayog defines 'gig workers' as those engaged in work outside of the traditional employer-employee arrangement.

What is Gig Economy?

- A gig economy is a labour market characterized by the prevalence of short-term contracts or freelance rather than full-time permanent employees.
- In a gig economy, large numbers of people work in part-time or temporary positions or as independent contractors.
- The result of a gig economy is cheaper, more efficient services, such as Uber or Airbnb, for those willing to use them.

Genesis of Gig

- One of the newest employment trends that have gathered several eyeballs in recent times including the Niti Aayog, a think tank of India, is the concept of gig working or in more common terms – freelancing.
- The term, 'gig' was coined way back in 1915 by Jazz musicians to refer to various performances.
- Fast forward to 2005, Amazon Mechanical Turk created a crowdsourcing marketplace for easier and repetitive tasks that AI couldn't do giving rise to the need for gig employees.
- For years, platforms like Airbnb and Uber gained popularity and introduced the newest alternative mode of earning for many.
- With the impact of Covid-19, pandemic-induced remote working became the new norm and it eliminated the mental block around hiring people only from urban cities.

Expansion of the Gig Economy

- As per the most recent Niti Aayog report, 'India's Booming Gig and Platform Economy', which was released in June 2022, the Indian gig workforce is expected to expand to 23.5 million workers by the year 2029-30, which is nearly a 200% jump from the current 7.7 million.
- The report also states that gig working is about to expand to all sectors, where 47% of the jobs are medium-skilled, 22% are high-skilled and around 31% are low-skilled.

Legislation needed for Gig Economy

- Gig work still remains untested in Indian Courts, and with the absence of specific legislation, gig workers cannot claim consequential benefits such as minimum wages, hours of work, overtime, leave, etc.
- Currently, Indian labour and employment laws recognize **three main categories of employees:**

1. Government employees,
2. Employees in government-controlled corporate bodies known as Public Sector Undertakings (PSUs)
3. Private sector employees who may be managerial staff or workmen.

- **The Contract Labour (Regulation and Abolition) Act, 1970** regulates engagement of contract labour in India, including work done through third-party contractors.
- There is scope for gig workers who work for platforms to be "contractors" under this law.
- The Employment Compensation Act, 1923 mandates that the employer pay compensation for accidents arising out of and in the course of employment. The applicability of this law to gig workers also remains to be determined by Courts.

Why is the legislation necessary for Gig Workers?

- Labour laws across the world and in India have certain threshold requirements for bringing workers within their ambit.
- In the 21st century, however, this is no longer the dominant paradigm of work. In gig work, for example, workers often switch between different companies, are required to use their own equipment (or loan it from the company), and quite disingenuously are referred to as partners instead of employees by the company, precisely to bypass the protections that labour law offers.
- While gig work does not resemble the employment relationship of the factory owner and the worker, it exhibits all the hallmarks of institutionalised power differences and subordination that make labour laws important in the first place.
- Gig workers are often misclassified as independent contractors, which means they are not entitled to the same rights and protections as employees.
- Gig workers should have access to basic labour protections such as minimum wage, overtime pay, and paid sick leave.

Why is the Gig economy preferred by Gig Worker?

- Gig work allows workers to choose when and where they want to work, providing them with greater control over their schedules and work-life balance.
- Gig workers can engage in a diverse range of projects and gigs, allowing them to explore different industries and develop new skills.
- Gig workers are not tied to a single employer, giving them the freedom to work for multiple clients and be their own boss.
- Many gig jobs can be done remotely, reducing the need for commuting and enabling workers to work from anywhere.
- Gig work can serve as a supplemental source of income, allowing workers to pursue other passions or part-time work.

Why is the Gig economy preferred by Gig Employers?

- Hiring gig workers can be more cost-effective for employers since they are often paid on a per-project basis, and businesses do not have to provide benefits or pay for downtime.
- Gig employers can access a wide pool of talent with diverse skills and expertise from different geographical locations, enabling them to find the best fit for each project.
- Traditional hiring processes can be time-consuming, whereas gig workers can be onboarded quickly, leading to faster project execution.
- Hiring gig workers helps employers mitigate risks associated with economic fluctuations or uncertain market conditions, as they can adjust their workforce accordingly.
- Employers can reduce overhead costs by not having to maintain a large permanent workforce or office space for gig workers.

What are the stumbling blocks in a Gig Economy?

- Job security and stability are uncertain in the gig economy as workers receive payment based on completing individual projects or gigs.
- Workers can be terminated at any time in the gig

economy since they are not tied to long-term employment contracts.

- Gig workers miss out on benefits such as pensions, gratuity, and perks that are typically provided to full-time employees.
- The lack of a steady income in the gig economy makes it difficult for banks and financial service providers to extend lines of credit to workers.
- In areas with limited internet connectivity and electricity, many people are deprived of gig economy opportunities, leading to inequality.

Conclusion

- Perhaps the gig economy is the only option to give new graduates, semi-skilled workers, and unskilled labourers work. Therefore, it is critical to support this sector's development. We require procedures and regulations that make it clear how the industry ought to operate.

SOCIAL ISSUE

1. PMKV Yojana: MP Tops in Hiring Skilled Workers

Current Context

Madhya Pradesh, Haryana, Tamil Nadu, Bihar and West Bengal emerged as the top five States with the highest placement of skilled workers compared to other bigger states with higher number of certified candidates, suggesting greater demand for skilled workers in these states.

About the Report

- As per the official data of the Pradhan Mantri Kaushal Vikas Yojana since the launch of the scheme in 2015, Madhya Pradesh provided jobs to 30.7% of its skill certified candidates under PMKVY followed by Haryana (29.6%), Tamil Nadu (27.6%), Bihar (25.4%) and West Bengal (24.7%).

- UP, Maharashtra and Rajasthan which have the highest number of certified candidates have placement rates of 21.2%, 8.3% and 19.3% respectively.

- The top 10 states for training under PMKVY are Uttar Pradesh (1.9 million), Maharashtra (1.2 million), Rajasthan (1.09 million), Madhya Pradesh (0.9 million), Tamil Nadu (0.75 million), Assam (0.72 million), Haryana (0.65 million), Bihar (0.63 million), West Bengal (0.58 million) and Odisha (0.55 million).

- These 10 states constitute 58.9% or 7.3 million of the total 12.4 million youth certified under PMKVY and 63.2% or 1.54 million placed candidates out of the total placement of 2.43 million in over eight years since the scheme came into existence.

- According to a state-wise analysis, states such as West Bengal and Bihar also saw higher recruitment of skilled workers, while skill, training and certification rates were higher in populous states.

- There is a growing demand for skilled workers even in states which are not typically industrial in nature.

- The state-wise analysis shows while the rate of skills training and certification is high in bigger and populous states, high placement of skilled workforce is happening even in states like West Bengal and Bihar.

- Haryana, Tamil Nadu, Bihar, and West Bengal topped the PMKVY 4.0 scheme in terms of maximum recruitment. Job aspirants demand is more in these states than other big states.

About Skill India Mission

- Skill India Mission was launched in 2015, to train over 40 crore citizens with different industry relevant skills by 2022.

- Part of Skill India Mission is to cater to skill development in India through result-oriented framework that corresponds with the need of the industry.

- It is a smart initiative aimed to create and implement comprehensive skill development training programmes that would help bridge the gap between industry demands and skill requirements and therefore, develop the country at large.

- The skill India programmes comprised implementing curriculum-based skill training courses, wherein trainees would gain certifications and endorsements from industry-recognised learning centres.

- The mission also involved incorporating skill-based learning in school curriculum, creating opportunities for both long- and short-term skill training and employment.

- With this Mission, the Indian Government aims to develop practical skills, which are required by the industry and therefore, improve employment rate in the country.

- Since implementation of Skill India Mission, the mission has helped boost employment.

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

- Under the Skill India Mission, the Ministry of Skill Development and Entrepreneurship (MSDE) implemented the Pradhan Mantri Kaushal Vikas Yojana (PMKVY).

- Under the PMKVY 1.0, 2.0 and 3.0 as on December 31, 2022, 1.37 crore candidates have been trained/ oriented; of which 24.36 lakh certified candidates have been reported placed across the country.
- PMKVY has two training components, namely, short-term training (STT) and recognition of prior learning (RPL).
- Under PMKVY, placement opportunities are being provided to STT certified candidates, while RPL is not linked with placements as it recognizes the existing skills of the candidate.

PMKVY 2.0

- Under PMKVY 2.0 (2016-20), funds worth Rs. 7,279 crore have been issued to implementing agencies as of February 2021.
- The target was to train 1 crore youth under PMKVY 2.0 (2016-20). As of January 2021, 1.07 million candidates have been trained.

PMKVY 3.0

- Under PMKVY 3.0, which was launched on January 15, 2021, the government introduced demand-driven, short-term development training programmes for all districts in the country.

PMKVY 4.0

- The Government launched the Pradhan Mantri Kaushal Vikas Yojana 4.0. Making Indian residents self-sufficient is the fundamental goal of this programme.
- The Government of India administers the programme for the benefit of young people who are unemployed, with the goal of helping them develop their skills and become self-sufficient. The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is run by the National Skill Development Corporation.
- NIELIT, Aurangabad is implementing Short Term Training under Centrally Sponsored Centrally Managed (CSCM) category of PMKY 4.0 for FY 22-23 in association of National Skill Development Corporation (NSDC).

Conclusion

- The PMKVY envisages to link the aptitude, aspiration, and knowledge of the skilled workforce with employment opportunities and demands in the market. Through the PMKVY, the government aims to improve or enhance the efficiency of capable workforce and therefore, contribute to the overall development of India.
- Currently, there is a huge gap between the needs of industry and skills of individuals at the local level that is rapidly expanding. While employers struggle to employ people with the required skills, many displaced workers with limited skills strive to regain their livelihoods.
- Also, the present skilling ecosystem needs a new game plan, as 'work from home' becomes the new norm, functional roles in different sectors are increasingly being redefined, resulting in fundamental changes in the ecosystem.

2. Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM)

Current Context

The Labour and Employment Ministry will undertake a detailed review of the Life Insurance Corporation (LIC) of India in managing the two pension schemes i.e., the Pradhan Mantri Shram Yogi Maan-Dhan Scheme (PM-SYM) and the National Pension Scheme (NPS) for Traders and Self-Employed, as implementation is the priority for the Government.

About

- The Labour and Employment Ministry plans to re-evaluate the role of Life Insurance Corporation (LIC) of India and tighten the operational framework for around 500 Common Service Centres (CSCs) for tardy enrolments under its voluntary pension schemes for unorganised workers and traders.
- PM-SYM and NSP for Traders and Self-Employed, both launched in 2019, are administered by the Labour and Employment Ministry and implemented through LIC and Common Service Centre e-Governance Services India Limited.
  - ✔ These are voluntary contributory pension schemes, catering to unorganised sector workers and traders, in the 18-40 age group and earning less than Rs. 15,000 per month.

About Pradhan Mantri Shram Yogi Maan-Dhan Scheme (PM-SYM)

- PM-SYM is a pension scheme for the unorganised sector.
- The scheme is meant for old age protection and social security of Unorganised Workers (UW).
- It is a voluntary and contributory pension scheme, under which the subscriber would receive a minimum assured pension of Rs 3000/- per month after attaining the age of 60 years.
- If the subscriber dies, the spouse of the beneficiary shall be entitled to receive 50% of the pension as family pension.
  - ✔ Family pension is applicable only to the spouse.
- The subscriber's contributions to PM-SYM shall be made through 'auto-debit' facility from his/her savings bank account/Jan-Dhan account.
- Under the PM-SYM and NSP schemes, a worker or a self-employed person pays a monthly contribution of Rs. 55-200 and a matching contribution is offered by the Government.
- The Government has spent Rs. 1,323.29 crore on premium contribution under PM-SYM since 2019, with Rs. 269.91 crore spent in 2022-23.
- **Donate a Pension:** The Union Labour and Employment Ministry launched the scheme in 2022, allowing any citizen to pay the premium amount on behalf of an unorganised worker under the Pradhan Mantri Shram Yogi Maan-Dhan Scheme.
- The donor can pay the contribution for a minimum of one year, with the amount ranging from Rs 660 to Rs 2,400 a year depending on the age of the beneficiary.

Re-assessing the Role of LIC

- The premium size under the two schemes i.e., PM-SYM and NSP (Rs. 55-200 per month) is so miniscule that LIC is not incentivised enough to carry out enrolments, which are largely commission based.
- The pace of enrolments is slow also because Common Service Centres (CSCs) are not making enough efforts to enrol despite getting a commission of Rs. 30 per enrolment.
- The Labour and Employment Ministry has so far seen just 52,671 enrolments under the NPS for Traders and Self-Employed since 2019.
- About 4.9 million workers have registered under PM-SYM scheme out of an estimated 400 million unorganised workers.

Way Forward

- The Labour and Employment Ministry looks to fix minimum monthly enrolment target for Common Service Centres, which will be monitored on a regular basis. To widen the penetration of the two pension schemes (PM-SYM and NSP), the Ministry is also pushing states to enhance enrolments. This may bring field staff of other ministries to drive enrolments.

3. Schemes for Socio-economic and Educational Empowerment of the Six Notified Minority Communities

Current Context

The Union Government has been implementing many socio-economic and educational empowerment schemes for the six notified minority communities. However, it has decided to discontinue the "Padho Pardesh" scheme in 2022-23 which was providing "interest subsidy" on the loans to minority students for overseas studies.

About

- The Scheme was discontinued because according to the official statement, the interest subsidy accrued through the scheme was very limited and majority of the benefits offered by the scheme were already provided by other dedicated government schemes.

The Minority Communities of India

- The Indian Constitution contains the term "Minority" in article 30, however, it does not define the same. Conventionally, Minorities are considered as those communities that have less than 50% share in total population.
- The Union Government, under the National Commission for Minorities Act, 1992, recognized 6

communities namely, Muslims, Sikhs, Christians, Parsis, Buddhists and Jains as "Minority communities" in India.

- ✔ The first five were recognized in 1992, while the Jains were recognized as minorities in 2014.
- Through the very same Act, a statutory body called **National Commission for Minorities** (NCM) was also established in 1993, to ensure the welfare of these communities.
  - ✔ It is an autonomous statutory body under the Ministry of Minority Affairs that enjoys the powers similar to a civil court.

Ministry of Minority Affairs

- The Ministry was constituted in 2006 by carving it out from the Ministry of Social Justice & Empowerment.
- The organizations under the Ministry include: Central Wakf Council (CWC), National Commission for Minorities (NCM), Commissioner for Linguistic Minorities (CLM), Maulana Azad Education Foundation (MAEF), and National Minorities Development and Finance Corporation (NMDFC).

Schemes and Initiatives Launched by the Union Government

- The Union government has been implementing various schemes in various domains like health, education, skill and entrepreneurship etc. to ensure social economic upliftment of the minority notified communities.

Education related schemes:

- **Scholarship schemes:** The Ministry is providing scholarship schemes for the various groups of students such as:
  - ✔ Dedicated pre-matric and post-matric Scholarship Scheme.
  - ✔ Merit-cum-Means Scholarship Scheme to pursue professional as well as technical courses.
  - ✔ Begam Hajrat Mahal National Scholarship for Meritorious Girls belonging to Minorities for 11th and 12th standard is being implemented by the Maulana Azad Education Foundation (MAEF).

Socio-economic Schemes:

- **Skill enhancement programs and initiatives**
  - ✔ **Pradhan Mantri Virasat Ka Samvardhan (PM ViKaS):** It is an integrated scheme which includes 5 different schemes–
    - ◊ **Seekho aur Kamao (Learn and Earn):** It is a Central sector scheme with an objective of developing and conserving traditional skills of minority groups and create a market linkage.
    - ◊ **USTTAD (Upgrading the Skills and Training in Traditional Arts Crafts for Development):** The scheme aims to preserve heritage of traditional arts and crafts of minority communities and **Hamari Dharohar** initiatives to ensure that the ancestral methodologies of arts and crafts as well as the heritage of the minorities are conserved.
    - ◊ **Nai Roshni:** The program involves the empowerment of women with the help of non-governmental organizations.
    - ◊ **Nai Manzil:** This scheme is providing a bridge course to link the knowledge gained by the students at deeni madrasa and the skill development.
    - ◊ **National Minorities Development and Finance Corporation (NMDFC) Scheme** seeks to distribute concessional loans to the people belonging to minority communities.

Special Schemes

- **Jiyo Parsi:** This Central sector scheme was launched in 2013 with an objective to reverse the decline in population of Parsis in India.
- **Qaumi Waqf Board Taraqqiati Scheme (QWBTS) and Shahari Waqf Sampatti Vikas Yojana (SWSVY):**
  - ✔ It focuses on computerization of land records of the waqf properties to avoid encroachment.
  - ✔ It aims to develop viable projects on the vacant lands so that new employment and livelihood opportunities can be explored and welfare can be ensured.
- **Pradhan Mantri Jan Vikas Karyakram (PMJVK):** Through this Centrally sponsored scheme, the government is providing infrastructure in the areas

with concentrated minority population to provide basic amenities such as health, education and skill development and ensure women empowerment.

Significance

- The schemes are helpful in ensuring the socio-economic development of the minority communities. Through PMJVK, the means of social security and development that is, health, education and skill development could be achieved.
- The schemes like QWBTS and SWSVY provide autonomy to these religious bodies to maintain the welfare of the population by developing institutions either on their own or with the help of government.
- Through USTTAD and Hamari Dharohar, the government is helping these minority groups to conserve their own ancestral skills and culture and with help of "Nayi Manzil" and "Seekho Aur Kamao", they can develop these skills and earn from them.
- These efforts will serve the purpose of conservation of minority groups along with their practices, ethnicity and culture.

Challenges

- The very first problem lies with the identification and recognition of these communities in case of lack of documents of identity.
- A universal program and scheme may not work for

all the minority communities because the socio-economic and educational condition of every minority group is not the same.

- Further, challenge comes in the implementation of these programs because along with system loopholes (such as corruption etc), sometimes government also faces a situation of communal disharmony and disagreement (as observed in Manipur).

Way Forward

- Since the socio-economic and educational needs of all communities are different therefore specific programs are required for every community. For example:
  - ✔ In case of Muslims, the problem of educational and socio-economic backwardness is quite common, however, Jains, despite being a minority group, have a good educational level.
  - ✔ Similarly, the socio-economic condition of Parsis is good as compared to other communities.
  - ✔ Thus, more minority-specific dedicated programs should be implemented.
- While implementing the scheme, the government must develop effective system to identify the correct beneficiary.
- The system loopholes should be minimized by bringing the mechanisms for transparency and social audit to check the efficacy of the programs.

4. Revised Manufacturing Rules for Drug Firms

Current Context

The government recently directed all pharmaceutical companies in the country to implement the revised Good Manufacturing Practices (GMP), bringing their processes at par with global standards.

About

- The government amending **schedule M of the** Drugs and Cosmetics Rules, 1945 will lead to an upgrade and tightening of the GMP norms for pharma firms.
- Larger companies with a turnover of over Rs 250 crore have been asked to implement the changes within six months, while medium and small-scale enterprises with turnover of less than Rs 250 crore have been asked to do so within a year.

- The new guideline seeks to improve the documentation of the processes followed, as per the global regulators.

Need for Changes in GMP Regulations

- Implementation of the new norms will bring the Indian industry at par with global standards.
- There has been a string of incidents where other countries have reported alleged contamination in India-manufactured syrups, eye-drops, and eye ointments. The deaths of 70 children in Gambia, 18

children in Uzbekistan, three persons in the United States, and six deaths in the Cameroon have been linked to these products.

- A risk-based inspection of 162 manufacturing units by the government found several deficiencies — incoming raw materials not being tested before use, product quality not being reviewed, absence of quality failure investigation, infrastructure deficiency to prevent cross-contamination, faulty design of manufacturing and testing areas, missing qualified professionals, and poor documentation.

- Only 2,000 of the 10,500 drug manufacturing units in the country at present meet global standards, being WHO-GMP certified.

- The improved standards will ensure that pharmaceutical companies follow standard processes, quality control measures, and do not cut corners, improving quality of medicines available in India as well as sold in global market.

What Changes will it Bring?

- The revised GMP guidelines focus on **quality control measures, proper documentation, and IT** backing to maintain quality of medicines produced.

- The new guideline introduces **pharmaceutical quality system (PQS),** quality risk management (QRM), product quality review (PQR), and validation of equipment.

- This means that companies will have to carry out regular quality reviews of all its products, verify consistency of the quality and the processes, thorough investigation of any deviation or suspected defect, and implementation of any preventive actions.

- It also suggests a change in control system to evaluate all changes that may affect the production or quality of the product.

- The companies will also have to carry out **stability studies as per the climate conditions.** Most companies at present keep their samples stored under recommended conditions and test for various parameters from time to time.

  ✔ Now, they will be needed to mandatorily maintain the drugs in a stability chamber, set the proper temperature and humidity, and carry out an accelerated stability test as well.

- The guidelines also state that companies should

have GMP-related computerised systems, which ensure that there is no tampering of data related to the processes. Such GMP systems will prevent unauthorised access and changes to the data.

- In addition, the **new schedule M also lists out** the requirements for additional types of products, including biological products, agents with radioactive ingredients, or plant-derived products. The new schedule also lists the requirement for investigational products being manufactured for clinical trials.

How will the Changes help?

- Instituting the same quality across the industry will give confidence to regulators from other countries.

- In addition, it will improve the quality of drugs in the domestic markets.

  ✔ Most of the 8,500 manufacturing units that are not WHO-GMP certified supply medicine within India.

- It will ensure that all the manufacturing units in the country are at par with global standards, reducing the need for repeated inspections by different regulators.

- It will make India a quality pharmaceutical hub of the world. In addition, it will ensure that our citizens also receive export-quality medicines.

What are Good Manufacturing Practices (GMP) for Pharma Companies?

- Good Manufacturing Practices (GMP) are mandatory standards that aim to bring quality into product by way of control on materials, methods, machines, processes, personnel, facility or environment, etc.

- GMP was first incorporated in Schedule M of the Drugs and Cosmetics Rules, 1945 in the year 1988 and the last amendment was done in June 2005.

- Existing schedule M under the Drugs Rules, 1945 prescribes details of requirements of facilities and their maintenance, personnel, manufacture, control and safety testing, storage and transport of material, written procedures, written records, traceability, etc.

Way Forward

- India is recognized as a global pharmaceutical hub,

with its industry playing a pivotal role in improving health outcomes worldwide by serving as a dependable supplier of affordable and high-quality drugs.

- Pharmaceutical manufacturing and quality domain has developed significantly in the last 15-20 years. The linkage between good manufacturing practice and product quality is interdependent.

- Hence, to keep pace with fast changing manufacturing and quality domain, there was a necessity to revisit and revise the principles and concept of GMP mentioned in current Schedule M.

- This would bring India's GMP recommendations and compliance expectation at par with global standards, specially to those of WHO, and ensure production of globally acceptable quality of drug.

5. Tobacco Control in India

Current Context

Recently, the World Health Organization released a report on tobacco control measures which assesses the advancements in the implementation of such control measures prescribed by WHO. As per the report, India has performed significantly well and achieved certain milestones in this direction.

About WHO and the Report

- **World Health Organization (WHO)** is recognized as a specialized agency of the UN which is responsible for the international public health.
  - ✔ The organization operates through its 6 regional and 150 field offices located throughout the globe and its headquarters is located in Geneva, Switzerland.
- **Around one-and a half decade ago, MPOWER measures were developed by WHO. These measures are mentioned hereunder:**
  - ✔ Monitor tobacco use and prevention policies,
  - ✔ Protect people from tobacco smoke,
  - ✔ Offer help to quit tobacco,
  - ✔ Warn about dangers of tobacco,
  - ✔ Enforce bans on tobacco advertising, and
  - ✔ Raise taxes on tobacco products.
- The report on tobacco control measures, released by WHO, is dedicated to assess how effectively these measures are being implemented.

Key Highlights of the Report

- The Bengaluru city finds a special mention in the report. According to the report, with the help of "No tobacco signs" and conducting awareness programs, a significant 27% reduction in smoking in public places in the Bengaluru city has been achieved.
- Across the world, there are 300 million fewer smokers today, with the prevalence of smoking declining from 22.8% in 2007 to 17% in 2021.

1. Effectiveness of the MPOWER Measures:

- According to the report, more than 70 percent of the population is being protected by at least one of the measures. This percentage was merely around 5 percent in 2008.
- As of now, more than 151 nations are implementing at least one of such MPOWER measures. The number has increased from 44 countries in the year 2008.
- More interestingly, countries like Brazil, Turkiye, Mauritius and Netherlands have implemented all the MPOWER measures.
- According to the report, around 8-9 million people die across the globe due to "tobacco epidemic" and thus, WHO urged all the nations to adopt all the MPOWER measures.

2. About second-hand smoke:

- Second-hand smoke is defined as the smoke consumed indirectly by an individual who is in the proximity of a smoker.
- According to the reported data, out of 8.7 million deaths due to tobacco consumption, more than 1 million deaths account for those who are non-smokers but were exposed to secondary smoke.
- The report also indicates that more than 50 thousand children as well as adolescents are exposed to second-hand smoke which may lead to

medical complications like severe asthma, infections of respiratory tract and even lead to sudden infant death syndrome.

- Therefore, the report predominantly indicates the need of creating smoke-free public areas and also de-normalizing the habit of smoking in the society.

- The report claims that around 40% nations have indoor public places which are completely smoke-free.

3. India's status:

- Since 2005, India has been a party to the WHO Convention on Tobacco Control.

- As per the report, India has the highest achievement levels when it comes to putting labels of warning on both sides of the tobacco products as well as providing tobacco dependence treatments.

- India is among the top 10 nations with more than 80 percent cigarette packs carrying health advisory along with a quit-line toll free number.

Scenario of Tobacco Consumption in India

- According to a report published in 2021, there is more prevalence of tobacco usage and consumption among boys, that is, 9.6% as compared to that among girls, which is 7.4%.

- Prevalence of smoking tobacco was around 7% while that of smokeless tobacco products, it was around 4%.

- About 3% usage of e-cigarettes was also observed.

Measures adopted by India

- In India, there is a complete ban on the sale of e-cigarettes. It is in line with the findings that e-cigarettes are relatively more harmful than traditional ones.

- Also, there is a complete ban on smoking in the educational institutions and healthcare centers.

- The report ranks the implementation of these bans an 8 out of 10 in healthcare facilities, 6 in schools, and 5 in universities. There is a prohibition on advertisement of such products through majority of mass media platforms. In addition to this, India is looking to implement warnings on the OTT platforms as well. Since pandemic times, there has been an increase in OTT trend in India. Therefore, projection of warnings and advisories on these platforms will help in spreading awareness to a large chunk of population. If such step is implemented, India would be the first country in the world to do so.

- India is among those nations which has a comprehensive legislation related to tobacco control. There is a strict ban on selling of such products within 100 yards of any educational institution. Further, there has been a regulation put by the government to restrict the selling of cigarettes and tobacco to children below the age of 18 years and so on.

Significance of such Restrictions

- The measures adopted by India has given significant results as there was a reduction of almost 42% in tobacco usage among the school going children of age group 13-15 years.

- Moreover, the states like Himachal Pradesh and Karnataka have a tobacco usage percentage of slightly more than 1 percent.

Challenges

- Selling of loose cigarettes is one of the biggest challenges because the users are not exposed to the health warning and quit-line at all as it is only printed on the pack.

- There is also a lack of proper implementation of laws and regulations.

Way Forward

- The problem of tobacco consumption can be best addressed if the consumers become aware of the ill effects of the harmful substance and the government takes appropriate measures in this direction, which is also highlighted by the report of the WHO.

- There is a requirement of more robust mechanisms and the government should also explore them so that behavioral changes can be introduced in consumers.

- The government should also ensure strict implementation of the regulations.

- Imposition of more tax on such goods may also ensure their less consumption.

6. National Tele Mental Health Programme of India

Current Context

The government's national mental health helpline Tele MANAS, a toll-free service, has received more than 2,00,000 calls from various parts of the country since its launch in October last year.

About

- In merely three months, the number reached two lakhs from one lakh calls received in April 2023.
- Around 7,000 calls have been followed up by callbacks by the counsellors where they have succeeded in completing the loop of care.

Call Demographic

- **Age Group:** Nearly 75% of the callers were between 18-45 years age group, 12.5% of the callers were in the 46-64 years age group, and 8% were below 18 years of age.
- **Gender Distribution:** Of the two lakh calls, 59.6% were made by male callers, and 40% by female callers.
- **Top Concerns:** The most common reasons for seeking help were general feelings of sadness (28.8%), sleep-related problems (27.6%), anxiety (20.4%), relationship issues (10%), aggression (9.2%), and low interest in activities (9.7%).

About National Tele Mental Health Programme

- The Government of India, in its Union Budget 2022, announced the National Tele Mental Health Programme of India, **Tele Mental Health Assistance and Networking Across States** (Tele MANAS) and entrusted the **Ministry of Health and Family Welfare** (MoHFW) to guide its overall implementation.
- Consequently, the MoHFW formed a **National Technical Advisory Group (NTAG)** and three technical advisory sub-committees (Mental Health Service Delivery, Information Technology Architecture and Health Systems) to achieve specific goals and objectives of Tele MANAS.
- The programme includes a network of **23 tele-mental health centres** of excellence, with **NIMHANS being the nodal centre** and International Institute of Information Technology-Bangalore **(IIIT Bangalore) providing technology support.**
- Indian Institute of Technology (IIT), Bengaluru and National Health Systems Resource Centre (NHRSC) provide technical support.

Tele MANAS

- Tele MANAS is the digital arm of the **'District Mental Health Programme'.**
- Currently, there are 42 active Tele Manas cells across 31 states and Union Territories. The service handles over 1,300 calls daily in 20 different languages.

Aim and Objectives

- The program aims to provide universal access to equitable, accessible, affordable, and quality mental health care through **24x7** tele-mental health services across all Indian states and UTs.
- The program implements a full-fledged mental health-service network that provides integrated medical and psychosocial interventions, including video consultations with mental health specialists, e-prescriptions, follow-up services, and linkages to in-person services.
- The program extends services to vulnerable groups of the population and difficult-to-reach populations.

Two-tier Working

- Tele MANAS is organised in a two-tier system– Tier 1 comprises state Tele MANAS cells which include trained counsellors and mental health specialists and Tier 2 comprises specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or e-Sanjeevani for audio-visual consultation.

Significance of the National Tele Mental Health Programme

- This program ensures that it helps the shift towards normalising conversations on mental health, **encourages people to recognise mental health-related illnesses,** seek treatment and also remove stigma in the long run.
- The program will increase access to **mental health care for people in remote and underserved areas**, as well as those who may be unable to afford or travel to in-person services.

- The program can help to reduce the stigma associated with mental illness by making it more accessible and acceptable to seek help.
- The program can help to improve the quality of mental health care by providing access to trained mental health professionals and evidence-based interventions.
- The program can also help to enhance the efficiency of mental health care by providing a convenient and cost-effective way to deliver services.

Mental Disorder: A Challenge

- Worldwide, pandemic-induced job losses, lack of social contact, and anxiety have been some factors that have led to an increase in mental health issues.
- Many people need mental health support due to the increasing stress in life through distress, anxiety, depression, students with exam stress, family issues, suicidal thoughts, relationship issues, financial stress or in case of any other mental health issue.
- It is estimated that six to seven per cent of India's population suffers from mental disorders.
- According to the **World Health Organization (WHO),** one in four families is likely to have at least one member with a behavioural or mental disorder.
- These families not only provide physical and emotional support, but also bear the negative impact of stigma and discrimination.
- Most of **them (>90 per cent) remain untreated.** Poor awareness about symptoms of mental illness, myths and stigma related to it, lack of knowledge on the treatment availability and potential benefits of seeking treatment are important causes for the high treatment gap.

Impact of Mental Disorder

- Mental disorders can lead to reduced productivity at work, school, or other activities. This can lead to financial problems.
- The cost of seeking treatment, therapy, and medication for mental disorders can be substantial, putting financial strain on individuals and families.
- Mental disorders can lead to social isolation, as people with these disorders may withdraw from social activities and relationships. This can lead to loneliness, depression, and other problems.
- Research indicates that mental health conditions are associated with an increased risk of suicide.

7. Manipur Issue

Current Context

The Central government deployed around 20 to 22 companies of CAPF in the various regions of Manipur that suffer from ethnic violence.

About

- This deployment is in addition to the already-deployed 125 units of CAPF in the violence-hit areas of the state.
- The deployment will comprise companies of the Central Reserve Police Force (CRPF), the Border Security Force (BSF), and the Sashastra Seema Bal (SSB) with the objective of "bolstering" the security grid in the state.
- The state has been seeing incidents of ethnic violence since May 2023 after the Manipur High Court finally ordered the state government to consider the case of the petitioners for inclusion of the Meitei community in the ST list, expeditiously, preferably within four weeks from the date of receipt of its order.However, the matter aggravated after the release of a video in which two women of the Kuki-Zo community were nakedly paraded, after which the incidents of violence increased.

Manipur

- The State is like a football stadium with the Imphal Valley representing the playfield at the centre and the surrounding hills the galleries. The valley, which comprises about 10% of Manipur's landmass, is dominated by the non-tribal Meitei who account for more than 64% of the population of the State and yields 40 of the State's 60 MLAs.
- The hills comprising 90% of the geographical area are inhabited by more than 35% recognised tribes but send only 20 MLAs to the Assembly.
- While a majority of the Meiteis are Hindus followed

by Muslims, the 33 recognised tribes, broadly classified into 'Any Naga tribes' and 'Any Kuki tribes' are largely Christians.

Why are Tribal Groups against ST Status for Meiteis?

- The tribal groups say the Meiteis have a demographic and political advantage besides being more advanced than them academically and in other aspects.
  - ✔ They feel the ST status to the Meiteis would lead to loss of job opportunities and allow them to acquire land in the hills and push the tribals out.
  - ✔ The language of the Meitei people is included in the Eighth Schedule of the Constitution and many of them have access to benefits associated with the SC, OBC or EWS status.

Meitei argument to support ST Status

- Scheduled Tribe Demand Committee of Manipur (STDCM) began demanding ST status for the Meiteis in 2012.
  - ✔ The Meiteis were recognised as a tribe before the merger of the State with the Union of India in 1949. The ST status is needed to "preserve" the community and "save the ancestral land, tradition, culture, and language" of the Meiteis.
  - ✔ The Meiteis needed constitutional safeguards against outsiders, as the community has been kept away from the hills while the tribal people can buy land in the "shrinking" Imphal Valley.

What are the reasons behind the crisis?

- **Geographical divide:** According to the last census in 2011, the Meitei have 53 percent of the state's 2.85 million population, but occupy only 10 per cent of its land, against the Kuki and 33 other tribes, which constitute about 30 per cent of the population and are geographically more spread out in the poorer hill areas.
  - ✔ Manipur is witnessing a sudden population surge with a growth rate of 24.5 per cent,

against the national average of 17.64 per cent and mushrooming of villages in hilly regions.

- **Ethnic tension:** The Kukis are mostly Christian and the Meitei mostly Hindu (small numbers of Meiteis are Christian or Muslim). The violence has occurred over ethnic rather than religious divides.
- **Insurgency:** The Meitei have long alleged that the Kuki are not indigenous to Manipur but were resettled in the state by the British from the nearby hills of Myanmar in the nineteenth century.
- Churachandpur district has the highest number of insurgent groups in Manipur, with 24 operational groups under the Suspension of Operation (SoO).
- **Drug issues:** Meiteis alleges that the Kuki are involved in the illegal drug trade, including poppy cultivation, in collaboration with transnational networks operating from Myanmar.
- Kuki groups have claimed that the survey and eviction is a **violation of Article 371C**, which confers some administrative autonomy to the tribal-dominated hill areas of Manipur.

Steps taken by Government

- The Centre invoked Article 355 of the Constitution, which is a part of emergency provisions. It empowers the Centre to take necessary steps to protect a State against external aggression or internal disturbances.
- The government blocked the internet intending to control the spread of fake news and misinformation on social media.

Way Forward

- The major task before the government is to build confidence between the Meitei and Kuki communities.
- The government should bring more survilliance to the border areas to stop incursion of illegal migrants from Myanmar.

INTERNATIONAL RELATIONS

1. 15th BRICS Summit

Current Context

The 15th Summit (August 22-24, 2023) in Johannesburg saw manifestation of the idea of BRICS-plus that has been on the table of the group, for quite some time.

About

- It was the fifteenth annual BRICS summit attended by the Heads of State or Heads of Government of the five member states: Brazil, Russia, India, China, and South Africa.
- South African President Cyril Ramaphosa also invited the leaders of 67 countries to the summit, including 53 other African countries, as well as Bangladesh, Bolivia, Indonesia and Iran.
- As the Chair of BRICS, South Africa focused on the theme, 'BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development, and Inclusive Multilateralism'.

About BRICS

- The BRICS brings together five of the largest developing countries in the world—Brazil, Russia, India, China, and South Africa.
- It represents 41% of the global population, 24% of the global GDP and 16% of the global trade.

Contingency Reserve Arrangement

- It is a framework founded in Fortaleza, Brazil, that aims at providing support through additional liquidity and other means to BRICS countries at a time of economic crisis.

New Development Bank

- It is a multilateral development bank jointly founded by the BRICS countries in Fortaleza, Brazil in 2014. It was formed to support infrastructure and sustainable development efforts in BRICS and other underserved, emerging economies for faster development through innovation and cutting-edge technology.

Key Highlights of the Summit

- BRICS leaders announced the admission of six new countries – Argentina, Ethiopia, Iran, Saudi Arabia, Egypt and the United Arab Emirates – into the bloc from next year.
- Discussions revolved around multiple aspects of political and socio-economic coordination in which member countries identified business opportunities, economic complementarities, and areas of cooperation.
- It presented an opportunity for PM Modi and Chinese President Xi Jinping to meet and talk, with the hope of coming to a common understanding to resolve border disputes.
- The expansion of size could signal an expansion of the agenda beyond economics as all the concerned members are united by a desire to level a global playing field. This is lacking because of the wealthy West's domination of international bodies, such as the United Nations, the International Monetary Fund or the World Bank.
- Amid widespread dissatisfaction with the prevailing world order, the pledge of BRICS nations - currently Brazil, Russia, India, China and South Africa - to make the grouping a leading champion of the "Global South" has, found resonance.

Challenges

- The expanded BRICS-11 is a less coherent group — some are going through crises, others are thriving. This creates the problem of heterogeneity which needs to be carefully tackled.
- Among BRICS aspirants, Argentina and Egypt are also members of the infamous **"Coffee Club" which** oppose India's membership in the UNSC while getting a lot of support from China, thus presenting India with difficult foreign policy choices.

- China has been trying since 2017 to expand the group by including other countries to constitute a BRICS Plus framework and induce **the transformation of BRICS into a China-centric bloc, entrap the new members with loans under its Belt and Road Initiative.**
- The BRICS is a relatively young group; there are **wide disparities in size, outlook and perceptions of its members** about a multipolar world and restructuring of the global organs of power. Making the group too big would make **decision-making more complicated and time-consuming.**

Suggestions

- BRICS need to shed the centrality from China and

create a better internal balance, reinforced by the urgent need for diversification.
- BRICS countries should be builders of universal security. Seeking one's own security at the expense of others will only create new tensions and risks.
- Facing the rising tide of de-globalisation and the increase of unilateral sanctions, BRICS countries should enhance mutually-beneficial cooperation in supply chains, energy, food and financial resilience.
- BRICS should embrace a global governance philosophy that emphasizes extensive consultation, joint contribution and shared benefits, enhance unity and cooperation with emerging markets and developing countries, and increase the voice in global governance.

2. US-Iran Relationship

Current Context

Recently, Iran reduced the punishment of five Iranian Americans from imprisonment to house arrest in accordance with the deal currently being negotiated with the USA. With this release, Iran will get its 6-7 billion dollars frozen in South Korea due to USA-led sanctions.

About

- The US has considered this release a "positive step," but it has refused to share further details.
- The Iran-owned funds will only be transferred to certain restricted accounts, subject to the condition that they can only be used for humanitarian causes.
- The official statement further added that this development will not result in any relief from the sanctions imposed on Iran.
- On the other hand, Iran is also pursuing the release of Iranians who are detained in the USA, along with full control over how the released funds and assets are used.

History of US-Iran Relations

- The diplomatic relations between the USA and Iran deteriorated after the overthrow of a pro-West monarchy and the establishment of an anti-West theocracy in Iran.
- An initiative was proposed in 2015 where Iran, the P5+1 nations, and the European Union reached a deal on Iran's nuclear program, the Joint

Comprehensive Plan of Action. According to this, Iran agreed to dismantle and redesign its Arak-based nuclear reactor, limit uranium enrichment for at least fifteen years and so on.
- However, in 2018, the USA withdrew itself from the JCPOA and imposed heavy sanctions on Iran. In retaliation, Iran boosted its nuclear enrichment program, due to which relations further deteriorated.

The Current Deal

- The ongoing deal has been in discussion for the past few months. In March 2023, the Iranian foreign minister made a statement regarding such an agreement of prisoner swap with the USA.
- However, the news of such interaction between the two nations finally got confirmation from the foreign minister of Oman.
- **Role of Qatar:** According to USA media outlets, the frozen funds from Iran will first be sent to Qatar's Central Bank. Qatar will regulate the account to ensure that funds can only be used for humanitarian aid.

Benefits for Both Parties

- **Benefits for Iran:**
  - ✔ The release of frozen funds will help Iran manage and resolve the financial issues it is facing.
  - ✔ Though informal, through this agreement, Iran is seeking a diplomatic engagement with the USA, aiming for a relaxation of sanctions.
  - ✔ This agreement can be a way forward in resolving the issue of the JCPOA and its resumption.

- **Benefits for the USA:**
  - ✔ In recent times, Iran has been considered a source of hostility by the USA through its actions like enriching uranium and supplying drones and other weaponry to Russia.
  - ✔ Through this agreement, the US may be seeking an opening to resolve its disputes with Iran, thereby reducing its hostility toward its Russian ally in the West Asian region.

Benefits for India

- Stable relations between the USA and Iran will benefit India, as it could trade with Iran without the risk of US-led sanctions, thereby diversifying its energy needs.
- The bilateral trade between India and Iran will also get a boost.
- A resolution of tensions will allow India to carry out developmental advancements at the Chabahar Port without any risk of sanctions.
- This will ensure India's supply connectivity and trade of goods with Afghanistan, Central Asia, Russia, and even Europe, making connectivity initiatives like the International North-South Transit Corridor functional.
- It will also give India a strategic military advantage in the Arabian Sea to counter Gwadar port, which is a part of China's "string of pearls".

Conclusion

- This informal agreement between the USA and Iran can pave the way for formal engagement between both nations and can benefit India significantly in achieving its national interests. India, therefore, should keep a keen eye on it.

3. Bilateral Exercise 'Zayed Talwar'

Current Context

Two Indian Naval Ships INS Visakhapatnam and INS Trikand arrived at Port Rashid, Dubai on 8 August 2023 to participate in a bilateral Naval Maritime Partnership Exercise with the UAE Navy.

Highlights of the Exercise

- The bilateral exercise **'Zayed Talwar'** was conducted to enhance interoperability and synergy between the two navies.
- Rear Admiral McCarty met Brigadier Abdullah Farj Al Mehairbi, the Deputy Commander of UAE Naval Forces at Abu Dhabi Naval Command and agreed on increasing the interaction between the two navies in order to jointly tackle the common challenges of piracy, smuggling, human trafficking, enhance maritime security and undertake joint humanitarian assistance and disaster relief operations, should the need arise.
- As part of the exercise, the ships were planned to engage in tactical manoeuvres, over-the-horizon targeting, search and rescue, and electronic warfare drills to improve coordination between the two fleets.

The First Edition of Zayed Talwar

- The inaugural edition of the Indian Navy-UAE Navy

Indian Naval Ships
• **INS Visakhapatnam** is one of the largest operational Destroyers in Indian Navy and is a completely indigenous warship made by the Mazagaon Docks Limited.
• **INS Trikand** is an advanced stealth frigate commissioned in 2013. The ship is a contemporary warship with state-of-the-art technology incorporated in every facet of its design to make her stable, stealthier, fast and formidable.

- bilateral exercise, Zayed Talwar, was held in March 2018, to enhance interoperability between the two navies.
- Indian Naval ships have made regular port calls at UAE to promote maritime cooperation and the exercise Zayed Talwar 2023 is an addition to the bolstering relations between two nations.

India-UAE Diplomatic Relations

- India and the UAE established diplomatic relations in 1972 and UAE opened its Embassy in Delhi in 1972 whereas, India opened its Embassy in Abu Dhabi in 1973.
- The traditionally strong bilateral relations enjoyed by India and UAE received impetus with the visit of Prime Minister Narendra Modi to UAE on August 16-17, 2015 which marked the beginning of a new **strategic partnership** between the two countries.
- Bilateral Defence Interaction between India and UAE has been steadily growing in accordance with other aspects of the bilateral relationship.
- There have been **regular high-level & functional level exchanges** between the two countries.

Way Forward

- The bilateral exercise "Zayed Talwar" between the Indian Navy and the UAE Navy is an important step in strengthening the relationship between the two countries. The exercise is a valuable opportunity for India and the UAE to strengthen their maritime cooperation and to build a more secure future for the region.

4. Malabar Exercise

Current Context

The 31st edition of the Malabar multilateral exercise comprising India, Australia, Japan and the U.S. was held in Sydney from August 11-21, as Australia hosted for the first time this year.

About

- India will also take part in the Sea Power conference that Australia is hosting from November 7-9.
- The exercise took place in a large designated area, the East Australian exercise area, spread over a couple of hundred miles off Sydney and had a harbour and sea phase.
- Malabar exercise was followed by AUSINDEX, the India-Australia bilateral naval exercise.
- In addition, P-8 maritime patrol aircraft of India, Australia and the U.S. took part in the exercise with focus on anti-submarine warfare (ASW).

Malabar Exercise

- Malabar is a multilateral war-gaming naval exercise that was started in 1992. It began as a bilateral exercise between the navies of India and the United States.
- Two more editions of the exercise were carried out in 1995 and 1996, after which there was a break until 2002 in the aftermath of India's nuclear tests.
- From 2002 onward, the exercise has been conducted every year. Japan and Australia first participated in 2007, and since 2014, India, the US and Japan have participated in the exercise every year.

- Japan joined **the naval exercise in 2015 as a permanent member**, and Malabar became a trilateral exercise.
- Australia was included as a permanent **member of Exercise Malabar in 2020** amid the stand-off with China in Eastern Ladakh.
- **The last edition of Malabar** was hosted by **Japan** off Yokosuka Island near the East China Sea, which was held in November 2022.
- It also marked 30 years of the exercise that began as a bilateral exercise between India and the U.S. in 1992.

Objectives

- The Malabar Exercise includes simulated war games and combat maneuvers.
- Enhancing understanding of each other's operational methodologies and ability to co-operate in tackling myriad maritime challenges.
- Assessment of the security situation across the Indo-Pacific.
- Commitment to peace, stability and prosperity of all countries in this region.
- The rules-based international order, respecting the rule of law and freedom of navigation in the

international seas, and upholding the territorial integrity and sovereignty of all states.

- Malabar exercise is based on QUAD members' shared values and commitment to an open, inclusive Indo-Pacific and a rules-based international order.

Significance

- As a grouping of four powerful navies in the Indo-Pacific region, the Quad has irked China, which is flexing its military power globally.
- It enhanced synergy, **interoperability and coordination** between the four country's navies.
- Exercises highlight the convergence of views among the participating countries on maritime issues and their shared **commitment to an open, inclusive Indo-Pacific and a rules-based** international order.
- Malabar has grown in size, scope and complexity with ASW training emerging as a major focus area, especially in the backdrop of rapid expansion of Chinese Navy and its increased forays into the Indian Ocean.
- This Exercise address the variety of shared threats to maritime security in the Indo-Asia Pacific.
- Malabar exercise may be called Quad group (US, Australia, Japan, and India) exercise.

Challenges

- China has been muscle-flexing in the Indo-Pacific region, coming in direct conflict with Japan and the US, primarily in the East and South China Seas.
- China has turned into a global expansionist. It views every regional or global strategic grouping as a challenge to its expansion programme.
- Beijing claims almost all of the 1.3 million square-mile South China Sea as its sovereign territory.

- China has been building military bases on artificial islands in the region.
- Beijing has impeded commercial activity like fishing and mineral exploration by neighbouring nations in recent years, saying the ownership of the resource-rich maritime territory belongs to China for hundreds of years.
- QUAD nations lack unanimity, as every nation has it's individual interest in the Indo-Pacific region.
- QUAD has also to deal with the challenges of piracy, maritime terrorism, organised crime like drug trafficking, weapons smuggling, trafficking of weapons of mass destruction (WMD) and related material in the Indo-Pacific region.

Way Forward

- The exercise has grown in size, scope and complexity with Anti-Submarine Warfare training emerging as a major focus area in the last few years, especially against the backdrop of rapid expansion of Chinese Navy and its increased forays into the Indian Ocean.
- Exercise Malabar, if upgraded to a quad of the navies of these countries, will further reiterate the message of strategic deterrence and solidarity among these like-minded nations, thereby ensuring greater security given the complex dynamics of mistrust, ambition and competition prevalent in the Indo-Pacific region.
- If India takes advantage of this chance to take the lead in forming an overarching security quad of India, Australia, Japan, and the US, showing a cooperative approach, greater coherence, and a shared resolve to address maritime security issues in the Indo-Pacific, a perceptible beginning to a peaceful Indo-Pacific region can be made.

5. Economic Community of West African States (ECOWAS)

Current Context

Recently, the ECOWAS (Economic Community of West African States) has given indications of its plans to intervene in the Niger military coup.

About

- ECOWAS has been one of the significant players, along with global players such as Russia and the USA, in the Niger crisis.
- The heads of member states of ECOWAS will be meeting in the near future to discuss the next steps

after the military junta of Niger defied their deadline of August 6th to reinstate the ousted president as well as the closed airspace.

- Niger witnessed a military coup on July 26, when President Mohamed Bazoum was ousted and the military junta government was established.

- Apprehensions indicate that ECOWAS may also intervene in the Niger crisis militarily.

ECOWAS

- ECOWAS is a regional bloc in Western Africa, consisting of 15-member nations: Benin, Burkina Faso, Cape Verde, Guinea, Cote dIvoire (Ivory Coast), Ghana, the Gambia, Guinea Bissau, Niger, Liberia, Mali, Sierra Leone, Nigeria, Senegal, and Togo.
- However, following the military coup in Mali, Guinea, and Burkina Faso, ECOWAS suspended these three members and refused to recognize the new government.
- With a mandate to promote economic cooperation, ECOWAS was established in 1975 through the Lagos Treaty. It is also known as CEDEAO in French.

Objectives of ECOWAS:

- It aims to have a single common currency and the constitution of a trading bloc in various areas such as industry, telecommunication, transport, energy, financial issues, and socio-cultural matters.

Role of ECOWAS in Niger So Far

- In accordance with its objectives, ECOWAS has attempted to resolve and end the military conflicts occurring in the region.
- ECOWAS has also deployed its peacekeeping forces in Liberia during a civil war in 1990. Similarly, in 1997, when Sierra Leone witnessed a military coup, these peacekeeping forces were deployed.
- It also intervened in Gambia when the president was not vacating the seat even after losing elections.
- The role of ECOWAS in resolving this turmoil becomes more important because the leader of the ongoing coup, General Tchiani, has also served as the battalion commander for the ECOWAS peacekeeping force in 2003.

Challenges for ECOWAS in dealing with the Niger Crisis

- The military junta governments of Mali and Burkina Faso have given their support to the Junta

government in Niger by sending their official delegation. As per the official statement, any attack on Niger would be considered an attack on them.
- This has resulted in the development of a rebellious group of military-government-led nations within ECOWAS, thereby challenging its authority and integrity.
- Further, the grouping is also facing challenges in launching the attacks because the Chairperson of ECOWAS is the Nigerian president, who has given the call for military intervention by ECOWAS in Niger; however, the Nigerian Senate is delaying it.

Significance of ECOWAS for India

- ECOWAS, being a regional bloc of western Africa is significantly important to India. India was given the status of observer to ECOWAS in 2004. India is investing in the region with credit facilities like "political risk coverage" and cooperation in various domains like renewable energy, telecom etc.
- ECOWAS is supporting India's UNSC permanent membership claim.
- Further, India's cooperation with ECOWAS can pave a way for bilateral deals in energy and critical minerals sector which can boost energy and manufacturing sector of India and the African market can be a destination of those goods.
- A stable relation with ECOWAS can help India in realizing its idea of Global South cooperation by giving it an opportunity to increase its ties with South American countries, thereby countering China's global expansion.

Conclusion

- ECOWAS has a significant role to play in maintaining peace and stability in West Africa. The region has just recovered from the problems of severe food inflation, and an unstable military junta government may again put it in turmoil.

6. India-UK Free Trade Agreement

Current Context

India and United Kingdom are in the direction of concluding the negotiations on the FTA and for the same purpose chief negotiators of both countries held the 12th round of talks in New Delhi from August 7, 2023.

About

- Out of the 26 chapters of the FTA, around 19 are closed and the remaining are being negotiated.
- Through a separate agreement, that is, Bilateral investment Treaty, negotiations regarding investments are being made which will also likely to be finalized side by side this FTA is negotiated.

India-UK Bilateral Trade Scenario

- India is among the top source markets for the FDI into the UK. Indian companies are known to play a key role in the British economy by generating jobs and making tax contributions. UK is among the largest European source of remittances for Indian economy and 6th largest source of FDI investments for India.
- In case of trade in merchandise, India's 7th largest export partner is UK and this trade has witnessed an increase of more than 20 percent from FY2009-10 to FY2020-21.
- In case of trade in services as well, India is holding strong relations with UK as it is the 10th largest service trade partner for Britain.

What is FTA?

- A Free Trade Agreement (FTA) is an agreement or a pact between two or more nations with an objective to reduce the trade and EX-IM related barriers and ease out the bilateral or multilateral trade among the parties.
- FTAs also include the areas such as Intellectual property rights (IPRs), government competition and procurement policy, investments etc.

The Ongoing FTA Negotiations between India and UK

Historical background:

- The negotiations and discussions on this FTA commenced in January 2022 to give a boost to bilateral trade between the two nations. There has been a focus on developing partnerships for research and innovation in the field of advanced defence capabilities, and countering new and emerging cyber, maritime and terrorism threats.
- Since the FTA came into discussion during the pandemic times, there has been a proposal for collaboration between Astra Zeneca and Serum Institute of India.

Progress So far:

- So far, 11 rounds of such negotiations have been completed which resulted in the closing of 19 chapters of the FTA out of 26. So far, till the 11th round of negotiations, both the nations have reached an agreement on the matters of contention such as whiskey and automobile tariffs.
- For the bottled scotch, the FTA is likely to incorporate MIP (minimum import price) while the duties on the imported bottled whiskeys (to around 100 percent from 150 percent) and cask whiskey (to 75 percent) will be reduced.
- The discussions and agreement further mentioned that the duties on the bottled scotch will be further reduced to reach a target of 50% over a period of 10 years.
- According to the commerce secretary, the concerned FTA shall be the most complex FTA agreement for India till date and this will also serve as a standard template for upcoming FTA negotiations in future.

Expectations for Both the Nations

- The Indian IT and healthcare industries are making a demand for greater access to their skilled professionals in the British market.
- Further, Indian industry is demanding an access for certain goods in the UK market at nil custom duties.
- UK, on the other hand, is seeking a significant reduction in the import duties on goods like Scotch Whiskey, lamb meat, automobiles and some confectionary items.

Significance for India

- The FTA shall further increase the magnitude of bilateral trade between both the countries. Through this, the domestic manufacturing sector of India will prosper.
- This will present India as an alternate to Chinese market in the world.
- If the negotiations regarding the R&D becomes successful, Indian researchers will get an access to further advanced technology and resources which can help in growth of the concerned sector.
- More industrial instalments and more bilateral trade will also result in strengthening of Indian Diaspora in UK which will act as soft power for India.
- Through the success of this FTA, India's FTA negotiations with EU might get a boost.
- This FTA, just like other ones, can help the domestic small and medium-sized enterprises as they will become more competitive without relying much on government subsidies.

Challenges

- There is a contention regarding the IPRs of clinical drugs on which India's stand is non-negotiable. This stand is to ensure that the life-saving drugs must be available in India at an affordable cost.
- India is not agreeing with the idea of data protection and data localization because there is no dedicated digital policy in India to manage this domain.
- Government procurement is one more area where the disagreement persists. India is ready for negotiations however, it is made clear that public procurement policy of India is formulated in order to support the small and medium enterprises (SME), and any compromise regarding this is not acceptable.

Similar Trade Agreements Signed by India with Other Countries

- India, in order to diversify its trade requirements and increasing its scope as one of the largest markets, is trying to increase its trade links with other major economies and markets across the globe and in this very direction, such FTAs are being signed.
- With around 54 individual nations, India has signed preferential access, economic cooperation as well as FTAs.
- In 2022, India signed a CEPA (comprehensive economic partnership agreement) with UAE which also includes FTA. This was India's 5th major FTA.
- In the very same year, India inked FTA with Australia.
- Similarly, India has been negotiating FTAs with countries like Israel to expand the ambit of bilateral trade from defence to other sectors.
- In the year 2011, India signed separate FTAs with Japan, South Korea and member nations of ASEAN.

Conclusion

- The ongoing FTA negotiations can play a significant role in increasing the scope of bilateral trade between the respective nations.
- It will help India achieve its ambitious goals of becoming a 5 trillion dollar economy as well as third largest economy of the world in the upcoming years.

GEOGRAPHY

1. Hurricane Hilary

Current Context

Category 1 storm Hilary hit the US state of California on 20 August 2023, bringing fierce winds and flooding to the Pacific coast.

About

- The storm moved across the border from Mexico, where the Baja California peninsula saw winds of 70 mph (119km/h).According to forecasters, Hilary was the first tropical storm to hit Southern California in 84 years, bringing flash floods, mudslides, high winds, power outages and the potential for isolated tornadoes.

About Hurricane

- Hurricanes are tropical storms that form in the Atlantic Ocean with wind speeds of at **least 119 kilometres (74 miles)** per hour.
- A tropical cyclone or hurricane is like a heat engine that is energised by the release of latent heat on account of the condensation of moisture that the wind gathers after moving over the oceans and seas.
- They derive their energy through the evaporation of water from the ocean surface, which ultimately re-condenses into clouds and rain when moist air rises and cools to saturation.

Names in Different Regions of the World
• **Typhoons:** Tropical cyclones are known as Typhoons in the China Sea and Pacific Ocean.
• **Hurricanes:** In the West Indian islands in the Caribbean Sea and Atlantic Ocean.
• **Willy-willies:** In north-western Australia and
• Tropical Cyclones: In the Indian Ocean Region.

Saffir-Simpson Hurricane Wind Scale

CATEGORY 1 — 119 - 153km/h — Very dangerous winds will produce some damage

CATEGORY 2 — 154 - 177 km/h — Extremely dangerous winds will cause extensive damage

CATEGORY 3 — 178 - 208 km/h — Devastating damage will occur

CATEGORY 4 — 209 - 251 km/h — Catastrophic damage will occur

CATEGORY 5 — 252 km/h or higher — Catastrophic damage will occur. A high percentage of framed homes will be destroyed. Most of the area will be uninhabitable for weeks or months.

Source: NOAA — BBC

Hurricanes have three main parts:

1. The calm eye in the centre,
2. The eyewall where the winds and rains are the strongest,
3. The rain bands which spin out from the centre and give the storm its size.

Categories of Hurricane

- Meteorologists use the Saffir-Simpson Hurricane Wind Scale to classify hurricanes into **categories one to five.**
- Categories **three to five** are considered major storms.
- A **category five hurricane** has wind speeds that exceed 252 kilometres (157 miles) per hour.
- Coastal areas are often most heavily impacted by damaging winds, rains, and storm surges as the storm collides with or brushes land.

Conditions for the Emergence of a Tropical Cyclone

- There are differences of opinion among scientists about the exact mechanism of a tropical cyclone. However, some initial conditions for the emergence of a tropical cyclone are:

    I. Large and continuous supply of warm and moist air that can release enormous latent heat.

    II. Strong Coriolis force that can prevent filling of low pressure at the Centre (absence of Coriolis force near the equator prohibits the formation of tropical cyclone between 0°-5° latitude).

    III. Unstable condition through the troposphere that creates local disturbances around which a cyclone develops.

    IV. Finally, absence of strong vertical wind wedge, which disturbs the vertical transport of latent heat.

Tropical Cyclone Forecasting

- It is the science of forecasting where a tropical cyclone's centre, and its effects, are expected to be at some point in the future.
- There are several elements to tropical cyclone forecasting: track forecasting, intensity forecasting, rainfall forecasting, storm surge, tornado, and seasonal forecasting
- Tropical cyclones far from land are tracked by **weather satellites** capturing visible and **infrared images from space**, usually at half-hour to quarter-hour intervals.
- As a storm approaches land, it can be observed by land-based **Doppler weather radar.**
- Radar plays a crucial role around landfall by showing a storm's location and intensity every several minutes.

List of some important Cyclones in India
• The 1970 **Bhola cyclone**
• The 1999 **Odisha cyclone**
• The 2014 **Hudhud Cyclone**
• The 2018 **Gaja Cyclone**
• The 2019 **Fani Cyclone**

Spatio-temporal Distribution of Tropical Cyclone in India

- Owing to its peninsular shape, surrounded by the **Bay of Bengal in the east** and the **Arabian Sea in the west,** the tropical cyclones in India also originate in these two important locations.
- Though most of the cyclones originate between 10°-15° north latitudes during the monsoon season, in case of the Bay of Bengal, cyclones mostly develop during the months of October and November.
- They originate between 16°-2° N latitudes and to the west of 92° E. By July the place of origin of these storms shifts to around 18° N latitude and west of 90°E near the Sunderban Delta.

Government Initiatives for Cyclone Preparedness

National Cyclone Risk Mitigation

- **The National Cyclone Risk Mitigation Project (NCRMP)** is a World Bank assisted flagship programme being implemented by NDMA in 8 cyclone prone coastal states in two phases, with the following components:

    ✓ **Component A:** Early Warning Dissemination System (EWDS)

    ✓ **Component B:** Cyclone Risk Mitigation Infrastructure (CRMI)

    ✓ **Component C:** Technical Assistance for Capacity Building on Disaster Risk Management

    ✓ **Component D:** Project Management and Monitoring.

National Disaster Management Authority
• The NDMA, established under the Disaster Management Act of 2005 (DM Act of 2005), and chaired by Prime Minister, has the responsibility for laying down the policies, plans and guidelines for disaster management for ensuring timely and effective response to disasters in the country.

- The "National Cyclone Risk Mitigation" program was initiated by India with the purpose of implementing measures, both structural and non-structural, to reduce the impacts of cyclones.
- The primary goal of the project is to safeguard at-risk local communities from the consequences of cyclones and other weather-related disasters.
- Following the establishment of the National Disaster Management Authority (NDMA), the project's administration was handed over to NDMA in September 2006.

Integrated Coastal Zone Management (ICZM)

- The objective of ICZM is to enhance the well-being of coastal communities and safeguard the coastal ecosystem.
- The ICZM strategy encompasses the recognition of necessary infrastructure and methods for enhancing livelihoods in coastal regions.
- The preservation of mangrove ecosystems is one of the aspects included.
- The project's nationwide segment involves the delineation of the country's coastline and the establishment of the hazard line.

Coastal Regulation Zones (CRZ)

- Regions along the coasts, including seas, bays, creeks, rivers, and backwaters that experience tidal effects within a range of 500 meters from the high tide line (HTL), as well as the land located between the low tide line (LTL) and the high tide line, were designated as

coastal regulation zones (CRZ) in 1991.
- The coastal regulation zones have been declared by the Ministry of Environment, Forest and Climate Change, operating under the Environment Protection Act of 1986.

Colour Coding of Cyclones

- The IMD has its own colour coding system for warning and information regarding cyclones.
- The colour codes are used by the department to signify the intensity of the situation and the warning associated with it.
- The four colours used by IMD are Green, Yellow, Orange, and Red.
- **Green:** The green colour signifies everything is smooth and well i.e "all is well" with no adverse weather conditions.
- **Yellow:** The yellow colour code asks the guards to "be updated" to handle the bad weather that can last for days, with a warning of affecting daily activities.
- **Orange:** Orange colour code alert warns of severe damage, communication disruptions, power cuts, road and railway blockages, and evacuation, urging families to prepare basic necessities.
- **Red:** Red warnings signal authorities to take action in severe weather conditions- a threat to life, requiring disaster management response teams to handle the situation and ensure safety.

2. Danube Channel

Current Context

Recently, Russia targeted the ports and grain storage facilities along the Danube river channel through drone strikes.

About

- The Danube delta was utilized as an alternative passage by Ukraine for its grain exports after Russia pulled out of the UN Black Sea Grain Initiative.
- This resulted in halting the passage of grain-carrying cargo ships from Ukrainian ports in the Black Sea such as Odessa, Pivdennyi, and Chornomorsk.

Danube River Channel

- The Danube River is recognized as the second-

longest river in Europe and has played a significant role in freight movement.
- Along its course, the Danube River passes through 10 nations: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, Moldova, and Ukraine.
- **Distributaries of the Danube:** The river forms its delta around 80 kilometers from the sea (Near Tulcea, a Romanian city) and spreads into three major distributaries or channels: Chilia, Sulina, and St. George.
- Of these, the 63 km-long Sulina River channel is

of utmost significance for Ukraine as it is the only channel that has been dredged and straightened, and thus, it has enough width for freight transport.

The Sulina River Channel

- The Sulina River lies completely within the borders of Romania and connects the major ports of Ukraine on the river to the Black Sea.

- Due to these features, it is considered a riverine 'expressway', thereby playing a significant role in the transport of goods from inland to the Black Sea.

- From the Ukrainian ports like Izmail and Reni, the grain-carrying ships travel through the Chilia Channel towards the port of Sulina, located at the mouth of the Sulina Channel.

- Afterwards, these ships travel to Constanta, Romania's biggest seaport, where the cargo is transferred to bigger ships. From here, the grains are carried through the Black Sea into the Mediterranean Sea via the

Bosphorus Strait. Currently, NATO is keeping a constant eye on this route.

The Need for this Alternate Channel for Ukraine

- Ukraine is one of the largest grain exporters in the world, and thus, its economy is highly dependent on agricultural exports, which are stalled after the impasse on the UN Black Sea Grain Initiative.
- **Russia's withdrawal from the UN Black Sea Grain Initiative**
  - ✔ The UN Black Sea Grain Initiative allowed the safe passage of Ukrainian food grains from the Black Sea to the rest of the world, which helped ensure an uninterrupted supply of food grains even during the crisis.
  - ✔ Russia pulled itself out of the initiative after the alleged attack on Kerch Bridge by the Ukrainian forces.

Challenges Faced by Ukraine

- With the impasse of the Black Sea Grain Initiative, the passage through the Ukrainian ports in the Black Sea has been disrupted, thereby forcing it to shift towards the ports in the Chilia channel.
- The Danube channels have not been used so far for the purpose of grain exports by Ukraine because of its high dependence on the rail route and Black Sea ports. Therefore, the capacity of the ports on the Danube is fairly limited.
- After witnessing the recent attack by Russia on grain storages at the Danube, the possibility of future attacks cannot be neglected.
- Romania has offered Ukraine to transport its exports via the rail network and then use the Romanian ports to supply grains globally. However, this will further increase the cost of exports for Ukraine.
- **Other impacts:**
  - ✔ With the disruption of the Black Sea grain initiative, there is already a delayed supply of grains to the African nations suffering from food shortages which may further aggravate due to the current situation.
  - ✔ With the increased cost of Ukrainian exports, the prices of these food grains will also increase, thereby resulting in food inflation.

Conclusion

- The world has recently witnessed the food crisis and high food inflation due to the pandemic and the ongoing Russia-Ukraine Crisis. Thus, it becomes the duty of all the stakeholders to find a feasible way out so as to ensure that the world does not face the problem of food insecurity and high food inflation.

3. Project Devika

Current Context

Recently, the Union Minister of State (Independent Charge) Science and Technology reviewed the development of liquid waste management and the Project Devika.

About

- This project is considered North India's first River Rejuvenation Project, launched by the PM to protect the sanctity of the holy river Devika.
- The project is being developed on the lines of the "Namami Gange" project at a cost of around Rs. 190 crore.

The River Devika

- The river Devika has its origins in the **Udhampur district of Jammu and Kashmir,** near the **hilly Suddha Mahadev temple.** While flowing down towards Pakistan, it merges with the Ravi River.
- Being referred to as the sister of the Ganga, this river has its own religious significance.
- The Devika Bridge is developed over this river by the Border Roads Organization (BRO), which helps in the smooth passage of military convoys to the border areas in the region.
- Along with such cultural importance, the river also has **economic significance,** as during the festivals, it generates a large number of **employment opportunities for the local residents.**
- However, the river has been facing the problem of **ecological and cultural destruction** because of various problems such as the disposal of municipal waste, solid

waste, untreated sewage water, and garbage that are released directly into these bodies of water.

What is Project Devika?

- The work on the project was initiated in 2019 under the **National River Conservation Plan (NRCP)** of the Ministry of Environment, Forestry, and Climate Change to address the problem of untreated sewage water disposal in the river, thereby protecting its sanctity as a holy river.
- As per the guidelines and directives of the project, the bathing ghats on the river banks will be developed, and the encroachments near the river course will be removed.
- There will be restoration of river catchment areas as well as natural water bodies.
- Under this project, a **Liquid Waste Management Project** is being developed with a network of pipes and manholes that will connect all the households through the UEED (urban environment engineering program). For this, the **funds will be allocated by both the Centre and the UT** in the ratio of **90:10.**
- Along with the construction of three sewage treatment plants with an extensive sewerage network of around 129 km, a solid waste management Project will also be developed under this ambitious Devika Rejuvenation.
- The project also aims to develop two cremation ghats, small hydroelectric power projects, and three solar power plants.

Significance of the Project

- With the development of sewage treatment plants and solid waste management plants, the solid waste pollution as well as the water pollution in the river will be effectively managed.

- Since the river also provides an employment source, its cleanliness will ensure the attraction of more tourists in the region, which will further enhance tourism in the state and the income of local people.
- A clean river could ensure the supply of cleaner water in the nearby regions. It will also ensure that the river ecosystem thrives, thereby protecting and nurturing biodiversity.
- The cultural significance and religious sanctity of the river will also be maintained.

Challenges

- The establishment of projects like waste water treatment plants, hydroelectric power projects, etc. will result in the displacement of natives residing near the river. Thus, their proper rehabilitation will become a big challenge.
- Since the concerned area lies in the Shivalik Ranges, which is a mountainous region, the construction of such projects can be difficult and prone to natural disasters.
- The development of such projects can also have an impact on the biodiversity of the region.

Way Forward

- While implementing the project, its efficacy should be assessed periodically through official surveys and social audits.
- The displaced people should be rehabilitated properly.
- Disaster resilience construction should be carried out to ensure the longevity and efficiency of the projects.

National River Conservation Plan
• NRCP is recognized as a scheme launched in 1995 by the Central government with the objective of preventing the rivers from getting polluted.
• Various programs of river conservation are being implemented under the two bodies, namely the NRCP and the National Ganga Council.
• Along with this objective, the body also performs some other functions, such as:
✔ Identification and diversion of raw sewage into the treatment plants, and then their appropriate treatment.
✔ To stop open defecation on the banks of rivers, it also conducts low-cost sanitation work.
✔ Development of efficient human resources to promote research in this discipline, spread awareness in the public, and so on.

4. Rainfall Pattern

Current Context

India Meteorological Department (IMD) carried out an analysis of observed monsoon rainfall variability and changes of 29 States & Union Territory at State and District levels based on the IMD's observational data of recent 30 years (1989-2018) during the Southwest monsoon season from June to September (JJAS) and issued a report on 30 March 2020. The report has been found significant in the current year's monsoonal variabilities.

About

- As per the report of IMD, states such as Uttar Pradesh, Bihar, West Bengal, Meghalaya and Nagaland along with Arunachal Pradesh and Himachal Pradesh have shown a decreasing southwest monsoon rainfall trend in last 30-year span.

- If district-wise data is considered, then the increasing trends of southwest monsoonal rainfall can be observed in districts like Saurashtra, Kutch, southern part of Rajasthan, northern Tamil Nadu etc.

Causes of Change in Rainfall Patterns

- The primary and most significant cause of this changed pattern of southwest monsoon is due to global warming and climate change.

- As per the studies conducted by the UNESCO, due to climate change, the ocean surface temperature is changing. Due to this change in the temperature of ocean surface, the thermohaline circulation has been disturbed, which in turn, resulted in altering the global wind patterns. Due to this shift in the global wind patterns, the rainfall patterns are also getting altered.

- Further, this changed rainfall pattern is also triggered by the effect of human activities on the surface vegetation.

- The recently published IPCC report has also claimed that these patterns of changed monsoon rainfall are going to become more frequent and cannot be prevented.

Implications and Effects

- The problem of this change in rainfall pattern is observed throughout the globe and India is also not left untouched from it. Due to change in the rainfall patterns, several problems may arise.

- Global researchers claim that natural rainfall pattern is good for the vegetation growth while a fluctuated rainfall pattern may result in lower amount of water in the subsurface layer of soil. Further, a changed rainfall pattern may also lead to unusual growth of weeds which may significantly affect the crop production.

- India, being an agrarian economy, is highly dependent on rainfall patterns and thus a variable rainfall may result in early maturation of crops which may become vulnerable to excessive moisture and fungal and bacterial attack. Similar conditions have been observed in India where unusual and unseasonal rainfall has impacted the production of wheat in past few years.

- Due to heavy rainfall, the rivers may overflow and the risk of floods increases. In the mountainous states like Himachal Pradesh and Uttarakhand and States like Bihar, every year, events of floods can be witnessed. Simultaneously, many states of India also face conditions like drought.

- This results in the condition of "paradox" where one part of the country is suffering from water scarcity and drought while the other part is suffering from excessive rainfall and flood-like situations.

- Another major impact can be seen in urban areas in the form of urban flooding. From past few years, India's metropolitans face a constant threat of urban flooding even with the commencement of southwest monsoon and regular events of urban flooding are also observed. One such example is seen in Delhi.

- Other additional problems like spread of water-borne diseases post-floods also put additional health risks as well as additional burden on the public healthcare sector.

Measures and Initiatives Adopted by IMD

- Since the IMD has been releasing data on monsoonal rainfall patterns and predicting the variabilities, to counter the challenges associated with changed rainfall patterns, it has adopted certain measures which are mentioned hereunder.

- IMD has come out with a seamless forecasting mechanisms and systems at different levels:
  - ✔ The **long-range forecasts,** for the entire season, are issued and being followed with an extended range forecast. It is issued on every Thursday with a validity period of 4 weeks.
  - ✔ For an extended range forecast, another **short to medium range forecast** as well as warnings are provided at 36 meteorological sub-divisions levels four times a day, by the National Weather Forecasting Centre (NWFC) with a validation upto five days and an outlook for next two days.
  - ✔ Another forecast, that is, short to medium range forecast and warning is also provided by the state-level or regional meteorological centers which are valid for next five days and updated two-times a day.
  - ✔ Further, **very short-range forecasts** are provided and updated every three hours (nowcasts).

Impact Based Forecast

- This mechanism indicates about the impact of the concerned weather condition along with guidelines, do's and don'ts for public etc. in case of an exposure to severe weather. These guidelines and SOPs are finalized in collaboration with the National Disaster Management Authority.

- In addition to this, different color codes are used to indicate the intensity and impact of the severe weather events. Green color indicates no warning therefore, no action is required, yellow color corresponds to be watchful and get updated information, orange color warns to be alert and prepared to take appropriate action. However, red color is a signal to take an appropriate action.

- The warnings are also disseminated through various means of communication such as emails, whatsapp and short message service (SMS), and other social media platforms and channels (including press release, if required) to all the users and Disaster managers.

- Digital Initiatives like UMANG mobile app, MAUSAM (a weather forecast application), Meghdoot (for dissemination of Agromet advisory) and DAMINI (for lightening alerts) are also in place to manage the concerned situations.

ENVIRONMENT

1. Melting Glaciers

Current Context

According to a new study published in the journal "Nature", melting glaciers could create new ecosystems covering an area between the size of Nepal and Finland by the year 2100.

About the New Study on Melting Glaciers

- **Researcher and Study Context:** The study was conducted by Jean-Baptiste Bosson and colleagues from the Conservatory of Natural Areas of Haute-Savoie, France, using a **global glacier evolution model.**
- **Ecological Shift from Melting Glaciers:** The melting of glaciers could lead to a significant ecological transformation, resulting in the emergence of **novel ecosystems** to adapt to new habitat conditions.
- **Glacial Area Prediction:** The study focused on the trajectory of approximately 650,000 square kilometres of glaciers outside the Antarctic and Greenland ice sheets throughout the 21st century.
- **Deglaciation Rate:** The research model predicts that deglaciation, or glacial retreat, will continue at a consistent rate until 2040, irrespective of various climate scenarios.
- **Diverging Estimates After 2040:** Beyond 2040, the rate of glacial retreat diverges based on the severity of greenhouse gas emission releases. A high-emissions scenario could result in a loss of about half the 2020 glacier area by 2100.
- **Role of Low-Emissions Scenario:** Alternatively, adopting a low-emissions scenario that achieves net-zero emissions by 2050 could significantly reduce glacial loss to approximately 22%.
- **Emerging Ecosystems:** The research model was able to predict the nature of emerging ecosystems
- in areas that had previously been glaciated. These

Global Glacier Evolution Model

- The (GloGEM) includes mass loss due to frontal ablation at marine-terminating glacier fronts and accounts for glacier advance/retreat and surface elevation changes.

- ecosystems were categorized as **terrestrial, marine, or freshwater habitats.**

Various Examples Highlight the Melting of Glaciers

- **Greenland Ice Sheet** losing around 280 billion tons of ice annually.
- **Himalayan glaciers** at risk of disappearing by 2100.
- **Glaciers of European Alps** retreating since the mid-1800s.
- **Glaciers of Andes Mountains** in the tropical Andes have shrunk by 30-50% since the 1970s.
- **Antarctic Ice Sheet** is also experiencing significant ice loss.

Several factors are driving this ice melt:

- **Global warming:** Increasing temperatures lead to accelerated glacial melt, surpassing the rate of snow accumulation.
- **Anthropogenic activities:** Emissions from deforestation, fossil fuel burning, and industry release greenhouse gases, contributing to global warming and glacier melt.
- **Altered precipitation:** Changes in precipitation patterns due to rising propensity of extreme weather events, induced by climate change influence glacial extent and thickness.
- **Natural factors:** Volcanic activity, and variations in insolation also impact glacier melting.

Impacts of glacier melt are far-reaching:

- **Rising sea levels:** Coastal areas face major risks due to sea level rise which threatens loss of life, property and infrastructure.
- **Water scarcity:** Glacial meltwater is vital for many communities, and its reduction can affect agriculture and industries.

- **Weather pattern shifts:** Glacial melt can disrupt weather patterns, potentially destabilizing regional climates.
- **Ecosystem disruptions:** Biodiversity, food chains, and ecosystems are impacted by glacier melt.
- **Natural disasters:** Glacial melt can trigger flash floods, cloudburst and landslides with catastrophic effects.
- **Reduced albedo effect:** As glaciers shrink, Earth absorbs more sunlight, leading to higher temperatures.

Efforts to Combat Melting Glaciers

- **Lower carbon emissions:** Embrace renewable energies like wind and solar power, and adopt energy-saving policies.
- **Enhance energy efficiency:** Improve building insulation and promote energy-efficient appliances.
- **Promote public transport:** Reduce private vehicle use and greenhouse gas emissions, and promote electric mobility.
- **Expand afforestation:** Planting trees aids in absorbing atmospheric carbon dioxide.

- **Reduce waste and recycle:** Minimize greenhouse gas emissions from unsustainable waste disposal.
- **Curb deforestation:** Prevent loss of carbon-absorbing forests through initiatives like REDD+.
- **Sustainable agriculture:** Implement practices that cut emissions and preserve water resources.
- **Global agreements:** Collaborative international efforts, like the Paris Agreement (2015), tackle emissions.
- **Adaptation and mitigation measures:** Plan and execute strategies for dealing with impacts of glacial melt.

Conclusion

- Ultimately, lowering greenhouse gas emissions remains the pivotal long-term solution. Governments, businesses, and individuals each play a vital role in addressing the consequences of glacial melt and contributing to climate change mitigation.

2. NTPC Starts Trial Run of Hydrogen Bus in Leh

Current Context

The National Thermal Power Corporation (NTPC) started a trial run of a hydrogen bus in Leh. The first hydrogen bus arrived at Leh on August 17 after 3 months of field trials, roadworthiness tests and other statutory procedures.

About

- With the goal of achieving carbon-neutral Ladakh, NTPC is setting up a hydrogen fuelling station, solar plant and providing five fuel cell buses for operation on intracity routes of Leh.
- It is a part of NTPC's Hydrogen Fuel Cell Based Bus and Car Project undertaken with the support of the Ministry of New and Renewable Energy.

Significance of the Development

- This marks the **first time when such a project has been undertaken in India,** wherein a holistic solution from **green energy** to fuel cell vehicle would be developed.
- This will be India's first-ever deployment of hydrogen buses on public roads, marking a bright moment in the evolution of India's policy on public infrastructure.

- The Ministry will also harness renewable energy for the generation of hydrogen and develop its storage and dispensation facilities as part of pilot projects at Leh and Delhi.

About NTPC

- NTPC Ltd. is a Central Public Sector Undertaking (PSU) under the Ministry of Power which earned the status of a Maharatna company in 2010.
- It is India's flagship energy conglomerate that dates back to 1975 in terms of its origin, working with the aim to accelerate power development in India.
- **Among its prominent policy aims and accomplishments include creation of public charging infrastructure, installation of** battery charging and swapping stations, **providing electric buses to state and city transport undertakings etc.**

Green Hydrogen based Energy and its Significance

- Green hydrogen is produced via the electrolytic splitting of water into hydrogen and oxygen to produce a clean and renewable source of energy for which it is considered as a game changer for the future of India's energy security.

- This innovation is a part of Prime Minister's Hydrogen Vision which will ensure self-reliant means of affordable and accessible clean energy, while also responding to the need to mitigate against climate risks and creating new entrepreneurs and jobs.

- Through such innovations, India can transition from being a net importer of fossil energy to becoming a net exporter of clean hydrogen energy.

- These developments are in tune with India's National Hydrogen Energy Mission (2021-22) as the Government continues to focus on augmenting national capacity for Green Hydrogen development via the Green Hydrogen Policy launched in 2022 by the Ministry of Power.

India's Global Aspirations and Sustainable Transportation

- Fuel cell vehicles ensure zero greenhouse gas emissions while having a lower operational cost as compared to diesel powered vehicles.

- This effort in decarbonizing the transport sector will help India meet her Intended Nationally Determined Contributions (INDCs) which is a part of her international obligations under the Paris Agreement (2015).

- As a part of India's "Panchamrit" strategy announced at the UNFCCC COP26 in Glasgow, India announced Net Zero by 2070 along with the aim to reduce emissions intensity of its economy by 45%.

- To that end, Electric Mobility has also been a policy priority for India expressed via the consequent designing of schemes like FAME India, EV30@30 Campaign etc.

- Hydrogen buses complement the broad aim of developing Sustainable Public Transportation Systems and bring necessary convergence in India's Climate-based Public Policy.

Challenges

- Financial viability of such projects on a continuous basis remains a major area of concern for the administration.

- Generation of hydrogen energy might require non-renewable sources like coal which in turn raises a question mark on the efficacy of such technologies.

- Hydrogen as an energy source needs to be handled with utmost procedural safety due to its potential to be chemically extremely explosive in nature.

Suggestions

- Utmost importance must be given to familiarize Green Hydrogen-based technologies and its applications and mainstream them into the social fabric of India.

- Convergence between the Government and Private Sector and Financial Institutions may bring about an expansion in the scope of financing for such projects with long gestation periods.

- Green Hydrogen as a Renewable Energy source, must be proactively promoted to create public awareness, which can generate market demand when automobile products, like cars, based on Hydrogen Energy (Eg. Toyota Mirai) are launched.

3. Green Mobility Scheme

Current Context

The Union Cabinet, on 16 August 2023, approved Rs 57,613 crore PM-eBus Sewa under green mobility scheme to improve urban mobility and decarbonise public transport in cities. Ten thousand electric buses will be inducted on a public-private partnership (PPP) model in 100 cities.

About Green Mobility Scheme

- In 2017, the **Ministry of Housing and Urban Affairs** unveiled the much-anticipated 'Urban Green Mobility Scheme'.
- The plan came close on the heels of the launch of **Smart Cities Mission** and **Atal Mission for Rejuvenation and Urban Transformation (AMRUT).**
- The Urban Green Mobility Scheme **primarily focuses on two areas:**

Sustainable Urban Mobility, which entails:

- Development of infrastructure-enabling bus systems, on lines of the Bus Rapid Transport System (BRTS).
- Promoting non-motorised transport through 8,000 km of pedestrian walkways and cycling tracks.
- Promoting bike-sharing through 73,000 public cycles.
- Better urban freight management.
- Integrating physical and soft infrastructure, paving the way to set up systems like ITS (intelligent transport system) with cashless payment support.

Sustainable Vehicles and Fuels, which entail:

- The shift toward hybrid and electric vehicles for public transport.
- Switch to non-fossil fuels or renewable resources for public transport projects.

Need for Green Mobility

- India's booming auto market fuels rapid vehicle growth, contributing to high air pollution and health issues in urban areas due to increased traffic.
- India's energy reliance on imported fossil fuels, including for transportation, exposes vulnerability to global oil price fluctuations, impacting the economy significantly.
- India, a Paris Agreement signatory, aims to cut greenhouse gas emissions; transportation, responsible for 15% of total greenhouse gases, is a key focus area.

Recent Government Initiatives

- In recent years, the Indian government has taken several initiatives to promote green mobility, including the launch of the **FAME scheme, PM-eBus Sewa Scheme** which aims to promote the adoption of electric vehicles in the country.

PM-eBus Sewa

- On 16 August 2023, the Union Cabinet approved a scheme to add 10,000 electric buses to city bus services nationwide, and to shore up urban infrastructure under green mobility initiatives with a focus on cities having no organised bus services.
- The PM e-bus Sewa scheme will have an estimated cost of Rs 57,613 crore, out of which the Centre will provide Rs 20,000 crore. It will support bus operations for 10 years.

The scheme will be implemented in two segments:

1. **In 169 cities,** 10,000 e-buses will be deployed using a **public-private partnership (PPP) model.** Depot infrastructure will also be developed or upgraded to support the new e-buses, including the creation of behind-the-meter power infrastructure like substations.

2. **In 181 other cities,** infrastructure will be upgraded under the green urban mobility initiatives. Initiatives will focus on bus priority, infrastructure, multimodal interchange facilities, automated fare collection systems, and charging infrastructure.

Eligible cities for the Scheme

- Cities with a **population of three lakh and above** will be covered under the scheme, including all the capital cities of Union Territories, and the northeastern and hill States.

Significance of PM e-Buses Sewa

- The adoption of electric mobility services will help **reduce noise and air pollution** in Indian cities and also curb carbon emissions.
- This scheme is also expected to bring in economies of scale for the procurement of electric buses through aggregation.
- Around 45,000 to 55,000 direct jobs are expected to be generated via the scheme.

FAME Scheme

- The **Faster Adoption and Manufacturing of Electric Vehicles (FAME)** scheme was launched in April 2015 under the **National Electric Mobility Mission,** to encourage people to purchase electric and hybrid vehicles by providing financial support.
- The scheme was launched in **two phases:**

- ✓ Phase 1 of the scheme was from **1 April 2015** to 31st March 2019.
- ✓ Phase 2 was launched on **1 April 2019** with an outlay of **Rs 10,000** crore, for a three-year duration. The scheme has been extended till March 2024.

Way Forward

- To ensure the success of these transformative initiatives, the government should focus on seamless execution and monitoring.
- Strengthening public awareness campaigns about green mobility benefits, bolstering charging infrastructure for EVs, and collaborating with local governments for effective implementation are key.
- Regular reviews and adaptive policies will drive sustainable urban development, reduced emissions, and enhanced livelihoods.

4. World Biofuel Day

Current Context

August 10 is celebrated as World Biofuel Day with the objective of spreading awareness about the significance of biofuels in energy production as compared to conventional sources (like fossil fuels), thereby promoting their use.

About

- This day has been celebrated since 2015 by the Ministry of Petroleum and Natural Gas with a particular theme.
- The theme of last year was "Biofuels for Sustainability and Rural Income," but for this year, the theme has not been decided yet.

What are Biofuels?

- Biofuels are fuels derived from biomass such as algae, plant materials, animal and domestic waste, as well as agricultural and industrial bio-wastes.
- Biofuels are the liquid fuels directly converted from this biomass.
- Biofuels are sometimes considered "renewable energy sources" because the feedstock for biofuel production can be quickly replenished.
- Usually, biofuels are of two types, namely ethanol and biodiesel, with ethanol being the more viable and efficient option.

Ethanol as a Potential Biofuel

- Ethanol, C_2H_5OH, is a hydrocarbon compound with applications in many industries. However, its efficiency as a biofuel is also very high.

Significance of Ethanol as a Biofuel

In clean energy production:

- Blending ethanol with gasoline increases the fuel's octane number due to ethanol's oxygen-rich properties and allows for efficient burning, thereby producing relatively more energy and emitting less CO_2.
- Therefore, globally, it is considered a viable and efficient energy source and is blended with gasoline.
- With ethanol blending, the consumption of fossil fuels will also be reduced. This will also reduce the import bills for India.

Economic benefits:

- For India, along with reducing import bills, this will also reduce its dependence on fossil fuels, thereby diversifying its energy resources.

- This also increases reliance on renewable sources of energy.
- The consumption of ethanol as a biofuel will require its increased production. The government is also giving economic benefits to the farmers who sell their sugarcane produce for ethanol production. This promotes the cultivation of sugarcane and increases income for farmers.
- Further, the byproducts of ethanol production, such as distillers' grains, can be used as livestock feed, thereby ensuring additional benefits for farmers.
- A recently released report indicated a surplus in the production of sugarcane in India. This can be diverted for ethanol production, and thus, blending targets can be successfully achieved.

Environmental benefits:

- Efficient burning of fuel ensures cleaner emissions with less carbon monoxide and CO2.
- This will help India achieve its Panchamrit goal of reducing its total projected carbon emissions by one billion metric tons by the year 2030.
- Ethanol can be used as a fuel for the production of electricity, thereby ensuring clean electricity production.

Government Initiatives to Promote Bioethanol Production and Ethanol Blending

Ethanol Blending Program and National Policy for Biofuels, 2018:

- This policy, introduced and implemented by the Ministry of Petroleum and Natural Gas, allows ethanol production from various sources, such as damaged grains.
- This ethanol shall be used in the blending process, with a target of achieving 20% ethanol blending in gasoline by 2030.
- India has already achieved 10% ethanol blending, and in June 2022, the government significantly revised its target of achieving 20% ethanol blending by 2025.

Challenges

- Currently, bioethanol production is lower than demand in the blending process.
- The existing engines and technology are not well suited for blended fuel, and thus, their efficiency may decrease.
- An increased sugarcane production will result in the depletion of the groundwater table, thus defeating the objective of environmental conservation.

Way Forward

- Government initiatives are in place to ensure appropriate bioethanol production that can cater to industrial demand.
- New technologies should be developed in the area of flex-fuel vehicles that can work effectively with biofuels.
- Rather than focusing on sugarcane production, other viable ethanol production methods should also be considered.

5. Small Modular Reactors (SMRs)

Current Context

Several countries are developing Small Modular Reactors (SMRs), nuclear reactors with a maximum capacity of 300 MW, to complement conventional Nuclear Power Plants (NPPs).

About

- The global decarbonisation, aligned with the U.N. Sustainable Development Goal 7, highlights the need for access to affordable, reliable, sustainable and modern energy for all.
- Since the world still depends on fossil fuels for 82% of its energy supply, decarbonising the power sector is critical; the share of electricity in final energy consumption will also increase by 80-150% by 2050.

- The recent uptick in coal consumption in Europe, despite the increase in solar and wind power, suggests that reliable, 24/7 low-carbon electricity resources are critical to ensure the deep decarbonisation of power generation, along with grid stability and energy security.
- Rapid expansion of nuclear energy is critical since hydroelectric sources are limited by topography, besides social and environmental issues.

About Small Modular Reactors (SMRs)

- Small Modular Reactors are advanced nuclear reactors that have a power capacity of up to 300 MW(e) per unit, which is about one-third of the generating capacity of traditional nuclear power reactors.

- Both public and private institutions are actively participating in efforts to bring SMR technology to fruition within this decade.

- Russia's Akademik Lomonosov, the world's first floating nuclear power plant that began commercial operation in May 2020, is producing energy from two 35 MW(e) SMRs.

- Other SMRs are under construction or in the licensing stage in Argentina, Canada, China, Russia, South Korea and the United States of America.

- Rosatom eagerly anticipates collaborating with the Indian government and its partners to harness the full potential of SMRs in the upcoming projects in the country.

- India and Russia are collaborating to build six Light Water Reactors in Kudankulam, two of which are already operational.

- According to the Department of Atomic Energy, India still does not have a formal policy on SMRs.

- India currently has 22 operational nuclear power plants, two Light Water Reactors, two Boiling Water Reactors and 18 indigenously developed Pressurised Heavy Water Reactors.

Advantages of SMRs

- **Affordable to build:** Pre-fabricated units of SMRs can be manufactured and then shipped and installed on site, making them more affordable to build than large power reactors, which are often custom designed for a particular location, sometimes leading to construction delays.

- **Saves cost and construction time:** SMRs offer savings in cost and construction time, and they can be deployed incrementally to match increasing energy demand.

- **Simpler design:** SMRs design are also simpler than those of the conventional NPPs and include several passive safety features, resulting in a lower potential for the uncontrolled release of radioactive materials into the environment.

- **Enhanced isolation for safety:** SMRs are designed with a smaller core damage frequency (the likelihood that an accident will damage the nuclear fuel) and source term (a measure of radioactive contamination) compared to conventional NPPs. They also include enhanced seismic isolation for more safety.

- **Less nuclear fuel store:** The amount of spent nuclear fuel stored in an SMR project will also be lower than that in a conventional NPP.

Conclusion

- The SMR is flexible in design and requires a smaller footprint. Since SMRs are mostly manufactured in a factory and assembled on site, the potential for time and cost overruns is also lower.

- Further, serial manufacture of SMRs can reduce costs by simplifying plant design to facilitate more efficient regulatory approvals and experiential learning with serial manufacturing.

- Less nuclear power would make the journey to net zero more challenging and expensive. To address this challenge, Small Modular Reactors (SMRs) have emerged as a potential solution to provide reliable low-carbon electricity.

6. Reasons Behind the Ban on Single-use Plastic

Current Context

On 1 July 2023, the Nationwide ban on single-use plastic completed one year. The banned single-used plastic items were identified based on the recommendation of an "Expert Committee" on single use plastics set up by the **Department of Chemical and Petrochemicals, Government of India.**

About

- The decision of such a ban came after the Plastic Waste Management Amendment Rules, 2021 was brought by the Ministry of Environment, Forest and Climate Change.

- The notification, with effect from 31st December, 2022, also prohibits the manufacturing, import, stocking, distribution, sale and use of plastic carry bags which have a thickness less than 120 microns.

Single-Use Plastic

- Single-use plastics are those goods which are made of petrochemicals (that is, fossil fuel-based chemicals) which are disposed off after being used only once.

- These plastics are also recognized as "disposable Plastics" and are primarily used as packaging material such as polythene-based grocery bags, food packaging, straws, containers, bottles, cups and cutlery etc.

- The single-use plastics contribute maximum percentage in the total plastic manufacturing.

Harmful Effects of Single-Use Plastics

- Every year, around 300 million tonnes of plastic waste is generated and around half of this waste is composed of single-use plastics. Although the polythene phthalate is one of the most recycled plastics, only 9 percent of the total plastic has only been recycled till now.

- When plastics are left unattended, they are not broken down, rather they only break up and get converted into smaller plastics, ultimately resulting in the formation of microplastics which are potentially very dangerous.

Impact on Biodiversity:

- The consumption or accumulation of microplastics in the body of the terrestrial and aquatic organisms, mainly through ingestion thereby causing death of the organisms.

- In case of decomposition, plastics release toxic chemical compounds that leach down the soil and harm the human and animal life in a similar manner.

Impact on climate change:

- Since the single-use plastic is a petrochemical derivative, it is manufactured from the fossil-based compounds. The extraction of fossils for plastic manufacturing results in the release of 12 to 14 million metric tonnes of carbon dioxide that may lead to global warming.

- It is estimated that single-use plastics could be responsible for five to ten percent of annual greenhouse gas emissions by 2050.

- **Impacts on human health:** The single-use plastics are known to release endocrine-disrupting chemicals such as Bisphenol-A, that bio-accumulate in the human body and may lead to cancer and impact reproductive hormones.

Ban on Single-Use Plastic Items

- In the backdrop of all these harmful effects of the single-use plastic, the government of India decided to ban the manufacturing of the single-use plastics.

- The first rules related to the management of single-use plastics came in 2016– Plastic Waste Management Rules, 2016. The objective was to:
  - ✔ Increase the thickness of the plastic carry bags to 50 microns.
  - ✔ To increase the jurisdictions of such rules even to the rural areas due to the perceived increase in plastic usage in rural areas.
  - ✔ To bring the responsibilities of both the producer and the user in the management of plastic wastes and so on.

- These rules were further amended in 2018 and advancements mere made in the norms.

- Similarly, the Ministry of Environment, Forest, and Climate Change vide notification dated 12 August 2021, notified the Plastic Waste Management (Amendment) Rules, 2021. A new sub-rule (2) was inserted to rule 4 which prohibits the manufacture, stocking, distribution, import, sale, and use of the following 'single-use plastic commodities (including polystyrene and expanded polystyrene)' from 1st July 2022:
  - ✔ Ear buds with plastic sticks, plastic flags, plastic sticks for balloons, candy and ice cream sticks, polystyrene (Thermocol) used for decoration purposes;
  - ✔ Glasses, cups, plates, cutlery like knives, spoons, forks, straws, trays, packing films used to pack sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.

- Further the government specified that plastic packaging is covered under the Extended Producers Responsibility. Certain packaging materials such as

sachets composed of plastic materials, packing of gutkha, pan Masala , packaging used to wrap sweet boxes, etc. all are banned under the Plastic Waste Management Rules.

Regulations Proposed by FSSAI

- **FSSAI (Food Safety and Standards Authority of India)** had also come out with certain guidelines and rules, that is, Food Safety and Standards (Packaging) Regulations, 2018 according to which, the packaging materials such as glass, paper, metal and plastic packaging materials must be manufactured through Good Manufacturing practices in compliance with the national and international standards.
- Further, to reduce plastic footprints, FSSAI also issued certain guidelines to the food and beverage industry such as:
  - ✔ Guidelines for the use of bamboo as food contact material.
  - ✔ Permitting them to use paper-sealed reusable glass bottles to serve drinking water for captive use within the hotels subject to certain conditions.
  - ✔ As part of the Eat Right India initiative, FSSAI also promoted the use of bio-degradable packaging.
  - ✔ Restrictions are removed from the usage of returnable bottles for packaging of artificially sweetened bewerages, and so on.

EPR guidelines

- The EPR guidelines mandated the reuse of the rigid plastic packaging as per the conditions specified by FSSAI.
- The EPR guidelines, in order to reduce the plastic footprint, also seek to promote the use of sustainable plastic packaging.

Other Initiatives Launched by MoEFCC

- **"India Plastic Challenge – Hackathon 2021"** was an initiative launched by the Ministry of Environment, Forest and Climate Change for the students of colleges and universities as well as start-ups to develop some sustainable alternatives of single-use plastics.

- The MoEFCC also came out with another initiative called "Prakriti – Mascot" on 5th April 2022. So far, under this initiative, 3 videos are made which focus on the elimination of single use plastics. These videos are available in 19 different languages to spread awareness for the same.
- Furthermore, "National Expo on eco-alternatives to banned single use plastics items" was also launched jointly by the Union government and the state government of Tamil Nadu.

Challenges

- Although Government has put a ban since a year, there are certain hurdles that prevent the proper and effective implementation of the initiative,such as:
- Even though ban has been imposed, the manufacturing and consumption of the single-use plastics is still in function and the enforcing authorities are not able to curb it at the ground level.
- During the implementation, authorities assured strict actions against those who do not comply with the new norms. However, the local manufacturers are still using SUP products without any restrictions.
- Although the EPR rules have been put into force, there is a huge unorganized market involved in the manufacturing of these SUP products.

Way Forward

- The policy regulations should be implemented strictly at ground level so as to stop the use of SUP between the last vendor and consumer. This strict implementation will also help in identifying and regulating the unorganized sector-led manufacturing of SUP.
- Since the matter is of public importance, the government should include awareness campaigns for the same.
- The manufacturers can be incentivized to perform their duty of recycling these SUP goods and can be promoted to recycle extra SUP from unorganized sectors through subsidies.

7. 5% of Birds in India are Endemic, Says ZSI

Current Context

According to the recent publication titled "75 Endemic Birds of India," released by the Zoological Survey of India, around 5% of the bird species found in India are endemic and are not reported in any other part of the world.

Key Findings of the Publication

- According to the publication, India is home to almost 1353 species of birds, which contribute to around 12.4% of total global bird diversity.

- Out of these 1353 species, around 78 species (which constitute around 5% of bird species) are endemic to India.

- According to the published data, three out of these 78 endemic species have not been recorded or spotted in the past few decades. These species are:

  ✔ **Manipur bush quail** (Perdicula manipurensis), which is categorized as **"endangered"** in the IUCN Red List of Threatened Species, had **its last recorded sighting in 1907.**

  ✔ The **Himalayan quail** (Ophrysia superciliosa), which is categorized as **"critically endangered"** and was last spotted and recorded in 1876; and

  ✔ **Jerdon's courser** (Rhinoptilus bitorquatus), which is listed as a **"Critically endangered"** species under the IUCN with its **last confirmed sighting in 2009,**

- The reported **75 species** in the publication **belong to 11 distinct orders, 31 families**, and 55 different genera, and exhibit remarkable distribution patterns across various regions in India.

- An endemic species is defined as a species that is restricted only to a particular geographical location and is naturally not found anywhere else in the world.

- Due to the confined and relatively small population of endemic species, they are highly vulnerable to extinction; thus, their conservation becomes more critical.

- The publication also highlights the significance of endemic species, thereby putting more emphasis on the conservation of endemic species.

- The report also focuses on making sufficient efforts to inform the common people, especially the students, about these endemic species that are confined to restricted spaces.

- **Significance of the Western Ghats:**

  ✔ The publication has placed an emphasis on the significance of the Western Ghats in terms of high endemism. According to the concerned document, the Western Ghats, which is one of the four biodiversity hotspots of India, house the highest number of endemic species, that is, around 28 bird species.

  ✔ These include species like the **Malabar Grey Hornbill** (Ocyceros griseus), the **Ashambu Laughing Thrush** (Montecincla meridionalis), the **Malabar Parakeet** (Psittacula columboides), and the White-bellied Sholakili (Sholicola albiventris).

- **Endemism in the Andaman and Nicobar Islands:**

  ✔ The Andaman and Nicobar Islands house around 25 such endemic species of birds.

  ✔ These species include **Nicobar Megapode** (Megapodius nicobariensis), **Andaman Crake** (Rallina canningi), **Nicobar Serpent Eagle** (Spilornis klossi), and **Andaman Barn Owl** (Tyto deroepstorffi).

- **The Eastern Himalayas** house four endemic birds, along with one species each in the central Indian forest and the southern Deccan plateau.

- Out of the total 78 bird species, around 25 species are marked as "Threatened", 11 are recognized as "Near Threatened ", 17 are marked as "vulnerable", 5 are categorized as "endangered," and three species, namely, Bugun Liocichla, Himalayan Quail, and Jerdon's Courser, are categorized as 'critically Endangered'.

Significance of the report

- The report highlights India's high endemism in terms of avian species diversity, and thus, it also

indicates the need to conserve such endemic species.

- With this rich biodiversity, India can claim to have a significant role in international conventions like the Convention on Migratory Species (CMS), IUCN, and CJTES, along with other initiatives to conserve biodiversity.
- It can be inferred from the findings of the publication that there is a need for robust policies and laws, along with proper implementation of the existing laws, to prevent any loss of biodiversity.
- The publication highlights the importance of endemism, and thus, potential risks to endemic species should also be taken seriously.

About ZSI

- The Zoological Survey of India is a body that comes under the jurisdiction of the Ministry of Environment, Forestry, and Climate Change, and according to Section 39 of the National Biodiversity Act, 2002, ZSI is declared a designated repository for the National Zoological Collection.

- The ZSI was constituted in 1916 as the Zoological Section of the Indian Museum (Kolkata) to promote exploration, survey, and research work in this field and to enhance knowledge regarding the flora and fauna existing in the British Indian Empire.
- Currently, ZSI is India's apex body on animal taxonomy.

Way Ahead

- Although laws for the conservation of biodiversity exist, they should be implemented in an effective manner so that this endemism can be protected.
- The existing bodies must be integrated with mechanisms of information and data sharing to streamline the conservation mechanisms.
- Programs of captive breeding can be initiated for endangered and critically endangered bird species. In this area, research should also be promoted.
- The report has given a clear picture of India's treasure of avian biodiversity, and thus, it becomes the duty of the state to protect and conserve the same from any potential risk so that all the species in the region can thrive.

8. Vehicle Scrapping Policy

Current Context

Recently the Ministry of Road Transport and Highways said that over 23,000 vehicles scrapped across India, more than half belongs to Government.

About

- The certificates of registration for vehicles owned by Central, State, and Union Territory governments and their departments are not being renewed after a lapse of 15 years.
- With 31 Registered Vehicle Scrapping Facilities, operational across 12 states, at least 23,113 automobiles have been scrapped with over half of them belonging to the government.
- A total of 23,113 vehicles (11,095 private vehicles and 12,018 government vehicles) have been scrapped till July 21, 2023, by the Registered Vehicle Scrapping Facilities since the launch of the policy.
- Out of the 31 Registered Vehicle Scrapping Facilities, Uttar Pradesh has the highest number of centres at nine. The facilities are also in Andhra Pradesh (2), Assam (2), Chandigarh (1), Gujarat (4), Haryana (5),

Madhya Pradesh (2), Maharashtra (1), Odisha (1), Punjab (1), Rajasthan (2), and Uttarakhand (1).

About India's Vehicle Scrapping Policy

- The policy states that commercial vehicles which are more than 15 years old and passenger vehicle for more than 20 years old have to undergo the fitness and emission test.
- The policy checks the quality of brakes, engine performance and several other factors, after which it is decided whether the vehicle is scrap or not.
- As per the policy, automated testing stations and vehicle scrapping provisions will be established in the phases.
- The provision for scrapping of auctioned, impounded, or abandoned vehicles has been provided under the Motor Vehicles (Registration and Functions of Vehicle Scrapping Facility) Rules issued on September 23,

2021 and the implementation of these rules comes under the purview of state/UT governments.

- Till December 2022, there were just eight RVSFs across India and only 5,215 vehicles were scrapped at these facilities.

Aim of Vehicle Scrapping Policy

- It curbs the pollution by scrapping 1 crore vehicles without any eligible fitness and registration.
- It improves vehicular safety.
- It enhances the fuel efficiency and minimize maintenance cost for vehicle owners.
- It improves auto sector sales and promote employment opportunities.
- It boosts the availability of the low-cost materials for steel, electronics and automotive industries.
- The aim of implementing this policy was to remove old vehicles as they pollute the environment 10 to 12 times more than fit vehicles and pose a risk to road safety.

Significance of Vehicle Scraping Policy

- It establishes norms that regulate vehicle phase-out on a national level with the potential to improve knowledge about vehicle retirements and to harmonise registration rules across states.
- The policy has the potential to accelerate the formalisation of vehicle scrappage and recycling.
- The policy will also bring in investments of around Rs 10,000 crore and create 35,000 job opportunities.
- By scrapping the vehicles, India can aim to reduce its carbon footprint significantly.

Issues with the Vehicle Scraping Policy

- **Need for categorisation of vehicles:** Different types of vehicles are driven on Indian roads. Due to this diversification, the same rules cannot apply to all cars. Thus, the need for categorisation of vehicles concerning scrappage.
- **Limited incentive:** There has been limited incentive and low-cost economics for big vehicles.
- No SOP: The Government do not have any standard operating procedures (SOP) for setting up of vehicle scrapping centres.
- **Fitness tests for vehicles:** If vehicles are not properly regulated, it will pollute the environment and have long-lasting consequences.
- **Approach by the government:** The government must take a proactive approach in ensuring that governmental vehicles are properly maintained and replaced in a timely manner.

Conclusion

- The policy will not only boost the sales but will also enable in achieving clean and green environment for overall sustainable development. The scrappage policy has the potential to meet the government-set target of 30-40% electrification of the vehicle fleet by 2030. By implementing effective policies and promoting awareness, India can address this issue more efficiently and create a healthier, greener transportation system for its citizens.

9. India's Clean Cooking Strategy

Current Context

Over the last 15 years, despite several government efforts, the adoption of LPG in rural households and it's refilling cost has been a cause of concern. The government needs to move from LPG subsidy alone to financing and business models that value a clean cooking transition because of the environmental benefits.

About

- LPG consumption in Indian households saw an absolute reduction in FY23 (minus 0.5% versus FY22) after years of steady growth.
- India's clean cooking policy must actively pivot towards the adoption of a suite of clean-cooking technologies and shift from an LPG-only strategy. For example, electric cooking, including induction cook-tops, can

significantly offset the need for flame-based cooking.

- Access to clean fuels is covered under the United Nations (UN)-mandated Sustainable Development Goal (SDG) 7 — Access to Affordable and Clean Energy.

Government Efforts to Increase LPGs Base

- The Grameen Vitrak Yojana, launched in 2009, helped in growing the rural distributor base from 18% to 60% of the total LPG distributor base today.

- In the recent past, the share of Indian households using LPG as the primary cooking fuel had risen to 71% in 2020 from 33% in 2011, according to the India Residential Energy Consumption Survey (IRES) conducted by the Council on Energy, Environment and Water (CEEW).
- Pradhan Mantri Ujjwala Yojana (PMUY), 'a flagship scheme of 2016, with an objective to make clean cooking fuel such as LPG available to the rural and deprived households, has provided more than 9.5 crore new households with LPG connections since 2016.

Need to Recalibrate India's Clean Cooking Strategy

- **Universal adoption of LPGs:** Loss of livelihoods and income due to Covid-19 and the Russian invasion of Ukraine which resulted in surge and volatility in crude and product prices have dented a near-term prospect of universal use of LPG in Indian households.
- **Budgetary outlay:** Despite significant efforts, subsidies, home delivery and distribution channel, the adoption issues remain and more budgetary outlay will be needed for subsidies to entice the poor to consume LPG and avail its health benefits.
- **Rising LPG price due to India's dependence on import:** The refined commodity has steadily increased to over 64% in FY23 (versus 46% in the pre-PMUY phase). Further, Indian households have seen a near-doubling in LPG prices since May 2020 in nominal terms.
- **Subsidy regime:** With volatile international prices and a domestic budget that relies on petroleum (and its products) taxation significantly, it is unlikely that India can return to a regime where a subsidy of approximately INR20,000 crore (2011-12 prices) was provided each year for LPG consumption over the first two decades of the 21st century.
- **To avoid diseases burden:** According to the recently released National Family Health Survey (NFHS)-5, there was a higher prevalence of TB in households that were using solid fuels when compared to those using clean cooking fuels in most States.

Diversity in Clean Cooking

- After the success of UJWALA and thus having transitioned to clean cooking, India now need to make the transition to alternative clean cooking technologies.
  - ✔ For example, electric cooking, including induction cook-tops, can significantly offset the need for flame-based cooking.
- With near to 100% access to electricity connections, rural households can also shift specific cooking needs to electricity.
- **Currently,** in urban areas, nearly 10% of households already use **electrical appliances** for their cooking needs.
- Highlighting the importance of affordability, we must promote e-cooking from renewable energy sources such as solar power and thermal power.

Government Efforts Regarding E-cooking

- **E-cooking Key to Mission LiFE:** The focus on electric cooking is based on the recognition that e-cooking is a key pathway to Mission LiFE (Lifestyle for Environment), an India-led global mass movement to nudge individual and community action to protect and preserve the environment.
- The Government of India has launched the ''GO Electric'' campaign to promote adoption of e-cooking" in 2021.

Benefits of E-cooking

- It can spur the domestic manufacturing ecosystem for e-cooking technologies, decrease dependence on imported LPG and crude, and limit the outflow of precious forex.
- E-cooking has many benefits, like improved indoor air quality, reduced greenhouse gas emissions and enhanced per capita energy access for India.
- **A CEEW study finds** that even at a high tariff of Rs 8 for each unit of electricity, e-cooking would still be cheaper than cooking using LPG at today's prices.
- **With the newly launched carbon market, India can actually monetise these avoided emissions and help finance the capital needed by poorer rural communities to adopt e-cooking.**

Barriers in Adopting E-cooking

- There are legitimate concerns about the power distribution grid in rural India and its ability to support all-electric cooking, given the high-power needs of the extant technology.

- The main concern towards adopting e-cooking is regarding potential faults in e-cooking appliances and whether all dishes could be prepared.
- Consumer awareness and acceptance of new forms of cooking are low, especially in a country where cooking patterns, foods and cultures change every 40 kilometres.
- E-cooking requires a different approach, which might be hard to adopt even though it is cleaner and easier.
- Cultural aspects like caste, for example, can act as a barrier to the penetration of clean cooking technologies.

Way Forward

- Access to clean cooking energy is a crucial aspect of India's energy transition journey. The choices we make regarding cooking fuel can have a significant impact on India's trajectory towards becoming a sustainable economy. India's clean cooking transition requires rethinking, individual and community actions and decisions that drive energy consumption.
- With rising fuel prices and increasing supply pressures, India needs a clean, sustainable and affordable e-cooking solution – one that also reduces its dependence on imports and increases energy security.

10. Carbon Capture and Storage

Current Context

Recently, the government of United Kingdom has reaffirmed its support for the projects dedicated for capturing and storing the CO2 emissions, in coherence with its Net Zero targets.

About

- The UK government also informed that negotiations are going on for two more such projects.
- Earlier in March, 2023, the British government also said that they will be investing around 25.7 Billion USD in the coming 20 years in this technology.

Carbon Capture and Storage (CCS) Technique

- As the name signifies, the CCS technique aims to capture the carbon dioxide (CO2) from the atmosphere and then store or bury it in appropriately deep and underground locations.
- This technique can be classified into two different types on the basis of capturing site/location. This includes:
    - ✓ **The point-source capture and storage technique:** This technique is known to capture the CO2 at very source of its production and emission before it enters the atmosphere. This includes mechanisms like smokestacks.
    - ✓ **Direct Air Capture (DAC),** which removes already released carbon dioxide from the air.

How this Technique Works?
The technique works in two steps:

- **Step I:** In the first step, the installed technology will segregate carbon dioxide from other gases which are produced during the industrial processes as well as power generation.
- **Step II:** After the task of capturing CO2 is completed, it is compressed and then transported to storage sites, usually through the pipelines where this compressed gas is buried/stored around one kilometre under the ground.
- Both the projects are designed by Britain to capture the CO2 emissions from the industries like oil and gas refining, steel industry etc. and it will be stored in the depleted oil and gas fields off the coast of Britain.

Similar Techniques Employed in India

- India, with an objective to achieve its Net Zero target by 2070, is trying to adopt emission reduction strategies like CCUS (carbon capture, utilization and storage). India's major oil and gas companies have announced, through the report called **"The Green Shift – The low carbon transition of India's oil and gas sector"** (released by the Ministry of Petroleum and Natural Gas), the plans related to energy transition.
- The CCUS technology works on similar mechanism

as CCU does. CCUS technology works by capturing CO_2 from power generation plants, industrial facilities and similar larger point sources where fossil fuels and biomass is utilized as fuels. After capturing, the compressed CO_2 is either used onsite or is transported to be utilized in various applications or is injected into specific geological formations such as underground rock formations for their permanent storage.

- The public sector oil and gas producing and exporting company ONGC has signed an MoU with Equinor (a Norway-based energy company) to explore opportunities in the CCUS technology.

- Further, ONGC is also working in partnership with another public-sector company Indian oil corporation (IOCL) on India's first industrial-scale carbon capture project which is installed at Koyali refinery.

- In addition to this, Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL) are also planning to install this CCUS technology to their oil refineries by the year 2026 and 2023 respectively.

- GAIL is utilizing another mechanism of carbon sequestration where it is using micro-algae to convert inorganic carbon to organic compounds.

Significance and Potential Benefits of this Technology

- The primary objective of this technology is to sequester the carbon to prevent its release in the atmosphere as a greenhouse gas. This will help in mitigating climate change.

- As per the UN panel of scientist's report, this technique can be proved effective for countries in achieving their INDCs and commitments. India is among those countries which is ambitious and dedicated to its INDC targets and this technology will help India in catering its energy needs along with mitigating climate change.

- The sequestered carbon has been utilized in manufacturing of construction materials, plastics, chemicals and algae-derived products like fertilizers and animal feed.

Relevance of Such Technology for India

- India is currently the most populous nation and

the fifth largest economy of the world. Further, as targeted by the government and estimated by IMF that India is going to be the third largest economy by 2027, it should also be noted that both demand and consumption of energy will increase.

- To cater such demands, energy production will need to be increased. Since more than half of energy requirements of India are fulfilled through fossil resources such as coal, this will also lead to increase in the emission of CO_2.

- While the technology for energy production through renewables requires further advancements, in such a scenario, India will require such technologies through which it can sequester the emitted carbon.

- Although per capita emissions of India is relatively very low, as a responsible nation India has determined its NDCs in accordance with the Paris Agreement (CoP21) and subsequent conferences. Thus, these techniques will help India achieve its INDCs.

Limitations

- Although the technology seems reliable, its efficacy and effectiveness are not very high. For example, the installations at smokestacks can sequester only 90 percent of the emitted CO_2.

- The technology is in its demonstration stages and thus, extensive research and development is needed.

- Further, the cost of such technology may also become a matter of concern for developing and least developed countries which are willing to contribute in mitigation of climate change but lack appropriate resources.

Conclusion

- The technique seems promising and reliable, and developed countries like UK and USA are developing it. India is also trying to implement this technology but more research and development is required in this area. Therefore, India can learn from the experiences of other developed nations working on it, thereby developing a more economic, efficient and reliable variant.

DISASTER MANAGEMENT

1. FloodWatch App

Current Context

The Central Water Commission, on 17 August 2023, launched the "FloodWatch" app which can forecast the chances of occurrence of floods a day in advance.

About

- The application also provides a 7-day advisory related to the chances of flooding at various stations located throughout the country where the Commission maintains its measurement instruments and devices.
- The app also includes other essential information regarding flood situations that users can access.

The "FloodWatch App"

- This mobile application contains a map of India on which the water stations located across the nation are marked with colored circles indicating the current risk of flooding.
- **Different colors indicate different situations, such as:**
  - ✔ A **'green'** circle depicts that the water level is 'normal' and there is no risk of flooding.
  - ✔ Marking with the **"yellow"** circle indicates that the water level is "above normal."
  - ✔ **An** orange-colored circle indicates a 'severe' situation.
  - ✔ The **red** color indicates the water level is much above normal levels and there is an 'extreme' risk of flooding.
- When one clicks on the circle, certain information about the concerned station is available, such as:
  - ✔ current water level at the station,
  - ✔ the highest level historically attained at that station,
  - ✔ the danger levels as well as the warning levels, and so on.
- These warnings are presented in **English or Hindi**. The option of **"voice-enabled prompt"** is also available in the app.

- One can get the information related to flood forecasts as well as advisory either by directly selecting the station from the map or by searching the name of the station in the provided search box.
- The app is said to have an interface that is user-friendly, due to which the user will stay informed, thereby minimizing the risk during flood events.

How Does the Application Work?

- The application would collect data from around 338 stations to provide real-time flood updates in around 23 states and UTs.
- FloodWatch is known to use advanced technologies, including "satellite data analysis", "real-time monitoring," and "mathematical modeling," thereby delivering timely and accurate forecasts regarding the floods.
- Users can download this application from the Google Play Store, and as per the official statement, it will be available on other app stores as well in the coming future.

Significance of the App

- The application has been released in the public domain at a time when the nation is facing the menace of floods, landslides, avalanches, etc. in states like Himachal Pradesh and Uttarakhand.
- With mobile applications, this critical information about flood forecasts has become handy and easily accessible to the user.
- The application can act as a mechanism to spread awareness about the potential damage inflicted by the floods. Through the flood forecast, timely relocation of the people can be ensured to minimize the damage to life and livestock.
- The information provided in the form of a flood

forecast or a flood advisory is available in English as well as Hindi, along with both written and audio formats; thus, it can be comprehended by a large chunk of the population.

Possible Challenges

- The information provided in the application is subject to cyber threats, as any misinformation may result in aggravating the impacts of floods.
- The lack of digital inclusivity is a big hurdle to the outreach of this information tool. This problem of inclusivity increases manifold in rural areas.
- With the disruption of radio signals and network infrastructure in the flood-hit areas, the functioning of the application may be disrupted.

Way Ahead

- Since the potential threat of cyberattacks cannot be neglected, a robust mechanism must be in place to secure this critical information infrastructure.
- Increasing digital inclusivity can play a key role in successful functioning of this app.
- Considering the user-reviews and feedbacks on application functioning and bringing changes accordingly, can help in increasing efficiency and effectiveness of the application.

2. Lightning in India

Current Context

In response to demands by States to classify lightning as a disaster, the Union Government has recently expressed that it isn't in favour of doing so.

About

- The Union government doesn't prefer declaring lightning a natural disaster as deaths caused by it can be avoided through education and awareness.
- Bihar and West Bengal have been frontrunners among States who have demanded that deaths due to lightning be covered as a natural disaster.
- The victims shall consequently be entitled to compensation from the **State Disaster Response Fund (SDRF)** once this is notified. As much as 75% of funds to SDRF are contributed by the Centre.
- According to present norms, cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves are considered disasters that are covered under the SDRF.

Lightning as a Geographical Phenomenon

- Lightning is a violent geo-climatic phenomenon caused by a difference in electrical charge between the top and bottom of a cloud, forming a huge current of electricity.
- Condensation and gradual rise of water vapour in the atmosphere generates heat, eventually crystallizes water molecules into ice.
- Collisions between these ice crystals trigger the release of electrons, leading to a series of reactions that results in a positively charged top layer and negatively charged middle layer in the cloud.
- When the difference in charge goes above a threshold, a huge charge of electricity flows between the layers, producing heat that expands the air column, leads to shock-waves and creates rumbling sound of thunder.

Lightning as a Disaster

- In 2021, lightning accounted for 40% of all accidental deaths caused by "forces of nature" [NCRB Data]. The trend indicates an increase in lightning-related fatalities compared to other natural events.
- Propensity of such events is highest in the Eastern and North-eastern part of the country like in the States of West Bengal, Sikkim, Jharkhand, Odisha, and Bihar. However, the number of lightning-related deaths is higher in central Indian states like Madhya Pradesh, Maharashtra, Chhattisgarh, and Odisha.
- Bihar is one of the most vulnerable states to lightning strikes, with a significant number of deaths reported annually. On June 25, 2020, more than 100 people died in a single day after they were struck by lightning.

Geographical Explanations to Such Trends

- Global warming intensified by climate change may have a role in inducing violent extreme weather events which are accompanied by thunderstorms and lightning activities.
- Urban Heat Islands created around cities highlight a warmer than normal temperature due to density of anthropogenic activities, which may consequently lead to formation of more thunderstorms and lightnings.
- Unsustainable changes in agricultural patterns, alteration of naturally preserved landscapes, long-term changes to land use patterns and deforestation may disturb long-term patterns of local climatic conditions.
- Formation of aerosols triggered by air pollutants like Suspended Particulate Matter (PM 1.0, PM 2.5) lead to increased cloud formation, causing higher frequency of thunderstorms and lightning strikes.

Impact of Such Events

- The 'Annual Lightning Report 2020-2021' has highlighted how India has experienced an increasing loss of human lives, property, and livelihoods due to the menace of lightning and thunderstorms. Between 1972 and 2019, around 90,632 people were killed.
- Increasing frequency of lightning-based casualties compounded by the absence of formal guidelines on dealing with such events makes it difficult to streamline a policy response by the administration.
- The negative impact is further exacerbated due to the abrupt and sudden nature in which thunderstorms and lightnings break out, making it difficult to predict and for people to seek precaution.
- Cloud-to-ground lightning is particularly dangerous in this regard as it can electrocute people with its high electric voltage and abrupt form of release.

Suggestions

- India ranks among the five countries worldwide with an early warning system for lightning which provides forecasts (5 days-3 hours) before the occurrence of lightning. This may be better utilized to effectively disseminate such forecast to the local populace.
- Education of the masses to create general awareness on standard response procedures to follow during such events might be handful to develop ground-level capacity.
- Retrofitting existent infrastructures like buildings, schools, bus-stops to make it lightning resilient may reduce the intensity of lightning-induced deaths.
- Efforts must be made to create Quick-Response mechanisms during such events to reduce casualties with the help of local community, police and dedicated First-Responding Teams.
- Technological interventions using remote-sensing data, satellite-based monitoring etc. may be adopted by the administration.

3. Dam Safety and Water Resource Management

Current Context

In light of an increasing trend of mishaps with respect to dams in India, the broad issue of dam safety and its role in ensuring water resource efficiency has gained importance.

About Dam Safety

- A dam is a barrier that stops the flow of water and results in the creation of a reservoir. Dams are built independently (Eg. Tehri Dam) to generate hydroelectricity or as a part of Multipurpose River Valley Projects (Eg. Damodar River Valley Project) to serve a wide range of purposes like conservation, community protection, energy extraction etc.
- Dam Safety is the act of retrofitting, securitization and sustainable management of dams to mitigate potential hazards while maintaining continuity in its operational effectiveness.
- In the wake of climate change, population explosion and resource deficiency in India, measures to boost dam safety has emerged as a potential policy tool to ensure prudent water resource management in the country.

Need to Boost Dam Safety

- Dams in India are extremely important in generating hydro-electric power which serves as a vital measure to enhance India's efforts to generate energy from non-renewable sources and achieve Net Zero by 2070.

- Increasing intensity of challenges like overflow of water, unsustainable flood management and construction-based risks call for urgent measures. Eg. Pong Dam in Himachal in recent times.

- Unsustainable dam management practices severely impact the overall ecosystem of a region and expose it to myriad of environmental vulnerabilities as seen in recent times with respect to construction of dams in the Himalayan states and the increasing trend of geomorphological disasters in the region.

Provisions to Boost Dam Safety

- Implementation of the Dam Safety Act of 2021 which mandates **surveillance, inspection, operation and maintenance** of all specified dams **via the National Dam Safety Authority,** and policy analysis through recommendations from the National Committee on Dam Safety.

- Effective Federal Coordination between the Union and the States on policy and implementational issues with consequent empowerment of State institutions like State Committee on Dam Safety, State Dam Safety Organizations etc.

- Boosting operational safety by upholding the "Rule Curve", keeping it in the public domain and continuously re-evaluating it as per changing environmental factors.

- Retrofitting of existent dams in India to do away with ageing structures and remodel them as per modern safety standards.

About Water Resource Management

- Water Resource Management is the act of laying down methods, ways and procedures to sustainably manage water resources in India and preventing their consequent misutilization, to attain the broad objective of SDG 6 (Clean water and sanitation).

- A report by the **World Bank** report estimates that the average per capita water available will **decline from 1588 cubic meters to less than half by 2030. In context of such water scarcity in India, water resource management is an indispensable reality.**

Challenges to Water Resource Management

- Most of the Indian mainland is seismically active with a high intensity of dams in the Himalayan Regions falling in Zones IV and V, impairing water conservation efforts with a permanent problem to deal with.

- Lack of mainstreaming of water harvesting methods, erratic water use in average households and over-exploitation of water resources in agriculture, constraints our options.

- Increasing rate of water pollution, triggered by industrial runoffs, make water unfit for usage as seen with arsenic contamination in major parts of Eastern India.

- Climate change induced vulnerabilities and extreme weather events like cloudbursts, un-seasonal excessive rains, etc. put stress on existing management infrastructures like dams and barrages, leads to massive floods and loss of life and property.

Suggestions

- Broad implementation of the National Water Mission as a part of the National Action Plan on Climate Change, which aims to boost overall water use efficiency, is necessary.

- Visionary policy measures to address multidimensional aspects of water resource management like PM Krishi Sinchayee Yojana for micro-irrigation, Jal Shakti Abhiyan for rainwater harvesting etc. must be integrated and effected.

- Adoption of technology-based solutions like Precision Agriculture, Remote Sensing (Eg. Bhuvan App by ISRO), Internet of Things etc. will boost efficiency in executing such policies.

4. Flash Flood in Himachal Pradesh

Current Context

Amid incessant rainfall, repeated instances of landslides and rockslides were observed in several districts of Himachal Pradesh.

About

- Torrential rains and **cloudbursts** hit Himachal Pradesh, throwing normal life out of gear. At least 50 people died and 12 were injured in rain-related incidents in the state.
- More than 750 roads, including the Shimla-Kalka National Highway and Shimla-Mataur road, were closed due to landslides and flooding.
- **Flash floods** were also reported in Bilaspur district, damaging key infrastructure.

About Flash Flood

- A flash flood is a sudden and rapid flooding event that occurs within a short period of time, after heavy rainfall, sudden snowmelt, dam or levee failures, or other triggers.
- Flash floods are characterized by their swift onset and the rapid rise of water levels in rivers, streams, and low-lying areas.
- These floods are known for their intensity and can be extremely dangerous due to their unpredictability and the speed at which they develop.
- Flash floods can trigger landslides by undercutting slopes.

Causes

- Flash floods are caused by intense rainfall, rapid snowmelt, dam failures, urbanization reducing water absorption, and obstructions like debris or ice blocking water flow.
- Steep terrain, deforestation, and climate change also contribute to their occurrence. Flash floods pose significant dangers due to their swift onset and high-water velocities.
- One of the main reasons for the devastating impact of floods in the region is the **uncontrolled construction of hydropower projects,** which have essentially transformed mountain rivers into mere streams.
- Cloudbursts can cause flash floods by rapidly raising water levels in rivers and streams.

What is Cloudburst?

- A cloudburst refers to an extreme amount of rain that happens in a short period, sometimes accompanied by hail and thunder.
- The India Meteorological Department (IMD) defines it as unexpected precipitation exceeding 100mm (or 10 cm) per hour over a geographical region of approximately 20 to 30 square km.
- Significant amounts of rainfall such as this can result in flash floods.

Impacts of Flash Floods in Hilly Areas
• **Loss of Life:** Flash floods can cause casualties due to swift water currents catching people off guard.
• **Property Damage:** Floodwaters damage homes, infrastructure, and agriculture, leading to economic losses.
• **Erosion:** Intense runoff erodes soil, altering landscapes and affecting farmland.
• **Disruption:** Roads and bridges may be washed away, cutting off communities and services.
• **Environmental Degradation:** Sediment and pollutants carried by floods harm aquatic ecosystems.

Impacts of Cloudbursts in Hilly Areas
• **Flash Flooding:** Intense rainfall from cloud bursts leads to rapid and localized flash floods.
• **Mudslides:** Soil saturation can trigger landslides, damaging property and posing risks.
• **Communication Disruption:** Infrastructure damage disrupts communication and emergency response.
• **Community Isolation:** Blocked roads isolate communities, hindering evacuation and assistance.
• **Economic Impact:** Damage to homes, agriculture, and infrastructure affects local economies.

- Cloud bursts are particularly common in **hilly or mountainous regions** where moist air is forced to rise quickly, leading to rapid condensation and precipitation.

How does Cloudburst Occur?

- In hilly areas, sometimes saturated clouds ready to condense into rain cannot produce rain, due to the upward movement of the very warm current of air.
- Instead of falling downwards, raindrops are carried upwards by the air current. New drops are formed and existing raindrops increase in size.
- After a point, the raindrops become too heavy for the cloud to hold on to, and they drop down together in a quick flash.
- Cloudburst rainfall saturates steep slopes, reducing stability and causing **landslides** due to increased gravity movement and debris flow.

Landslides

- Landslides are simply defined as the mass movement of rock, debris or earth down a slope and have come to include a broad range of motions whereby falling, sliding and flowing under the influence of gravity dislodges earth material. They often take place in conjunction with earthquakes, floods and volcanoes.
- In the hilly terrain of India including the Himalayas, landslides have been a major and widely spread natural disaster that often strike life and property and occupy a position of major concern.

Why Himalayas are More Prone to Landslides?

- Ongoing collision of tectonic plates (Indian Plate and Eurasian Plate) has created steep slopes and weak rock formations, making the region susceptible to landslides.

Impacts of Landslides in Hilly Areas
- **Structural Damage:** Landslides can damage or destroy buildings, roads, and utilities.
- **Loss of Life:** People caught in landslides are at risk of injury or death.
- **Environmental Consequences:** Soil erosion, habitat disruption, and water pollution can result.
- **Displacement:** Landslides can force communities to evacuate and seek temporary shelter.
- **Economic Loss:** Infrastructure repair, recovery efforts, and property damage incur economic costs.

- Intense monsoon rainfall saturates the soil, triggering landslides as water-laden slopes become unstable.
- The rugged Himalayan landscape with sharp inclines accelerates water flow, eroding soil and causing landslides.
- Glacier retreat exposes unstable rock and sediment, contributing to frequent rockfalls and landslides.
- Deforestation, construction, and urbanization disrupt natural slopes, reducing stability and increasing landslide risk.

Man-made Causes

- Excavation (particularly at the toe of slope)
- Loading of slope crest
- Draw-down (of reservoir)
- Deforestation
- Irrigation
- Mining
- Artificial vibrations
- Water impoundment and leakage from utilities

Mitigation Measures

- Drainage correction,
- Proper land use measures,
- Reforestation for the areas occupied by degraded vegetation
- Creation of awareness among local population.

Government Initiatives for Disaster Management

- National Flood Risk Mitigation Project (NFRMP)
- National Disaster Management Plan (NDMP)

Landslide Prone Regions in India
- **Himalayan region**
- **The Western Himalayas** (Jammu & Kashmir, Uttaranchal, Himachal Pradesh, and Uttar Pradesh)
- **The Eastern & North-eastern Himalayas** (Arunachal Pradesh, Sikkim, and West Bengal).
- **The Naga-Arakan Mountain belt** (Nagaland, Manipur, Mizoram and Tripura).
- **Peninsular India**
- **The Western Ghats region** (Maharashtra, Goa, Karnataka, Kerala & Tamil Nadu).
- **The Plateau margins of Peninsular India and Meghalaya plateau in North-East India.**

- National Disaster Management Authority (NDMA)
- India Meteorological Department (IMD)
- National Flood Management Programme
- National Flood Commission, 1976

Way Forward

- Implementing comprehensive disaster management strategies is crucial for hilly areas prone to flash floods, cloudbursts, and landslides.

- This includes enhancing early warning systems, improving infrastructure resilience, promoting sustainable land use, afforestation, and educating communities about disaster preparedness.
- Collaborative efforts by authorities, local populations, and environmental experts are vital for minimizing the impact of these natural hazards.

5. Sponge Cities

Current Context

The recent floods in China led to urban flooding in many cities and resulted in deaths and infrastructural damage, thereby raising questions about the effectiveness of the Chinese idea of "sponge cities".

About

- From northern Chinese provinces such as Zhuozhou, residents were evacuated amid the inundation of the city with flood water.
- Floods and other geological disasters resulted in around 142 deaths and disappearances as well as significant infrastructural losses in China in the month of July.
- According to the Emergency Ministry of China, the disasters caused a loss of around 2 billion USD to China.

What are Sponge Cities?

- The concept of "Sponge city" was adopted by China in 2014-15 as a methodology for urban surface water management.
- This step was taken to manage the issue of the increasing frequency of urban flooding and water logging in Chinese cities.
- The initiative aims to make appropriate use of rainwater through architectural, engineering, and infrastructural tweaks such as the use of permeable asphalt, canal and pond construction, wetland restoration, and so on, so as to reduce waterlogging cases.
- The need for such an initiative arose due to massive urbanization and the encasement of land with impermeable concrete, especially near river banks and floodplains.
- As per 2018 data released by the Chinese sources,

around 180 cities face flood risk every year, and more than 600 large and medium cities are vulnerable to urban floods.

Claimed "Efficiency" of Sponge Cities

- The sponge cities were supposed to cater to the flooding by absorbing more water during rainfall.
- It was also claimed that sponge cities can hold more water in rivers, greenery, and soil, thereby making them resilient even against droughts.

Reasons for Failure
Sluggish implementation:

- Although it started as an ambitious project, its implementation remained patchy.
- A total of 30 pilot sponge cities were selected in 2015 and 2016. Till now, only 64 out of 654 cities (that are prone to urban flooding risks) have passed legislation for program implementation.

Project proved ineffective:

- Despite all the claims of effectiveness and water-absorbing capacity, it was found that the sponge cities can handle only up to 200 millimeters of rainfall per day.
- Therefore, it was not able to cater to the impact of the heaviest rainfall in history in 2021. It also failed against the July 2023 rainstorms.

Lessons for India: Need for a Calibrated Approach

- India has also witnessed instances of urban flooding in cities like Mumbai, Bengaluru, etc. in the recent

past. Very recently, Delhi also faced such an issue. Therefore, India's approach to dealing with urban flooding must be calibrated by learning from the failures of sponge cities.

- It can be implemented by resolving the issues and developing mechanisms through which the water-absorbing capacity of the cities can be increased.
- In addition to this, the existing "grey infrastructure" should be modified to make it more resilient.
- It is high time that India should move towards "nature-based solutions" to manage urban flooding, at various levels such as:
  - ✔ **At the tier 1 level: The village/locality level**
    - ◊ Rainwater harvesting;
    - ◊ Urban roof terrace greening and water retention tanks;
    - ◊ Green corridors around residential buildings, rain gardens, green landscaping, and so on.

- ✔ **At the tier 2 level: The city level**
  - ◊ Establishment of a dedicated to **"nature-based solution" grid** (similar to the idea of sponge cities but with more efficiency).
- ✔ **At tier 3 level: National level**
  - ◊ These nature-based solution can be integrated in the National disaster management policies as a "climate adaptation mechanism" and appropriate funds should be allocated.

Conclusion

- The risk of urban flooding will surely aggravate because of changes in rainfall patterns and intensity with rising global warming and constant events of climate change. Therefore, a more calibrated approach is required, and developing climate-resilient infrastructures through nature-based solutions can be a way ahead.

ECONOMY

1. T+1 Settlement Cycle

Current Context

Recently the Indian capital market regulator Securities and Exchange Board of India (SEBI) has said it is working on real-time settlement of transactions in India's stock exchanges.

About

- The announcement came after the SEBI shortened the settlement cycle to trade-plus-one (T+1) from T+2 (in January 2023).
  - ✔ From January 27, all top listed securities, which includes shares, exchange-traded funds (ETFs), real estate investment trusts (REITs), infrastructure investment trusts (InvITs), sovereign gold bond (SGB), government bonds, and corporate bonds trading in the equity segment are being settled on T+1 basis.
- The current cycle of T+1 means trade-related settlements happen within a day or within 24 hours of the actual transaction.
- For mutual fund investors, an instant settlement means that they will receive the proceeds from their redemptions more quickly.
- The SEBI is aiming to bring real-time transaction settlement process by next fiscal year i.e., FY25.

What is Trade Settlement?

- 'Settlement' is a two-way process that involves the transfer of funds and securities on the settlement date.
- Under the traditional T+2 settlement system, transactions are settled two business days after the trade date.
- All trades executed on a trading day are settled on the next working day, i.e., on a T+1 basis instead of the traditional two-day settlement cycle.
- India became the second country to start the T+1 settlement cycle in top listed securities after China in January 2023, bringing operational efficiency, faster fund remittances, share delivery, and ease for stock market participants.

What is T+0 or Instantaneous Settlement?

- Instant settlement refers to the process where the transaction of buying or selling shares or units is processed and completed immediately.
- Same-day, or 'T+0', settlement of trades will be possible with the real-time payment system such as Unified Payments Interface (UPI), online depositories, and technology stack.
- Under the T+0 settlement cycle, if investors sell shares, they will get the money in their account instantaneously, and the buyers will get the shares in their demat accounts the same day.

Need of Instant Settlement

- There are very few markets in the world that settles in even T+1. Many countries are even struggling to bring the settlement to T+1 from T+2.
- It will enhance the liquidity for traders and investors and ultimately increase the overall volumes.
- The introduction of instant settlement will have a direct, positive impact on the cash segment, where volumes can be expected to pick as investments move across stocks without delay.
- Right now, investors need to wait for settlement to buy another share in the cash segment or rely on limits offered by the stockbroker.
- Such developments can also be expected to help stockbrokers, as the degree of risk on account of defaults on margins offered to clients will drop significantly.

How Instant Settlement is Relevant to Investors?

- **Immediate access of funds:** With instant settlement, investors can immediately access the funds from a sale or the shares from a purchase, increasing the fluidity of their portfolio management.

- **Seize short-term trading opportunities:** T+0 will also allow investors to seize short-term trading opportunities, as they can immediately reinvest proceeds from a sale into a new purchase without waiting for settlement.
- **Push trade volumes:** The mutual fund investors stand to gain as the faster settlement cycle will lead to quicker realization of funds, adding another layer of convenience and liquidity.
- **Lesser fraud:** It would mandate investors to have sufficient funds in their demat accounts prior to trading, thus mitigating the risk of fraud and reinforcing prudent trading practices.

Conclusion

- The instant settlement makes buying and selling of shares in the markets easier and quicker. It will improve cost efficiencies and transparency in the overall market, besides improving transparency and reducing the risk of fraud. Ensuring uniformity will also improve efficiencies.
- SEBI is working towards increasing the pace of new equity issuances, debt issuances, approvals for mutual fund schemes using technology and other interventions with the aim of helping capital formation in the economy.

2. Windfall Tax

Current Context

The Union government has decided to increase the windfall gains tax to Rs. 4250/tonne from around Rs. 1600/tonne on domestic crude oil. This new rate has come into effect from 1st August, 2023.

About

- The tax was reimposed on July 15 after its reduction to nil in May 2023.
- The Special Additional Excise Duty (SAED) will increase by Rs. 1/liter on diesel while for the petrol and ATF (aviation turbine fuel) it will not change i.e. it will remain zero.

What is Windfall Tax?

- Windfall tax is recognized as a tax that the governments levy on the supernatural profits earned by the companies. When companies, due to certain events or economic situations (which are not created by them), earn such high profits, the governments tax these profits additionally above those normal taxes. This tax is usually levied in the form of cess (that is tax on tax) and revised every fortnight after analyzing the global prices of crude oil and movement in the margin on fuels in international market.
- The possible reason behind this step of government could be that the government is seeking to earn an additional revenue from the oil, petroleum and other energy sources.

What is Special Additional Excise Duty?

- As mentioned under section 147 of the Finance Act,

2002, SAED is a duty levied on the goods which are mentioned under schedule 8 and are manufactured in India. This is a duty of excise which are levied by the Union government as surcharge.

Similar Instance of Windfall Tax imposition

- In India, such taxes were imposed on several oil producing and fuel exporting enterprises when due to Russia-Ukraine Crisis, these companies were earning an extraordinary profit.
- In 2022, the government oil companies such as ONGC and GAIL declared highest net profits because the prices of the fuels soared.
- Further, due to rise in crude oil prices, the rupee was depreciating and the import bills of the government were increasing.
- Moreover, the government was spending more to ensure food supply to the people during crisis which put additional burden on its treasury.
- Thus, the objective of this Tax was to increase government's income and maintain the stability in its reserves.

Other Taxes that are Imposed on Oil, Gases and Petroleum Products

- Since the crude oil as well as petroleum products are not included in the ambit of GST, different types

of taxes are being imposed by the Central and state governments on these products. For example,

- **Taxes levied by the Central government:** The Union government may impose taxes such as central excise duty, service tax, customs duty, as well as central sales tax.
- **Taxes levied by the state governments:** Similarly, certain indirect taxes levied by the state governments include VAT i.e. value-added tax, entry tax, octroi as well as local body tax.

Possible Implications of Imposing Windfall Tax

- The imposition of this windfall tax (in the form of cess) will further increase the tax liability of the companies producing and exporting the oil and other petroleum products.
- To compensate this tax liability, the companies would either try to hide their actual profit margins or may try to increase the prices of the fuel in the domestic market. This culture of additional tax imposition can also prove to be derogatory as the companies may not be willing to do business. This will result in reduction in GDP and economic growth of the nation.

- In the former case, the companies will try to evade taxation trough various mechanisms such as transfer pricing and so on while in the later case, the prices of such fuels will soar in the domestic market resulting in fuel inflation.
- This will directly impact the consumers as majority of Indian population has a low purchasing power which will create a problem for them in purchasing expensive fuel.
- If the price of fuels will increase, the whole economy will face inflation risk as the prices of food as well as other commodities will also increase. The low as well as poor income sections of the society will be highly vulnerable to such a condition.

Conclusion

- Since this tax imposition will help government in getting more revenue, such additional resources can be diverted for the welfare of people. However, the implications of this step should also be calculated so that while ensuring welfare, the interests of the businesses can also be taken care of.

3. Fast-Moving Consumer Goods (FMCG)

Current Context

The FMCG sector is relieved after some improvement in rural volume growth of 4% in the June quarter due to moderation in inflationary pressures.

About

- The sector expects to see a gradual recovery in rural demand trends in the coming quarters. However, the impact of erratic weather patterns on Agri-incomes and El Nino will need to be closely monitored.
- The heightened amount of rural expenditure maintained by the government and the increase in government's capex investments have supported the overall situation of income levels in rural areas.

What is FMCG?

- Fast Moving Consumer Goods are characterised by high turnover consumer packaged goods, i.e., goods that are produced, distributed, marketed and consumed within a short span of time.
- These consumer products are designed for frequent

use, quicker consumption, having high demand and low cost. E.g., Household and personal care products, pharmaceuticals, consumer electronics, soft drinks, packaged food products, chocolates etc.
- Household and personal care products accounts for 50% of the sales in the FMCG industry, healthcare accounts for 31-32% and food and beverage accounts for the remaining 18-19%.

FMCG Sector in India

- **Significance:** The FMCG industry is the 4th largest sector of the Indian economy, providing employment to around 3 million people and accounting for approximately 5% of the total factory employment in the country.
- **GDP:** With household and personal care accounting for 50% of FMCG sales in India, the industry is an important contributor to India's GDP.

- **Consumption:**
  - The FMCG industry in India is divided into the demographics of rural and urban India.
  - The urban segment (accounts for a revenue share of around 65%) is the largest contributor to the overall revenue generated by the FMCG sector in India.
  - Semi-urban and rural segments are growing at a rapid pace and FMCG products account for 50% of the total rural spending.
- **Growth Prospects:**
  - The sector had grown 8.5% in revenues and 2.5% in volumes last fiscal year (2022-23).
  - As per CRISIL, the revenue of the FMCG sector is expected to grow 7-9% in 2023-24, slightly slower than the 8-9% clip of the past two fiscal years, even as volume growth is set for a rebound on rural demand.
  - Total revenue of FMCG market is expected to grow at a CAGR of 27.9% through 2021-27, reaching nearly US$ 615.87 billion.
- **The key growth drivers for the FMCG sector include:** favourable Government initiatives & policies, a growing rural market and youth population, new branded products, and growth of e-commerce platforms.

Factors Leading to the Growth of FMCG Sector in India

Favourable Government initiatives & policies:

- **The Union Budget 2023-2024**
  - Incentives for advances in food infrastructure research & development, and innovation.
  - US$ 976 million has been allocated for PLI schemes, that aims to reduce import costs, improve the cost competitiveness of domestically produced goods, increase domestic capacity, and promote exports.
- **Foreign Direct Investment:** The Government of India has approved 100% FDI in the cash and carry segment and in single-brand retail along with 51% FDI in multi-brand retail.
- **The Goods and Services Tax (GST)**
  - Many of the FMCG products such as soap, toothpaste and hair oil now come under the 18%

tax bracket against the previous rate of 23-24%.
  - GST on food products and hygiene products has been reduced to 0-5% and 12-18% respectively.
  - GST is expected to transform logistics in the FMCG sector into a modern and efficient model.

Digitisation:

- In India, where 80% of sales still occur from local Kirana stores, digitisation has ensured that the orders from such channels remain steady.
- FMCG companies are bringing together suppliers, inventory management, and distributor management within one ecosystem with the help of e-commerce, increasing digital capabilities.
- They are using technologies like AI, Big Data and Predictive Analysis to predict customer behavior close to accurate and understand what actually attracts their customers.

Rise of e-commerce:

- Increasing internet and smartphone penetration is assisting rural consumers in easily accessing online shopping on different e-commerce websites.
  - The number of online users in India is expected to cross 850 million by 2025.
- E-commerce now accounts for 17% of the overall FMCG consumption among evolved buyers, who are affluent and make average spends of about Rs. 5,620 (US$ 68).
- E-commerce share of total FMCG sales is expected to increase 11% by 2030.

Direct sale to consumers:

- The margin of profit associated with selling directly to the consumers to their doorstep is gradually tempting brands to set up stand-alone online stores and websites as well as create direct digital sales channels on various digital marketplaces.
- Direct-to-Consumer is turning out to be a preferred business model for FMCG companies which will find more relevance in the years to come.

Growing rural market and youth population:

- The retail market in rural India is contributing 36% in the overall FMCG spending as more people start to move up the economic ladder and the benefits of economic progress become accessible to the public.

- With a median age of just 27, India's youth are becoming more consumerist due to the surge in internet and smartphone, rising ambitions; and increasing popularity of digital wallets, Internet banking, and debit/credit cards for making transactions.

Challenges for the FMCG Sector

- **Inflation and Covid effects:**
  - ✔ The mix of purchases made by a household keeps shifting with inflation or uncertainties.
  - ✔ The country's FMCG industry continued to be 'hit hard by inflation levels' leading to successive price increases as well as to an impact on volumes, especially in rural market.
  - ✔ During Covid, consumers tended to gravitate towards familiar or known brands and local brands suffered.

- **Fragmented supply chains:**
  - ✔ Lack of storage and transport facilities coupled with rising costs of raw materials and energy has been a major challenge for the Indian FMCG market.
  - ✔ Many small towns and villages in India lack adequate infrastructure, a major bottleneck in setting up supply chain networks.
  - ✔ Inadequate storage capacity can lead to overcrowding, disorganized stock, and inefficient picking and packing processes. Also, it restricts the ability to maintain optimum stock levels, resulting in stock outs or overstock situations.

- **Product shelf life and fragility:**
  - ✔ Many FMCG products, particularly perishable goods, and fragile items, have limited shelf life or are sensitive to handling and storage conditions.
  - ✔ Inadequate temperature control, improper handling, and suboptimal packaging can result in spoilage, damage, or expiration of goods.

- **Environment and sustainability:**
  - ✔ Today's youth are seeking businesses that support sustainability, while the FMCG industry has attracted controversies by engaging in environmentally harmful activities.
  - ✔ According to a Forbes article, FMCG businesses should make R&D investments to help reduce nearly a third of the world's greenhouse gas emissions.

- **Counterfeiting:**
  - ✔ Counterfeit products have an economy-wide effect on trade, investment, employment, innovation, environment, and most importantly on the health and safety of consumers.
  - ✔ The counterfeiting issue certainly encompasses many facets of the economy, including intellectual property rights (IPR), security concerns, and global trade.
  - ✔ Distribution centres, retail outlets, and third-party logistics providers are the most vulnerable to infiltration of counterfeit products.

- **Large geographical expanse:**
  - ✔ Large states in India such as Rajasthan and UP presents a problem of large distances between two adjacent markets.
  - ✔ This has a crippling effect on viability of channel partners, which are serving the isolated markets.

- **Ageing:**
  - ✔ It is difficult for FMCG businesses to strike the appropriate balance to satisfy and remain relevant with a wide variety of age groups, in contrast to other industries that have catered to a certain set of consumers.

Way Forward

- A robust, smooth and efficient supply chain is necessary to reduce storage and transportation cost and thereby overall product cost. Brands must be socially and ecologically conscious when using supply chain management techniques.

- Collaboration with local authorities to check and monitor counterfeiting is necessary for FMCGs to maintain trust among consumers.

- Businesses must foster sustainable practices by adopting sustainable ways, such as: reducing the use of plastic, consciously eliminating waste, adopting alternate packaging methods, sustainable sourcing, plant alternatives etc.

- Digitalization and shifting strategy in response to clients' needs and choices are the core components of any significant solutions to the problems associated with FMCGs.

- The Government must also relax tax norms, initiate more favourable schemes to promote local retailers, and increase digital network and infrastructure for the development of FMCG sector.

4. 28% GST on Online Gaming

Current Context

The Parliament has cleared amendments to the Goods and Services Tax (GST) laws to implement a 28% tax on online gaming, horse racing clubs and casinos from October 1, 2023.

About

- The Parliament approved the **Central Goods and Services Tax (Amendment) Bill, 2023,** and the Integrated Goods and Services Tax (Amendment) Amendment Bill, 2023.
- In the case of online gaming platforms, 28% GST applies only where wagering is involved and not on any services provided by those hosting casual games.

Online Gaming Market in India

- India's gaming market is expected to grow from $2.8 billion in 2022 to a whopping $5 billion by 2025, growing at a compounded annual growth rate (CAGR) of 28-30 percent.
- The revenue of the Indian mobile gaming industry is expected to exceed USD 1.5 billion in 2022, and is estimated to reach USD 5 billion in 2025.
- The industry in India grew at a Compound Annual Growth Rate (CAGR) of 38% between 2017-2020, as opposed to 8% in China and 10% in the US.
- It is expected to grow at a CAGR of 15% to reach Rs 153 billion in revenue by 2024.
- India's percentage of new paying users (NPUs) in gaming has been the fastest growing in the world for two consecutive years, at 40% in 2020 and reaching 50% in 2021.
- According to the report by the EC and FICCI, transaction-based game's revenue grew 26% in India, with the number of paying gamers increasing by 17% from 80 million in 2020 to 95 million in 2021.

What Kind of Online Gaming Comes Under 28% GST?

- The amendments made under the GST laws makes a clear distinction between the casual online games and those involving a wager.
- The amendments do not affect the tax on casual online gaming in which no real money or betting or wager is involved.
- The amendments make it clear that the activity of online money gaming will be taxed on the total amount paid to the supplier by the player, irrespective of whether the game is based on skill or chance or both.
- Also, any payments made by crypto assets will also be taxable.

Purpose of GST Law Amendments

- The Central Goods and Services Tax (Amendment) Bill, 2023, and the Integrated Goods and Services Tax (Amendment) Bill, 2023 includes a provision which makes it mandatory for offshore online money gaming firms providing services to Indian users to register in the country and pay taxes or face access blockages.
- The valuation of the supply of online gaming and actionable claims in casinos may be done based on the amount paid or deposited by the player to the supplier, excluding the winnings of previous games or bets. The amendments offer this relief.
- With the amendments, online gaming companies shall not expect any litigation in respect of the charge of GST prospectively.

What are the Concerns?

- **Tax burden on online gaming platforms:** Online gaming platforms have been complaining that the 28% tax on the full value of deposits will increase their tax burden and affect the industry. It may lead to a nearly 1000% increase in taxation and prove catastrophic for the industry.
- **Benefit to illegal gambling platforms:** It will benefit illegal gambling platforms in the country.
- **Discourage investors:** The steep rise in GST will discourage both domestic and foreign investors

from considering the domestic ecosystem as a viable investment destination.

- **Malware and viruses:** If one tries to find cheaper or free versions of favorite games, then there is risk of inadvertently downloading viruses and **malware** instead.

Conclusion

- At present, such classification of games relies on

state legislation and court judgments, lacking quantifiable methods for evaluation. The industry at large maintains that online gaming is different from gambling, pointing to the various SC and HC judgments that have "reaffirmed the states of online skill-based games as legitimate business activity protected as fundamental right under the Constitution."

5. Zero Revenue Deficits

Current Context

The golden rule in post-pandemic fiscal strategy emphasizes targeting **"zero revenue deficits",** focusing on revenue receipts as the basis for expenditure design and utilizing borrowed funds for capital spending.

What is Zero Revenue Deficit?

- A **"Zero Revenue deficit"** is a situation where the government's total revenue is equal to its total expenditure on a recurring basis. This means that the government is not borrowing money to finance its day-to-day operations.
- **Achieving a zero-revenue deficit is considered to be a sign of fiscal discipline and sound economic management.**
- **It can help to reduce inflation, make the government's debt more sustainable, and free up resources for investment in other areas.**

The Classifications

- In the classification of budgetary transactions, revenue expenditure is further re-categorized into general services, economic services and social services.
- A step further is to say general services (mainly interest payments, salary and pensions, and establishment expenses) are non-developmental spending.
- Social services (mainly social infrastructure spending including education, health, water and sanitation) and economic services are broadly classified as developmental spending.

Why a Government need to Target a Zero Revenue Deficit?

- **To reduce inflation:** When the government

Revenue Deficit

- A revenue deficit occurs when realized net income is less than the projected net income. This happens when the actual amount of revenue and the actual amount of expenditures do not correspond with budgeted revenue and expenditures.

Fiscal Deficit

- A fiscal deficit is a shortfall in a government's income compared with its spending. A government that has a fiscal deficit is spending beyond its means.
- A fiscal deficit is calculated as a percentage of gross domestic product (GDP), or simply as total rupees spent in excess of income.

Budget deficit

- A budget deficit refers to a situation in which a government's total expenditures exceed its total revenues in a given fiscal year.
- Budget deficits affect the national debt, the sum of annual budget deficits, and the cumulative total a country owes to creditors.

Effective Revenue Deficit

- Effective revenue deficit is the difference between revenue deficit and grants for creation of capital assets.
- The concept of effective revenue deficit has been suggested by the Rengarajan Committee on Public Expenditure. It is aimed to deduct the money used out of borrowing to finance capital expenditure.

borrows money, it injects more money into the economy, which can lead to inflation. A zero revenue deficit can help to reduce the amount of money in circulation, thereby controlling inflation.

- **To make the government's debt more sustainable:** When the government borrows money, it adds to its debt. A zero revenue deficit can help to reduce the government's debt burden, thereby making it easier for the government to repay its debts in the future.

- **To free up resources for investment in other areas:** When the government does not have to borrow money to finance its operations, it can use those resources for other purposes, such as investment in infrastructure or education.

- **To improve the government's credit rating:** A government with zero revenue deficit is seen as being more financially stable, which can make it easier for the government to borrow money in the future.

- **To meet the requirements of an international financial institution:** Some international financial institutions, such as the International Monetary Fund (IMF), require countries to target zero revenue deficit as a condition for lending money.

Government Measures to Achieve Zero Revenue Deficit

- **Cut spending:** This is the most common way to reduce a revenue deficit. The government can cut spending on a variety of things, such as social programs, infrastructure projects, and defence spending.

- **Raise taxes:** The government can raise taxes on income, profits, or consumption.

- **Improve tax collection:** The government can improve its tax collection efforts by cracking down on tax evasion and by making it easier for people to pay their taxes.

- **Invest in economic growth:** By investing in economic growth, the government can create more jobs and generate more tax revenue.

- **Attain debt relief:** If the government's debt is too high, it may be able to get debt relief from

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FRBM

- In the 2018 amendment to the Fiscal Responsibility and Budget Management (FRBM) Rules 2004, the **"golden rule"** of zero revenue deficit was eliminated.

- **FRBM:** The **Fiscal Responsibility and Budget Management (FRBM)** Act, 2003 was enacted by the Parliament in August 2003. The objective of introducing the Act was to institutionalize fiscal discipline, reduce fiscal deficit, improve macro-economic management and the overall management of the public funds by moving towards a balanced budget.

- **Section 7A of the FRBM Act, 2003,** as amended in May 2012, allows the Central Government to entrust the Comptroller and Auditor General to review compliance and present them to Parliament.

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international financial institutions. This would reduce the government's debt burden and make it easier to achieve a zero revenue deficit.

Challenges to Achieve Zero Revenue Deficit

- Achieving zero revenue deficit requires political will, requiring the government to make difficult decisions like cutting expenses or raising taxes. These decisions can be unpopular with voters and may lead to political instability.

- The government's ability to achieve zero revenue deficit is contingent on economic conditions, with recessions posing challenges due to potential revenue decline and increased expenditure.

- The government's high debt burden can hinder in achieving zero revenue deficit, as it may be challenging to reduce expenses or raise taxes without increasing the debt burden.

- The government's fiscal institutions, including weak budget planning and execution, corruption, and inefficiency in the tax collection system, can pose significant challenges in achieving zero revenue deficit.

- External factors like natural disasters or wars may also pose challenges as it will reduce government's revenue and increase expenses, making it harder to balance the budget.

6. Federal Open Market Committee (FOMC)

Current Context

In the Federal Open Market Committee meeting held on 26 July 2023, it was decided to increase the targeted federal funds rate to 5.25-5.5%, i.e., yet another increase of the cost of funds by 25 basis points.

About

- The federal funds rate has reached levels higher than that of 2001; it is at a 21-year high.
- The decision has been made with the intent of reducing the rate of inflation to 2%.
- Despite the increase in the interest rate, the numbers on the employment front have been on the rise.

What is Federal Open Market Committee (FOMC)?

- The FOMC is the body of the Federal Reserve System that sets national monetary policy.
- It makes all decisions regarding the conduct of open market operations, which affect the federal funds rate (the rate at which depository institutions lend to each other), the size and composition of the Federal Reserve's asset holdings, and communications with the public about the likely future course of monetary policy.
- The FOMC was first convened in 1933, following the Glass-Steagall Act but it came into effect in March 1936 as constituted by Section 12A of the Federal Reserve Act as amended by the Banking Act of 1935.

Structure of FOMC

- The FOMC consists of the members of the Board of Governors and presidents of the Reserve Banks.
- The chair of the Board is the chair of the FOMC.
- The FOMC has 12 members at a time: seven members of the Board of Governors, the president of the Federal Reserve Bank of New York, and four of the remaining 11 Reserve Bank presidents, who serve one-year terms on a rotating basis.

Meeting of FOMC

- The FOMC holds regular meetings eight times each year about every six weeks.
- At these meetings, the Committee reviews economic and financial conditions, determines the appropriate stance of monetary policy, and assesses the risks to its long-run goals of price stability and sustainable economic growth.

Responsibilities of FOMC

- The FOMC is charged with overseeing "open market operations," the principal tool by which the Federal Reserve executes U.S. monetary policy.
- The operations affect the federal funds rate, which in turn influence overall monetary and credit conditions, aggregate demand, and the entire economy.
- The FOMC also directs operations undertaken by the Federal Reserve in foreign exchange markets and, in recent years, has authorized currency swap programs with foreign central banks.

What is Federal Funds Rate?

- Federal Funds Rate refers to the target interest rate range set by the Federal Open Market Committee (FOMC).
- This target is the rate at which commercial banks borrow and lend their excess reserves to each other overnight.

Impacts of High Fed Rate on Indian Economy

- **Capital flow:** Fed's move on interest rates strongly influences the foreign capital inflow in India.
- **Benefit to banking industries:** The high fed rate interest will be helpful for banking industries.
- **Stock market:** This can drive up foreign investment in India, bolstering the rupee and positively affecting the stock market. Moreover, if the Fed starts to cut rates, it can lead to lower borrowing costs in India, spurring business investments and overall economic growth.
- **Borrowing cost:** Higher interest rates increase borrowing costs for businesses and consumers, which could slow economic growth and reduce oil demand.

Conclusion

- In developing and least developed countries, as interest rates in the advanced countries increase, given the lower risk associated with the U.S. treasury securities, foreign investors would abandon the government securities of the developing economies.
- It would result in both exchange rate depreciation as well increase in the cost of borrowing or rollover of the loans.

7. Repo Rate

Current Context

The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) decided to keep the repo rate unchanged at 6.50% in its second bi-monthly monetary policy meeting of the FY23-24.

About

- This was the third meeting on the trot that the MPC decided to maintain the status quo on the repo rate.
- The repo rate, the key policy rate at which the RBI lends to the banks, was last increased in February 2023 by 25 basis points (bps).
- The RBI had kept the rate unchanged in April and June meetings, after hiking rates cumulatively by 250 bps.
- The RBI has maintained that the focus would be on withdrawal of accommodative policy stance to ensure that inflation progressively aligns with target, while supporting growth.
- The MPC remained resolute in its commitment to aligning inflation to the 4% target and anchoring inflation expectations.
- The MPC retained its projection for real GDP growth in 2023-24 at 6.5%, with Q1 at 8%; Q2 at 6.5%; Q3 at 6%; and Q4 at 5.7%.
- The economy was projected to expand at a 6.6% pace in Q1FY25.

What is Repo Rate?

- The term 'Repo' stands for 'Repurchasing Option' Rate, also known as Repurchasing Agreement.
- The Repo Rate, set by the RBI, is the rate at which commercial banks borrow funds from the RBI against the collateral of securities.
- It is a crucial tool used by the RBI to manage liquidity and control inflation in the economy.
- By increasing or decreasing the Repo Rate, the RBI influences interest rates and regulates the money supply in the banking system.
- It is the return on investment that the banks get when they borrow money against any kind of collateral.

Objectives of Repo Rate

- **Liquidity regulation:** The main motive of the liquidity framework to avoid any liquidity crisis in the Indian banking system through implementation of repo agreement.

- **Inflation control:** RBI holds a key responsibility with respect to striking a balance between inflation and economic growth by managing the repo rate periodically. By changing the repo rate, the RBI can control money flow i.e., liquidity in the economy— too much liquidity usually leads to inflation which can adversely affect the economy, while too little liquidity can lead to an economic slowdown.

What happens when Repo Rate Increases or Decreases?

Increase in Repo Rate:

- Increase in repo rate makes borrowing from the RBI more expensive for commercial banks and this can lead to increase in rates applicable to loans.
- As the interest rates on various loans increases, fewer loans are applied for disbursed, which restricts the money supply in the economy and may adversely affect the country's economic growth.

Decrease in Repo Rate:

- A cut in repo rate can allow banks to borrow from the RBI at a cheaper rate and infuse higher liquidity in the banking system.
- This can lead banks to reduce their lending rates for customer leading to cheaper loans in the long term.
- As bank loans get cheaper, consumers can borrow and spend more which boosts consumption and can eventually lead to economic growth.

Conclusion

- The repo rate is a key to keep inflation under control because it affects the cost of borrowing and, in turn, the amount of money in Indian economy.
- RBI adjusts the repo rate to manage inflationary pressures and maintain price stability. The repo rate adjustments play a crucial role in shaping inflation expectations among consumers, businesses, and financial markets.
- By adjusting the repo rate, RBI influences the demand for goods and services.

8. Vivad se Vishwas Scheme

Current Context

The Department of Expenditure (DoE), Ministry of Finance has set October 31, 2023 as deadline for firms to submit their claims for consideration regarding Vivad se Vishwas-II Scheme.

About

- The DoE made an order on 29th May, 2023 indicating detailed guidelines regarding Vivad se Vishwas-II Scheme.
- The scheme will apply to all domestic contractual disputes where one of the parties is either the Government of India or an organisation operating under its control.

Vivad se Vishwas Scheme

- The Vivad se Vishwas Scheme was announced by the Union Finance Minister during the budget speech on 1 February, 2020.
- The scheme aims to settle the huge number of pending direct tax cases.

Aim:

- Resolution of pending income tax disputes and litigation.
- Savings on account of time and resources, and generate timely revenues for the Government.
- Help tax payers end their tax disputes with the department by paying their disputed tax and get waiver from payment of interest and penalty. Also get immunity from prosecution.

Significance:

- Under this scheme, appeals before the Commissioner (Appeals) will be disposed off by eliminating the interface between the Commissioner (Appeals) and the appellant in the course of appellate proceedings to the extent technologically feasible.
- The scheme covers disputes pending at the level of Commissioner (appeals), Income Tax Appellate Tribunals (ITAT), High Courts, the Supreme Court and those in International Arbitration.
- It offers a complete waiver on interest and penalty to the taxpayers who pay their pending taxes.
- The scheme aims to resolve 4,83,000 direct tax-related disputes pending in various appellate forums.
- The Government has received a total of 1,28,733 declarations for resolution of tax disputes amounting to Rs 98,328 crore and payment of Rs 53,346 crore have been made by taxpayers under the Vivad Se Vishwas scheme till 1 March 2021.

Vivad se Vishwas-II Scheme

- The Finance Minister has announced a one-time settlement scheme termed as "Vivad se Vishwas-II" (Contractual Disputes) in the Union Budget 2023-24.
- To ensure the scheme's seamless implementation, the Department of Expenditure has issued detailed guidelines of the scheme on 29th May, 2023.
- Under the scheme, for Court Awards passed on or before 30th April, 2023, the settlement amount offered to the Contractor will be up to 85% of the net amount awarded/ upheld by the court.
- For Arbitral Awards passed on or before 31st October, 2023, the settlement amount offered is up to 65% of the net amount awarded.

Aim:

- A one-stop solution for reconciliation and updating of identity of individuals would be established.
- To provide a much-needed impetus to the resolution of contractual disputes involving the government and government undertakings.
- The move is aimed at promoting ease of doing business and will cover disputes up to 30 September 2022.
- The Central government is aiming to resolve approximately 500 cases, involving an estimated Rs 1 trillion, under this new voluntary settlement scheme.

Significance:

- To facilitate a smooth and transparent process, the Government e-Marketplace (GeM) has created a dedicated web-page for the implementation of the "Vivad se Vishwas-2 (Contractual Disputes)" scheme.
- The Vivad Se Vishwas scheme provides for settlement of disputed tax, disputed interests, disputed penalty or disputed fees in relation to an assessment or reassessment order on payment of 100 per cent of the disputed tax and 25 per cent of the disputed penalty or interest or fee.
- Eligible claims will be processed exclusively through the GeM platform, streamlining the settlement process and ensuring expeditious resolution.
- Separately, the Ministry of Railways' contractors (non-GeM) can register their claims on the Indian Railways E-Procurement System.

Major Concern of the Scheme

- **Not suitable for larger amount:** While the scheme encourages arbitration by providing finality in proceedings, it may not be suitable for disputes where the amount at stake is high.
- **Easy and effective relief:** Whether the true purport of the mechanism of the arbitration, i.e., speedy and effective relief to the litigants, can be met with this initiative or not because the very stated objective is being lost in decision making and in seeking execution of award.

Conclusion

- Such settlements would give much needed relief to both the government entities as well as private organisations who would otherwise be mired in long drawn and costly litigations.
- The Vivad se Vishwas scheme offers a settlement mechanism, where the government entity and the private party can put an end to the case by signing a standard contract.

9. Benefits of PLI Schemes for Chemicals and Petrochemicals

Current Context

At the third edition of the summit on Global Chemicals & Petrochemicals Manufacturing Hubs in India, Finance Minister of India said that the Government is considering a Production-Linked Incentive (PLI) scheme for the chemicals and petrochemicals sector to promote manufacturing and to reduce import dependency.

About

- The Government is considering the PLI scheme for the chemicals and petrochemicals sector to make India a manufacturing hub.
- The Government is focused on green growth and becoming energy independent by 2047.
- India aims to achieve net zero by 2070, but cannot achieve the goal unless each sector and industry contributes towards it.

About PLI Scheme

- Production-Linked Incentive (PLI) scheme is a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units.
- PLI Schemes are a cornerstone of the Government's push for achieving an Atmanirbhar Bharat.

- The objective is to make domestic manufacturing globally competitive and to create global champions in manufacturing.
- The strategy behind the scheme is to offer companies incentives on incremental sales from products manufactured in India, over the base year.
- PLI schemes have been specifically designed to boost domestic manufacturing in sunrise and strategic sectors, curb cheaper imports and reduce import bills, improve cost competitiveness of domestically manufactured goods, and enhance domestic capacity and exports.

Benefits of PLI Scheme for the Chemicals and Petrochemicals

- **Manufacturing capacity**
  - ✔ The global manufacturers in the chemical industry are looking to diversify their production

capabilities and India stands out as an alternative destination for manufacturing.

- ✔ In case of chemicals and petrochemicals industry, it has great potential to create manufacturing capacity, keeping in mind the sustainability carbon emission, general pollution and groundwater pollution, etc.
- ✔ The Government has announced the re-bidding of PLIs for 20 GWh Advanced Chemistry Cell manufacturing– India's Rs 18,100-crore programme to boost local battery cell production.
- ✔ It manufactures 80,000 products that directly impact many sectors including construction, packaging, textiles and agriculture.

- **Rise in export**
  - ✔ India's combined exports of chemical and petrochemicals rose 2 percent to $9 billion in FY23 (till September 2022). Imports in this sector increased to $13.33 billion.
- **Green growth**
  - ✔ The Government is focused on green growth and industry should keep in view energy efficiency and renewable energy commitments of India and the Hydrogen Mission.
  - ✔ The Government has approved a Rs 19,744-crore incentive plan to promote the manufacturing of green hydrogen in the country in a bid to cut emissions.
  - ✔ The National Green Hydrogen Mission seeks to promote development of green hydrogen production capacity of at least 5 million metric

tonnes per annum and renewable energy capacity addition of about 125 GW in the country by 2030.

Major Concern in PLI Scheme for the Chemicals and Petrochemicals

- **Pollution control and Rising labour cost:** In view of the stringent pollution control regulations and rising labour cost, the global manufacturers in the chemical industry are looking at diversifying their products and production capability and India stands out as an alternative destination for manufacturing.
- **Skilling and technology adoption:** The chemicals and petrochemicals industry require immense skilling to make more progress in research and development (R&D) and adopt Industry 4.0 standards.
- **Recycling:** It is important for the sector to have elements of recycling and reuse high on their agenda.
- **Green growth and lower carbon intensity:** To achieve net zero emissions, it will require efforts from every industry, including petrochemicals and chemicals. India is highly motivated to promote green growth and lower carbon intensity.

Conclusion

- If Indian manufacturers focus on the issues such as sustainability, recycling or becoming circular economy, skilling and technology adoption, global investors would actively look at parking their money or forging joint ventures with Indian partners in chemicals and petrochemicals industry.

10. Impact of India's Ban on Rice Exports

Current Context

India's decision to ban exports of some rice was due to domestic reasons, but it had a global impact.

About

- As per the statement issued by the Central government, the step was taken to ensure adequate supply and control the price rise in the domestic market. However, India didn't restrict the export of other types of semi or wholly milled rice such as parboiled rice and basmati.

Rice Export Share of India

- In 2022-23, India accounted for almost 40 percent of global rice exports which makes it the largest exporter of rice globally. It was around 22.2 million tonnes last year with the contribution of parboiled rice being maximum.
- India usually exports three types of rice– Basmati Rice, Non-Basmati Rice, and parboiled rice. The

The chart shows the quantity of the three different types of semi/wholly milled rice exported by india in lakh tonnes over time
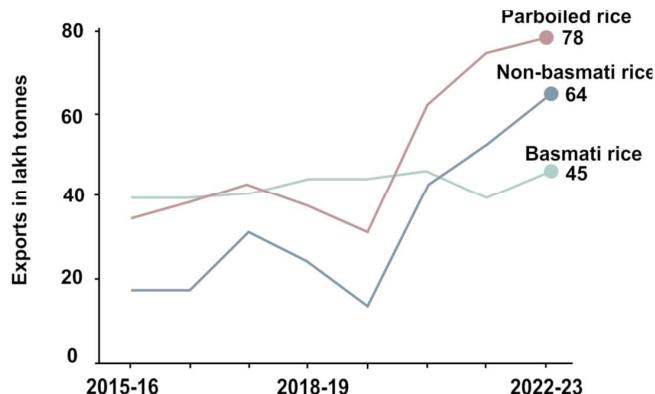
- annual contribution of these types in total rice export is depicted hereunder.
- The export share of non-basmati white rice has been more than that of basmati rice from past two financial years.
- The maximum contribution in total rice exports of India is of parboiled rice which stood at 78 lakh tonnes.
- In the financial year 2023, the contribution of non-basmati white rice in total rice export stood at around 64 lakh tonnes followed by export share of basmati rice which was around 45 lakh tonnes.
- More than 100 countries imported India's non-basmati rice in the FY2023. India's neighbouring nations such as Nepal and Bangladesh along with African countries viz. Madagascar, Kenya, Berlin, and Ivory Coast are highly dependent on the Indian rice exports.
- Countries like Malaysia, Vietnam, and United Arab Emirates are the biggest importers of Indian non-basmati rice in absolute terms.

The chart shows the average quantity of semi/wholly milled rice bought per year between FY 19 and FY 23 (in tonnes). The bigger the circle the more the dependency.
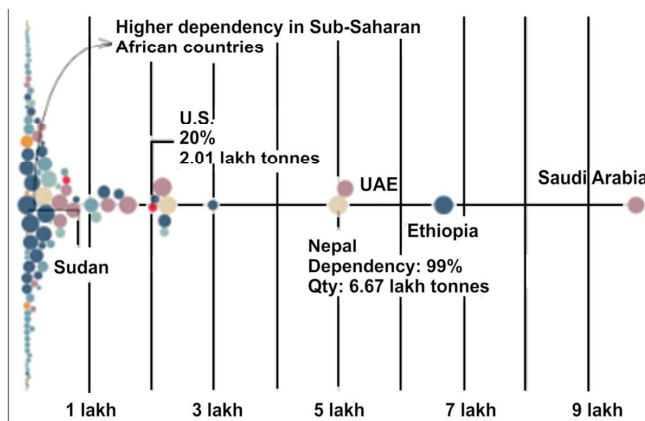
The table shows the usual area covered by rice (lakh ha) compared to the actual area covered in 2023.

State	For week ending July 13		For week ending July 13	
	Usual area covered	Actual area	Usual area covered	Actual area
Chhattisgarh	21.37	11.01	25.6	19.5
Odisha	10.22	2.89	13.7	5.0
Punjab	28.73.	23.97	29.9	29.2
Assam	6.09	2.72	7.9	5.7
West Bengal	4.10	2.84	8.3	5.6
Bihar	8.48	8.07	13.8	14.0
M.P.	8.56	8.30	12.5	20.8
Haryana	8.35	8.80	11.0	10.4
U.P.	31.24	31.86	41.1	39.1
All India	151.68	123.18	198.3	180.2

Reasons for the Export Ban

- India banned the export of non-basmati white rice in order to bring down the prices of rice in the domestic market which had increased by more than 30 percent since October last year.
- The government is also aiming to ensure an adequate availability of rice in the domestic market to minimize the effect of reduction in the actual area covered by rice this year in comparison to the usual area covered by rice crop.

Possible Implications of the Ban and Challenges for India

- Since Indian non-basmati rice is exported to almost 140 nations, a ban imposed on the exports will result in a halt on the overseas sales of rice.
- Rice exports contribute around 11 percent of the total global production, thus, a hard and prolonged ban on the export may put pressure on rice inventories of dependent nations as well as other rice-importing nations.

- The predicted "El-Nino" condition over India is expected to affect the monsoon and rice production may also get reduced in the South and South Asian nations including India. In such a scenario, rice exporting nations like India, Thailand and Vietnam may further reduce the exports which will aggravate the supply shortages in the global market.
- Recently Russia has put a halt on the implementation of the UN Black Sea Grain Initiative which allows the uninterrupted food grain supply from Ukraine to the entire world. This decision of the Indian Government may put additional risk of food shortage in the global food grain market.
- The ultimate outcome of this ban could be observed in the form of rising price of non-basmati rice which will have grave and adverse impacts on low-income nations which have just recovered from the threat of food-insecurity due to Covid-19 and Russia-Ukraine Crisis.

Diplomatic Challenges for India

- Since India claims itself to be the representative of "Global South", it promotes initiatives and groupings like G-77 and South-South cooperation. However, this step of export ban may put many poor nations of the Global South (that are struggling due to high debt, food, and fuel inflation) into more vulnerable condition.
- Thus, many reports alleged that this step will weaken India's stand for the welfare of Global South and will blur its image as the "Representative of Global South".

Conclusion

- International organizations like International Monetary Fund (IMF) has encouraged India to revoke its imposed ban on non-basmati rice, and being a nation that promotes the idea of "Vasudhaiva Kutumbakam– one earth, one family, one future", India has to strike out a balance between its own national interest and global food security and come out with an outcome where both the objectives can be fulfilled.

11. Reasons Behind Wheat Price Hike

Current Context

Wheat prices in India have surged to a six-month high due to limited supplies and robust demand ahead of the festival season.

About

- Prices have surged by nearly 18% over the past four months.
- India consumes about 108 million metric tonnes of wheat annually.
- In a bid to stabilise the prices of essential staples and augment supplies, the government has announced its decision to provide 5 million metric tonnes of wheat and 2.5 million tonnes of rice to bulk consumers, specifically flour millers.

Reasons for High Price

- Due to **limited supplies and robust demand ahead** of the festival season.
- India's **wheat harvest** in 2023 was at least **10% lower** than the farm ministry's estimate.
- In all key producing states, farmer supplies have **nearly come to a halt.**

- The **weather (drought, floods and heat)** has had an impact on wheat production capacity.
- **Changing climate patterns** also affected sowing and harvest season of wheat.
- Ukraine War that reduced production and exports of major exporting countries, or affected transport links between exporting and importing countries.
- Rainfall and hailstorm damaged standing crops in states like Uttar Pradesh, Madhya Pradesh, Maharashtra and Rajasthan due to **which crop quality** has also deteriorated.
  - ✔ Harvesting operations also got disrupted in Punjab, Haryana and Uttar Pradesh.

Impacts

- **Rising inflation:** Rising wheat prices could contribute to food inflation and potentially complicate the efforts of both the government and the central bank to contain inflation.

- **Impact on supply:** Flour mills are struggling to obtain sufficient supplies in the market.
- **Impact on consumers:** The rising prices of wheat means that the pinch would be felt by the lower and middle-income groups.

Wheat

- This is the second most important cereal crop.
- It is the main food crop in north and north-western part of the country.
- Wheat, as a Rabi crop, requires a cool growing season and a bright sunshine at the time of ripening.
- It requires 50 to 75 cm of annual rainfall evenly distributed over the growing season.
- The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh.
- India is the second-largest producer globally after China.

Way Forward

- The increasing prices may prompt the government to eliminate import duties on the cereal to bolster supplies and control prices ahead of key state polls and next year's general election.
- The government should release stocks from its warehouses into the open market to avoid potential shortages during the festive season.
  - ✔ As of August 1, wheat stocks in government warehouses stood at 28.3 million metric tonne, an increase from the 26.6 million metric tonne recorded a year earlier.
- The government should consider cutting or even abolishing a 40% import tax on wheat and lowering a limit on the amount of wheat stocks millers and traders can hold.
- The government is likely to continue restricting cereal exports. But if wheat prices climb further, it can impose stock limits on private trade.

SCIENCE & TECHNOLOGY

1. Chandrayaan-3 Makes Historic Landing on the South Pole of the Moon

Current Context

The Indian Space Research Organisation's (ISRO) third lunar mission Chandrayaan-3, launched on July 14, made successfull landing on the Moon's surface on August 23, 2023.

About

- At around 6:03 PM IST, the lander successfully established its footprint at the South Pole of the Moon in a process that lasted for 19 minutes and was telecasted live by the ISRO.
- Prime Minister Narendra Modi joined the telecast during the landing and addressed the nation once India made history.

Key Features of the Mission

- This is the 3rd Lunar Mission conducted by the ISRO which comprises of two major components- a Vikram Lander and Pragyan rover.
- The propulsion module of Chandrayaan-3 features a new experiment called Spectro-polarimetry of Habitable Planet Earth (SHAPE) which aims to search for smaller planets with potential habitability by analyzing reflected light.
- It was launched using the flagship LVM3 M4 launcher. Around 16 minutes after the LVM3 lifted off, the spacecraft separated from the rocket. It entered into an elliptic parking orbit (EPO).
- The lander and the rover will have a **mission life of one lunar day (about 14 Earth days) as they work on solar energy.**
- August 23 was chosen for the landing because the sun was set to rise on that day. The mission will conclude two weeks later when the sun sets.

Objectives of the Mission

- The primary objective of the mission is simple— showcase the space agency's capability to complete a soft-landing on the Moon.
- Aimed at the lunar South Pole, it attempts to confirm it as a region with water ice, or frozen water, that could be a source of oxygen, fuel and

Previous Attempts to Moon by India

Chandrayaan I (2008)

- It was India's maiden Lunar attempt which orbited the Moon at a 100 km distance from the lunar surface.
- It was launched by the PSLV C11.
- It was able to detect frozen water/water ice which inspired further missions to explore the discovery.

Chandrayaan II (2019)

- India became the 1st country to attempt landing on the Moon's South Pole. However, the attempt failed.
- All parts of the mission were developed indigenously- Vikram Lander, Pragyan rover etc.
- It was launched by the GSLV Mk III, now known as LVM3.

water for future moon missions or a more permanent moon colony while highlighting signs of life.

- On the surface, the solar-powered lander and rover will use a range of instruments to make thermal, seismic and mineralogical measurements.
- Over the course of the next 14 days, a range of chemical experiments and study of the lunar surface shall be conducted via the mission.

Significance of the Feat

- India became only the fourth country after the erstwhile USSR, the U.S. and China to make a soft landing on the lunar surface. More importantly, India also became the first country to land near the Moon's South Pole which has been a challenge due to unfavourable native conditions and difficult terrain.
- Vikram out-endured its Russian counterpart, Luna-

25, which crashed following an engine malfunction. That India managed to outdo a nation that put the first satellite, man and woman in space, is a measure of the country's long embrace of the science and technology needed to support a space program.

- India's Chandrayaan-3 mission has attracted attention for its relatively low budget of $75 million compared to the $165 million spent on Christopher Nolan's film "Interstellar." This established ISRO as an organisation revolutionizing accessibility to space research for the entire humanity.

Why this Attempt Succeeded?

- Compared to earlier strategies, the focus this time was to demonstrate soft landing capacity at the Lunar surface which made the difference. A soft landing is any type of aircraft, rocket or spacecraft landing that does not result in significant damage to or destruction of the vehicle or its payload, as opposed to a hard landing which was seen during failure of Chandrayaan 2.
- High-resolution images from the Chandrayaan-2 orbiter were used to determine the landing location, and physical modifications were made to enhance stability and sturdiness.
- The landing was consequently expanded, providing flexibility to land safely within a larger designated area, and was equipped with more fuel to enable

longer-distance travel to the landing site or alternate locations.

Other Lunar Missions
• **Artemis I (2022), II** (2024), III (2026) by NASA (USA), CSA (Canada), ESA (Europe) and JAXA (Japan).
• **Beresheet** (2019) by Israel
• **Rashid** (2023) by UAE
• **Danuri Orbiter** (2022) by South Korea
• **Hakuto R** (2022) by JAXA (Japan)
• **Luna-25** (2023) by ROSCOSMOS (Russia)
• **Chang'e 5** (2020) by China

- Additional navigational and guidance instruments were on board Chandrayaan-3 to continuously monitor the Lander's speed and make the necessary corrections. This included an instrument called Laser Doppler Velocimeter, which fired laser beams to the lunar surface to calculate the Lander's speed.

Way Forward

- India gears up to continue this momentum for its future projects like the Human Spaceflight Program Gaganyaan. Today, ISRO and India are a force to reckon with in the field of cutting-edge space technology after successfully lighting up the dark side of the moon.

2. Astra Missile Successfully Test-fired

Current Context

The Astra indigenous Beyond Visual Range (BVR) missile was successfully fired from the light combat aircraft Tejas off the Goa coast on August 23, 2023.

About

- The missile was successfully fired at an altitude of around 20,000 feet.
- The **Aeronautical Development Agency (ADA)** and Defense Research and Development Organization (DRDO), HAL, and officials from the Centre for Military Airworthiness and Certification (CEMILAC) and Directorate General of Aeronautical Quality Assurance (DG-AQA) monitored the launch.
- The Tejas aircraft that fired the missile was also monitored by a Chase Teja twin-seater aircraft.

The Astra Missile

- Astra is an indigenously developed, state-of-the-art "Beyond Visual Range" (BVR) air-to-air missile comprising the Astra missile and the launcher.
- It is developed by the Defense Research and Development Laboratory (DRDL), the Research Centre Imarat (RCI), and other DRDO laboratories.

Features of Astra

- The Astra missile is capable of targeting and destroying highly **maneuverable supersonic aerial targets**. It is

specially designed to be mounted on aircraft.

- The missile is equipped with all-weather daytime and night-time capabilities.
- Multiple variants of this missile system are being developed in order to cater to specific demands. These variants include **Astra Mk-1 (current operational), Astra Mk-2 and Astra Mk-3 (testing phase), Astra-IR (designing phase), and VL-SRSAM (testing phase).**
- **The ASTRA Mk-I:**
  - ✔ This is the variant of the Astra missile that is currently operational. It can carry a pre-fragmented explosive warhead weighing 15 kilograms.
  - ✔ The missile is equipped with electronic counter-countermeasure (ECCM) capabilities, which allow it to operate in an electronic counter-countermeasure environment.
  - ✔ It has a head-on launch range of up to 100 km and a speed of up to 4.5 mach (supersonic missile). It also has a launch clearance of up to 66 thousand feet.
  - ✔ The Astra Mk-I Weapon System integrated with SU-30 Mk-I aircraft is being inducted into the Indian Air Force (IAF).

The Aircraft: Tejas LCA

Tejas LCA, as the name suggests, is a light combat aircraft developed by the Defense Research and Development Organization (DRDO) and Hindustan Aeronautics Limited (HAL) in a joint collaboration.

Features of Tejas LCA:

- Tejas is recognized as an all-weather and multi-role

fighter aircraft of the 4.5 generation.
- Tejas has the capacity to carry payloads up to 4000 kg.
- It is a single-pilot, single-engine aircraft.
- It can carry a maximum takeoff weight of around 13,000 kg.
- It can increase its speed up to Mach 1.8, which makes it a supersonic fighter jet.
- It has a range of around 850 km, with a combat range of almost 500 km.

Significance of this Missile Test

- **Strategic and defense-related advantages:**
  - ✔ Tejas has been deployed along the Jammu-Kashmir line of control, which makes it strategically important to initiate and counter any military action along the disturbed border area.
  - ✔ With this successful missile testing, India's warfare capabilities will increase in the region.
  - ✔ This will also help in creating deterrence in the minds of hostile neighbours.
  - ✔ It can help India prepare for a two-front war against the Pakistan-China nexus.
- **Economic advantages:**
  - ✔ It will also give a boost to India's defense manufacturing sector, along with the "Make in India" initiative.
  - ✔ It will reduce India's import dependence in terms of defense equipment, especially modern-generation aircraft and missiles.
  - ✔ India's defense exports will also increase as an effective and efficient defense will be available to other nations at an economic price.

3. India's First 3D-printed Post Office

Current Context

India's first 3D-printed post office was inaugurated in Bengaluru on 18 August 2023 by the Union Minister for Railways, Communications, Electronics and Information technology.

About 3D-printed Post Office

- The construction was carried out by Larsen & Toubro Limited with technological support from IIT Madras under the guidance of Building Technology and Construction Management Division, Department of Civil Engineering.

- The post office covers a built-up area of 1,021 sq ft.
- Using a robotic printer, 3D printing technology deposits concrete layer-by-layer in accordance with the 3D model drawing input.
- The process requires a delicate balance of concrete properties, including flowability, quick hardening

for load-bearing capacity, green concrete status for inter-layer bonding, and sufficient strength to ensure successful printing.

- It is because of the robotic intervention that involves pre-embedded designs, that the entire construction was completed in a period of 43 days as compared to about 6-8 months taken by conventional method.

- The construction was carried out at a cost of Rs 23 lakh, around 30-40% less compared to the cost involved in conventional methods.

- The special concrete material used for this project provides pumpability, extrudability, buildability and is powered with mechanical properties.

About 3D-printing Technology in Construction

- 3D concrete printing is an emerging technology that has the potential to transform construction practices by quickening the construction process and enhancing the build quality.

- The 3D printing technology which was actually imported from Denmark for the post office project was also flexible to incorporate curved surfaces and adapt to site dimensions, showing no constraints of plane walls.

- The technology also enabled continuous reinforced concrete footing and three-layer walls with outer layers printed with concrete and the middle being reinforced concrete.

- 3D printing in construction employs robotic systems to place construction materials in layers, forming walls, floors, and roofs.

- To create a structure, the 3D printer follows dimensions from a software program and constructs the design on a platform.

- Various materials, such as cement, plastic, or liquid metals, can be used to build the structure.

Advantage of 3D Concrete Printing

- **Automation:** Fully automated construction ensures excellent build quality and safe work environment.

- **Fast construction:** Unlike the traditional methods

of slow bricklaying and rebar reinforcement, 3D printing is significantly faster in creating structures.

- **Design freedom:** Without a formwork system, innovative and non-geometrical building shapes can be constructed to enhance aesthetics and convenience and optimise overall cost.

- **Sustainable Construction:** Elimination of timber and aluminum formwork; use of supplementary materials to optimise CO_2 emission; less wastages; and less electrical energy consumption.

- **Digital Workflow:** Digital workflow of drawings eliminates manual errors and costly rework.

- **Time-saving:** It is time-saving and does not require expensive transport costs as compared to traditional manufacturing processes that are produced in countries like China.

- **Efficient construction:** 3D printing also enables incorporation of weather-proofing as well as utilities within the walls for more efficient construction.

Other 3D printed constructions in India

- In April 2021, India's first 3D-printed home in Chennai located within the IIT-Madras campus was created by the tech startup Tvasta.

- In 2022, IIT Guwahati constructed a 3D-printed sentry post for the Indian Army as part of an indigenous research and development initiative.

- The world's first 3D-printed Hindu temple is currently under construction in Telangana. The temple located near Siddipet will cover an area of 3,800 square feet.

Conclusion

- The 3D printing technology is the technology for the future which may trigger interest in low-cost housing. When this technology will become mainstream, more such initiatives can be seen taking this technology forward. It is a "testament to the nation's innovation and progress", which embodies the "spirit of self-reliant India".

4. Nauka Launched by Russia

Current Context

Recently, Russia launched "Nauka", its biggest Space Laboratory till date, which traveled for 8 days and docked at the International Space Station (ISS).

About

- Russia's space agency Roscosmos detached "Pirs" from the ISS and replaced it with the significantly larger module Nauka, which will serve as the country's main research facility on the space station.

Features and Key Details on Nauka

- Nauka was launched from the Baikonur Cosmodrome in Kazakhstan on July 21 using a Proton Rocket, the most powerful in Russia's space inventory, with the intended purpose to serve as a new science facility, docking port, and spacewalk airlock for future operations at the ISS.
- It adds to the ISS an additional oxygen generator, a spare bed, another toilet, and a robotic cargo crane constructed by the European Space Agency (ESA).
- On the ISS, Nauka will be installed into the Zvezda module, which is responsible for sustaining the space station's life support systems while acting as the structural and functional centre of the Russian Orbital Segment (ROS), the Russian part of the mammoth floating laboratory.

Significance

- **The module will facilitate ongoing microgravity research at ISS which is not possible on the Earth.**
- **It adds to the table infrastructural additions in the form of a new science facility, docking port, spacewalk airlock, oxygen generators etc. for prospective future operations of the cosmonauts.**
- **This plays the vital role in expanding the habitable volume of the ISS to roughly 70 cubic metres,** which will be used to conduct experiments and to store cargo.

About Space Stations

- A space station is essentially a large spacecraft that remains in low-earth orbit for extended periods of time to facilitate microgravity operations.
- The ISS is a pathbreaking collaborative effort between five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe) and CSA (Canada).
- For over 20 years since its launch, human beings have continuously lived and conducted scientific investigations on the $150 billion ISS to effect major breakthroughs in outer space research.
- China's unmanned module "Tianhe" is a mark of its sovereign desire to build its own permanent space station in the foreseeable future.
- India aims to launch its own space station by 2030, joining the league of US, Russia, and China to an elite club of nations flourishing in the advancement of space research.

5. Navigation with Indian Constellation (NavIC)

Current Context

The Department of Space (DoS) told the Parliamentary Committee of Science and Technology that it will soon integrate the Navigation with Indian Constellation (NavIC) into Aadhaar enrolment devices.

About

- It will significantly boost the accuracy and frequency of the collection and verification of personal details for Aadhaar and extend the application of NavIC as well.
  - ✔ Currently the Aadhaar enrolment kits, that are used to collect and verify personal details, are linked to American GPS (global positioning system).
- A NavIC chip has been developed recently by Elena Geo Systems, a Bengaluru-based space technology company, that can expand the use of NavIC and

form the core of the Navigation, Positioning and Timing applications.

About NavIC Series

- **Developed by ISRO,** NavIC was originally approved in 2006 at a cost of $174 million and it became operational in 2018.
- **Purpose:** To meet the positioning, navigation and timing requirements of the nation, ISRO has established a regional navigation satellite system called Navigation with Indian Constellation (NavIC).
  - ✔ NavIC was erstwhile known as Indian Regional Navigation Satellite System (IRNSS).
- **NavIC is designed with a constellation of 7 satellites** and a network of ground stations operating 24 x 7.
  - ✔ There were a total of eight satellites. However only seven are active.
  - ✔ Three satellites of the constellation are placed in geostationary orbit, and four satellites are placed in inclined geosynchronous orbit, with inclination of 29° (two satellites in each plane).
  - ✔ The ground network consists of control centre, precise timing facility, range and integrity monitoring stations, two-way ranging stations, etc.
- **Application:**
  - ✔ Transportation (terrestrial, aerial and marine)
  - ✔ Location-based services
  - ✔ Personal mobility
  - ✔ Resource monitoring
  - ✔ Surveying and geodesy
  - ✔ Scientific research
  - ✔ Time dissemination and synchronisation
  - ✔ Safety-of-life alert dissemination
- **NavIC offers two services:**
  - ✔ Standard Position Service (SPS) for civilian users and
  - ✔ Restricted Service (RS) for strategic users.
- **Bands:** These two services are provided in both L5 (1176.45 MHz) and S band (2498.028 MHz).
  - ✔ The NavIC system operates in the L5 band, which is a protected frequency specifically assigned to the Indian system.
  - ✔ Newer satellites like NVS-1 will have an additional band called L1 that will be compatible

with civilian use and increase its interoperability with other satellite-based navigation systems.

Significance of NavIC for India

- **Self-reliance:** NavIC is conceived with the aim of removing dependence on foreign satellite systems for navigation service requirements, particularly for "strategic sectors."
  - ✔ Relying on systems like GPS and GLONASS may not always be reliable, as those are operated by the defence agencies of respective nations and it is possible that civilian services can be degraded or denied.
  - ✔ NavIC is an indigenous positioning system that is under Indian control and there is no risk of the service being withdrawn or denied in a given situation.
- **Accuracy:** Once fully operational, with ground stations outside India for better triangulation of signals, NavIC open signals will be accurate up to 5 meters and restricted signals will be even more accurate.
  - ✔ NavIC signals are designed to provide user position accuracy better than 20 meters and timing accuracy better than 50 nano seconds, provided by GPS.
- **Coverage:** NavIC provides coverage over the Indian landmass and up to a radius of 1,500 km around it.
  - ✔ In this region, NavIC signals will likely be available in even hard-to-reach areas.
  - ✔ Unlike GPS, NavIC uses satellites in high geo-stationery orbit moving at a constant speed relative to Earth, so they are always looking over the same region on Earth.
  - ✔ NavIC signals come to India at a 90-degree angle, making it easier for them to reach devices located even in congested areas, dense forests, or mountains.
  - ✔ Work is underway to set up ground stations in Japan, France, and Russia.
- **Interoperability:** NavIC SPS signals are interoperable with the other global navigation satellite system (GNSS) signals namely GPS (US), Glonass (Russia), Galileo (European Union), and BeiDou (China).
- **Disaster Alert:**
  - ✔ NavIC is already being utilized as an alert dissemination system for major natural disasters

like landslides, earthquakes, floods, and avalanches by the National Disaster Management Agency (NDMA).

✔ The Indian National Centre for Ocean Information System (INCOIS) also relies on it to broadcast cyclones, high waves, and tsunamis alert messages to fishermen venturing into the deep sea.

- **Uses:** NavIC is in use for projects like public vehicle safety, power grid synchronization, real-time train information systems, and fishermen's safety.

  ✔ Other upcoming initiatives, such as common alert protocol-based emergency warning, time dissemination, geodetic network, unmanned aerial vehicles are in the process of adopting NavIC system.

  ✔ Some cell phone chipsets such as the ones built by Qualcomm and MediaTek integrated NavIC receivers in 2019.

  ✔ The Ministry of Electronics and IT is in talks with smartphone companies to make their handsets NavIC compatible.

Navigation systems around the globe

- **There are four global satellite-based navigation systems:**
  ✔ The American **GPS** (Global Positioning System),
  ✔ The Russian **GLONASS** (GLObalnaya NAvigatsionnaya Sputnikovaya Sistema),
  ✔ The European **Galileo**, and
  ✔ The Chinese **Beidou**.

- **Regional navigation systems**
  ✔ **NavIC :** Navigation with Indian Constellation.
  ✔ **QZSS:** Japan has a four-satellite system that can augment GPS signals over the country, covering Asia-Oceania region, with a focus on Japan, similar to India's GAGAN (GPS Aided GEO Augmented Navigation).

Way Forward

- India's 2021 satellite navigation draft policy stated that the government will work towards "expanding the coverage from regional to global" to ensure availability of NavIC signal in any part of the world. Total 30 satellites are needed in the constellation of NavIC to expand its coverage and make it global. The government must provide appropriate fund and resources for the launching of satellites and development of receiver chips.

- The government and ISRO must focus on the commercialization of NavIC to expand its consumer base and promote its uses in different sectors, such as defence, navigation, mining, disaster management, communication etc., for better data protection, accuracy and economic benefits.

- Coverage must be increased for NavIC to be used in integration with the Coalition for Disaster Resilient Infrastructure (CDRI), Indian Ocean Rim Association, Indian Ocean Naval Symposium along with other regional and global initiatives in the Indo-Pacific region to make it free and peaceful.

6. Nyoma Advanced Landing Ground (ALG)

Current Context

Recently the Ministry of Defence has decided to elevate the Nyoma Advanced Landing Ground (ALG) in eastern Ladakh into a fully functional operational base, capable of facilitating fighter aircraft take-offs.

About Nyoma Advanced Landing Ground (ALG)

- Nyoma is located at an altitude of about 13,700 feet and close to the south Bank of Pangong Tso. Nyoma holds the distinction of being the world's highest airfield.

- It is very close to the Line of Actual Control (LAC) in eastern Ladakh.

- The runway will be expanded to 9,000 feet-10,000

feet and will be able to handle all fighter aircraft.

- The Indian Air Force (IAF) is also tweaking the engines of fighter jets so that they can be started in high-altitude areas.

- Currently designated as an ALG, Nyoma's existing runway comprises mud, restricting its utility to specialized transport aircraft and helicopters.

- Once the new runway is completed, heavier transport aircraft will also be able to operate from

Nyoma, which will add to the strategic depth of the Indian military.

- The Nyoma ALG played a crucial role in the ongoing stand-off with China as the C130Js helped in quickly inducting men, heavy weapons and equipment at the Line of Actual Control (LAC) when tensions began in 2020.

Significance of Nyoma Advanced Landing Ground (ALG)

- Weather at Nyoma is much more stable compared with the other two airfields i.e., Daulat Beg Oldie (DBO) and Fukche, enabling seamless operations.
- To overcome the challenges faced by fighter jets in starting at high-altitude airfields, the engines are being tweaked to enable them to start at extremely low temperatures. The region has temperatures plummeting to -40 degrees Celsius during winter.
- It will be a concrete one that can be used to land heavier transport aircraft at Nyoma to bring troops and equipment close to the LAC.

Need of Nyoma Advanced Landing Ground (ALG)

- **To enhance military operations:** The change of Nyoma ALG into a high-altitude fighter base signifies India's unwavering commitment to fortifying its national defense apparatus.
- **Border security:** India is working to upgrade its advanced landing ground in Nyoma to a full-fledged airbase capable of operating fighter jets. It will

further cut down reaction time in case of tensions on the border.

- **For infrastructure development in Eastern Ladakh:** The airfield would also be utilised for tourism under the regional connectivity scheme 'Udaan' and would offer better connectivity during extreme winters leading to overall development of Ladakh. The Government has already sanctioned Rs.219.39 crore towards the development of air infrastructure along the border.
- **Counter balancing the China's strategy:** India's objective is to establish a comprehensive defensive capability and deployment strategy to counter China's "Anti Access Area Denial (A2AD)" approach, as this strategy by China involves restricting the enemy's freedom of movement on the battlefield.
- **Quick movement of men and material:** The Nyoma ALG is strategically important as it is the airbase closest to the Line of Actual Control (LAC) between India and China in eastern Ladakh. The airbase enables quick movement of men and material in the area.

Conclusion

- With the imminent completion of the new runway, the operational capabilities will extend to accommodate heavier transport aircraft. This development is poised to significantly enhance India's military strategic depth. This endeavor not only accentuates India's strategic readiness but also underscores its proactive stance in the face of evolving regional dynamics.

7. India's Space Industry

Current Context

Currently, India's space industry is valued at $8 billion with a 2% share in the global space economy. The government spending on space is around $2 billion and the country has launched 381 foreign satellites since 1999 for 34 countries clocking $279 million in revenues.

About

- The Indian government aspires for the country's space sector to account for 9% of the global industry by 2030.
- Indian space startups have received total funding of over $200 million since 2021 and with ISRO's plan to set up its own space station by 2030.

India's Space Industry

- India's space industry is **one of the fastest growing in the world.**
- The industry is driven by the **Indian Space Research Organisation (ISRO)**, which is responsible for developing and launching satellites, launch vehicles, and space applications.

- ISRO is the **world's sixth-largest** national space agency.
- India has the potential to claim a much larger share of the global space economy, amounting to $100 billion addressable opportunity by 2040.

History of Indian Space Programme

- Space research activities were initiated in India during the early 1960s.
- Indian space programme began at Thumba Equatorial Rocket Launching Station in 1963, using the **first sounding rocket, Nike Apache**, which was procured from the US.
- India's first indigenous sounding rocket, RH-75, was launched on November 20, 1967.
- **Aryabhata,** the first Indian satellite, was launched in 1975, enabling India to learn satellite technology and design.
- The **first GSLV-D1 launched** in 2001, with GSAT-1 from Sriharikota, aimed at heavier, more demanding Geosynchronous communication satellites.
- On October 22, 2008, PSLV-C11 successfully launched **Chandrayaan-1** from Sriharikota.
- India launched its first interplanetary mission to Mars, the **Mars Orbiter Mission,** on PSLV-C25 in 2013 and became the fourth space agency to successfully send a spacecraft to Mars orbit.
- ISRO undertook PSLV-C53/DS-EO mission on June 30, 2022. PSLV-C53 is the second dedicated commercial mission of **New Space India Limited (NSIL)**.
- India's cost-effective space program has launched lunar probes, built satellites, and successfully reached Mars, earning global recognition for its innovative approach.
- **India has two operational launch vehicles: Geosynchronous Satellite Launch Vehicle (GSLV)** and **Polar Satellite Launch Vehicle (PSLV)**.

Opportunities in Space Sector

- The Indian Space programme is characterized by a vision to use space technology for national development.
- The Department of Space (DOS) is responsible for administration of the Indian Space Programme.
- Over the last five decades, ISRO has been successful in the development of indigenous end-to-end capability in space technology and space activities.
- Industries have matured in the field of motor cases, engines, satellite production and rocket motor realization to the level of exporting indigenous technologies.
- The involvement of industries in space activities has **created jobs for around 45,000 people** in the country.
- Many sectors like defence production, telecom, materials, chemicals and precision engineering have benefitted from this exercise.
- To enable enhanced participation of Indian industries in taking up high-tech space related activities, Government of India has incorporated NSIL, a wholly owned **Central Public Sector Enterprise (CPSE),** under the administrative control of the **Department of Space.**
- With increase in space exploration, various sectors like meteorology, energy, telecommunications, insurance, transport, maritime, aviation, urban development etc. have seen growth and increased efficiency.

Challenges for India's Space Sector

- The DOS sits under the Prime Minister's Office and directly controls the ISRO. ISRO has a commercial arm – **Antrix** – that promotes ISRO's space products and technologies to an international customer base.
- The government therefore plays the dual role of regulator and commercial executor, which has led to significant bottlenecks in the participation of the **private sector.**
- Although the government **allows for 100% FDI** into the sector, all investments are governed by the sectoral guidelines of the DOS/ISRO, under the government route.
- This has led to some **private companies being hesitant to invest** in the space sector, as they are unsure of the regulatory environment and the level of competition from the ISRO.

Indian Space Policy, 2023

- The Indian Space Policy, 2023 has been formulated as an overarching, composite and dynamic framework to implement the reform vision approved by the Cabinet.

Vision

- **To augment space capabilities:**
  - ✔ Enable, encourage and develop a flourishing commercial presence in space.

- ✔ Use space as a driver of technology development and derived benefits in allied areas.
- ✔ Pursue international relations, and create an ecosystem for effective implementation of space applications among all stakeholders.
- **Government shall focus on:**
  - ✔ Encouraging advanced **Research & Development** in space sector to sustain and augment the space program.
  - ✔ Providing public goods and services using space technology for national priorities.
  - ✔ Creating a stable and predictable regulatory framework to provide a level playing field to **Non-Government Entities** in the space sector through IN-SPACe.
  - ✔ Promoting space-related education and innovation, including support to space sector start-ups.
  - ✔ Using space as a driver for overall technology development, nurture scientific temperament in the society, and increase awareness on space activities.
- **InSPACe (Indian National Space Promotion and Authorisation Centre):** It will be a single window **clearance and authorisation agency** for space launches, establishing launch pads, buying and selling satellites, and disseminating high-resolution data among other things.

- **NSIL,** replacing ISRO's **Antrix,** will commercialize space technologies and platforms created through public expenditure in addition to manufacturing, leasing, or procuring space components and assets from private or public sectors.
- The **DOS** will provide **overall policy guidelines,** and be the "nodal" department for implementing space technologies, coordinate international cooperation, and establish an appropriate mechanism for resolving disputes arising from space activity, in consultation with the Ministry of External Affairs.

Future Missions

The following are the approved missions the ISRO is going to accomplish:

- **PSLV-C56/DS-SAR:** The DS-SAR satellite will support Singapore's government agencies' satellite imagery needs and offer multi-modal, responsive imagery and geospatial services for commercial customers.
- **NISAR (NASA-ISRO SAR):** It provides consistent data on Earth's ecosystems, ice mass, vegetation biomass, sea level rise, groundwater, and natural hazards like earthquakes, tsunamis, volcanoes, and landslides.
- **Aditya L1:** Aditya L1 shall be the first space-based Indian mission to study the Sun.
- **SPADEX:** It is an Indian technology mission to demonstrate autonomous docking.

8. Havana Syndrome

Current Context

Recently, the Central government told the Karnataka High Court that it will look into the reported case of "Havana syndrome" in India.

About

- The government responded to the Court against a petition filed by a resident of Bengaluru.
- The petitioner approached the high court with a request to issue a writ of mandamus to inquire into this syndrome and the prevention of transmission of high-frequency microwaves in India.
- The court has given a period of 3 months to the Union government to consider this matter.

The Havana Syndrome

- The Havana syndrome is defined as a set of symptoms of mental health experienced by intelligence and embassy officials of the USA in different nations across the globe.
- The Havana syndrome gets its name from the place it was first reported, namely, Havana, Cuba, in 2016, when the USA opened an embassy there after normalizing its relations with Cuba.

Symptoms Associated with Havana Syndrome

- In the first instance of this disorder, the patients of the USA Embassy faced a sudden pressure burst in their brains, followed by conditions like **insomnia, a feeling of disorientation,** and a **headache.**

- The symptoms of this disorder include **nausea, the sensation of hearing certain sounds without the presence of any external sound, vertigo, headaches, and memory loss.**

Causes of Havana Syndrome

- Although there is no certainty about the causes associated with this syndrome, initially, it was suspected to be a Cuban "sonic attack". However, further studies indicated that the possible reason for this syndrome could be an exposure to "high-powered microwave" radiation.

- According to the studies, these high-powered microwaves have been interfering with the nervous systems of the officials.

- Due to this interference, pressure is built up in the brain, which generates the feeling of hearing a sound.

- It is also specified in the research and studies that prolonged and severe exposure to such waves may also result in interference with the body's sense of balance. This may also have an impact on memory and even cause permanent brain damage.

Other Disorders Associated with "Microwave Radiation Exposure"

Several other disorders are also associated with microwave exposure. These include:

- **Skin burns and cataracts:** The microwaves emit non-ionizing radiation; however, prolonged exposure results in excessive heating and ultimately leads to skin burns and cataracts.

- **Microwave syndrome:**
  - ✓ This syndrome is also recognized as electro-hypersensitivity. It is a clinical syndrome recognized by the occurrence of symptoms associated with multiple non-specific organs, primarily the central nervous system.

  - ✓ This syndrome occurs after the patient suffers from acute or chronic exposure to EM waves in the environment or at their workplace.

- **Microwave-induced brain damage:** The brain is the most vulnerable organ to microwave radiation because, due to its effect, energy metabolism disorders may arise, which in turn triggers the process of brain damage.

Countries where this Syndrome has been Reported

- Around 130 cases have been reported by various US officials across various nations.

- In 2017, the cases were reported by an employee of USAID at the US embassy located in Uzbekistan.

- In 2018, cases of such a syndrome were reported by the US officials posted in China.

- In the years 2019 and 2020, similar cases were reported by officials within the USA itself, especially in Washington, DC.

- The first case of the syndrome was recorded in India in 2021, when a US intelligence officer reported it.

Stand of US-based Reports in the Current Scenario

- Initially, the US-based studies alleged that such high-powered radiation was projected towards "US officials" through "microwave weapons". However, research and studies were not able to find any conclusive evidence regarding their claims.

- Many of the US-based studies alleged China and Russia behind this syndrome claiming that both the nations are conducting research on "microwaves".

- Some US-based medical experts discredited this theory by calling it just a mere psychological illness exaggerated by a fear of being targeted.

- Further, the reports of some US security agencies also negated the idea of any such foreign adversary.

What does India know about this Syndrome?

- Only one such case of Havana syndrome has been recorded in India since 2021; there are very unlikely chances of any such targeting weapon technology,

and the authorities said they are unaware of the same.

- It is also said that if such a technique is deployed, then why is such a problem faced only by US officials and not of any other nation?
- The Indian authorities said that they are not denying the assertions proposed by the USA, however, in the absence of any evidence, the situation and cases of Havana syndrome create curiosity.

Way Forward

- Since the exact cause and concrete evidence about the Havana syndrome has not been determined yet, any premature claim or argument should be avoided. Appropriate steps should be taken to counter this problem and other potential implications that may arise from it.
- Proper research must be carried out to determine the exact cause of this syndrome.

INTERNAL SECURITIES

1. Left-Wing Extremism in India

Current Context

The Union Government has been undertaking several development initiatives to combat left-wing extremism (LWE) by improving infrastructure, providing skills training, and increasing access to financial services in affected areas.

About

- The steadfast implementation of these initiatives has resulted in consistent decline in LWE violence across the nation.
- The number of LWE-related violent incidents have **come down by 76% in 2022** in comparison to the high of 2010.
- The number of resultant deaths (security forces and civilians) has also **reduced by 90%** from an all-time high of 1005 in 2010 to 98 in 2022.

Left-Wing Extremism in India

- Left-Wing Extremism (LWE) in India refers to various militant groups that operate with radical leftist ideologies and engage in armed insurgency against the Indian government.
- These groups seek to establish a Marxist or Maoist-inspired state through armed struggle and often target remote and marginalized regions of the country.
- The States of Chhattisgarh, Jharkhand, Odisha, Bihar, West Bengal, Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh and Kerala are **considered LWE affected,** although in varying degrees.
- LWE is one of the major internal security threats faced by the nation.
- LWE outfits are also commonly known as Naxalites or Maoists.

Difference between Naxalites and LWE

- On 2 March 1967, Naxalites, as they are generically known in India, who were then members of the Communist Party of India (Marxist), led a tribal peasant uprising in Naxalbari village, Siliguri sub-division, Darjeeling district, West Bengal. Since then, all those who subscribed to the idea of an armed overthrow of the state have been generically referred to as Naxalites, the term having its origins in Naxalbari village.
- On the other hand, the term 'Maoists' refers exclusively to cadres and leaders of the Communist Party of India (Maoist). All Maoists are Naxalites, but all Naxalites are not Maoists.

Unlawful Activities (Prevention) Act (UAPA)

- The UAPA is aimed at prevention of unlawful activities associations in India. Its main objective is to make powers available for dealing with activities directed against the integrity and sovereignty of India.
- The most recent amendment of the law, the Unlawful Activities (Prevention) Amendment Act, 2019 (UAPA 2019) has made it possible for the Union Government to designate individuals as terrorists without following any formal judicial process. The UAPA is also known as the "Anti-terror law".

Left-Wing Extremist Outfits in India

- A number of Left-Wing Extremist outfits have been operating in certain remote and poorly connected pockets of the country for a few decades now.

- The amalgamation of **People's War Group (PWG)** and the Maoist Communist Centre of India (MCCI) into the CPI (Maoist) Party in 2004 marked a significant turning point.
- The **CPI (Maoist),** responsible for the majority of violent incidents, was designated as a terrorist organization in 2009 under the **Unlawful Activities (Prevention) Act.**

Government of India's Approach

- 'Police' and 'Public Order' being State subjects, action on maintenance of law and order lies primarily in the domain of the State Governments. The Union Government closely monitors the situation and supplements and coordinates their efforts in several ways. These include:
- Providing the **Central Armed Police Forces (CAPFs)**.
- Sanction of India Reserve (IR) battalions, setting up of Counter Insurgency and Anti-Terrorism (CIAT) schools.
- Modernisation and upgradation of the State Police and their Intelligence apparatus.
- Reimbursement of security-related expenditure under the Security-related Expenditure (SRE) Scheme.
- Providing helicopters for anti-LWE operations, assistance in training of State Police through the Ministry of Defence, the Central Police Organisations and the Bureau of Police Research and Development.
- Sharing of Intelligence.
- Facilitating inter-State coordination; assistance in community policing and civic action programmes etc.

Government Initiatives to Curb LWE

National Policy and Action Plan

- To address the issue of LWE holistically, the government formulated National Policy and Action Plan in 2015.
- It envisaged a multi-pronged strategy involving security-related measures, development interventions and ensuring rights and entitlements of local communities.

SAMADHAN

- SAMADHAN doctrine is the one-stop solution for the LWE problem.
- It encompasses the entire strategy of government from short-term policy to long-term policy formulated at different levels.
- SAMADHAN stands for:

Smart leadership:

- In the LWE-affected areas, there is a need of leadership which, despite adversity, can keep the jawans enthusiastic and teach them only to win.
- The central forces and the local police were asked to work under a coordinated plan.
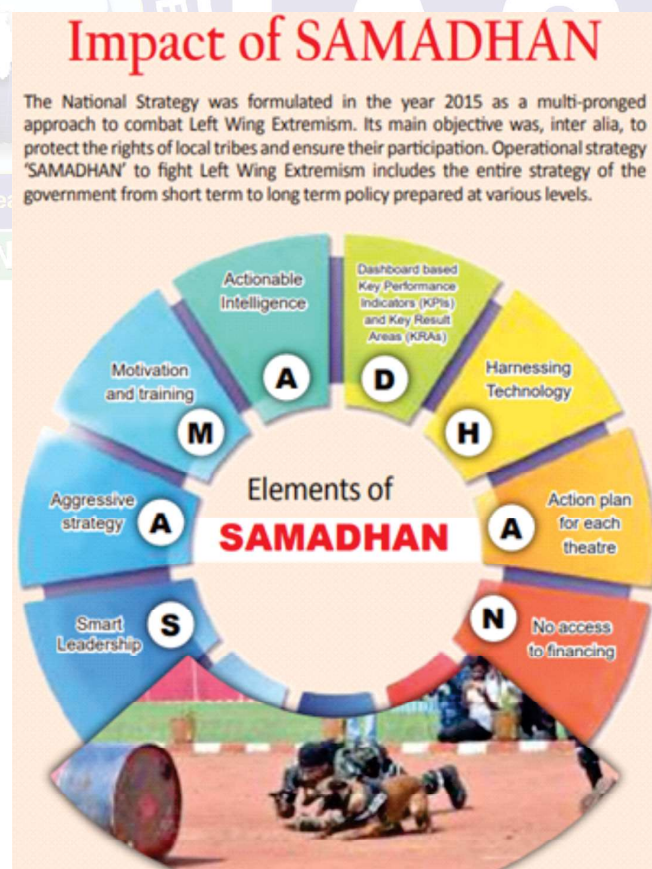
Aggressive strategy

- It is necessary to analyse incidents where security forces suffered heavy losses and encouraged aggression in thinking, operations and development such as road construction.

Motivation and training

- Focus should be on training of security forces and providing them adequate facilities. Security forces must learn the culture and languages of the locals to earn their trust.

Actionable intelligence:

- It is important to establish a good network with the locals. "Surrendered LWE cadre should be used for intelligence collection," and there is a need to

Impact of SAMADHAN

The National Strategy was formulated in the year 2015 as a multi-pronged approach to combat Left Wing Extremism. Its main objective was, inter alia, to protect the rights of local tribes and ensure their participation. Operational strategy 'SAMADHAN' to fight Left Wing Extremism includes the entire strategy of the government from short term to long term policy prepared at various levels.

Elements of **SAMADHAN**

- **A** — Actionable Intelligence
- **D** — Dashboard based Key Performance Indicators (KPIs) and Key Result Areas (KRAs)
- **H** — Harnessing Technology
- **A** — Action plan for each theatre
- **N** — No access to financing
- **S** — Smart Leadership
- **A** — Aggressive strategy
- **M** — Motivation and training

depute "Shadow Intelligence Officers" to trace prominent LWE targets.

Dashboard-based Key Result Areas (KRAs) and Key Performance Indicators (KPIs):

- These should be determined for the state police and the central forces to assess their preparedness as well as performance.

Harnessing technology

- To prevent looting of weapons by the extremists, there is a need to have trackers in weapons and biometrics and unique identification numbers for explosives.

Action plan for each theatre:

- To counter LWE in different states, there is a need to fight on multiple fronts and create separate action plans for each front.

No access to financing:

- Choking LWE's financial resources is the "basic mantra" in this fight to prevent them from getting weapons, ammunition and food.

Some Other Important Initiatives for LWE-Affected States

On the security front, the Union Government assists the LWE-affected states' government by providing Central Armed Police Forces battalions, training, and provision of funds through schemes like
- Security Related Expenditure (SRE) and Special Infrastructure Scheme (SIS),
- Funds for modernization of state police forces,
- Equipment and arms,
- Sharing of intelligence,
- Construction of fortified police stations etc.

- Road Connectivity Project for LWE-affected areas (RCPLWE),
- LWE Mobile Tower Project.

A map of India's Maoist conflict

A crackdown on Maoist rebels has led to a rise in the number of casualties in the country's tribal areas. Here are the regions that are most affected.

Highly affected
Moderately affected
Marginally affected

Source sidp, Government of India, Ministry of Home Affairs

Way Forward

- The government should continue to implement its security and development initiatives in the LWE-affected areas. It should also focus on improving intelligence gathering and sharing, and on choking the financial resources of the LWE groups. In addition, the government should work to win the hearts and minds of the people in these areas, so that they are no longer sympathetic to the LWE cause.

2. INS Vindhyagiri

Current Context

President Droupadi Murmu, on 17 August 2023, launched INS Vindhyagiri, an advanced stealth frigate, at Garden Reach Shipbuilders and Engineers Ltd's (GRSE) facility in Kolkata.

About

- This is the sixth ship of Project 17A of the Indian Navy, developed by Garden Reach Shipbuilders and Engineers (GRSE).
- The other five ships, namely INS Nilgiri, Udaygiri,

Himgiri, Taragiri, and Dunagiri, have already been launched between 2019 and 2022.

Features of INS Vindhyagiri

- INS Vindhyagiri, deriving its name from the Vindhyan ranges of Karnataka, is an advanced stealth guided missile frigate.

- It has a length of around 149 meters, a speed of 28 knots, and a displacement of approximately 6,670 tons.
- The ship can neutralize potential threats and hostilities in all three dimensions: air, surface, and sub-surface.
- This is a frigate of the P17A class, or the Nilgiri class of ships.
- All ships belonging to this class are equipped with radar-absorbent coatings, which make them undetectable to enemies.
- The new technology of radar-absorbent coating also reduces infrared signals generated by ships.

Project 17A

- The Project 17 Alpha frigates (abbreviated as P 17A) were launched in the year 2019 by the Indian Navy to build a series of stealth guided-missile frigates.
- Two companies, namely Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE), are building the ships of this class.
- Out of a total of seven frigates, three are to be built by MDL, while the GRSE is going to develop four frigates.
- The first stealth ship launched under Project 17A was the INS Nilgiri which was launched in 2019.
- The ships belonging to Project 17A are known to be built with improved stealth features, modern weapons, advanced sensors, and platform management systems.
- The P 17A, or Nilgiri class of frigates, is recognized as a derivative of the Shivalik class frigates (the P 17, which is a three-ship multi-mission frigate type) with certain changes or modifications in size and technology.
- The size of P 17A ships is relatively larger by 4-5% as compared to the P 17 frigates.
- The P 17A is known to deploy "vertical launching system" (VLS) cells to fire surface-to-air missiles in comparison with the P 17 class, which utilizes a single-arm missile launcher.

Current Status of Indian Warships and Frigates

- Currently, the Indian Naval force comprises of almost 150 ships and submarines. This includes around twelve guided-missile frigates belonging to three different classes, namely Shivalik, Talwar, and Brahmaputra.

Significance of this Frigate

- With the incorporation of this new frigate, the strength of the Indian Navy in the Bay of Bengal region would increase.
- This will also strengthen India's stake in regional and global initiatives such as IORA, IONS, and QUAD, thereby acting as a key security partner in the region.
- This will also help India counter the Chinese navy in the region.
- The project has been designed by the Warship Design Bureau of Indian Navy, which is the primary organisation associated with all the warship design activities.
- Further, almost 75 percent of the equipment and systems of the ships made under this project are procured from indigenous firms, especially MSMEs which is in line with "Make in India" and "Atmanirbhar Bharat".

Conclusion

- India is increasing its influence in the region in order to become a key security partner in the Indian Ocean and Indo-Pacific. Thus, there is a need for India to increase its military might, and the current step can be seen on similar lines.

3. Border Infrastructure Development

Current Context

In a move towards strengthening regional connectivity and bolstering national security, the External Affairs Minister, S Jaishankar, highlighted four-fold increase in India's spending on border infrastructure and said that India's engagement with Bangladesh, Nepal, and Bhutan has been a focal point, with infrastructural initiatives taking center stage.

About

- India's focus on improving infrastructure in the border areas with China had meant more contestations and counter-patrolling with the Indian military now able to deploy and tackle any Chinese movement efficiently.

- India and China are still negotiating to resolve the military standoff in the remaining areas in eastern Ladakh and has managed to find "some solution" to 5-6 tense friction points including Galwan, Gogra Hot Springs and Pangong.

Border Infrastructure Development Initiatives

- India is focused on initiatives in the North and East along India's 3,488 km border with China (Line of Actual Control or LAC), including ramping up infrastructure on the Indian side in Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh, as well as projects connecting India to "friendly" neighbouring states such as Bangladesh, Bhutan, Nepal and Myanmar.
- A multi-pronged approach:
  - Improving connectivity to the LAC through roads, bridges and tunnels,
  - Improving cross-border connectivity to neighbouring countries via highways, bridges, inland waterways, railroads, electricity lines and fuel pipelines,
  - Modernising and constructing integrated check posts (ICPs) at all the border crossings to smooth trade, and funding and constructing infrastructure projects in neighbouring countries.
- **Budget** for connectivity in border areas has increased 400% since 2014.
- **China border:**
  - The budget of the Border Roads Organisation was increased to Rs 14,387 crore in 2023-24, from Rs 3,782 crore in 2013-14.
  - 6806 km roads were constructed in 2014-22 compared to 3,610 km from 2008-14.
  - Several crucial projects were expedited to give the armed forces an enhanced ability to counter moves of the Chinese security forces.
  - Bridges constructed totalled 22,439 metres in 2014-22, compared to 7,270 metres between 2008 and 2014.
  - The length of roads constructed during 2014-22 is 6806 km, compared to 3610 km from 2008-14.
  - 205 projects have been completed on the LAC and 176 projects worth Rs 6,200 crore is being completed.
  - The government completed five new tunnels in the last three years, work on 10 is on, and an additional seven are in the planning stage.
- **Arunachal:**
  - A frontier highway of about 2,000-km, which is also known as Mago-Thingbu-Vijaynagar border

highway, is being developed, that follows the McMahon Line, which is the effective boundary between China and India.
  - To connect Frontier highway with the Trans-Arunachal highway and East-west Industrial Corridor highway, six vertical and diagonal national highway corridors covering 2,178 km have been sanctioned for providing faster access to border areas which will not only benefit armed forces but also provide economic and tourism boost.
  - The BRO is presently constructing nine tunnels, including the 2.53-km long Sela tunnel, which will offer all-weather connectivity between Guwahati in Assam to Tawang in Arunachal Pradesh, which will be highest bi-lane tunnel in the world once it is completed.
- **In Laddakh, work is in progress on:**
  - Chusul-Dungti-Fukche-Demchok highway project.
  - Nyoma airfield, which is one of the highest airfields in the world.
  - Shinku La tunnel on the Ladakh-HP border, which will be the world's highest tunnel once completed.
  - Completion of the 9.02 km-long Atal Tunnel, the world's longest tunnel above 10,000 feet, as well as the highest motorable road over the Umlingla Pass at 19,024 feet in southern Ladakh's Demchok area are important achievements.

Neighborhood Projects

- Integrated check points for smoother trade flows with Nepal, Bangladesh, and Bhutan;
- The railway links to Nepal and Bangladesh, the Mahakali motorable bridge and the Maitri Setu between Tripura and Bangladesh;
- The Kaladan Multi-Modal Transit Transport Project (KMTTP) which includes a 158 km waterway;
- The Sittwe port project and road to Mizoram;
- South Asia's first cross-border petroleum products pipeline between Motihari in India and Amlekhgunj in Nepal;
- High Speed Diesel pipeline with Bangladesh that will reduce petrol prices and road congestion, and
- A Bhutanese dry port in Pasakha bordering West Bengal

being developed under an Indian government grant.

- In Nepal, the government has committed Rs 500 crore for the construction of 10 roads totalling 306 km in the Terai region.

Significance of Border Infrastructure

- **Strategic deployment:** Looking at successive skirmishes with the Chinese People's Liberation Army in Chumar in 2014, Doklam in 2017 and the ongoing standoff along the entire LAC since April 2020 when the Chinese army amassed troops along the border, which resulted in the Galwan clashes, infrastructure development is necessary for faster deployment of troops as well as resources.

- **Connectivity:** Building roads, bridges and tunnels for transportation and network infrastructure of seamless integration is necessary for connectivity.
  - ✔ India is focused on rapidly developing border connectivity with its friendly neighbors to enhance trade, energy and other people-to-people exchanges.

- **Coordination:** The state of India's border infrastructure is inadequate despite several conflicts and wars. Coordination is necessary among different military, para-military, and police forces for surveillance against intrusion, enemy deployment and to protect our borders.
  - ✔ Smugglers, drug traffickers, and terrorists often take advantage of poor surveillance and infrastructure at borders.

Other Border Initiatives

- **Border Infrastructure and Management (BIM):** The Government has approved the continuation of this Central Sector Umbrella Scheme over the 15th Finance Commission Cycle from 2021-22 to 2025-26, at a cost of Rs.13,020 crore.
  - ✔ It will strengthen the border infrastructure for improving border management, policing and guarding the borders.
  - ✔ The BIM scheme will help in the creation of infrastructure such as construction of border fence, border flood lights, technological solutions, border roads and Border Outposts (BOPs)/Company Operating Bases (COBs) to secure the Indo-Pakistan, Indo-Bangladesh, Indo-China, Indo-Nepal, Indo-Bhutan and Indo-

Myanmar borders.

- **Border Area Development Programme (BADP):**
  - ✔ The BADP was initiated in the border areas of the western region during the Seventh Five Year Plan (1985-90).
  - ✔ The government of India is implementing the BADP through the State Governments/UT Administrations in habitations located within 0-10 kms from the first habitation at international border in 117 border districts of 16 States and two UTs.
  - ✔ The main objective of the BADP is to meet the special developmental needs and well-being of the people living in remote and inaccessible areas situated near the International Boundary (IB) and to provide the border areas with essential infrastructure by convergence of BADP/other Central/States/UT/Local Schemes.
  - ✔ Over the last five Financial Years, Rs 2,975.22 crore has been released to States/UTs.

- **Comprehensive Integrated Border Management System (CIBMS):**
  - ✔ The Union Home Ministry first introduced Smart Fencing on Indo-Bangladesh border in 2019 under CIBMS.
  - ✔ The purpose of the CIBMS is to enhance faster surveillance, detection and interception capability of BSF.
  - ✔ CIBMS is a strong system with three main components:
    - ◊ Sophisticated devices including sensors, detectors, cameras, radar systems, micro-aerostats, lasers etc.
    - ◊ Dedicated wired and wireless communication system, and
    - ◊ Centralized command control system.
  - ✔ Two pilot projects have been completed under CIBMS covering about 71 Kms:
    - ◊ on the Indo-Pakistan Border (10 Kms) and
    - ◊ on the Indo-Bangladesh Border (61 Kms).

- **Vibrant Villages Program:**
  - ✔ This village development scheme was first announced in the 2022 Budget.
  - ✔ The targets are to provide comprehensive development of villages on the border with

China and improvement in the quality of life of people living in identified border villages.

- ✔ The development in these villages will help prevent migration, and thus also boost security.
- ✔ Under this Centrally sponsored scheme, 2,967 villages in 46 blocks of 19 districts have been identified for comprehensive development.
- ✔ These villages are located on the border in the states of Arunachal Pradesh, Sikkim, Uttarakhand and Himachal Pradesh and the Union Territory of Ladakh.
- ✔ The government has allocated Rs 4,800 crore for infrastructure development and to provide

livelihood opportunities in the border areas for financial years 2022-23 to 2025-26. Out of the total outlay, Rs 2,500 crore will be spent exclusively on the creation of road infrastructure.

Conclusion

- The Border Roads Organisation, under the Ministry of Defence, has built over 60 per cent of roads bordering China in the last three years, data presented in Parliament showed. Government's commitment to secure borders and defend the national interest is reflected in infrastructure development in the border areas.

PERSONALITY/AWARDS/SPORTS

1. Bindeshwar Pathak

Current Context

Bindeshwar Pathak, the "Toilet Man of India", passed away in New Delhi on August 15, 2023.

About

- Born and educated in Bihar, Bindeshwar Pathak was a renowned Indian sociologist and social entrepreneur who revolutionised sanitation in India by building public toilets and promoting human rights.
- He was a visionary who worked extensively for societal progress and empowering the downtrodden, and made it his mission to build a cleaner India.
- He was inspired to take up the cause of sanitation after witnessing the plight of manual scavengers. He campaigned for the abolition of manual scavenging as a practice and a profession.
- He provided education, training, and alternative livelihoods for the scavengers and their families. He lived with scavenger families as part of his PhD research and vowed to eradicate the practice by building public toilets and toilets in homes.
- Mr. Pathak founded the Sulabh International Social Service Organisation in 1970 to introduce a public toilet system in India that would go on to become a feature of hundreds of towns.
- The effort saw the installation of more than 1.3 million toilets in households and 10,000 public toilets in India.
- Over time, Sulabh International also contributed to the welfare of people engaged in manual scavenging and helped them come out of the occupation. The organisation was conferred with the Gandhi Peace Prize for 2016, jointly with the Akshaya Patra Foundation.
- Bindeshwar Pathak was a visionary leader who used technology for social upliftment and environmental protection. He designed biogas plants that could convert human waste into energy and fertiliser.
- He was conferred with the Padma Bhushan in 1991 for social work and later became an ambassador for the government's Swachh Bharat Mission.

2. CR Rao

Current Context

C Radhakrishna Rao, one of India's greatest mathematicians and statisticians, died in the US on August 23, 2023. He was 102 years old.

About

- One of India's most distinguished statisticians of all time, his work encapsulated estimation theory, differential geometry and multivariate analysis.
- Rao was hugely creative. He used to categorise creativity in two kinds- at its highest level, it is the birth of a new idea or a theory which is qualitatively unique, while there is creativity of another kind of a discovery made within the framework of an existing paradigm

Prominent Achievements and Career Trajectory

- Rao obtained a degree in mathematics at Andhra University.
- On meeting Prasanta Chandra Mahalanobis, who established Indian Statistical Institute (ISI), and thereafter, speaking with some faculty members and workers, Rao felt that ISI was the right place for him.
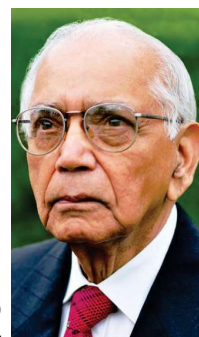
- After he had obtained his MA, Rao was offered a technical apprenticeship in ISI. He also began to teach statistics at Calcutta University.
- He went to Cambridge and obtained a PhD under Ronald Fisher, a founder of modern statistical science.
- Rao returned to India in 1948 and became a professor in ISI where in 1964, he was appointed its Director.
- After his retirement from ISI, he moved to the US and in 1982, he established the Center of Multivariate Analysis at the University of Pittsburgh. He later joined the Pennsylvania State University in 1988.
- In 2007, the University of Hyderabad opened the C R Rao Advanced Institute of Mathematics, Statistics and Computer Science.
- Around 2010, Rao moved to the University of Buffalo at Amherst. He published his last scientific work in his 100th year.
- The former Director of ISI had hit the headlines earlier this year after he was awarded the International Prize in Statistics, which many consider equivalent to the Nobel Prize.

Contributions to the Field of Statistics

- Rao's seminal contributions have been in areas of statistics, designing an experiment for efficient extraction of information and testing scientific hypothesis using the results.
- In 1944, he derived a landmark result with which his name is associated — the Cramer-Rao bound. In 1945, he proved a result that is now known as the Rao-Blackwell theorem. There are several ways of obtaining estimates from data, but the method proposed by Rao, and two years later by David Blackwell, provide highly reliable estimates.
- During his PhD, he discovered a method, now known as Rao's Score Test, which is used in all branches of science.

3. Dr. VS Arunachalam

Current Context

Recently, former Director General of the Defence Research and Development Organisation (DRDO) Dr. V S Arunachalam, passed away in California.

About

- Arunachalam began his career in material sciences with a reputation of specializing in Physics. He worked at institutions like the Bhabha Atomic Research Centre, the National Aeronautical Laboratory, and the Defence Metallurgical Research Laboratory, where he rose to become the Director at a young age.
- Arunachalam was not only a scientific visionary but also a deeply spiritual individual. He spent time at temples and had an affinity for classical Carnatic music. Later in his academic life, he continued to write about India's nuclear program.

Contribution to India's Scientific and Defense Policy Apparatus

- Dr. Arunachalam was the chief architect of many strategic programs of the DRDO, the flagship one being the Integrated Missiles Development Programme which included missiles like Agni, Prithvi, Akash and Nag.
- His tenure saw the ideation of the Light Combat Aircraft now called Tejas and the Airborne Early Warning and Control System. His vision witnessed the transition of DRDO from a small projects' organization to a multifaceted entity capable of handling complex projects like the Main Battle Tank Arjun.

- His visionary approach and leadership skills contributed to DRDO's overall modernization. He built strong relationships with political leaders, army chiefs, and defence ministers, fostering acceptance of DRDO's technologies and products within the armed forces.
- Arunachalam was a firm advocate of India's nuclear weaponization, but he emphasized the need for an effective delivery system alongside the development of weapons. He initiated the integration of missile and nuclear systems, a foundation that proved crucial during subsequent advancements.

Prominent Career Achievements

- After his stint at the Bhabha Atomic Research Centre, the National Aeronautical Laboratory, and the Defence Metallurgical Research Laboratory, he

worked as Secretary, Department of Defence Research and Development (Ministry of Defence, Government of India).

- As the Director General of DRDO, he transformed it into a multi-mission organization by laying the foundation for vital defence projects during his tenure (1982 to 1992) for which he was awarded DRDO's Lifetime Achievement Award in 2015.

- He served as the Scientific Adviser to the Defence Minister, Government of India (1982 to 1992).

- Arunachalam was conferred the Shanti Swarup Bhatnagar Award, Padma Bhushan and Padma Vibhushan for his visionary leadership in the field of engineering science and technology.

- He was also a distinguished Fellow of the Indian National Science Academy, the Indian Academy of Sciences and the Indian National Academy of Engineering. Along with being the first Indian Fellow of the Royal Academy of Engineering (UK), he was a Distinguished Service Professor (Engineering and Public Policy) at Carnegie Mellon University, Pittsburgh.

- In 2005 he became the Founder Chairman of the Bengaluru based think tank Center for Science, Technology and Policy (CSTEP) to enrich policymaking with innovative approaches using science and technology for a sustainable, secure and inclusive society.

AWARDS

1. 69th National Film Awards

Current Context

The 69th National Film Awards were announced on August 24, 2023, in New Delhi, with honours for films censored in the year 2021. The event is held by the Government of India's Directorate of Film Festivals, which comes under the Ministry of Information and Broadcasting.

About

- The awards were announced by Ketan Mehta, Chairperson, Feature Films Jury; Vasanth S Sai, Chairperson, Non-feature Films Jury; Yatindra Mishra, Best Writing on Cinema Jury in presence of Ms Neerja Sekhar, Additional Secretary, Ministry of Information and Broadcasting.

National Film Awards Winners 2023	
The following is the list of winners in selected categories:	
• Best Feature Film	'Rocketry: The Nambi Effect'
• Best Non-Feature Film	'Ek Tha Gaon' directed by Srishti Lakhera
• Nargis Dutt Award for Best Feature Film on National Integration	'The Kashmir Files'
• Best Popular Film Providing Wholesome Entertainment	'RRR'
• Best Actor	Allu Arjun for 'Pushpa (The Rise Part I)'
• Best Actress (Joint Winners)	Alia Bhatt for 'Gangubai Kathiawadi' and Kriti Sanon for 'Mimi'.
• Best Supporting Actor	Pankaj Tripathi for Mimi (Hindi)
• Best Supporting Actress	Pallavi Joshi for The Kashmir Files (Hindi)

Indian Cinema

- India is the world's largest producer of films and has consistently been so since 2007. At the same time, the country is the leading film market in terms of the number of tickets sold too.
- Due to the pandemic, 2020 and 2021 saw the number of films being produced to drastically dwindle.
- Revenues climbed to 93 billion ($1.2 billion) but remained far below the pre-pandemic heights of 191 billion ($2.5 billion). The sector is projected to grow to 212 billion ($2.7 billion) by 2024.
- India has the potential to become the content hub of the world. Indian films are being recognised all over the world, be it BAFTA or the Oscars.

History of Indian Cinema

- India has one of the oldest and largest film industries in the world. It was in early 1913 that an Indian film received a public screening.
- The film was **Raja Harischandra** (Silent Movie). Its director, Dadasaheb Phalke is now remembered through a lifetime achievement award bestowed by the film industry in his name.
- At that point of time, it was really hard to arrange somebody to portray the role of females.
- Silent movies continued in India for another decade although the first Indian talkie came out on March 14, 1931. It was **'Alam Ara'** (The Light of the world), made by Ardeshir Irani who admitted that the idea of making an Indian talkie came from Universal pictures production of 'Show Boat', which was a 40% talkie.
- Of the Historical movies of 60s, the first mention falls on 'Anarkali'. Then comes 'Mughal–e –Azam' and 'Mother India'.
- The important film makers of this period not only made commercially successful works but also mastered the language of cinema.
- Before the late 1960s, movies were directed by people who learnt the art on the job. There were no schools or training institutes for actors, directors, producers, and technical experts. Later the National School of Drama and FTII trained these personnel.

Golden Age of Indian Cinema

The films of the late 1940s, 1950s and early 1960s were lyrical and powerful and dealt with themes including the following:

- The exploitation of the poor by rich landlords **(DO BIGHA ZAMEEN, 1953)**
- The importance of sacrifice and honour **(MOTHER INDIA)**
- Survival in the big city **(BOOT POLISH, 1954)**
- Untouchability **(SUJATA, 1959)**
- The changing role of the women **(Mr. and Mrs.55, 1955)**
- Urban vs rural morality **(SHREE 420, 1955)**
- Nature vs nurture **(AWAARA, 1951)**
- Dilemmas faced by modern Indians **(ANDAZ,1949)**
- Materialism vs spiritualism **(PYAASA, 1957)**
- The importance of destiny **(CHAUDHVIN KA CHAND, 1960)**.

Middle-period Cinemas

- In the 1970s, Indian commercial cinema experienced a significant shift with the rise of Rajesh Khanna's charming personality and Amitabh Bachchan's rugged, angry young look. His blockbuster movies like Amar Prem, Kati Patang, and Anand fuelled the

The National School of Drama (NSD)
• The National School of Drama is one of the foremost theatre training institutions in the world and the only one of its kind in India.
• It was set up by the Sangeet Natak Akademi as one of its constituent units in 1959.
• In 1975, it became an independent entity and was registered as an autonomous organization under the Societies Registration Act XXI of 1860, fully financed by the Ministry of Culture, Government of India.

National Film Development Corporation (NFDC)
• The National Film Development Corporation of India is the central agency established to encourage the good cinema movement in the country.
• The primary goal of the NFDC is to plan, promote and organize an integrated and efficient development of the Indian film industry and foster excellence in cinema.

industry, while his action films like Zanzeer and Kaala Patthar became popular.

21st Century Cinema

- In the early 21st century, Indian cinema experienced significant developments, including the declaration of cinema as an industry in 2001 and the gradual corporatization of the entertainment and media industry. The rapid proliferation of multiplexes and digital cinema theatres in metros and major cities like Bangalore, Hyderabad, Ahmedabad, and Pune accelerated this transformation.

Over-the-Top (OTT)

- OTT or Over-the-Top Platforms are services that offer viewers access to movies, TV shows and other media directly through the Internet, bypassing cable or satellite systems. There are two types of OTT streaming– pay-to-access and free-to-access. Examples: Netflix, Zee TV, MX-Player, Hotstar, and Amazon Prime.

Regional Cinema

Some of the popular regional film industries in India are Bengali, Tamil, Telugu, Kannada, Malayalam and Punjabi.

- **Bengali cinema** has always rendered some great piece of work by geniuses like Satyajit Ray, Mrinal Sen, Ritwik Ghatak and modern-day directors Rituparno Ghosh, and Aparna Sen.
- **Bhojpuri movies** of Bihar and eastern parts of Uttar Pradesh have a pretty large audience. Among the

popular movies are - Ganga Maiyya Tohe Piyari Chadhaibo, Bidesiya, Saiyyan Humar, Panditji Batai Na Kab Hoi and Sasura Bada Paisa Wala.

- **Gujarati cinema** has been very popular in Indian film industry. The movies have been based on mythology, history, society and politics. The industry has rendered the Bollywood with actors like Asha Parekh, Aruna Irani, Asrani, Sanjeev Kumar, Rajendra Kumar and Bindu.
- **Kannada film industry** is based in Bengaluru. The industry has flourished with actors like Rajkumar, Ambarish, Girish Karnad, Shakar Nag, Prakash Raj and Ravichandran. Some of the popular Kannada movies are Samskara, Accident, Maanasa Sarovara, Tabarana Kathe, Bharath Stores, Thaayi Saheba, Vimukthi, and Bhootayyana Maga Ayyu.
- **Marathi cinema** has contributed a lot to the Bollywood. Some of the popular Marathi actors like Dr. Shriram Lagoo, Reema Lagoo, Durga Khote, Tanuja, Nutan, Smita Patil, Madhuri Dixit, Urmila Matondkar, Sonali Bendre, Lalita Pawar, Padmini Kolhapure, and Sadashiv Amrapurkar are also recognized as popular faces in Bollywood as well.

The Film and Television Institute of India (FTII)

- The Film and Television Institute of India (FTII) was set up by the Government of India in 1960, as a department of the Ministry of Information and Broadcasting, in the premises of the erstwhile Prabhat Studios in Pune.
- It later became an autonomous society under the Ministry of Information and Broadcasting, with a Governing Council and an appointed Director.
- In 1971, FTII began in-service training programs for Doordarshan, India's public broadcaster. The institute moved to Pune in 1974 and was fully aided by the Ministry.

Some Important Facts About Indian Cinema

- India's first cinemascope film is "Kagaz ka Phool" (1959) by Guru Dutt.
- India's first 70 mm film is "Around the World" (Hindi) in 1967 by Raj Kapoor.
- Swarna Kamal (Golden Kamal) is the name of the award given to the Best Film of the Year by the Government of India.
- "Adi Shankara" directed by G.V. Iyer is the first Sanskrit film in India.
- Sivaji Ganesan was the first Indian to win the Chevalier Award instituted by the French Government.
- The first International Film Festival of India was held in 1952.
- First Indian 3-D Picture is the Malayalam cinema "My Dear Kuttichathan."
- Indians who won Oscar- Bhanu Athaiya, Satyajit Ray, Resul Pookutty, A.R. Rahman and Gulzar.

- **Tamil movies** are also known as Kollywood movies mainly because most of the movies are centred around Chennai neighbourhood called Kodambakkam.
- **Telugu cinema** is known to be the largest producer of movies in India. The Ramoji Film City has already got its name registered in Guiness Book of World Records, for being the largest film production center in the world.

Way Forward

- The future of Indian cinema promises innovation and growth. The rise of OTT platforms, regional cinema's diversity, and emerging talents will shape its trajectory. Increased digitization, expanding audiences, and global recognition hint at a dynamic cinematic landscape. As the industry evolves, embracing technology, original storytelling, and cultural diversity will be pivotal for sustaining its rich legacy.

SPORTS

5. Asian Champions Trophy 2023

Current Context

The seventh edition of the Asian Champions Trophy hockey was held in Chennai from August 3 to 12. India won a record fourth title after defeating Malaysia in the final.

About Asian Champions Trophy 2023

- The Asian Champions Trophy 2023 hockey tournament was held at the **Mayor Radhakrishnan** Stadium in Chennai, Tamil Nadu from August 3 to August 12.
- Six of Asia's top-ranked hockey teams - India, South Korea, Malaysia, Pakistan, Japan and China - played in the 2023 Asian Champions Trophy hockey tournament.
- Tournament was held on **the Poligras Paris GT zero hockey turf, carbon-free hockey turf, similar to the one that will be used at the Paris Olympics next year.**
  - ✔ The intricately designed hockey zero turf is made with 80 percent sugarcane and manufactured with green energy. The turf requires less water.

Format

- The Asian Champions Trophy 2023 was conducted in two phases - a group stage where all six teams played each other in a single-legged round-robin format followed by the knockout/classification stage.
- After the group stage, the top four teams made the semi-finals while the bottom two played in the fifth-place classification match. The two losing semi-finalists, meanwhile, played each other in the third-place playoff match.

Ranking

- The Indian men's hockey team won the tournament after defeating Malaysia 4-3 in the final to claim a record fourth title. India is the most successful team that holds four titles in 2023, 2011, 2016 and 2018 (shared the trophy with Pakistan in 2018) in the tournament's history after surpassing Pakistan's three titles.
- Japan beat Korea 5-3 to finish third while Pakistan beat China 6-1 to finish fifth.

Asian Champions Trophy

- The Asian Champions Trophy is a prestigious field hockey tournament held in Asia, showcasing the talent and competitiveness of top Asian hockey nations.
- The **first-ever Asian Champions** Trophy took place in Ordos, China in 2011. India emerged as the inaugural champions by defeating Pakistan.
- The **second edition** of the Asian Champions Trophy was held in Doha, Qatar in 2012. Pakistan emerged victorious in a closely contested final against arch-rivals India.

- The **third edition** of the tournament was hosted by Japan in Kakamigahara in 2013. Pakistan clinched their second consecutive title by defeating Japan.
- After a three-year hiatus, the **fourth edition** of the tournament returned in 2016 in Kuantan, Malaysia. India emerged as the champions for the second time, defeating Pakistan.
- In 2018, Muscat, Oman, played host to **the fifth** **edition** of the Asian Champions Trophy. India and Pakistan were named the joint winners of the tournament.
- The **sixth edition** of the Asian Champions Trophy was held in Dhaka, Bangladesh in 2021, after a gap of three years. South Korea won the champions for the first time in the tournament history, defeating Japan.

FACT POINTS

Parliament passes Cinematograph (Amendment) Bill, 2023

- **The Cinematograph (Amendment) Bill, 2023** was **passed by the Parliament on 31 July 2023** after getting the nod from the Lok Sabha.
- The Bill was **introduced in the Rajya Sabha on 20th July, 2023** and passed after discussion on 27th July, 2023.
- The historic bill was passed by the Parliament amending the Cinematograph Act after 40 years as **the last significant amendments in the Cinematograph Act, 1952 were made in the year 1984.**
- The **landmark bill aims to comprehensively curb the menace of 'Piracy'** causing losses of Rs 20,000 crores to the film industry, based on certain estimates.
- The provisions include **strict punishment of minimum 3 months imprisonment and fine of Rs. 3 lakhs which can be extended up to 3 years imprisonment and fine upto 5% of the audited gross production cost.**

PM conferred Lokmanya Tilak National Award

- The Prime Minister of India was conferred the **Lokmanya Tilak National Award** in Pune, Maharashtra on August 1, 2023.
- The Award was constituted by **Tilak Smarak Mandir Trust in 1983** to honor the legacy of Lokmanya Tilak.
- **It is awarded to people** who have worked **for the progress and development of the nation** and whose contribution can only be seen as **remarkable and extraordinary.**
- It is **presented every year on the 1st of August -** Lokmanya Tilak's death anniversary.
- The Prime Minister became the **41st recipient** of the award.
- It has **previously been presented to luminaries such as** Dr. Shankar Dayal Sharma, Shri Pranab Mukherjee, Shri Atal Bihari Vajpayee, Mrs Indira Gandhi, Dr Manmohan Singh, Shri N. R. Narayana Murthy, Dr E. Sreedharan among others.

Ayush Visa for foreign nationals seeking treatment under Indian systems of medicine

- The Ministry of Home Affairs, Government of India has **notified the creation of a new category of Ayush (AY) visa for foreign nationals** for treatment under **Ayush systems/Indian systems of medicine.**
- The introduction of Ayush Visa fulfills the proposal for introduction of a special visa scheme for foreigners visiting India for treatment under Ayush systems/Indian systems of medicine like **therapeutic care, wellness and Yoga.**
- Introduction of Ayush Visa category is part of India's roadmap for the **Heal in India initiative** of the government, which is intended at **promoting India as a medical value travel destination.**
- The Ministry of Ayush and the Ministry of Health & Family Welfare are working together to develop a **one stop Heal in India portal to promote India as a Medical tourism destination of the world.**

"Festival of Libraries 2023"

- The Ministry of Culture organised a unique **"Festival of Libraries 2023"** on 5th-6th August 2023 at Pragati Maidan, New Delhi.
- President of India Smt. Droupadi Murmu inaugurated the two-day festival.
- The **festival highlighted iconic libraries from across the world** in order to initiate a conversation on the **modernization and digitization of libraries in India.**
- This festival was a **part of the second phase of the 'Azadi ka Amrit Mahotsav'** and was in line with the Prime Minister's vision to foster the development and **digitization of libraries and cultivate a culture of reading in India.**
- It aimed to facilitate the formulation of action-oriented policies for the development of Model Libraries in India, **right down to the village and community levels.**
- The **festival also marked the launch of a special ranking system for libraries across India,** further promoting excellence and innovation in the library sector.

BIS signs MoU with 35 institutions for fostering collaboration in standardization and conformity assessment

- **Bureau of Indian Standards,** the National Standards Body of India, signed Memorandum of Understandings **(MoUs)** with **35 prestigious institutions** across the country for fostering collaboration in standardization and conformity assessment.

- The institutions included some **prominent NITs, Government and private engineering colleges** from different states across the country.

- The MoU will pave the way for the partner institutions to participate in standardization activities by associating with the technical committees of the Bureau at the national and international level, getting infrastructure support for relevant **R&D Projects,** jointly organizing events on **Standardization and Conformity Assessment, exchanging publications, introducing standardization curricula in academics, exploring a Centre of Excellence for Standardization, testing, and Conformity Assessment, and sharing laboratory facilities.**

- **BIS is a statutory body** functioning **under the aegis of Ministry of Consumer Affairs, Food and Public Distribution, Government of India.**

- It **operates various schemes** like Product Certification **(ISI mark), Management Systems Certification, Hall Marking of Gold and Silver Jewellery/Artefacts and Laboratory Services** for the benefit of the industry and in turn aiming at consumer protection.

Foundation stone laid for the 'Iconic Site Museum' at Adichanallur Archaeological site in Tamil Nadu

- The Union Finance Minister **laid the foundation stone for the 'Iconic Site Museum' at the Adichanallur site on August 5, 2023.**

- **Various objects dating back to 467 BCE** and food grains such as **millets and paddy dated 665 BCE** have been **unearthed here.**

- The upcoming **ASI Museum** will showcase all these artefacts 'in-situ', providing a world-class experience to visitors and researchers alike.

Parliament passes National Nursing and Midwifery Commission (NNMC) Bill, 2023

- In a landmark move **aimed at bringing transformative**

changes to the nursing education and practice landscape, the Parliament passed the National Nursing and Midwifery Commission (NNMC) Bill, 2023.

- The **Act will replace the existing Indian Nursing Council** with a modern regulatory structure, marking a significant legislative reform in the sector.

- The NNMC Act, 2023, will introduce several crucial provisions **to elevate the standards of nursing education and services, enhance professional conduct, and ensure greater transparency and accountability.**

Parliament passes Coastal Aquaculture Authority (Amendment) Bill, 2023

- The Coastal Aquaculture Authority (Amendment) Bill, 2023 has been passed by both the Houses of the Parliament of India.

- The Amendment Bill provides that the registration granted under Coastal Aquaculture Authority Act shall prevail and be treated as valid permission under CRZ Notification with the express intention of enabling lakhs of small marginal aquaculture farmers to avoid the possible need for obtaining CRZ clearances from multiple agencies.

- Specific exemption has been granted under the CAA Act, through this amendment for the establishment of aquaculture units like hatcheries, Brood stock multiplication centres (BMC) and Nucleus Breeding Centres (NBC) within the No Development Zone (NDZ) [200m from the HTL] of Coastal Regulation Zone (CRZ).

- The principal Act has a provision of imprisonment for a period up to 3 years for carrying out coastal aquaculture without registration.

- This appears to be a very harsh punishment for an offence of purely civil nature and hence the amendment bill replaces the same with suitable civil instruments such as penalty in line with the principle of decriminalizing civil transgressions.

- The Amendment Bill provides for broad basing "coastal aquaculture" to comprehensively cover all activities of coastal aquaculture under the purview of this Act and to remove the ambiguity existing in the Principal Act between the farm and other verticals of coastal aquaculture.

Centre releases Additional Guidelines for health and wellness celebrities, influencers and virtual influencers

- The Department of Consumer Affairs, under the Ministry of Consumer Affairs, Food and Public Distribution, has released Additional Guidelines for celebrities, influencers and virtual influencers in the field of health and wellness.
- These guidelines are an important extension to the Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022 released on 9th June 2022, and in lieu of the "Endorsement Know-hows!" guide booklet released on 20th January 2023.
- The additional guidelines aim to deal with misleading advertisements, unsubstantiated claims and ensure transparency in health and wellness endorsements.
- Under the guidelines, certified medical practitioners and health & fitness experts holding certifications from recognized institutions when sharing information, promoting products or services or making any health-related claims, must disclose that they are certified health/fitness experts and medical practitioners.
- DoCA will actively monitor and enforce these guidelines.
- Violations may lead to penalties under the Consumer Protection Act, 2019 and other relevant provisions of the law.

Digi Yatra at 6 more airports

- Digi Yatra facility will be launched at 6 more airports namely Mumbai, Ahmedabad, Kochi, Lucknow, Jaipur, and Guwahati airports in the month of August 2023.
- The implementation and installation of Digi Yatra infrastructure at these airports will take place in a phased manner.
- Since its launch by the Minister of Civil Aviation and Steel on December 1, 2022 at three airports– New Delhi, Varanasi, and Bengaluru– Digi Yatra has been implemented at four more airports, Vijayawada, Pune, Hyderabad, and Kolkata increasing the number of Digi Yatra airports to seven.
- With the addition of the aforementioned six airports, the total number of Digi Yatra-enabled airports will become thirteen.

- By August 10, 2023, Digi Yatra has been used by 34,60,454 passengers.
- By the same date, the Digi Yatra mobile application user base was 1.29 million.
- Digi Yatra is a mobile application-based facility conceived to achieve contactless, seamless processing of passengers at airports based on Facial Recognition Technology (FRT).
- It helps travelers pass through various checkpoints at the airports through paperless and contactless processing using facial features to validate their identity and travel details.

Ministry of Railways to establish Pradhan Mantri Bhartiya Janaushadhi Kendras at some of the railway stations

- In the pursuit to enhance wellness and welfare of passengers visiting railway stations, Indian Railways has conceptualized a policy framework to establish Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs) in circulating areas and concourses of stations which will be operated by Licensees.
- Under this scheme, PMBJKs would be deemed 'desirable passenger amenity' and accordingly, Railways shall provide fabricated outlets in circulating areas and concourses of stations, for operation by Licensees on commercial lines.
- The outlets will be located in circulating areas/ concourses at convenient locations so that both incoming and outgoing passengers are benefited.
- PMBJKs will be set up and operated by Licensees at locations identified by Railway Divisions.
- Stalls will be provided by E-auctioning as with respective Railway Divisions through IREPS.
- These stalls will be designed by NID Ahmedabad.

The Bharatiya Nyaya Sanhita Bill 2023, the Bharatiya Nagarik Suraksha Sanhita Bill, 2023 and the Bharatiya Sakshya Bill, 2023 introduced in the Lok Sabha

- The Union Home Minister and Minister of Cooperation introduced the Bharatiya Nyaya Sanhita Bill, 2023, Bharatiya Nagarik Suraksha Sanhita Bill, 2023 and Bharatiya Sakshya Bill, 2023 in the Lok Sabha on August 11, 2023.
- All these three bills have basic laws for the criminal justice system.

- The Indian Penal Code, 1860 will be replaced by the Bharatiya Nyaya Sanhita Bill, 2023, the Criminal Procedure Code, 1898 will be replaced by the Bharatiya Nagarik Suraksha Sanhita Bill, 2023 and the Indian Evidence Act, 1872 will be replaced by the Bharatiya Sakshya Bill, 2023.

Mega oil palm plantation drive organized in 49 districts of 11 states

- Under the National Mission on Edible Oils, Oil Palm, the State Governments along with Oil Palm processing companies initiated a 'Mega Oil Palm Plantation Drive' that commenced on 25th July 2023 to further promote and increase oil palm cultivation, making the country and its farmers 'Atmanirbhar' in edible oils production.

- This will further assist in achieving the target of bringing an additional area of 6.5 lakh hectares under oil palm production by 2025-26.

- The major oil palm growing states where the plantation drive was organized included Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Karnataka, Mizoram, Nagaland, Odisha, Tamil Nadu, Telangana, and Tripura.

- The Mega Oil Palm Plantation drive concluded on 12th August 2023.

- Through this drive, the states and the companies were able to reach out to more than 7000 farmers in 77 villages of 49 districts in 11 states, covering approximately 3500 hectares of the area and planting more than 5.00 lakh planting material.

One District One Product 'ODOP Wall' launched

- One District One Product (ODOP) and Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) joined hands to launch 'ODOP wall' on August 11, 2023.

- Such convergence is one more step forward towards realising Prime Minister Narendra Modi's vision of showcasing the uniqueness of Indian craft before the world.

- The One District One Product (ODOP) program, an initiative under the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry, aims at manifesting the vision of the Prime Minister to make the country and its people self-reliant by fostering balanced regional development across all districts of the country.

- The program selects, brands, and promotes one unique product from each district, showcasing the diverse range of products across the country which encompasses various sectors, including handlooms and handicrafts.

- Under this collaboration, products are being identified from all districts to be promoted for their unique qualities and cultural significance which include various handicrafts, handloom, and agricultural products that have been associated with the identity of their place of origin.

- This collaboration aims to drive consumers towards emporia, boosting sales and increasing the visibility SARAS products even further to promote indigenous crafts and artisans of rural SHGs women.

'Graphene-Aurora Program' launched

- The Ministry of Electronics & Information Technology (MeitY) launched the **'Graphene-Aurora program'** at a function in **Maker Village Kochi, Kerala** on August 14, 2023.

- The program **shall be implemented by Digital University Kerala** with **joint funding from Ministry of Electronics & Information Technology (MeitY), Government of India and Government of Kerala and Industry partners.**

- **Carborundum Pvt Limited** joined as **one of the main industry partners.**

- Along with the startup products developed, the technologies and products also developed at research and development centers like **India Innovation Centre Graphene (IICG),** setup at Maker village, Kochi **shall be considered for commercialization.**

Union Cabinet approves new Central sector scheme 'PM Vishwakarma'

- The Cabinet Committee on Economic Affairs, on August 16, 2023, approved a new **Central Sector Scheme "PM Vishwakarma"** with a financial outlay of Rs.13,000 crore for a period of five years (FY 2023-24 to FY 2027-28).

- The scheme aims to **strengthen and nurture the Guru-Shishya parampara** or **family-based practice of traditional skills** by artisans and craftspeople working with their hands and tools.

- The scheme also aims at improving the quality, as well as the reach of products and services of artisans and craftspeople and to ensure that the Vishwakarmas are integrated with the domestic and global value chains.
- Under PM Vishwakarma scheme, the artisans and craftspeople will be provided recognition through PM Vishwakarma certificate and ID card, **credit support up to Rs.1 lakh (First Tranche) and Rs.2 lakh (Second Tranche) with a concessional interest rate of 5%.**
- The Scheme will further **provide Skill Upgradation, Toolkit Incentive, Incentive for Digital Transactions and Marketing Support.**

Two reforms introduced for mobile user protection to promote a cleaner and safer digital ecosystem

- In strengthening Government of India's commitment to foster a digitally inclusive society while maintaining the highest standards of security and customer protection, the Minister of Communications, Railways and Electronics & IT, on 17 August 2023, **launched two reforms towards digital transformation and enhancing customer protection**– KYC Reforms and Point of Sale (POS) Registration Reform.
- These two reforms are in direction of earlier reforms introduced with a launch of **Sanchar Saathi, a citizen-centric portal** that has empowered India's fight against the menace of cybercrimes and financial frauds.

Point-of-Sale (POS) Registration Reforms

- This reform introduces the process for **mandatory registration of Franchisee, Agents and Distributors (PoS) by Licensees.**
- This will help in **eliminating the rogue PoS** who by fraudulent practices issue SIMs to anti-social/anti-national elements.

KYC Reforms

- **Strengthening of the existing KYC process** is **one of the tools in protecting the subscribers of telecom services from any probable frauds** and thereby enhancing the confidence of general public in the digital ecosystem.
- To prevent misuse of printed Aadhaar, the **demographic details will mandatorily be captured by scanning QR code of printed Aadhaar.**

India announces definition of Green Hydrogen

- In a significant move for the progress of the National Green Hydrogen Mission, the government has notified the Green Hydrogen Standard for India.
- The standard issued by the Ministry of New and Renewable Energy (MNRE), Government of India outlines the emission thresholds that must be met in order for hydrogen produced to be classified as 'Green', i.e., from renewable sources.
- The scope of the definition encompasses both electrolysis-based and biomass-based hydrogen production methods.
- After discussions with multiple stakeholders, the Ministry of New & Renewable Energy has decided to define Green Hydrogen as having a well-to-gate emission (i.e., including water treatment, electrolysis, gas purification, drying and compression of hydrogen) of not more than 2 kg CO_2 equivalent / kg H_2.
- The notification specifies that a detailed methodology for measurement, reporting, monitoring, on-site verification, and certification of green hydrogen and its derivatives shall be specified by the Ministry of New & Renewable Energy.
- With this notification, India becomes one of the first few countries in the world to announce a definition of Green Hydrogen.

Bharat New Car Assessment Programme (Bharat NCAP) launched

- Union Minister of Road Transport and Highways, Nitin Gadkari launched the much-awaited Bharat New Car Assessment Programme (Bharat NCAP) on August 22, 2023.
- This programme is a significant step forward in the Government's commitment to improve road safety through raising the safety standards of motor vehicles up to 3.5 tonnes in India.
- The programme aims to provide a tool to the car customers to make a comparative assessment of crash safety of motor vehicles available in the market.
- Under this programme, car manufacturers can voluntarily offer their cars tested as per Automotive Industry Standard (AIS) 197.
- Based on the performance of the car in the tests, car will be awarded star ratings for Adult Occupants (AOP) and Child Occupant (COP).

Sachin Tendulkar is Election Commission's national voter awareness ambassador

- Cricket legend and Bharat Ratna awardee **Sachin Ramesh Tendulkar**, on 23 August 2023, began a new innings - as the **'National Icon' for voter awareness and education** for the **Election Commission of India.**

- An MoU was signed with the legend **for a period of 3 years.**

- The collaboration will encompass a range of activities, including Tendulkar's promoting voter awareness in various **TV talk shows/programs and digital campaigns etc,** all aimed at raising awareness about the importance of voting and the role it plays in shaping the nation's destiny.

- The ECI associates itself with renowned Indians from various fields and designates them as ECI's national icons to motivate voters for participation in the festival of democracy.

- **Last year,** the Commission recognised famous **actor Pankaj Tripathi** as the National Icon. Earlier, **during the 2019 Lok Sabha Elections,** stalwarts like **M.S.Dhoni, Aamir Khan** and **Mary Kom** had been the ECI National Icons.

First ABDM Microsite Under the 100 Microsites Project by National Health Authority launched in Aizawl, Mizoram

- **Mizoram becomes the first state in India** to operationalize an **ABDM Microsite** in its capital city **Aizawl.**

- Under this, all healthcare facilities including the private clinics, small hospitals and labs in the region shall be made **ABDM-enabled and will offer digital health services to the patients.**

- The **ABDM Microsites** are **defined geographical regions** where focused outreach efforts would be made **to onboard small and medium scale private healthcare providers.**

- These Microsites **would be majorly implemented**
by State Mission Directors of ABDM while the financial resources and overall guidance would be provided by NHA.

- NHA had previously overseen **Microsites pilots in Mumbai, Ahmedabad and Surat.**

- The learnings and experiences from these pilots have been incorporated in the overall structure of 100 Microsites project under ABDM.

- **Besides Mizoram,** other states including **Andhra Pradesh, Madhya Pradesh, Uttar Pradesh, Maharashtra and Chhattisgarh** have also **made significant progress regarding implementation of ABDM Microsites.**

India Smart Cities Awards Contest (ISAC) 2022- winners announced

- **Smart Cities Mission, launched on 25 June 2015,** is aimed at providing **core infrastructure, clean and sustainable environment and a decent quality of life to their citizens** through the application of 'smart solutions'.

- It is a transformational mission aimed to bring about a paradigm shift in the practice of urban development in the country.

- Of the total proposed projects under SCM, 6,041 (76%) projects worth Rs 1,10,635 crore have been completed and the remaining 1,894 projects worth Rs 60,095 crore will be completed by 30 June 2024.

- **100 Smart Cities have taken up projects** across diverse sectors related to **mobility, energy, water, sanitation, solid waste management, vibrant public spaces, social infrastructure, smart governance,** etc.

- The India Smart Cities Award Contest (ISAC) is organized under the **Smart Cities Mission, Ministry of Housing and Urban Affairs, Government of India.**

- The President of India will felicitate the winners of **ISAC 2022 awards on 27th September 2023 at Indore, Madhya Pradesh.**