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1. HISTORY, ART AND CULTURE

1. Santiniketan included in UNESCO World Heritage List

Current Context

Rabindranath Tagore's Santiniketan, the university town in West Bengal, has been inscribed on the UNESCO's World Heritage List.

About

This was announced by the international agency during the 45th session of the World Heritage Committee.

- Santiniketan became the 41st UNESCO World Heritage Site in India and the third in West Bengal, after the Sundarbans National Park and the Darjeeling Mountain Railways.
  - ✓ Last year, the state's Durga Puja got space in "Intangible Cultural Heritage of humanity" under UNESCO.
- There had been repeated efforts in the past to secure the status of UNESCO World Heritage Site for Santiniketan, especially in the run-up to Tagore's 150th birth anniversary in 2010.

About Santiniketan

- Established in 1901 by the Nobel Laureate, Santiniketan was a residential school and centre for art based on ancient Indian traditions and a vision of the unity of humanity transcending religious and cultural boundaries.
- A 'world university' – Visva Bharati – was established at Santiniketan in 1921.

Significance of Santiniketan

- Santiniketan is a tangible part of the life, works and vision of Rabindranath Tagore and the other pioneers of the Bengal School of Art like Nandalal Bose.
- It exhibits the manifestation of their ideas of

Other sites to find place on the prestigious list

- **Ancient Jericho** in Palestine.
- **Zarafshan-Karakum Corridor of Silk Roads** in Tajikistan, Turkmenistan, Uzbekistan.
- **Gedeo Cultural Landscape** in Ethiopia.
- **Cultural Landscape of Old Tea Forests** of the Jingmai Mountain in China's Pu'er.

internationalism, humanism, inclusiveness, environmentalism and a pan Asian modernism.

- It is a remarkable example of an avant-garde enclave of intellectuals, educators, artists, craftspeople and workers who collaborated and experimented to enrich the heritage.
- It is totally free from the established European colonial paradigms, invoking a unique architectural language to herald a new era of modernism in art, architecture, landscape, product design and town planning.
- It also drew parallels for Santiniketan with other art movements of universal value, such as Bauhaus, the German art school, and the Mingei in Japan.
  - ✓ Founded in the same year as the Bauhaus, Kala Bhavan at Santiniketan embodies an alternative modernity and an internationalism in stark contrast to the austere puritanism of the former.
  - ✓ Unlike the absolute functionalism advocated by the Bauhaus, Santiniketan's arts school espoused a romantic humanism that was eclectic and playful.

WORLD HERITAGE SITES

1. The Architectural Work of Le Corbusier

1. QutubMinar, Redfort Complex, Humayun's tomb

1. Great Himalayan national Conservation park
2. Kalka Shimla railway-Himachal Pradesh

1. Nanda devi and valley of flowers national parks

1. Taj Mahal   2. Fatehpur Sikri

1. Keoladeo National Park
2. The Jantar Mantar, Jaipur
3. Hill Forts of Rajasthan
   1 Jaisalmer Fort
   2 Chittorgarh Fort
   3 Kumbhalgarh Fort
   4 Gagron Fort
   5 Ranthambore Fort
   6 Amber Fort

1. Archaeological site of Nalanda Mahavihara at Nalanda, Bihar
2. Mahabodhi temple complex at Bodhgaya

1. Khangchendzonga national park

1. Kaziranga national park
2. Manas wildlife sanctuary

1. Dholavira:a Harappan City
2. Rani-ki-vav (the Queen's Stepwell) at Patan, Gujarat
3. Historic City of Ahmedabad
4. Champaner pavagadh Archaeological Park

1. Chhatrapati Shivaji Terminus (formerly victoria Terminus)
2. Victorian gothic and Art Deco ensembles of Mumbai
3. Elephanta Caves
4. Ajanta caves
5. Ellora Caves

1. Sundarbans National park
2. Darjeeling Himalayan railway west bengal

1. Sun Temple, Konarak

1. Khajuraho Group of Monuments
2. Buddhist Monuments at Sanchi
3. Rock Shelters

1. Kakatiya Rudreshwara (ramappa) Temple, Telangana

1. Churches and convents of Goa

1. Group of Monuments at Pattadakal
2. Group of Monuments at Hampi

1. Group of Monuments at Mahabalipuram
2. Great Living chola Temples
3. Nilgiri Mountain Railways

1. Western ghats

About UNESCO World Heritage Sites

- UNESCO World Heritage Site is a place of distinctive cultural or physical importance which is considered of outstanding value to humanity, recognized by the United Nations Educational, Scientific and Cultural Organization.
- UNESCO strives to boost the conservation, identification, and maintenance of natural and cultural heritage around the world.
- This is exemplified by the Convention regarding the Protection of the World Cultural and Natural Heritage, accepted by UNESCO in 1972.
- The list of World Heritage Sites is maintained by the World Heritage Program, administered by the World Heritage Committee.
  ✓ World Heritage Committee is composed of 21 Members elected by the UN General Assembly.

- **In India, the sites are divided into-**
  ✓ UNESCO Natural World Heritage sites (7) with distinctive cultural facets such as geological formations, physical, biological, and cultural landscapes.
  ✓ UNESCO Cultural World Heritage sites (33) are those sites with unique cultural facets such as paintings, monuments, architecture, etc.
  ✓ A Mixed Site comprising components of both natural and cultural importance. Khangchendzonga NP in Sikkim is the sole one marked.

✓ It represents a strand of design enquiry parallel to other turn of the century movements like the Arts and Crafts movement in Britain, the Mingei in Japan and the Vienna Secession in Austria.

- This holds immense value for the present as well as for the future when it comes to education, which is not an isolated affair but linked to various other fields like arts, painting and nature etc.

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2. Hoysala Temples on UNESCO World Heritage List

Current Context

The Hoysala temples at Belur, Halebid, and Somanathapur in Karnataka have been added to the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage list on September 18, 2023.

About

- The announcement was made during the 45th session of the World Heritage Committee which was held from September 10 to 25, 2023 in

Riyadh, Saudi Arabia.

- This inclusion marks the 42nd UNESCO World Heritage Site in India and comes just a day after Rabindranath Tagore's Santiniketan also received this distinguished recognition.

The Hoysala Temples

Constructed during 12th and 13th centuries by the kings of the Hoysala dynasty, the Hoysala temples are dedicated to Lord Shiva and Vishnu.

- The three temples included in the list are **the Chennakesava temple, the Hoysaleshwara temple, and the Keshava temple.**
- The **Chennakesava temple** represents the main temple, located at Belur in Hassan district of Karnataka. The temple is present at the centre of the traditional settlement and is surrounded by the remnants or remains of a mud fort and a moat. The construction of this temple was started in 1117 A.D. during the rule of king Vishnuvardhana and it took 103 years to complete this architectural marvel.
- The **Hoysaleshwara Temple** is situated on the banks of Dwarasamudra tank in Halebidu (Hassan district of Karnataka). The construction of this temple is said to have commenced in 1121 CE.
- The **Keshava Temple** is the third Hoysala temple

Hoysaleshwara Temple

Keshava Temple

in the UNESCO's list, which is at the centre of Somanathapura village in the Mysore district of Karnataka. This temple was commissioned in 1268 AD by "Somanatha Dandanayaka" during the reign of Hoysala ruler Narasimha III.

The Hoysala Architecture

Features

- One of the most remarkable features of the Hoysala temple architecture is the construction of stellate shaped (or star-shaped) temples, a modification in the Panchayatan Style of temple construction.
- In the construction of temples, soapstone (also called chloritic schist) was used as the primary construction material. Being a soft-stone, it was

Chennakesava Temple

relatively easy to intricate carving and detailing on the soapstone.

- The intricate and decorative carvings are recognized as a defining feature of the Hoysala architecture. Almost all the walls of the temples are carved with the idols and sculptures of Hindu mythological themes, deities, animals, elaborate geometric patterns and so on.
  - ✓ For example, the sculptures of the Chennakesava temple represent the various incarnations of Lord Shiva and Lord Vishnu. Similar carvings are also found in the Hoysaleshwara temple.

Other remarkable features

- **Makartorana:** These are the carved representations of makara as the lintel over the entrance of the temple.
- **Mandapas:** The Hoysala temples include both inner and the outer mandapas, which are "open type of mandapas". The elaborate ceilings of the mandapas are featured with carvings of floral patterns as well as mythical creatures. These mandapas possess **oblong pillars** and each pillar possesses the brackets on which figurines are carved.
- **Cella or the vimana**: The interior of the vimanas in the Hoysala temples are simple interiors while the exteriors are lavishly detailed. In some of the temples, the vimanas are also decorated with the statue of Kirtimukh. Sometimes, it possesses a "**Kalasha**".

- **The Shrine**: Based on the number of shrines (one or more), the Hoysala temples are categorized as ekakuta (which possess one shrine), dvikuta (two shrines) etc.
- **Salabhanjika:** This unusual element may be seen in the Hoysala sculpture. This fabled woman's ancestry may be traced back to a Buddhist artwork. A mythological woman figure known as **Salabhanjika or Madanika** is shown standing next to a tree or holding a branch of a tree. They are occasionally seen performing creative endeavours like music, dancing, etc. These are also carved on the brackets of the pillars on either side of the **makartorana**.
- **Mythical presentation:** The depicted architectural and sculptural forms in the Hoysala temples were based on the epics and episodes from the Hindu mythology such as the Ramayana, Mahabharata, and Puranas.

Significance

- The inclusion of these great architectural marvels in the UNESCO World Heritage List will help the world recognize and praise the well-defined, and well-decorated ancient temple architecture of India, thereby further glorifying India's art and architectural richness.

3. Nataraja Statue Graces G-20 Venue

Current Context

The 27-foot-tall Nataraja statue, brought from Tamil Nadu, was installed at the entrance of Bharat Mandapam for the G20 Summit in New Delhi.

About the 28-feet Tall Nataraja Sculpture

- It is a bronze sculpture made by the sculptors of Swamimalai town of Tamil Nadu's Thanjavur district. The town is recognized for its bronze sculptures.
- The idol or the statue has a length of around 22 meters while the base or pedestal is of 6 feet, thereby making the whole sculpture 28-feet tall.

This sculpture is supposed to be world's tallest idol of such type.

- The statue is formed of **eight metals (also called Ashtadhatu) namely gold, lead, silver, copper, mercury, tin, iron and zinc.** The sculpture weighs around 19 tonnes.

- For constructing this sculpture, "Lost Wax" casting method or technique was used.

- It took around 6 months to build this sculpture and it involved a cost of around 10 crore rupees.

- Three models of Nataraja were followed to build this sculpture. These three models were **Chidambaram Nataraja, Konerirajapuram Nataraja and the Nataraja of Chola period**.

Cultural Significance of Nataraja Sculpture

- The Nataraja sculpture signifies the rich Tamil cultural heritage. **The Nataraja represents the Shiva in dancing pose** and the sculpture indicates their roles as creator, protector, and destroyer of the universe, thereby conveying the Indian conception of perpetual cycle of time.

- Every part of body of Shiva in this posture signifies something, for example:
  - ✓ Shiva's dance is set within a flaming halo. The **upper right hand** of Shiva in the sculpture holds a **damru** (a hand drum) that depicts the first sounds of **creation**.
  - ✓ The upper left hand holds **agni** in it, thereby symbolizing the **destruction**.
  - ✓ The **lower right hand** of Shiva is in

The Madurai Nataraja

- The Madurai Nataraja or the Pandyan sculpture of Nataraja is different from that of the Chola's Nataraja sculpture as in the later, Lord Shiva is standing on the right leg and raising his left leg. While in the former, Shiva is standing on the left leg while the right leg is raised.

- It is believed that the sculpture depicts the incident when Nataraja appeared after hearing Pandya's plea and switched his legs. The Madurai Nataraja sculpture is present in the Madurai Meenakshi Amman temple.

abhayamudra which indicates the gesture which allays fear.

- ✓ The dwarf-like figure on which Shiva is standing with his right foot, represents **apasmara purusha** (depicting the illusion).
- ✓ The **left hand** points towards the raised left foot which signifies refuge for the troubled soul.
- ✓ The energy of his dance makes his hair fly to the sides. The symbols imply that, through belief in Shiva, his devotees can achieve salvation.
- ✓ The Nataraja sculpture of Cholas is the most significant Nataraja sculpture which was formed during the period of medieval Cholas.

About the Chola Empire

- The Cholas are thought to come to power after dethroning the Pallavas during the **9th Century A.D**.
- The Chola empire was extended to major parts of South India. They are known as the "Imperial Cholas" because they expanded their rule even to Sri Lanka and the Malay peninsula.
- **Vijayalaya** was the founder of the Chola dynasty in the medieval period. Other significant rulers

include the **Rajaraja I** and **Rajendra Chola I**.

- Rajendra I (who ruled from 1014 to 1044 CE) was the most important ruler of the Medieval Chola empire. He was also recognized as the **Gangaikonda Cholan and Kadaram Kondan**.
- The Cholas are known for their architectural

marvels. The three Great living Chola Temples are the **Brihadisvara Temple** at **Thanjavur**, the **Brihadisvara Temple** at **Gangaikondacholapuram** and **Airavatesvara Temple** at **Darasuram**.

4. 75 years of Operation Polo

Current Context

September 13, 2023 marked the 75th Anniversary of Operation Polo, a military action which was launched by the Indian Army in 1948, thereby successfully integrating the princely state of Hyderabad in the Union of India.

About

- This military offensive was termed as 'Police Action' by Sardar Vallabhbhai Patel, the then Home Minister of India.
- Within 5 days of launch of this military action, on **18th September, 1948, the forces of Nizam surrendered to the Indian Army and Hyderabad was successfully integrated into India.**

Status of Hyderabad Princely state in 1947

- Hyderabad was one of the richest and most populous princely states of the Deccan in 1947. Having jurisdiction over almost 17 districts including Aurangabad and Gulbarga, it was a landlocked state.
- At that time, the Hyderabad state had mainly Hindu population, while the administration of the state was carried out by its Muslim rulers. Further, the Nizam was intending to have fraternal relations with Pakistan despite the fact that it had no common border with Pakistan.

Challenges related to Integration of Hyderabad in India

- Mir Osman Ali Shah, the then Nizam of the Hyderabad princely state, had the intention to stay independent by not joining either India or

Pakistan after Independence.

- Since the Indian Government was entangled in the Kashmir Issue and all the efforts and resources were diverted towards the northern border, Nizam tried to consolidate his claim. For this, in November, 1947, he signed a "standstill agreement" with India for a period of one year.
- According to this agreement, a status quo shall be maintained between the Hyderabad state and the Dominion of India until a resolution can be found for this impasse. Further, it was said that for this "one year" period, the Indian government shall not claim or exercise any authority over Hyderabad and all the conditions which were prevailing at the time of signing the agreement would prevail.
- Taking advantage of this agreement, the Nizam started consolidating its irregular force called Razakars under the command of Major General SA El Edroos, the Arab commander in chief of the Hyderabad forces.

Reasons for the Launch of Operation Polo

- With the consolidation of Razakars, the incidents of cross border raids and atrocities on the Hindu population increased manifold.
- Further, the Nizam was looking to establish an

independent nation in the heart of India and was sending regular diplomatic proposals to establish relations with Pakistan.

- These factors forced the Indian government to take appropriate steps to annex Hyderabad, thereby removing the threats of secession.

Significance of Operation Polo: A befitting reply to "Sub-nationalism"

- Military action in Hyderabad was a perfect example of retaliation by the "Indian Government" against the forces seeking to promote sub-nationalism and secession from India.
- Through this "Police Action", India ensured its sovereignty and territorial integrity and successfully included Hyderabad as a part of "Union of India".

- This can also be remembered as an example that the states in the Union of India cannot secede thereby creating a sense of deterrence to all those non-state actors which seek to promote idea of sub-nationalism and separatism in various parts of India such as Kashmir, Northeast and some South Indian states.

Conclusion

- The Article 1 of the Indian Constitution, which defines India as a "Union of States" also indicates that it is an "indestructible union" and no state can secede from it, thereby promoting the idea of unity, integrity and fraternity throughout the nation and its citizens and the "Police action" in Hyderabad in 1948 was a step to safeguard those principles.

5. "Adopt a Heritage 2.0 Programme"

Current Context

To ensure timely enhancement of amenities and boost visitor experience, the Archaeological Survey of India announced the launch of "Adopt a Heritage 2.0" program in New Delhi.

About

- **Through the scheme**, ASI invites corporate stakeholders to enhance amenities of the marquee monuments by utilizing their **Corporate Social Responsibility (CSR) funds**, which may entail aspects of cleanliness, public conveniences, drinking water, ease of access for differently abled and senior citizens, standardized signage, illumination and advanced amenities such as surveillance system, night viewing facilities, and an enhanced tourism experience that will result in more tourist footfalls, both domestic and foreign.
- The programme is a **revamped version of the earlier** "Adopt a Heritage" scheme launched

in 2017 and attempts defining the monuments with their consequent amenities as per **Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958.**

- The stakeholders are encouraged to apply for adopting a monument or a specific amenity at a monument through an ASI backed dedicated web portal and a user-friendly mobile app, named 'Indian Heritage.'
- The **term of the appointment will be for five years initially**, subject to **further extension** up to five more.

Aims and Significance

- The 'Adopt a Heritage 2.0' programme seeks to

foster **symbiotic collaboration with corporate stakeholders** who shall be recognized as a responsible and heritage-friendly entity.

- It envisages a vision to harness the **true potential of an inclusive tourist experience**, thereby boosting our Service sector of the economy.
- It shall uphold the rich value of our cultural heritage and foster it as per the **Constitutional vision of Article 51 (A) (f)** which are a part of the Fundamental Duties of the citizens.
- It shall also **boost employment** by actively involving local communities in a blend of community-driven community led socio-cultural intervention for India's heritage and prestige.

Adopt a Heritage Scheme

- It is a conjoint project among the Ministry of Tourism, Ministry of Culture, Archaeological Survey of India (ASI), and respective State/UTs governments which aims to develop synergy among all partners and guide it to effectively promote 'responsible tourism'.

- **It was launched** on 27 September 2017, also designated as the World Tourism Day, by the President of India.

- It aims to weave together public and private sector companies, corporates and interested citizens to take up the responsibility for making our native tourism more sustainable.

- It is to be done through the simultaneous procedural development, operation and dedicated maintenance of world-class tourist infrastructure and amenities at these important tourist sites in India.

- Agencies would be christened as 'Monument Mitras' through the innovative concept of

'Vision Bidding', where the best vision for the heritage site, as presented by the bidding agencies, will be given an opportunity to use their CSR activities.

Challenges

- **Lack of expertise:** The businesses with less or no experience in protecting and preserving cultural heritages may lead to tragedies like the collapse of a colonial-era bridge in Morbi, Gujarat.
- **Duplication:** Many monuments selected for the scheme, including the stupas at Sanchi, the Brihadeshwar temple in Thanjavur, and Akbar's Palace City at Fatehpur Sikri already have tourist infrastructure.
- **Diminishing valuable spaces:** The scheme let businesses occupy prime public land and build their own brands at the cost of further diminishing grounds around iconic monuments.
- It will **undermine local communities** and their relationships with historical sites, endangering livelihoods of local tourist guides and others.
- Businesses that sign agreements with the Union Ministry of Culture to adopt these monuments will be able to **alter the sites' historical character** without much opposition.

Way Forward

- India proudly boasts her existence as a land of rich cultural heritage, embodied in the truest sense of the term by the archaeological wonders. Thus, they warrant honest efforts in protecting and preserving them, undertaken by synergetic action by the Government and Civil Society.

- But the concerned challenges must be addressed and specially the historical character of the monuments and the livelihood of local communities must be protected.

6. Statue of Adi Shankaracharya Unveiled

Current Context

Recently, Madhya Pradesh CM inaugurated a 108-ft statue of Adi Shankaracharya in Omkareshwar.

About

- The 'Statue of Oneness' depicts Shankaracharya as a 12-year-old child when he is said to have visited **Omkareshwar, which has one of the twelve Jyotirlinga shrines**.
- Endowed with self-knowledge, he played a crucial role in reviving **Sanatan Dharma**, advocating for the philosophy of Advaita Vedanta and promoting cultural unity.
- The foundation stone for a Rs 2,200-crore 'Advait Lok' was also laid, which will contain a museum, situated on Omkareshwar Mandhata Hill, overlooking the Narmada River.

About the statue

- Weighing 100 tonnes, the statue was conceptualised by an Indian team of artists, a sculptor and engineers.
- The idol, installed on a 75-foot platform, is made up of bronze that contains 88% copper, 4% zinc and 8% tin. Its internal structure is made-up of high-quality steel.
- Overall, the museum will include a 3D hologram projection gallery, nine exhibition galleries, an indoor wide-screen theatre, and a cultural boat ride called Advaita Narmada Vihar, which will take visitors on an audio-visual journey through the teachings of Shankaracharya.
- The design for the statue was conceptualised by painter **Vasudeo Kamath**, who found inspiration in **Raja Ravi Verma's** depiction of Shankaracharya.

Significance

- Entire project was designed by Indian team and L&T company. They got different parts of the statue from China. The metal casting was done in China's Nanchang city and shipped to Mumbai in several batches.
- This project will also see huge boost to tourism in the area and like the Mahakal Lok, we expect to see more than 1.5 to 2 lakh footfall every day in the future. This area along with Ujjain, Maheshwar and Mandu will form a very important tourism circuit.
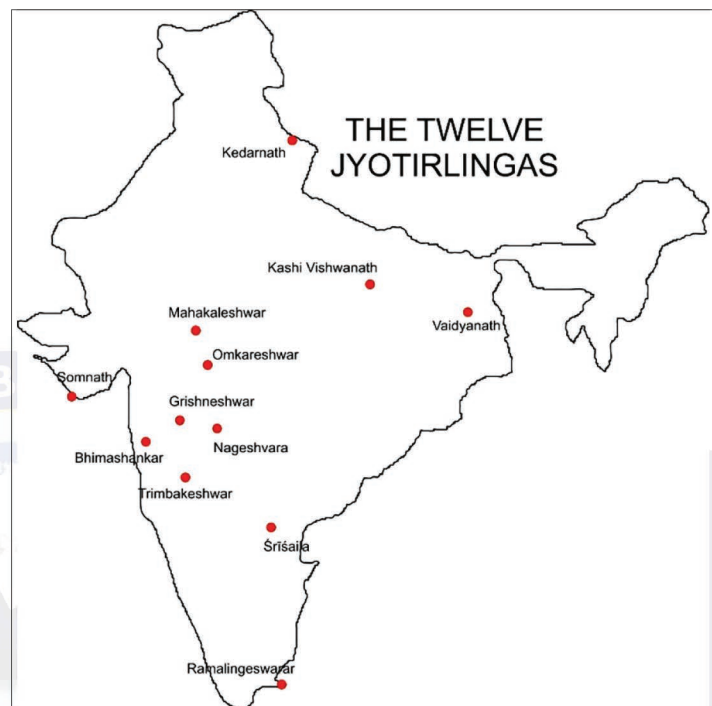
Adi Shankaracharya

- Adi Shankara, also known as Adi Shankaracharya, was an Indian Vedic scholar and teacher (acharya) whose works focused on liberating knowledge of the self, combining Advaita Vedanta teachings of the period.
- He was a revivalist and was known as the 'Jagadguru' while many believed that he was an

incarnation of Lord Shiva.

- He is said to have been born in 788 AD in the village of Kaladi on the banks of the Periyar, Kerala's greatest river.
- He is thought to have attained samadhi at Kedarnath, while Kanchi and Thrissur are also mentioned as places where Adi Shankara spent his final days.
- His teacher **Bhagvatpada** taught him **Gaudapada Karikas**, the earliest extant Advaita Text.
  - ✓ Bhagvatpada was a student of Gaudapada who propounded the principles of Asparsa Yoga-no contact & Ajati Vada- non-origination.

Legacy of Adi Shankaracharya

- **He established 4 Vedic Mathas**

  - i. Dwarka (Gujarat)
  - ii. Sringeri (Karnataka)
  - iii. Joshimath (Uttarakhand)
  - iv. Puri (Orissa)

- He started the **Shanmata Tradition** which highlights the synthesis of 6 religions, each worshiping one of the 6 supreme deities- Shiva, Vishnu, Shakti, Ganesha, Surya and Skanda.

  - ✓ The followers are called Smartas who follow Smriti or Dharmashastras.

- He founded the **Dashanami Sampradaya**, a monastic tradition of Hinduism.
- He advanced the **Advaita** (Monism) philosophy as well as the concept of **Nirgunabrahman** (God without attributes).
- He famously **opposed the Mimasa tradition** by defeating Mandana Misra in a debate, who became his disciple with the name Suresvara.
  - ✓ His other disciples included Padmapada, Totakacharya, Hastamalaka- each headed one math).
- **His literary works included**

Philosophy of Advaita

- Non-Dualism Atman (soul) identical to Brahman (ultimate reality).
- 1st main school of Vedanta Philosophy- links Vedas with Upanishads
- Brahman and Atman are one and all, is the Absolute Reality or Paramartha which doesn't change.
- Pratibhasika is Deceptive Reality constructed through imagination, surroundings change due to maya.
- Knowledge helps individuals reach absolute reality, liberation- Satchinananda (Truth, Consciousness, Bliss).

Mimasa Philosophy

- Vedas are eternal, possess all knowledge, and religion means the fulfilment of duties prescribed by the Vedas.
- The essence of the Vedas is Dharma. By the execution of Dharma one earns merit which leads one to heaven after death.

  - ✓ Brahmasutrabhasya- The oldest surviving commentary on Brahmasutra
  - ✓ Upadesasahasri- He described his philosophy of Advaita
  - ✓ Viveka Chudamani
  - ✓ Bhaja Govindum Stotra
  - ✓ Atma Bodha
  - ✓ Vakya Vritti
  - ✓ Nirvana Shatakam
  - ✓ Prakaran Granths
  - ✓ Commentaries on religious texts (Upanishads, Gita)
  - ✓ Devotional and Meditative Hymns like Soundarya Lahari, Nirvana Shatakam, Maneesha Panchakam etc.

- **Among his most famous lines are**
  - ✓ 'Brahma Satyam Jagat Mithya Jivo Brahmatra Naparaha,' which means "The Absolute Spirit is the reality, the world of appearance is Maya," and
  - ✓ 'Ekameva Adviteeyam Brahma,' which means "The absolute is one alone, not two."

7. Geographical Indication (GI) Tag

Current Context

International Trade Show in Greater Noida showcased the traditional essence of Uttar Pradesh's 54 GI tagged products.

About

- 80 stalls of Geographical Indication (GI) products featured at the fair.
- This was the first edition of the UP International Trade Show, started from September 21 - September 25 at India Expo Centre & Mart in Greater Noida.
- 'One District One Product' scheme had given their industries the impetus they needed to boost their presence, this fair being one such mechanism.
- The artisans hoped to expand their business to international markets to make it more lucrative for the next generation.

Geographical Indication (GI)

- A Geographical Indication (GI) is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that origin. In order to function as a GI, a sign must identify a product as originating in a given place.
- In addition, the qualities, characteristics or reputation of the product should be essentially due to the place of origin. Since the qualities depend on the geographical place of production, there is a clear link between the product and its original place of production.
- A Geographical Indication can be registered for a period of ten years. It can be renewed for a further period of ten years.

Agencies according Geographical Indications Status

International Level

- The Paris Convention for the Protection of Industrial Property includes geographical

One District One Product (ODOP)

- One District One Product (ODOP) initiative is aimed at fostering balanced regional development across all districts of the country.
- The initiative aims to select, brand, and promote at least One Product from each District (One District - One Product) of the country for enabling holistic socio-economic growth across all regions.
- The ODOP Initiative has identified a total of 1102 products from 761 districts across the country.
- It was first launched in January 2018, by the Uttar Pradesh Government, and due to its success, was later adopted by the Central Government.

indications as a component of intellectual property rights (IPRs).

- The World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights also governs GI (TRIPS).

India

- Geographical Indications registration in India is governed by the Geographical Indications of Goods (Registration and Protection) Act, 1999, which came into effect in September 2003.

Some Important GI tags in UP

- **Wood craft- Sharanpur:** This area is known as Shhesam wood village. Vine leaves, geometric and figurative carving patterns are commonly seen in this wood work.
- **Banarasi Zardoi:** This embroidery work, known for its intricate design, is believed to have been brought to India by Persian Craft during the Mughal Era.
- **Shazar stone** of Banda district in Bundelkhand. The translucent stones were found over four centuries ago on the banks of Ken river.

- **Mau saris:** It is similar to Banarasi sari in weaving technique, made using a combination of silk cotton and art silk yarns in handlooms across Mau.
- **Moradabad metal Craft:** Moradabad is called Peetal Nagri for their brass metal products. Brassware found in this area is known for hand carving and colours.
- **Meerut scissors:** These are made of carbon steel blades sourced from scrap metal found in buses, trucks and trains.
- **Varanasi glass beads:** Hand-made glass beads are made in abundance here, and used in a multiple of items such as jewellery, decorative products, purses, clothing, etc.

Other Important GI tags

- Baghpat - Home furnishing
- Nizamabad - Black pottery
- Varanasi - Brocade sarees
- Varanasi - wooden lacquerware and toys
- Aligarh - locks.

Benefits of GI Tags

- The products are legally protected; thus it prevents others from using GI tag products without permission.
- It enables consumers to obtain high-quality products with desired characteristics while also ensuring their authenticity.
- It increases their demand in national and international markets.

Issues

- There has been an increase in disagreements regarding the origin of the product under consideration, exacerbated by a lack of clear historical evidence. For example, the debate over the origins of Roshogulla between West Bengal and Orissa.
- Most States tend to overlook the importance of enhancing the value of products that already have a GI tag in their rush to secure new ones.

Significance

- Geographical indications are mostly traditional products made by rural communities over generations that have gained market prominence due to their precise qualities.
- ✓ The recognition and protection of these products' markets enable the producer community to devote and maintain the precise qualities of the product on which the reputation is built.
- Value is added when it is distributed at all levels of the supply chain.
- Natural resources, on which the product is based, can be preserved.

2. POLITY AND GOVERNANCE

1. Women's Reservation Bill Passed

Current Context

Both Houses of the Parliament passed the Bill to **provide 33% reservation to women** in the Lok Sabha and State Assemblies, marking the historic first legislation in the new Parliament House.

About

- **The Constitution (One Hundred and Twenty Eighth) Amendment Bill, 2023** can be implemented only after a delimitation exercise is completed, using data from the latest census conducted after the passage of the Bill.
- **The next delimitation exercise is scheduled in 2026**. Effectively, this means that the earliest implementation of the women's quota in the Lok Sabha can be in the 2029 general election, rather than in next year's polls.
- Prime Minister Narendra Modi appealed to both the Houses of Parliament to pass the Bill through consensus after recalling how previous attempts to pass such a Bill have failed for the last 27 years.
- The Bill, referred to as the '**Nari Shakti Vandan Adhiniyam**', was introduced in the Lok Sabha, with the prospect of the number of its women members rising to 181 from the present 82.

Key Features of the Bill

1. **Reservation for women:** The Bill reserves one-third of all seats for women in Lok Sabha, State Legislative Assemblies, and the Legislative Assembly of the National Capital Territory of Delhi.
2. **Commencement of reservation:** The reservation will be effective after the census conducted after the commencement of this Bill has been published. Based on the census, delimitation will be undertaken to reserve seats for women.

Background on the issue

- The 73rd and 74th Amendments passed in 1933, which introduced panchayats and municipalities in the Constitutions, reserve one-third of seats for women in these bodies.
- The Constitutions also provides for reservations of seats in Lok Sabha and state legislative assemblies for Scheduled Castes (SCs) and Scheduled Tribes (STs) in proportion to their number in the population. The Constitution does not provide for reservation of seats for women in the Lok Sabha and state legislative assemblies.
- Bill amending the Constitution to reserve seats for women in Parliament and state legislative assemblies have been introduced in 1996 under PM Gowda, 1998 and 1999 under PM Vajpayee, and in 2008 under PM Manmohan Singh.
- The first three Bills lapsed with dissolution of their respective Lok Sabhas. The 2008 Bill was introduced in and passed by Rajya Sabha but it also lapsed with the dissolution of the 15th Lok Sabha.

3. **Time period:** The reservation will be provided for a period of 15 years. However, it shall continue till such date as determined by a law made by the Parliament.
4. **Sub-quota for SC, ST:** Within the women's quota itself, one-third of the seats will be reserved for women belonging to the Scheduled Castes and the Scheduled Tribes but not to other backward classes.
5. **Rotation of seats:** Seats reserved for women will be rotated after each delimitation every 10 years as after 2026, delimitation is mandated to take place after every census.

Key Facts and Details on the Issue

- 15% of the total members of the 17ᵗʰ Lok Sabha are women while in state legislative assemblies, women on average constitute 10% of the total members.
- In 2015, the Report on the Status of Women (MoW&CD) in India noted that the representation of women in state assemblies and Parliament continues to be dismal. It recommended reserving at least 50% seats for women in local bodies, state legislative assemblies, Parliament, ministerial levels, and all decision-making bodies of the government.
- The 1996 Bill had been examined by a Joint Committee of Parliament, while the 2008 Bill was examined by the Standing Committee on Personnel, Public Grievances, Law and Justice. Both Committees agreed with the proposal to reserve seats for women.
- The National Policy for the Empowerment of Women (2001) had stated that reservation will be considered in higher legislative bodies.
- The Convention on the Elimination of All Forms of Discrimination Against Women provides that discrimination against women must be eliminated in political and public life. While India is a signatory to the Convention, discrimination in matters of representation of women in decision-making bodies has continued.
- The number of women MPs has increased from 5% in the first Lok Sabha to 15% in the 17ᵗʰ Lok Sabha; but the number continues to be quite low.
- A 2003 study by Raghabendra Chattopadhyay and Esther Duflo talked about the effect of reservation for women in panchayats and showed that women elected under the reservation policy invest more in the public goods which are closely linked to women's concerns.
- The Standing Committee on Personnel, Public Grievances, Law and Justice (2009) had noted that reservation of seats for women in local bodies has enabled them to make meaningful contributions.
- The inter-Parliamentary Union (2022) has noted that legislated quotas have been a decisive factor in women's representations.

Issues to Consider

1. **Rotation of reserved seats**
- May **reduce the incentive** for MPs to work for their constituencies as they could be ineligible to seek re-election.
- A study by the **Ministry of Panchayati Raj** recommended that rotation of constituencies

Key changes between 2008 Bill and Bill introduced in 2023

	Bill introduced in 2008 as passed by Rajya Sabha	Bill introduced in 2023
Reservations in Lok Sabha	One-third of Lok Sabha seats in each state/UT to be reserved for women	One-third seats to be reserved for women
Rotation of Seats	Reserved seats to be rotated after every general election to Parliament/ legislative assembly	Reserved seats to be rotated after every delimitation exercise

Sources: The Constitution (One Hundred and Eighth Amendment) Bill, 2008; The Constitution (One Hundred and Twenty-Eight Amendment) Bill, 2023; PRS.

should be discontinued at the panchayat level because almost **85% women were first-timers and only 15% women could get re-elected** because the seats they were elected from were de-reserved.

2. **Political Opposition**
- Opposition expresses concerns that the bill may **disrupt** existing reservations for marginalized communities, particularly SCs, STs and OBCs, resulting in competition for seats between women candidates and them.

3. **Lack of Consensus**
- Building a consensus among India's diverse political parties is challenging with varying party stances on the issue.

4. **Social Norms**
- Deep-rooted patriarchal norms and gender biases are significant obstacles to women's participation in politics.
- Family and societal pressures discourage women from pursuing a career in politics.
- Concerns about safety, traditional gender roles, and societal expectations can dissuade women from taking an active role in politics.

5. Violence and Harassment

- The political arena in India is not immune to gender-based violence and harassment. Women politicians and candidates have reported instances of threats, harassment, and violence, which can act as deterrents to their participation.

Significance

1. The reservation quota is a form of affirmative action aimed at addressing historical gender imbalances in political representation.
- This proactive measure aims to usher in gender equality to ensure that women have a fair opportunity to participate in the highest levels of decision-making.
- It signifies that Indian society recognizes and values the contributions of women, sending a message that women's voices and perspectives are essential in shaping the nation's future.

2. The rotation system promotes demographic diversity among women representatives and ensures that women from different communities, backgrounds, and social groups have the chance to represent their constituencies over time.
- By avoiding the permanent allocation of seats to specific constituencies, it promotes fairness and inclusivity in women's political representation.

3. It breaks down traditional barriers and prejudices that discouraged women from entering politics in the past.
- Their presence in politics will help shatter stereotypes and create a more inclusive and gender-equal society.

4. This empowerment extends beyond politics, as women who succeed in the political sphere can become role models for others, inspiring greater participation in various fields.

Country data on political representation of women (as of September 2023)			
Country	% of elected women	Quota in Parliament	Quota in political parties
Sweden	46%	No	Yes
Norway	46%	No	Yes
South Africa	45%	No	Yes
Australia	38%	No	Yes
France	38%	No	Yes
Germany	35%	No	Yes

- Female political leaders can challenge traditional gender roles and norms, inspiring broader social and cultural change.

5. Through political participation, women gain the power to influence policies that directly impact their lives and those of their communities.
- This empowerment translates into tangible changes in healthcare, education, gender-based violence, economic opportunities etc.
- Increased female representation in politics brings attention to gender-specific issues that may have been overlooked in the past.
- Diverse perspectives lead to more comprehensive and balanced decision-making.

6. The fact that the current Bill cannot be implemented until the 2026 delimitation means that the Government may be envisaging an increase in the number of Lok Sabha seats.
- In the new Parliament building, the Lok Sabha can accommodate 888 MPs.

Way Forward

- India needs to endow its mothers and daughters with an equal voice and change from the legislature may filtrate downwards to broader changes in society to realise the objectives of SDG 5 (Gender Equality).

2. One Nation, One Election

Current Context

The government has constituted a committee headed by **former President of India Ram Nath Kovind** to explore the possibility of "**One Nation, One Election.**"

About

- In 2015, the government had tasked the **ECI** to study the feasibility of simultaneous polls.
- This move indicated advancing the general elections and some state polls, scheduled after and with the Lok Sabha contest.
  - ✓ Assembly polls are due in five states in November-December (2023), followed by the Lok Sabha elections in May-June, 2024.

Simultaneous Elections

- **Meaning**

  - ✓ It is the reformed structuring of the Indian election cycle where Parliamentary and State Assembly elections are synchronized together and happen simultaneously, in tandem.
  - ✓ Voters would cast their vote for electing members of the LS and the State Assemblies on a single day, at the same time or in a phased manner.

- **History**

  - ✓ The polls for Lok Sabha and State Legislatures were held together in **1952 and 1957**.
  - ✓ A norm in India till 1967, the cycle was **first broken in Kerala (1959).**
  - ✓ In 1983, **ECI** proposed to bring back simultaneous elections.
  - ✓ The **170th Report of the Law Commission (1999)** pushed for simultaneous elections.
  - ✓ The **Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice,** prepared a report on the "Feasibility of holding simultaneous elections" (2015).

- **Constitutional Backdrop: Simultaneous elections would require amendments in not less than five Articles of the Constitution**

  - ✓ **Article 83:** Duration of the Houses of Parliament.
  - ✓ **Article 85:** Sessions of Parliament and their "prorogation and dissolution".
  - ✓ **Article 172:** Duration of State Legislative Assemblies.
  - ✓ **Article 174:** Governor's power to prorogue the House or dissolve the Legislative Assembly.
  - ✓ **Article 356:** Imposition of "President's Rule" in a state.

Pros of Holding Simultaneous Elections

- **Law Commission (2018) highlighted that simultaneous elections**

  - ✓ Save public money
  - ✓ Reduce burden on the administrative setup, security forces
  - ✓ Ensure better implementation of policies
  - ✓ Allow the administrative machinery to be engaged in developmental activities rather than electioneering.

- **Reducing electoral costs**

  - ✓ A whopping Rs 60,000 crore was spent on the

2019 Lok Sabha elections, including spending by the political parties fighting the polls and by the Election Commission of India to hold the elections.

✓ **The Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice** (2015) reported that a total of Rs 9,284.15 crore would be required for large-scale purchase of VVPAT machines.

- **Increased administrative efficiency:** Normal administrative duties are affected by separate elections as officials engage in polling duties, disturbing continuity in the policies and programs of the Central and State Governments.
- **Curbing corruption:** Could be a means to curb corruption and build probity in governance.

Cons of Holding Simultaneous Elections

- **Constitutional perspective**

  ✓ **The Law Commission (2018)** claimed that simultaneous elections could not be held within the existing Constitutional framework.

- **Spirit of regionalism**

  ✓ Regional parties would not be able to raise their local issues strongly as national issues will take center stage.
  ✓ They would also be unable to compete with national parties in terms of election expenditure and strategy.

- **Challenges to federalism**

  ✓ There is a 77% chance that voters will choose the same winning political party/alliance in the State Assembly and the Lok Sabha. [IDFC Institute Study, 2015]

✓ Apprehensions of Non-Allied States getting neutralised due to a Majoritarian Union Government, if simultaneous elections are held.
✓ Arbitrarily shortening/extending the terms of existing State Assemblies to bring their election dates in sync might not be well perceived by the States.

- **Government's accountability:** Repeated elections keep legislators on their toes, and increases their accountability to the people.

- **Propensity of violence:** May increase with greater stakes, compounded with the recent trend of bloodshed.

- **Logistical challenges**

  ✓ **Arranging EVMs**: Around 30 lakh EVMs will be needed to hold simultaneous elections. It had taken about a year to manufacture 6-7 lakh EVMs, making the task extremely difficult.

  ✓ **Deployment of Central forces, poll staff:** The sudden additional requirement may disturb balanced allocations of such forces while ensuring adequate remunerations considering an extension of duty hours, areas to cover etc.

Conclusion

- Holding simultaneous elections is not merely about the voting process but also about stable governance. Such a sensitive and far-reaching reform requires unanimous support from all stakeholders.
- The feasibility of the move needs to be analysed in context of the readiness of the ECI, acceptance to the voters and other relevant factors to attempt building policy-consensus.

3. Amitabh Kant Committee

Current Context

A 14-member committee, led by former NITI Aayog CEO and India's G20 Sherpa Amitabh Kant, submitted a report, recommending solutions for stalled real estate projects.

Major Findings

- The committee's report cited estimates from the Indian Banks' Association (IBA) stating that 4.12 lakh dwelling units worth Rs. 4.08 lakh crore were classified as "stressed," with 44% of them located in the NCR and 21% in the Mumbai Metropolitan Region.
- The primary reason for the stress in these projects was attributed to "lack of financial viability," leading to cost overruns and delays.
- To boost viability, all stakeholders, including developers, financiers, and land authorities, would need to accept reduced returns.

Major Recommendations of the Committee

Mandatory RERA Registration

It emphasized the need to enforce provisions of the Real Estate (Regulation and Development) Act, 2016 (RERA).

- RERA mandates that all projects exceeding 500 square meters of land or involving construction of more than eight apartments, must be registered with the respective state RERA authorities.

Rehabilitation Package for Stalled Projects

- One of the committee's key recommendations is for State governments to establish a rehabilitation package to revive stalled projects.
- Participating developers would commit to completing the projects within three years, could involve a "co-developer" to expedite.
- It proposed a "partial surrender policy" allowing developers to return unused land in exchange for a waiver of dues.
- It also recommended that the Ministry of Housing

RERA

- The Real Estate (Regulation and Development) Act, 2016, (RERA) is an act passed by the Indian parliament which seeks to protect the interests of home buyers and boost investments in the real estate sector.

and Urban Affairs (MoHUA) develops a detailed scheme to proactively finance stalled projects using the SWAMIH Fund by revisiting the its minimum Internal Rate of Return and first charge requirements.

About Special Window for Affordable & Mid-Income Housing (SWAMIH) Scheme

- The Central Government launched   it in November 2019 to stimulate growth in the Indian real estate sector by :
  - ✓ Providing priority debt financing for stalled housing projects in the affordable and middle-income housing categories.
  - ✓ Offering relief to real estate developers in need of funding to complete unfinished projects, ensuring timely delivery to buyers.

SWAMIH Fund

- The SWAMIH Fund is a government-backed fund established as a Category-II AIF (Alternate Investment Fund) debt fund registered with SEBI.
- An Alternative Investment Fund is a privately pooled investment vehicle that collects funds from sophisticated investors, whether Indian or foreign, for investment in accordance with defined policies.

- The government has committed to infusing up to Rs. 10,000 crore into the affordable and middle-income housing sector through the Special Window. The maximum financing available for any single project is capped at Rs. 400 crores

Challenges: Real Estate

Regulatory Complexity

- Multiple state and local laws create complexity and lack of regulatory uniformity for developers.

Lack of Transparency

- Limited transparency in transactions.
- Lack of a centralized database for records.

Land Acquisition Issues

- Lengthy, cumbersome with high propensity of delays due to land diputes and title issues.

Funding and Finance

- Difficulty to obtain due to high-interest rates.
- Limited access to alternative sources.

RERA Implementation

- Uneven implementation of the Act, and delays in project registrations and compliance.

Steps Taken to Address Real Estate Sector Challenges in India

Focusing on affordability

- Emphasis on improving accessibility with changes to floor space index (FSI) rules, discouraging land hoarding, and the "Housing for All" initiative, which aims to provide housing for all by 2022.

Enhancing transparency

- RERA (2016), has been implemented to enhance transparency in the sector.

Reviving stalled projects

- The SWAMIH fund shall be used to revive such projects by providing financial assistance to developers to complete them, ensuring that homebuyers are on time.

Establishing an affordable housing fund

- The government has also established an affordable housing fund with an initial corpus of around INR 10,000 crore to support housing finance companies (HFCs) in lending to low-income and middle-income households.

Initiatives for debt restructuring

- These include the Debt Recovery Tribunal (DRT) Fast Track Scheme, and the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act.

Moratorium benefits during pandemic

- During the COVID-19 pandemic, the government provided a moratorium on interest payments for loans to ease the financial burden on borrowers, and prevent defaults on loans.

Way Forward

- The committee thus prioritizes fulfilling the objectives of providing affordable shelter and housing to the needy in its aim to complement India's Constitutional vision (DPSPs) of being a Welfare state.

4. India's Judicial Data Grid

Current Context

The Supreme Court has announced that its case data will now be incorporated on the National Judicial Data Grid (NJDG), the national repository which contains data related to cases instituted, pending and disposed of by the Indian judicial system.

About

- CJI DY Chandrachud called the step "historic" as the user can now access information related to the pending, disposed, registered and unregistered cases along with other relevant information.
- PM Modi appreciated this integration of SC and NJDG saying it will ensure more transparency and strengthen justice delivery system in India.

National Judicial Data Grid

- National Judicial Data Grid is recognized as a database which contains orders, judgements along with case details from around 18,735 computerized District and Subordinate courts as well as High Courts.
- NJDG has been developed by **National Informatics Centre (NIC)** in close coordination with the in-house software development team of **Computer Cell, Registry of the Supreme Court.**

Features of NJDG

- It is an online platform launched under the **Phase II of the "e-Courts Project" in 2020**, which is **Centrally sponsored**.
- The NJDG has an interactive interface along with a dashboard projecting data analytics of various attributes under different heads such as pending and disposed cases. This portal can be accessed through the Supreme Court's website.
- The NJDG contains granular data up to the level of Taluka. Further, the data available on the NJDG is updated in real-time.
- Due to its alignment with the **National Data Sharing and Accessibility Policy (NDSAP)**, NJDG is known to provide an **open Application Programming Interface** (open API) to both the Union and the State Governments.
- The portal keeps a track of the cases related to land disputes. For this, data of land records from almost 26 States have been linked with the NJDG.

- NJDG got international recognition and appreciation from the World Bank in the Ease of Doing Business Report (2018), for its role in generating case management reports, thereby facilitating seamless contract enforcement.

Significance

- With an increased monitoring of cases under the NJDG, this initiative may help in identification and management of cases, thereby reducing the issue of judicial pendency that has been persisting for a long time.
  - ✓ It helps to provide timely inputs for making policy decisions to reduce delays in disposing off cases.

- It also facilitates better monitoring of court performance and addressing systemic bottlenecks, and thus, serves as an efficient resource management tool.
  - ✓ For example, if the cases related to land disputes are increasing in a state, then the concerned government can take it as an input, thereby formulating and implementing appropriate policies to manage them.

- This initiative will further increase the efficiency of other digital initiatives launched by the Indian Judicial System, such as Virtual Courts, Case Information Software (CIS), Supreme Court Portal for Assistance in Court's Efficiency (SuPACE), video conferencing and hearings, National Service and Tracking of Electronic Processes (NSTEP) etc.

Challenges

- **Missing data:** One of the major challenges associated with NJDG is missing data in many cases at various stages of proceedings.
  - ✓ For example, as per the study of NIPFP, in 70 percent of the cases, the final orders were missing.

Due to this, the litigants are unable to get the exact and correct information about their cases.

- **Inconsistencies in reported data:** There are several instances when discrepancies and inconsistencies have been reported in the available data.
  - ✓ For example, the NJDG only keeps track of 24 case types. But District Courts frequently keep track of up to 100 different case kinds. This results in inconsistency of data since the 24 kinds must be readjusted.

- **Restricted access:** With the help of this API, the data on NJDG can be accessed with a designated Departmental ID as well as access keys so that the institutional litigants have a facility to monitor and evaluate the cases.

- **Cyber security risk:** Recently, it was reported when a fake website was floated, similar to that of "Supreme Court". Such instances indicate that there is a need of a robust cyber security infrastructure in the absence of which, this NJDG may be vulnerable to cyber threats.

Way Forward

- There are plans to extend this access to non-institutional litigants in the upcoming time, thereby increasing transparency.
- A better digital infrastructure is required so as to minimize the cases of missing data, mismatches, inconsistencies and discrepancies.
- The cyber security infrastructure should be made full-proof to avoid data theft and other cyber threats.

5. Prevention of Money Laundering Act

Current context

Recently, the Central Government has brought amendments in the rules under the Prevention of Money Laundering Act (PMLA) in order to take strong action against the benami activities and operations of shell companies.

Key amendments brought by the Government of India

- **The Centre has amended the definition of "beneficial owner"** as any person having **10%** stake or less in a company and "controlling" the entity. Earlier, this criterion was 15% stake to have the beneficial ownership.
- Further, **the reporting entities** like banks and financial institutions have to compulsorily carry out due diligence and the Financial Intelligence Unit (FIU) should be reported about it.
- **Appointment of "Principal Officer":**, The reporting agencies will need to appoint a "manager-level officer" as "principal officer," who will report suspicious transactions to the FIU

Significance of these amendments

- **The amendment on beneficial ownership ensures** that the term "beneficial owner" will include not only partners who own more than 10% of the partnership's capital or profits, but also partners who own 10% or less of the partnership's capital or profits but exercise control over it in other ways.
- **Ensures Accountability**
  - ✓ As per the changed rules, it is also compulsory for the reporting entity to check if a client is acting on behalf of the "beneficial owner" or not. It further provides for the cross verification of the identity of that "beneficial owner" at the time of account opening. In

case, the client is a trust, it becomes the duty of the reporting authority to ensure that each trustee of that trust must declare their status.

About Money laundering and PMLA, 2002

- **Money laundering can be defined as** the process in which the illegal source of origin of money including unlawful activities like drug trafficking, corruption, misappropriation or gambling are concealed by converting it into a legal source.
  - ✓ The money that is earned from such illegitimate sources is known as "dirty money".

- In order to address this issue of money laundering and financing of illegal/illegitimate activities, the Union government passed **the Prevention of Money Laundering Act (PMLA) in 2002.**
- **This Act provides for a law enforcement framework** to: detect the trail of dirty money and the means through which it is laundered; seize the proceeds of crime; and penalize the criminals, thereby controlling the issue of money laundering.
- **Investigating agency:** As per the **sections 48 and 49 of PMLA**, the **Enforcement Directorate** (ED) has been given the investigating power in the cases associated with the Act and the crimes related to it.

Possible challenges associated with these amendments

- The expanded ambit of definition of "beneficial owner" may increase the chances of **false incrimination**.

- **Other challenges associated with PMLA**
  - ✓ **Possible Misuse of Powers:** There is a strong possibility that PMLA can be invoked

against a political rival or a dissenter, because the "process is itself the punishment".
- ✓ **Questioned credibility of ED:** Enforcement directorate has been repeatedly accused by the opposition to act on the whims of the ruling party.
- ✓ Further, the **conviction rate** of ED under the cases of PMLA is very low.
- ✓ **Contrasting nature of PMLA from the general law:** In case of general criminal laws, the accused remains innocent until proven guilty, however, in case of PMLA, the onus is on the accused to prove his innocence.
- ✓ **As per the section 63 of PMLA**, the accused should provide the information about the offence. In case of not providing information or furnishing wrong information, it is considered as another offence. This seems against the fundamental right of the accused against self-incrimination.
- ✓ **Enforcement Case Information Report (ECIR)** is considered equivalent to that of an FIR. However. it is considered an "internal document" and its copy is not provided to the accused.

Way forward

- The amendments brought by the government are towards increasing the span of law enforcing agencies so that they could control the crimes related to money laundering.
- However, with increased expansion, there is a need to make the process of investigation and conviction more transparent and accountable so as to remove the ambiguities and flagged concerns.
- Moreover, there should be vigilance over the investigation done by proper authorities to avoid any misuse of power.

6. Alternate Dispute Resolution and the Mediation Act, 2023

Current Context

Recently, the Mediation Act, 2023 received Presidential assent. It revived the conversation about the need for the Indian litigation system to mainstream Alternative Dispute Resolution (ADR).

Alternate Dispute Resolution (ADR)

- It refers to a bouquet of mechanisms that enables disputing parties to resolve their differences amicably, without the intervention of courts.
- Given the delays in Indian court proceedings and increasing cost of litigation, the significance of ADR in India cannot be understated.
- Until recently, these discussions largely focused on arbitration or conciliation of disputes under the Arbitration and Conciliation Act, 1996, but mediation of disputes is finally getting its due.

Mediation Act, 2023

- The Mediation Act, 2023 aims to foster a link between the mediation and the arbitration of commercial disputes, thus reducing the burden on Indian courts
- The Indian legal framework already encourages courts to refer the disputing parties to ADR procedures and the Act will takes it a step forward.
- Irrespective of a prior mediation agreement, it will obligate each party to take steps to settle their dispute through pre-litigation mediation before approaching an Indian court.
- To facilitate this process, the Act will also require courts and relevant institutions to maintain a panel of mediators.

Benefits

- It has the potential to reduce the filing of frivolous claims before Indian courts.
- It may also mitigate the risk of deterioration of the parties' relationship due to a publicly fought dispute with its assurances of confidentiality of a mediation.

- It emphasizes upon the neutrality and uncompromising expertise of the designated panel of mediators.
- Subject to an extension by the parties, they must also complete the mediation within 180 days from the parties' first appearance.
- A party may, in exceptional circumstances, seek urgent interim reliefs from a court before the commencement or during the continuation of a mediation.
- These provisions prioritise expertise and efficiency, while ensuring that the obligation of pre-litigation mediation is not weaponised. The aim is to create a balanced framework which encourages the parties to focus more on their commercial dealings and less on their disputes.
- Act also places emphasis on institutional mediation in India through mediation service providers

- ✓ It envisages them to provide not only the services of a mediator but also all the facilities, secretarial assistance, and infrastructure for the efficient conduct of mediation.
- ✓ A mediation service provider is synonymous with arbitration institutions. India is already home to experienced arbitration institutions, some of which provide mediation services that are on a par with global best practices.
- ✓ These institutions are, therefore, expected to play a meaningful role in India's mediation journey. Only then would India become a global hub not only for arbitration but also for all aspects of commercial dispute resolution.
- The Act will effectively position mediation similar to commercial arbitration in India. The similarities between their respective supporting pieces of legislation are obvious.
  - ✓ The establishment of a Mediation Council of India equally mirrors the proposal in 2019 to establish an Arbitration Council of India (that is yet to be implemented). Mediation and commercial arbitration are thus made allies, albeit at different stages of the same journey.

Concerns

- Concerns are raised about the feasibility of a mediation conducted under the sword of an obligation as opposed to a sincere desire to arrive at an amicable resolution.
- This may empower a recalcitrant defendant to delay a genuine claim, derailing efforts of genuine success at arbitrating disputes.

Way Forward

- Parliament's message to Indian industry is clear- in commercial matters, courts must no longer be the default venue for dispute resolution. The Act will foster camaraderie between the mediation and arbitration of commercial disputes, and reduce the burden on Indian courts.
- Parties are expected to resolve their dispute amicably through mediation, and, alternatively, through commercial arbitration. While the doors of Indian courts are open if required, this access must be perceived as a matter of last resort.

3. SOCIAL ISSUES

1. PM Vishwakarma Scheme

Current Context

PM Narendra Modi inaugurated the much-anticipated Vishwakarma Scheme, reaffirming the government's commitment to the upliftment of the marginalised artisans and craftsmen.

About

- It is a Centrally Sponsored Sector to support artisans with funding, training and incentives for taking up and preserving handicrafts and traditional trades.
- Nearly 2,000 artisans and craftsmen registered their names in the PM Vishwakarma portal.

About Vishwakarma Scheme

- The initial allocation is Rs 13,000 crore which will be available for **traditional craftspeople and artisans for five financial years,** i.e., from 2023-2024 to 2027-2028.
- **18 traditional trades such as carpenter, boat maker, armourer, blacksmiths etc. will be covered under the scheme.**
- The artisans and craftspeople will get a PM Vishwakarma certificate and an ID card along with credit support up to Rs. 2 lakhs.

Objectives of Vishwakarma Scheme

- It aims to strengthen and nurture the 'Guru-Shishya Parampara' or family-based practice of traditional skills by artisans and craftsmen under the guidance of their family mentors.
- It attempts to improve the quality, as well as the reach of products and services of artisans and craftsmen, thus looks to integrate with the domestic and global value chains.
- It will revive the rich tradition of Indian crafts

Handicrafts Sector

- Handicrafts are items that are constructed by hand using simple tools rather than by mass production methods and equipment.
- India is one of the largest handicrafts exporting countries. During 2021-22, the total exports of Indian handicrafts were valued at USD 4.35 billion; a 25.7% increase from the previous year.
- It is one of the largest employment generators after agriculture, employing more than seven million people.
- The sector functions on a self-sustaining business model and is well known for being a pioneer of environment-friendly zero-waste practices.

Other schemes in the sector
1. National Handicrafts Development Program
2. Ambedkar Hastashilpa Vikas Yojana
3. Handicrafts Mega-Cluster Mission
4. Market Support and Services Scheme
5. Research and Development Scheme

and encourage the artisans to further work to enrich the heritage of this sector.

Significance of Vishwakarma Scheme

- **Loan provisions**
  - ✓ Skilled workmen will be given training for 4-5 days to upgrade their skills, following which they will become eligible for loans.
  - ✓ Loans up to Rs. 1 lakh (first tranche) and Rs. 2 lakh (second tranche) will be provided at a concessional interest rate of 5%.
  - ✓ The interest subvention cap of 8% will be paid by the Ministry of Micro Small and Medium

Enterprises while the credit guarantee fees will be borne by the Central Government.

- **Enhance the income of artisans or craftsmen**

  ✓ The PM Vishwakarma Scheme is expected to have a significant impact on the life of traditional craftsmen and artisans as it looks to preserve their rich tradition.
  ✓ It will help them to enhance their disposable incomes, productivity of occupation, quality of life, and competitiveness of their products.
  ✓ It aims to enhance the accessibility and quality of products and services offered by traditional artisans and craftsmen.
  ✓ The scheme would enable traditional artisans to go to the market and spread their goods.

- **Training and skill development**

  ✓ The scheme has a provision to provide skill upgradation, incentives for toolkit as well as digital transactions and marketing support.
  ✓ It will provide financial stability to those who make a living in these professions while supporting skill training, loan assistance, incentives for digital transactions, incentives for purchase of equipment and support for marketing businesses.

- **Financial benefits**
  ✓ Participants will get a stipend of Rs. 500 per day while undergoing training.
  ✓ The scheme offers a nominal stipend as well as financial help to purchase modern tools.
  ✓ Beneficiaries will receive up to Rs. 15000 to buy modern tools.

- **Employment opportunities**
  ✓ The PM Vishwakarma Scheme is a driving force in the creation of new job opportunities.

Challenges

- Striking the right balance between budgetary allocations and implementational costs is a perennial concern for India's public policy interventions, the scheme is no exception.
- With the low rate of technological penetration in rural India, exacerbated by the Digital Divide, accessibility remains a significant issue.

Way Forward

- The scheme must be channelized to work as a boost to rural economy while preserving India's cultural heritage.
- It must be leveraged to fulfill the targets of other initiatives such as 'Vocal for Local', 'One District One Product', and 'Make in India' etc.

2. Self-Respect Marriage

Current Context

The Supreme Court, on 28 August 2023, observed that there is no blanket ban on advocates solemnising "self-respect" marriages under Section 7(A) of the Hindu Marriage Act, 1955.

About

- The SC overruled a 2014 Madras High Court judgment **[Balakrishna Pandian vs. The Superintendent of Police (2014)],** which held that the marriages performed in the offices of the Advocates are not valid as per the Hindu Marriage.
- The Court held that Suyamariyathai marriages,

or self-respect marriages need not be publicly solemnised or declared.

- A Madras High Court division bench had earlier said that self-respect marriages cannot be solemnised in secrecy.

What is Self-Respect Marriage?

- A self-marriage practice was recognised by Section 7A Hindu Marriage Act, 1955 (Tamil Nadu State Amendment).
- This allows a couple to solemnise their marriage through a joint declaration to live as husband and wife in the presence of relatives, friends or other persons.
- In this type of marriage, a Hindu couple is not needed to follow any religious practices and can be declared married to each other in the presence of relatives, friends or other persons.
- This section creates a special provision regarding "Suyamariyathai and seerthiruththa marriages" and is applied to any marriage between two Hindus.
- Each party to the marriage could declare in the language understood by the parties that each takes the other to be his wife or, as the case may be, her husband and the marriage would be completed by a simple ceremony requiring the parties to the marriage to garland each other or put a ring upon any finger of the other or tie a thali.
- Though registration of such a marriage is compulsory in Tamil Nadu, non-registration does not render it invalid.

SC Judgment on Self-Respect Marriages

- In **Deivanai Achi vs Chidambaram Chettiar (1967)** case, the SC said that Section 7A of the Hindu Marriage Act, as applicable to the state of Tamil Nadu through a state amendment in 1967, legally recognises Suyamariyathai and Seerthiruththa marriages or self-respect marriages between any two Hindus, solemnised in the presence of relatives, friends, or other persons.

- In **Nagalingam vs. Sivagami (2001) case,** it was held that there is no blanket ban on advocates to solemnise marriages under Section 7(A) of the Hindu Marriage Act (Tamil Nadu State Amendment Act).

Arguments made in favour of Self-Respect Marriages

- **Evolution of social norms**: Section 7A of the Hindu Marriage Act, 1956 acknowledges marriages between Hindus, conducted in the presence of relatives or friends, without the need for traditional rituals or priests. It reflects a modern approach that aligns with evolving societal norms and individual preferences.
- **Modern interpretations:** The Court emphasized that public recognition is not a prerequisite for a valid marriage, emphasising modern interpretations.
- **Changes in cultural landscape**: The recognition of "self-respect" marriages offers an alternative to traditional rituals and practices. It signifies a departure from the conventional approach to marriage, paving the way for more personalized ceremonies and reflecting a changing cultural landscape.

Arguments made against Self-Respect Marriages

- **Fear of safety**: The Court observed that couples intending to marry may refrain from making a public declaration due to various reasons, including familial opposition, or fear for their safety. In such cases, enforcing a public declaration could put lives at risk and potentially result in forced separation.
- **Limited area of governing:** Self-respect marriage is currently legal only in Tamil Nadu where the state recognises it as part of the Hindu Marriages Act and limits its applicability to Hindu ceremonies.
- **A scam for a woman**: In self-respect marriages,

there are no priests, no Gods, no mantras, and mangalsutra is optional. This marriage may be considered a scam to keep a woman tied to the husband.

Conclusion

- There is a bundle of top court judgments that acknowledged the right to choose a life partner

as a fundamental right under Article 21. Choosing a life partner is the personal liberty of a person and it must be fully given effect to. The Self-Respect Marriage is built on a promise of respect and equality, and the couple is wedded as partners in every sense. It doesn't see women as property to be handed over from one man to another but as humans with equal rights.

3. Prison Reforms in India

Current Context

Underlining that the correctional justice system is "evidently gender exclusionary," the Supreme Court sought the views of the Centre and the States recently, in context of the Justice Amitava Roy Committee report submitted on December 27, 2022.

About the Justice Amitava Roy Committee

- **In September 2018,** the SC had constituted a **three-member committee headed by Justice Amitava Roy** to look into issues involving jail reforms and make recommendations on several aspects, including overcrowding in prisons.
- This is in line with the Government's broad vision of institutionalizing a progressive policy architecture for correctional facilities across the country.

Recommendations regarding women prisoners in the Report

- **The problems stated**
  - ✓ **Women prisoners suffer far worse than their male counterparts,** especially with regard to access to basic facilities, such as medical care and medical staff, legal aid and counsel, paid labour and recreational facilities.
  - ✓ **On medical front, the major challenges are lack of**

i. separate medical and psychiatric wards for women inmates;
ii. basic minimum facilities for child delivery; and
iii. healthcare professionals to address the gender-specific health needs of female inmates.

- **Other problems**
  i. Lack of gender specific training to matrons,
  ii. Lack of any system for filing complaints against the jail staff for any form of abuse or harassment, and
  iii. No exclusive wards or functional women's prisons in many states.

SOME RECOMMENDATIONS BY PANEL

- Telemedicine and virtual consultation to address unavailability of women staff or medical wards.
- Vocational training in collaboration with NGOs.
- Community service for those accused of petty offences
- Allowing inmates to file complaints, sensitisation training of prison staff
- Women prisoners with psychological or psychosomatic disorders, or victims of sexual abuse, should get proper counselling

- **Recommendations**
  - ✓ Introduction of telemedicine facilities, remote diagnosis and virtual consultation for the treatment of inmates,
  - ✓ Strengthening vocational training and education programmes,
  - ✓ Replacing imprisonment for petty offences with community service and proper counselling for inmates with psychological disorders.

Overview of issues related to prisons in India

- **Over-crowding:** NCRB's prison statistics for 2021 showed that the occupancy rate in Indian prisons is 130% (12% increase). This is because:
  - ✓ 77% of India's 5.54 lakh prisoners are undertrials,
  - ✓ As many as 11,490 prisoners had spent more than five years in jail without a conviction.
  - ✓ As per the records of 2022, over 4.7 crore cases are pending in Indian courts across different levels of the judiciary.
- **Unhealthy living conditions:** Diet, nutrition, clothing, and cleanliness conditions are worse in many prisons.
- **Unequal treatment at prison:** Special privileges are accorded to the rich and influential prisoners who comes from the upper and middle classes.
- **Inadequate prison program:** Hardly any of the prisons have well-planned prison programs providing daily structured activities, vocational training, pre-discharge guidance, and post-prison monitoring.
- **Insufficient legal aid:** Since the majority of prisoners are non-trialed or under-trialed, the absence of legal aid until the point of trial greatly reduces the value of the country's system of legal representation to the poor.
- **Abuse of prisoners:** Physical abuse and custodial rape of prisoners by guards or inmates is another chronic problem. Brutal physical

treatment and third-degree torture in custody occur frequently.
- **Corruption:** In exchange for goods, drugs or special treatment, inmates bribe guards.

Model Prison Act, 2023

- **The administration and management of prisons in India** falls under the **State List in Schedule VII** of the Constitution of India, and is governed by the **Prisons Act, 1894** and the Prison Manuals of the concerned state governments.
- **Drafted by:** The Bureau of Police Research and Development.
- **Reviewing and overhauling the existing laws**
  - ✓ **The Model Prison Act, 2023 will replace the current 'Prisons Act, 1894,'** which is almost 130 years old and mainly focuses on keeping criminals in custody and enforcing discipline and order in prisons, with no provision for reform and rehabilitation.
  - ✓ **The Prisoners Act, 1900 and the Transfer of Prisoners Act, 1950** have also been reviewed by the MHA and relevant provisions of these Acts have been "assimilated" in the 'Model Prisons Act, 2023'.

The reforms include

- ✓ **Creating provisions for** grant of parole, furlough and remission to prisoners to encourage good conduct; providing special provisions to women and transgender inmates; ensuring physical and mental well-being of prisoners; and focusing on the reformation and rehabilitation of inmates.
- ✓ **Provision for** security assessment and segregation of prisoners, individual sentence planning, grievance redressal, prison development board, attitudinal change towards prisoners, and separate accommodation for women prisoners, transgender, etc.
- ✓ **Provision for use of technology** in prison

administration with a view to bring transparency in prison administration, video conferencing with courts, scientific and technological interventions in prisons, etc.

✓ **Provision of punishment** for prisoners and jail staff for use of prohibited items like mobile phones etc. in jails.

✓ Provision regarding **establishment and management of high security jail**, open jail (open and semi open), etc.

✓ Provision for **protecting the society from the criminal activities** of hardened criminals and habitual offenders, etc.

✓ Provision for **legal aid to prisoners** and **focus on vocational training and skill**

development of prisoners and their reintegration into the society.

Way Forward

- Intending to provide guidance and address gaps in the existing prison laws, the 2023 Act seeks to bring in several reforms for effective prison administration and management; handling gender exclusive deficiencies; providing human, legal and fundamental rights to prisoners; and addressing other challenges regarding prison reforms.

- The Central and the state governments must work in tandem to implement the recommendations by the SC-appointed committee and the Model Prison Reforms must be enacted with consensus as soon as possible.

4. NITI Aayog Envisages Policy to Push Local Production of Assistive Devices

Current Context

NITI Aayog has started discussions with the Indian Council of Medical Research (ICMR), World Health Organisation (WHO) and stakeholder ministries to firm up the blueprint for a national integrated policy on assistive devices.

About

- India has an estimated 30 million persons with disability as per the 2011 census and over 5% of the people aged 60 years and above have some form of disability.

- The government is working on policy intervention to promote mass manufacturing of assistive devices in India by incentivising the private sector to undertake R&D for such technology and scale up production.

- Emphasis is also being given on providing monetary support to persons with disability to avail assistive technology services to reduce the out-of-pocket payment.

About Assistive Technology

- Assistive technology (AT) includes any item,

Key Global Data

- **200 million people** with low vision do not have access to assistive products for low-vision.
- **75 million people** need a wheelchair and only 5% to 15% of those in need have access to one.
- **466 million people** globally experience hearing loss.
- Hearing aid production currently meets less than **10% of the global need.**

equipment, software programme or product system that is used to increase, maintain or improve the functional capabilities of persons with disabilities (PWDs).

- Besides this, ATs are also used to overcome the functional-loss related to senile changes such as a decrease in vision or hearing or locomotor disability in the human body and also in overcoming disabilities owing to intellectual or learning disabilities.

Significance

- With an increasing burden of non-communicable diseases, it is imperative to envisage such a policy with intended welfare benefits.
- It enables people to live healthy, productive, independent, and dignified lives, and participate in education, economy and civic life.
- It reduces the need for formal health and support services, long-term care, and the work of caregivers.
- It will be key to check exclusion and isolation, thereby fostering a disable-friendly society.

Challenges

- The possibility of these products being rationed or not included in health and welfare schemes may lead to a high propensity of out-of-pocket payments.
- Industrial capacity must be augmented to free it from specialization bias.
- Lack of trustworthy funding mechanisms, nationwide service delivery systems, concerted research and development, development of procurement systems etc. are major roadblocks.
- Countries with the highest prevalence of disability-related health conditions tend to be those with the lowest supply of health workers skilled in the provision of assistive technology and India is not an exception.

Way Forward

- Access to assistive technology in the public sector must be ensured to make these products affordable to the masses.
- Trained health personnel are essential for the proper prescription, fitting, user training, and follow-up of assistive products.
- Without these key steps, assistive products may cause more harm than benefits. Close to 75% of low-income countries have no prosthetic and orthotics training programs with as low as 2 professionals per 10 000 population.
- Dedicated government interventions like the Rashtriya Vayoshri Yojana, which aims to provide aids and assistive living devices to senior citizens belonging to Below Poverty Line (BPL) category, is the need of the hour.

5. Ayushman Bhav Campaign

Current Context

President Droupadi Murmu virtually launched the Ayushman Bhav campaign and portal from the Raj Bhavan in Gandhinagar, Gujarat on September 13, 2023.

About

- This historic launch of the campaign and the portal marked a significant leap towards achieving **Universal Health Coverage (UHC)** and ensuring healthcare for all as it strives to further consolidate the accessibility and affordability of healthcare services particularly for the underserved.
- This initiative is being implemented in line with the motto of philosophy of antyodaya, which means good health for all and leaving no one behind.
- This Campaign will be implemented during the 'Seva Pakhwada' from September 17 to October 2, 2023.

Ayushman Bhav Campaign

- The Ayushman Bhav campaign is a comprehensive nationwide healthcare initiative that aims to provide saturation coverage of

healthcare services, reaching every village and town in the country.

- This initiative builds upon the success of the Ayushman Bharat program and signifies a paradigm shift in healthcare services.
- The goals of Ayushman Bhav are to further facilitate to access following health schemes such as:
  ✓ Ayushman cards
  ✓ Generate ABHA IDs
  ✓ Raise awareness about vital health schemes and disease conditions, such as non-communicable diseases, tuberculosis, and sickle cell disease.

- 'Ayushman Bhav' initiative involves a set of interventions that include:
  ✓ **Ayushman-Apke Dwar (AAD) 3.0:** This is aimed at creation and distribution of Ayushman cards to all remaining eligible beneficiaries.
  ✓ **Ayushman Sabhas:** It is a Gram Panchayat or Urban ward level sabha led by the VHSNC/ Ward Committee/MAS. It shall ensure saturation coverage of health schemes and optimum healthcare service delivery.
  ✓ **Ayushman Melas:** Health melas at Ayushman Bharat - Health and Wellness Centres (AB-HWCs) shall be conducted weekly, on Saturday of each week.

Significance

- The campaign will focus on creating awareness about health schemes of the central and state governments including the Pradhan Mantri Jan Arogya Yojana (PMJAY), and also promote organ and blood donation.
- The campaign also seeks to strengthen tele-consultation services and expert referrals.
- The campaign will also focus on testing and treatment for TB, leprosy and other communicable diseases, maternal and child,

Ayushman Bharat

- Ayushman Bharat is a flagship program of Government of India, launched in 2018, translating the policy intent to budgetary commitment, to achieve the Universal Health Coverage (UHC) underscoring the commitment of "leave no one behind." Ayushman Bharat has four pillars, which are:
  1. Ayushman Bharat - Health and Wellness Centres (AB-HWC)
  2. Ayushman Bharat - Pradhan Mantri Jan Aarogya Yojana (AB-PM-JAY)
  3. Pradhan Mantri - Ayushman Bharat Health Infrastructure Mission (PM-ABHIM)
  4. Pradhan Mantri - Ayushman Bharat Digital Mission (PM-ABDM).

health, nutrition campaigns and population-based screenings and vaccinations for conditions like blood pressure, diabetes and common cancers (oral, breast, and cervical).

- The campaign will eventually ensure gram/nagar panchayat to attain the status of 'Ayushman Gram Panchayat' or 'Ayushman Ward' with saturation of selected health indicator.

Possible Challenges

- **Lack of manpower:** Lack of human resources available with government is the main challenge which can be faced by the Ayushman Bhav Campaign.
- **Digital divide:** Absence of adequate mobile connection and internet facility in the rural areas along with digital illiteracy is another major hurdle for the successful conduction of Ayushman Bhav campaign.
- **Data coordination:** There is a lack of coordination effort among Gram Panchayats, Department of Health, and other local elected bodies.

Way Forward

- The State should involve the NGOs to increase the scope and reach of the campaign.

- Government should take step to minimize digital divide and increase digital literacy in rural areas.
- Proper coordination and data sharing among Gram

Panchayats, Department of Health, and local elected bodies should be ensured by the government.

6. Jal Jeevan Mission

Current Context

Close to 98% of all rural homes in Mahoba district (UP) have tap water connections, according to the public dashboard of the Jal Jeevan Mission (JJM). However, a household certified as "connected" in JJM parlance does not always mean one with an actual water supply.

About Jal Jeevan Mission (JJM)

- Launched by the Ministry of Jal Shakti, the JJM undertakes a 'Community-Centric Approach' to create a "Jan Andolan" or "People's Movement" for water.
- It envisages to supply 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024, starting from its inception in 2019.
  - ✓ The mission looks to make existing water supply systems and connections functional, improve water quality monitoring and testing as well as promoting sustainable agriculture.
  - ✓ It advocates for mainstreaming of water conservation efforts, drinking water source augmentation, robust drinking water supply system, grey water treatment and its reuse etc.

- **JJM focuses on integrated demand and supply-side management of water at the local level.**

  - ✓ Designing local infrastructure for source sustainability measures via steps like rainwater harvesting, groundwater recharge and management of household wastewater for reuse, is undertaken in convergence with other government programmes/schemes.
- The fund sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern

Piped water supply to all rural households by 2024

Integrated demand and supply side management of water at the local level

JAL JEEVAN MISSION

Will converge with other Central and state Government Schemes

Creation of local infrastructure for rainwater harvesting, groundwater recharge and management of household waste water for reuse in agriculture
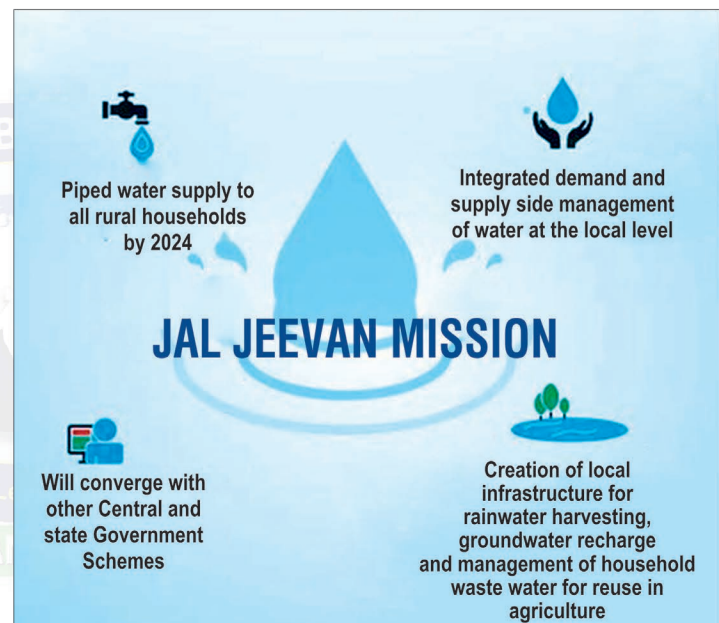
States, 50:50 for other states, and 100% for Union Territories.

Challenges

1. **Inadequate water supply**

- Villages officially certified as having 100% coverage of functional household tap connections (FHTC) also do not actually have taps in many instances. Some may have them, but don't get a consistent supply of water. **For example**
  - ✓ In Luhari village (UP), 295 houses marked as having 'tap connections' face the challenge of regular, consistent water supply, thus falling

Water Efficiency Programmes: GoI

- **Jal Jeevan Mission:** Har Ghar Nal se Jal by 2024
- **Atal Bhujal Yojana:** Sustainable groundwater management
- **National Aquifer Mapping and Management Program:** Developing aquifer management practices
- **AMRUT:** Urban policy prospective
- **Swachh Bharat Mission 2.0:** Sanitation
- **UNGA Resolution 64/292 (2010):** Human right to clean drinking water and sanitation
- **SDG6:** Clean water and sanitation

back on groundwater drawn from a borewell.

✓ In the Kunata village (UP), all 185 households have been marked as having a household tap connection but many do not even have the pipes, let alone the taps promised as part of the Har Ghar Jal scheme.

2. Over-reliance on groundwater

- Inadequacy of pipe-water connections have made people fall back upon traditional groundwater resources for domestic drinking water use.
  ✓ Asthaun (UP) gripes that only half the households have taps and no water actually flows through them.
- Villages in low-lying areas create problems for people without a submersible pump, which only the rich can afford.
- Thus, water remains inaccessible, making the villagers to be reliant on groundwater from handpumps for domestic drinking purposes.

3. Issues with water treatment efforts

- A major challenge has been commissioning pipes

and setting up facilities that run extensively over undulating terrain, given that a crack or leak can cause immediate disruptions. **For example-**

✓ Mahoba (UP) administration has commissioned five large water treatment plants to draw in water from larger reservoirs and treat them. These are in various stages of commissioning with frequently tests for purity. However, they often fail to meet quality standards.

4. Stolen taps

- Households do not store water in tanks like cities. Complaints regarding taps being stolen, have been rampant, worsening the situation. **For Example**
  ✓ Shivhar village (UP) has 180 households marked as FHTC, but with no continuous supply due to this region.

5. Inter-State disparities

- Only few states report high coverage while populous states like Uttar Pradesh and Rajasthan have lower coverage.

6. Reporting and certification

- Discrepancies exist between official reports and ground reality, as adoption numbers rely on self-reporting by villages and lack third-party certification.
- In only 100 out of the 398 villages in the Mahoba district (UP), eligible household tap connections had been fully connected with running water supply while JJM's official dashboard reports that all 385 villages have a "100% household tap connection."
  ✓ These households are included in Uttar Pradesh's official claim of 1.6 crore households having functional tap connections, conveying the impression that they all have access to tap water.

Suggestions

- Consistent supply of high-quality tap water must be the goal in efforts to augment capacity.
- States with low adoption rates and high population must be a policy priority, and receive additional funding if needed.
- Third party assessments to verify accuracy of official data, monitor on-ground

implementational success, needs to be regularized.

- Outreach, advocacy and awareness campaigns, focused on the rural communities, to inculcate proper usage and storage among households, is needed.

7. DIKSHA

Current context

The National e-Governance Division (NeGD), under the Ministry of Electronics and Information Technology (MeitY), is set to integrate Personalised Adaptive Learning (PAL) into its existing Digital Infrastructure for Knowledge Sharing (DIKSHA) platform.

About

- PAL's software-based approach will allow each student to have an individualised learning experience over the course of the curriculum based on their unique needs and abilities.
- The National Council of Educational Research and Training (NCERT) has sought the MeitY's expertise in facilitating PAL for DIKSHA.
- Apart from PAL, MeitY is also considering the introduction of voice commands in DIKSHA 2.0 as a part of AI-enabled learning.

About DIKSHA

- DIKSHA (Digital Infrastructure for Knowledge Sharing) is a national platform for school education, launched in 2017 which provides e-content for schools via an online portal and a mobile application.
- It is an initiative of National Council for Educational Research and Training (NCERT), under the aegis of the Ministry of Education (MoE), Government of India.
- DIKSHA has been adopted by almost all the States, Union Territories, Central autonomous bodies/boards including CBSE.

- DIKSHA was developed on the basis of the Strategy and Approach Paper for the National Teacher Platform and features digitised National Council of Educational Research and Training (NCERT) textbooks used national and State Boards.
- DIKSHA can be accessed free of cost by anyone and has also embedded assistive technologies for learners with visual or hearing impairments

Objectives

- DIKSHA portal enables, accelerates and amplifies solutions in realm of teacher education.
- It aids teachers to learn and train themselves for which assessment resources will be available.
- It helps teachers to create training content, profile, in-class resources, assessment aids, news and announcement and connect with teacher community.
- It enables curation of resources for chapters & topics in textbooks to digitally enable students and teachers.
- It enhances higher order competencies of learners and connect learning with real life solutions.

Significance

- DIKSHA policies and tools make it possible for the education ecosystem (educationist, experts, organisations, institutions - government, autonomous , non-government and private organisations) to participate, contribute and leverage a common platform to achieve learning goals at scale for the country.
- Under the PM e-Vidya initiative of the Government of India, which was declared as part of the Atmanirbhar Bharat vision, DIKSHA has been declared as 'One Nation, One Digital Platform'. Amid the ongoing COVID-19 pandemic, DIKSHA was included in the e-Vidya lockdown package for the education sector by the government.
- It is built on open-source technology that is made in India and for India, incorporating internet scale technologies and allowing for a variety of use-cases and solutions for teaching and learning.
- It facilitates all states/UTs to enable learning/ education at home through innovative state programs, hence leapfrogging the use of technology for the benefit of teachers and learners pan India.

Conclusion

- DIKSHA is part of efforts to build the nation's digital infrastructure for providing quality e-content for school education in States/UTs and QR coded energized textbooks for all grades (one nation, one digital platform).
- Till 25th July, 2023, DIKSHA has clocked more than 524 crores learning sessions, more than 6,125 crore learning minutes with more than 2.2 crore average daily page hits. A total of 3,17,496 pieces of e-contents are live on DIKSHA as on date (25th July, 2023).
- DIKSHA also hosts 2.43 lakh contributions by 11,624 academicians by way of teaching videos, explainers, and practice questions. Currently, all these contributions are scattered across the platform.

4. INTERNATIONAL RELATIONS

1. G20 Summit 2023

Current Context

Prime Minister of India Narendra Modi, on 10 September 2023, called an end to the G20 summit in New Delhi by passing on a ceremonial gavel to Brazil, which will take the bloc's presidency. The two-day summit witnessed the adoption of several remarkable decisions.

About G20

- G20 is an intergovernmental organization comprising of nineteen nations and the European Union.
- The G20 members account for nearly **2/3rd of the world's population, over 75 percent of global trade, and 85% of the world's GDP.**
- **G20 does not have any permanent office or headquarter**.
- The Presidency hosts the Summit and directs the agenda for the calendar year.
  - ✓ **The Troika** supports the Presidency (the previous and next Presidencies).
  - ✓ **Current Troika includes Indonesia (previous), India (current) and Brazil (next).**
- While the Head of States meet once a year, G20 agenda is pursued by two parallel tracks -
  - ✓ **The Sherpa Track:** The personal emissaries of the Leaders overseeing all the negotiations.
  - ✓ **The Finance Track:** They focus on Fiscal and Monetary policy issues.
- India received the presidency of G20 from Indonesia on December 1, 2022.

Evolution of G20

- **Founded in 1999** after the **Asian Financial Crisis (1997),** it was initially just a forum for the Finance Ministers and Central Bank Governors to discuss global economic and financial issues.

G20 MEMBERS

Argentina	Australia
Brazil	Canada
China	France
Germany	India
Indonesia	Italy
Japan	Mexico
Republic of Korea	Republic of South Africa
Russia	Saudi Arabia
Turkey	United Kingdom
United States of America	European Union (EU)

Source: g20.org

- Ever since the **2008 Global Financial Crisis**, the G20 was upgraded to the level of Heads of State.

Key Takeaways from the G20 Summit 2023

- Adoption of the New Delhi Leaders' Declaration:
  - ✓ On the very first day of the summit, PM Modi announced the adoption of New Delhi Declaration, focusing on the idea of **Mission LiFE** (**Lifestyle for Environment**), the intent of **"Vasudhaiva Kutumbakam",** and bringing the global attention towards problems like poverty and inequality, pandemics, climate change and their disproportionate impacts on the women and children.
  - ✓ It also focused on harnessing the potential of Digital Public Infrastructure and reforming Multilateral Institutions for the 21st century.
  - ✓ The Declaration promoted the idea of strong, balanced, sustainable and inclusive growth and accelerating the progress on Sustainable Development Goals etc.
- The G20 grouping saw a remarkable development with the **inclusion of 55-member African Union** as a permanent member.
- **Global Biofuel Alliance**
  - ✓ Brazil, India, and the USA, as leading biofuel producers and consumers, will be working together towards the development of a Global Biofuels Alliance along with other interested countries.
  - ✓ The Alliance shall work in collaboration with regional and international agencies as well as initiatives in the bioenergy, bioeconomy, and energy transition fields more broadly, including the **Clean Energy Ministerial Biofuture Platform**, the **Mission Innovation Bioenergy initiatives, and the Global Bioenergy Partnership** (GBEP).
- **India-Middle East-Europe Economic Transport Corridor**
  - ✓ USA, from the stage of G20 announced plans to build a rail and port connectivity mechanism all the way from South Asia to West Asia and eventually to Europe.
  - ✓ This transport corridor is recognized as "India-Middle East-Europe Economic Transport Corridor".
  - ✓ Along with USA, 7 other parties namely India, Saudi Arabia, the European Union, France, the UAE, Italy, and Germany, signed a Memorandum of Understanding (MoU) to establish this corridor.
- **Incremental progress on Climate Change**
  - ✓ The G20 leaders agreed to **increase world's renewable energy capacity** by three times by the year 2030 and acknowledged the need to continue phase-down of coal.
  - ✓ As per the statement made from the platform, around 4 trillion USD per year would be needed to pay for a green energy transition.
- A "softer language" on Russia-Ukraine Crisis was provided by India to describe the Ukraine conflict. The nations agreed on the fact that no nation can grab any territory by force and highlighted the sufferings of the people of Ukraine. There was no direct criticism of Russia for the war.

Challenges the Globe is facing due to Changing Geopolitics

- The **Covid pandemic and Russia-Ukraine Crisis have disrupted the global supply chains** and resulted in rising food inflation and insecurity. However, the most affected nations of Africa, and south America are not having any significant say in this.
- This problem was further aggravated by disruption of the **UN Black Sea Grain Initiative,** and ban on food grain exports by several nations amid the monsoon deficit and crop failures.
- Many island nations are facing the risk of climate change in the form of rising sea level and coastal submergence. Thus, there is a need to manage and mitigate these risks.
- With the rising imperialistic and expansionist approach of China, many African, Asian and South American nations are suffering from the

"**debt-trap**", thereby losing their territories and assets to China which exploits the resources and their markets.

- **The increasing trend of cryptocurrency** also require regulation as it is highly volatile in nature.

Significance of this Summit to Counter the Challenges

- With the inclusion of African Union, the say of Global South will also be included in defining the new world order based on "**universal good**".
- With the adoption of measures related to **climate change**, the **impacts of global climate change, including floods, coastal submergence, changing rain patterns, urban flooding etc. can be mitigated.**
- The **Summit also talked about bringing consensus in the regulation of cryptocurrency,** thereby managing its volatility and minimizing the risks involved.

- **Significance for India**
  - ✓ **Trade and economic significance:** The India-Middle East-Europe Economic

Transport Corridor will provide India an additional trade route directly to West Asia and Europe. This will increase India's access to global market and ensure an ease in global trade. It will also be a counter to China's Belt and Road Initiative.

- ✓ **Diplomatic significance:** Inclusion of African Union under India's presidency will strengthen its say of becoming the voice of "Global South".
- ✓ **Climate resilience:** Declarations on climate change will give more impetus to India's initiatives like International Solar Alliance, Coalition for Disaster Resilience Infrastructure etc. and will define its decisive role in combating climate change.

Conclusion

- The G20 under India's presidency has achieved a remarkable success in various domains, including economic, environmental, digital, geopolitical and other sectors, thereby strengthening India's claim of becoming a global power and advocating its permanent membership.

2. West Asia Economic Corridor

Current Context

During the 18th G-20 Summit 2023, India, European Union, USA, and Saudi Arabia announced plans to build a rail and port connectivity mechanism, all the way from South Asia to West Asia and eventually to Europe, called the "India-Middle East-Europe Economic Corridor".

About "India-Middle East-Europe Economic Corridor"

- India-Middle East-Europe Economic Corridor (IMEC) is a network of transportation / connectivity corridors comprising of both sea lanes as well as rail lines.
- This corridor is aimed to connect South Asia, West

Asia and Europe, thereby providing trade and connectivity to all the member nations and ensuring economic integration in the region as a whole.

- Participant members include India, UAE, Saudi Arabia, Germany, France, Italy, the United States, and the European Union.
- The IMEC will comprise of two distinct corridors, namely

- ✓ **The Eastern Corridor:** This corridor will link India to the Arabian Gulf.
- ✓ **The Northern Corridor:** This corridor will connect the Gulf Region with the Europe.
- This rail and shipping corridor is part of the "**Partnership for Global Infrastructure Investment**" (**PGII**), which is a collaborative initiative by the **G7 nations** to fund the infrastructure projects in developing countries.

Significance of the Corridor for India

- **Economic significance**
  - ✓ The corridor will help in connecting the business hubs, promoting the production as well as export of conventional energy resources, clean energy and other commodities, from India to Europe via West Asia, and vice versa.
  - ✓ In addition to this, India is looking to install a pipeline for exporting clean hydrogen along the track of the train. This will further advance the process of clean energy trade.

- **Increasing connectivity**
  - ✓ Plans to extend the electricity grids as well as telecommunication lines is one of the main goals of this initiative.
  - ✓ The trade corridor can also provide a means of connectivity to other initiatives such as, transporting aid to nations across various continents suffering from natural calamities, or transportation of food grains to ensure global food security. Through this, India can help the needy nations, thereby strengthening its ideology of "Vasudhaiva Kutumbakam" and its reputation of being the voice of the "Global South".

- **Countering China**
  - ✓ By providing an access to global markets,
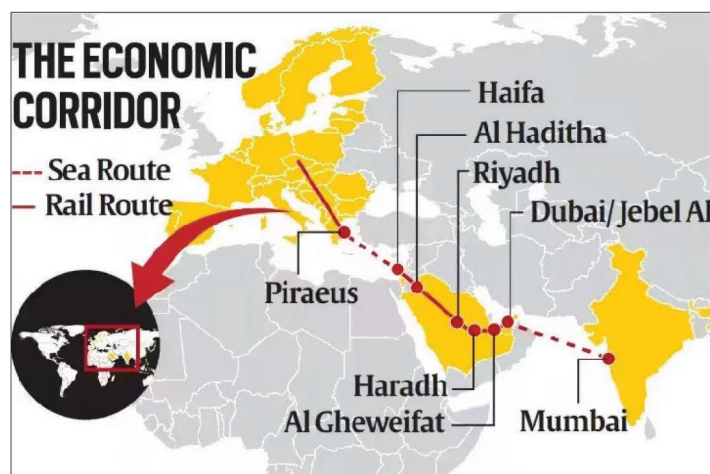
this trade and transport corridor will ease global trade. It will also be a counter to China's Belt and Road Initiative (BRI), which is carrying out infrastructural developments in many nations across all the continents, thereby pushing those countries in a "debt trap".

- ✓ With increased trade, the demand of goods and services will also increase. This will provide an opportunity for India to strengthen its manufacturing sector and become a "global manufacturing hub" while countering Chinese dominance in this sector.

- **Strategic significance**
  - ✓ This corridor will increase India's strategic hold in the Persian and Arabian Gulf, thereby countering China's installations at Gwadar and Djibouti Port.

Challenges for India with this Corridor

- The corridor seems to be an ambitious project which may provide an additional economic and geopolitical edge to India. However, the presence of China in the region through its "One Belt One Road" Initiative is a big political and economic challenge for India.
- Further, the stability of West Asia has been an elusive construct. Since the currently brokered

peace and tranquillity is led by pacts and accords more than sustainable peace-building, their longevity and credibility shall always remain questionable.

- The trade relations between India and European Union are not very good because of the sanitary and phytosanitary sanctions imposed by EU on Indian goods as well as Chinese trade dominance.

Way Forward

- India can reap the maximum benefit from this corridor if these challenges can be countered

effectively. By increasing regional cooperation with nations of West Asia and Europe, India can significantly increase its market penetration in the region and reduce their dependence over China.

- Further, India can increase the trade ties with European Union and for this, it can use its good diplomatic relations with nations like Germany and France.
- To cater to the projected increase in demand of goods, India can also focus on initiatives that can increase its manufacturing capacities.

3. India-Canada Standoff

Current Context

Recently, Canadian PM Justin Trudeau announced in the Parliament that there were credible allegations of the Indian Government's involvement in the assassination of Khalistani separatist leader Haredeep Singh Nijjar.

Key Developments in the Standoff

- Canada expelled a top Indian diplomat who worked with intelligence. India swiftly hit back, calling the accusations "absurd" and politically motivated, and expelling a Canadian diplomat in return.
- Canada has temporarily halted discussions on a proposed trade treaty with India. Canadian Trade Minister Mary Ng has postponed a planned trade mission to India, signaling the ongoing strain in Indian-Canadian relations.
- India updated its travel advisory to warn its citizens to "exercise extreme caution" in Canada due to "growing anti-India activities and politically condoned hate crimes".
- India has suspended all visa applications for Canadians, citing security threats against its diplomatic staff and "inaction by the Canadian authorities" on hate crimes, accusing Canada of being a safe haven for terrorists.
- Meanwhile, speaking at the UN, Trudeau stressed on how the intention was to not "provoke or

cause problems" with India as he urged to take the matter "extremely seriously" and work together to "uncover the truth".

- India asked Canada to downsize its diplomatic presence in the country as the size of Canadian diplomatic staff in India is larger than what New Delhi has in Canada, calling for parity in strength and rank equivalence.
- US Ambassador to Canada confirmed the credibility of this intelligence in a latest development, claiming it emanated from the Five Eyes intelligence grouping.
  - ✓ US Secretary of State Antony Blinken expressed concern over the situation and called for cooperation to let the investigation run its course, claiming that USA has been in touch with both.
- Thereafter, Justin Trudeau upped the ante by revealing that evidence and credible intelligence about the involvement of Indian agents in the killing was shared many weeks ago.

✓ He wanted India to "commit constructively" with Canada to establish the facts on this serious matter.

Implications

- **Paradigm shift in India's Intelligence Operations**
  - ✓ Foreign killings have not historically been part of India's intelligence playbook. If these allegations are true, then there is a radical reimagination of Indian intelligence and its extra-territorial operations.
  - ✓ RAW has become more emboldened to take action on foreign soil. In the past year, about six individuals whom India had designated as terrorists (in context of Kashmir or Khalistan) have been targeted and killed anonymously.
  - ✓ India's position on the world stage has never been so prominent and influential, as a result, India has been able to aggressively pursue a foreign policy that often runs counter to western interests, while still being courted by leaders from the US, UK, Australia and Europe.

- **Khalistan issue has become a major irritant in India-Canada bilateral relations**
  - ✓ The Indian diplomatic community in Canada has consistently emphasized Ottawa's failure to address "Sikh extremism".
  - ✓ India has also accused Canada of not acting upon "specific evidence about criminal activities" done by Canada-based individuals, claiming that the Khalistan movement remains active with the support of militants continuing to operate in Canada.
  - ✓ PM Modi voiced strong concerns about Sikh protests in Canada while meeting with Trudeau during the 18th G20 summit in New Delhi.
  - ✓ India recently criticized Canada for permitting a parade float that depicted the assassination of Indira Gandhi, interpreting it as the

Significant Pillars of India-Canada Relationship

1. **Political**
   - India established diplomatic relations with Canada in 1947 and have a long-standing bilateral relationship based on shared principles such as democracy, human rights, rule of law, and pluralism.

2. **Economic**
   - A priority market for Canada, in 2022, India was Canada's 10th largest trading partner. Bilateral trade between India and Canada has seen significant growth in recent years, reaching $8.16 billion in 2022-23.
   - Both countries are negotiating for a Comprehensive Economic Partnership Agreement (CEPA) including trade in goods, services, investment, and trade facilitation.

3. **Diaspora Connections**
   - Canada hosts one of the largest Indian diasporas in the world, numbering 16 lakh people of Indian origin, accounting for more than 3 % of the total Canadian population and 700,000 Non-Residential Indians (NRIs).

4. **Education**
   - Indian students make up 40 per cent of overall international enrolment, contributed USD 4.9 billion to the Canadian economy in 2021. [Canadian Bureau for International Education]

5. **Strategic**
   - India is indispensable for Canada's Indo-Pacific strategy, given her growing economic and demographic importance in the region.

6. **Science**
   - India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability (IC-IMPACTS) is the first, and only, Canada-India Research Centre of Excellence.
   - ISRO and Canadian Space Agency (CSA) have signed MOUs in the field of exploration and utilization of outer space. For Example, ISRO in its 100th Satellite PSLV launch (2018), also flew Canada's first LEO satellite.

glorification of Sikh separatist violence.

✓ Canada is home to the largest Sikh population outside Punjab, comprising more than 2% of the country's population. It also has significant political representation.

- **Diplomatic fallout**
  - ✓ It is likely to spread far beyond the India-Canada context as countries like the UK, USA and Australia find themselves caught in the middle.
  - ✓ Canada is one of the oldest allies of the West while India has come to occupy a pivotal place in contemporary geopolitics, and has been the focus of multiple recent strategic partnerships (Example- In the Indo-Pacific Region).
- **Effect on Khalistan Movement**
  - ✓ It has led to a crackdown on Khalistani activities in India with the National Investigation Agency (NIA) seizing Khalistani terrorist Gurpatwant Singh

Pannun's properties in India.
  - ✓ Pannun, who heads the banned 'Sikhs for Justice' Organization, had asked all Indo-Canadian Hindus to leave the country following the diplomatic crisis.

Way Forward

- India must clearly articulate its position on Khalistan secessionism and establish the primacy it puts in securing its national interest.
- However, the fiasco shouldn't be let disproportionately escalate as India must focus on constructive agendas to streamline its engagement with the West.

4. India-Saudi Arabia Energy Export Deal

Current Context

India and Saudi Arabia, on 11 September 2023, signed eight agreements during the State visit of Crown Prince and PM of Saudi Arabia Mohammed bin Salman bin Abdulaziz Al Saud.

Key Takeaways from the Bilateral Meeting

- The meeting concluded within a day after the launch of India-Middle East-Europe Economic Corridor on the sidelines of G-20 Summit, which links India with the Middle East and ultimately, to Europe.
- They agreed to set up a Joint Task Force with an objective to fast-track the 50 billion USD worth **West coast refinery project**.

  - ✓ This project is a 60 million tonnes "refinery-cum-petrochemical complex" to be constructed on the Maharashtra coast.
  - ✓ The partner companies involved in development of the project include Saudi Arabian Oil Company (Saudi Aramco) and Abu Dhabi National Oil Company (Adnoc) as well as Indian oil companies like Indian Oil Corporation (IOC), Hindustan Petroleum

Corp Limited and Bharat Petroleum Corporation limited.

- During the meeting, both the nations agreed to upgrade their existing "Hydrocarbons Relationship" to a "Comprehensive Energy Partnership".
- The signed **MoU** seeks to support India's energy transitions and commitment towards combating climate change.
- It will also help in India's transformation **from a** "**net buyer**" of oil and natural gas to a "**net energy exporter**" of green power and hydrogen fuel.
- The two sides also held discussions on **power grid, gas grid, optical grids and fibre networks** for possible cooperation.
- In the meeting, the Indian Prime Minister wholeheartedly appreciated the initiatives taken

up by the Saudi Arabia to ensure welfare of the Indians residing and working there.

- In addition to this, the leaders of both the nations co-chaired the 1st Summit-level Meeting of the "**India-Saudi Arabia Strategic Partnership Council**" (SPC).
- The India-Saudi Arabia SPC was set up in 2019, making India the fourth country with which Riyadh formed such a partnership, after the UK, France, and China.

Status of India-Saudi Arabia Bilateral Ties

- The bilateral trade between both the nations increased by almost 23 percent to above USD 52 billion in 2022-23.
- India is the second largest trade partner for Saudi Arabia while Saudi Arabia is the fourth largest trade partner for India.

Significance of the Meeting

- India and Saudi Arabia are two of the fastest growing economies in the world. Thus, a partnership between these two nations is significant for ensuring stability in the entire region.
- With an engagement in the petrochemical and refinery sector, India's energy-reliance will diversify.
- These agreements will also result in diversification of bilateral trade by incorporating sectors such as renewable energy, defence and security, climate change as well as data sharing.
- India's relations with Saudi Arabia are very important to secure Indian trade through the Middle East.
- With the restoration of diplomatic relations between Saudi Arabia and Iran, and Iran and USA, India can take benefit from both Saudi Arabia and Iran by engaging in the newly proposed economic and transport corridor on one hand, and diversifying their energy security

India-Saudi Arabia Strategic Partnership Council

The pact related to the establishment of SPC was signed in October 2019 during PM Modi's State visit to Saudi Arabia.

The objective of SPC is to establish a "high-level council to steer the Indo-Saudi relationship".

- It has **two key pillars** namely,
- **Committee on Political, Security, Social and Cultural Cooperation; and**
- **Committee on Economy and Investments.**

Each of these include four functional levels of engagement:

- **Summit level** (or apex level, i.e., between Prime Minister & Crown Prince);
- **Ministerial-level;**
- **Senior Officials' Meetings;** and
- **Joint Working Groups (JWGs).**

demands by purchasing oil from Iran on the other.

Concerns for India-Saudi Arabia Relations

- Although the new trade and transport corridor has been announced between India and West Asia, the presence of China's "One Belt One Road" initiative and its oil-trade relations with Saudi Arabia can be a challenge.
- Despite the normalization of relations among the West Asian nations, the longevity and credibility of this pact-laden peace is questionable.

Way Forward

- A close relation with Saudi Arabia can increase India's reach in organizations like OIC and GCC.
- India, due to its cooperation with nations like Israel, Saudi Arabia and Iran etc., can play a key role in brokering peace in the region.
- There is a huge scope for further advancements of these ties if the challenges can be resolved and engagement can be diversified across multiple sectors.

5. Nagorno-Karabakh Conflict

Current Context

Armenian separatist forces in the disputed Nagorno-Karabakh region of the South Caucasus surrendered and agreed to a ceasefire, 24 hours after Azerbaijan began an offensive to restore its full control over the territory.

About

- Under the agreement, separatist forces will disband and sit for talks.
- Authorities in the ethnic Armenian region have run its affairs without international recognition since fighting broke out in the early 1990s. For approximately four decades, territorial disputes and ethnic conflict between Armenia and Azerbaijan have severely impacted the Nagorno-Karabakh region.
- The two countries went to war over Nagorno-Karabakh in 2020, and months later, Russia brokered a truce.

Recent Developments

- For the past nine months, Azerbaijan had imposed a blockade on the only route into the enclave of Nagorno-Karabakh from Armenia, known as the Lachin Corridor.
- The residents of Nagorno-Karabakh accused Azerbaijan of causing a humanitarian crisis, claiming that it resulted in the crippling of critical civilian infrastructure like access to gas, electricity, health services, and internet access.
  - ✓ Nagorno-Karabakh also accused Azerbaijan of blocking the import of essential goods and causing the shortage of everyday supplies like food and water.
- Azerbaijan army unleashed an artillery barrage and drone attacks against outnumbered and undersupplied pro-Armenian forces.
- In announcing its military operation, Azerbaijan aired a long list of grievances, accusing pro-

Armenian forces of attacking its positions, planting land mines and engaging in sabotage.
- Even though Azerbaijan President Ilham Aliyev insisted the Azerbaijani army struck only military facilities during the fighting, separatist officials in Nagorno-Karabakh said Stepanakert and other areas came under intense shelling, and accused Azerbaijan of violating the ceasefire with missile-artillery strikes.
- Azerbaijan accused Armenia of systematic shelling of its army positions and said it had responded by launching local, anti-terrorist activities to disarm and secure the withdrawal of formations of Armenia's armed forces.

Background of the Conflict

Nagorno-Karabakh is a mountainous and heavily forested region that, under international law, is recognized as part of Azerbaijan. However, majority ethnic Armenians reject Azeri rule.

- After Azerbaijan's troops were pushed out of the region following a war in the 1990s, ethnic Armenians have been in administrative control of Nagorno-Karabakh, with support from Armenia.
- But the region has been the focus of a long-standing dispute between both with each laying its claim on the territory.
- Azerbaijan regained lost territories and parts of Nagorno-Karabakh during the 2020 fighting (2nd War) that ended with an armistice placing Russian peacekeepers in Nagorno-Karabakh.
  - ✓ More than 6,700 people died in the fighting,

which ended with a Russian-brokered peace agreement where Moscow deployed about 2,000 peacekeeping troops to the region.

International Response

- The U.S. White House national security spokesman expressed deep concern about Azerbaijan's military actions and added that the U.S. was closely watching the worsening humanitarian situation.
- Russia's Foreign Ministry urged the conflicting parties to immediately stop the bloodshed, hostilities and eliminate civilian casualties.

  - ✓ Russia has been a peace-maker before but relations between Yerevan and Moscow have been impacted after Armenia held military exercises with the United States recently.
  - ✓ Armenia has also taken steps towards ratifying the Rome Convention, which created the International Criminal Court that indicted Russian President Vladimir Putin.

- Earlier, the UN Security Council had scheduled an urgent meeting as France and the United States led efforts to stop the military operation.

Impact

- Protests erupted in Yerevan after Azerbaijan claimed victory in the 24-hour offensive, to voice anger at the government's handling of the crisis, as a result of which, the local Armenian government has to disband its military.
  - ✓ Since 2020, Armenian Prime Minister Nikol Pashniyan has faced widespread protests for

1st Nagorno-Karabakh War (1988-1994)

- In 1988, Karabakh Armenians demanded the transfer of the region from Soviet Azerbaijan to Soviet Armenia.
- The conflict escalated into a full-scale war in the early 1990s following the dissolution of the Soviet Union.
- It led to tens of thousands of casualties. The war was won by Armenia, which subsequently occupied the regions.
- Ethnic Azerbaijanis were expelled from the Armenian-controlled areas, while ethnic Armenians were expelled from Azerbaijan.

losing territory to Azerbaijan as well as for the blockade.

- Critics argue that this denotes the declining influence of Russia as despite stationing peacekeeping forces since 2020, clashes broke out.

  - ✓ The hostilities worsened an already grim humanitarian situation for residents who have endured food and medicine shortages for months due to the blockade.

- Around 120,000 ethnic Armenians have relocated to escape the conflict in this turmoil.

Way Forward

- Parties to the conflict must show strong resolve to commit to cessation of hostilities and adhere to international peace.
- Efforts must be made to address the worsening humanitarian situation to facilitate the supply of food and essential medicines.

6. China's 'Expansionist' Map 2023

Current Context

China released its standard map for 2023, showing Aksai Chin and Arunachal Pradesh as part of its territory.

About

- This map was released by the Chinese Ministry of Natural Resources, celebrating Surveying and Mapping Publicity Day and National Mapping Awareness Publicity Week.
- The step was taken by China just a few days after the BRICS summit, where the Indian PM and Chinese President gave a joint statement to resolve the border issues.
- In retaliation, India lodged a strong protest through diplomatic channels with the Chinese side.

The Recent Incidents of the India-China Border Dispute

- The killing of 20 Indian soldiers in the **Galwan Valley of Ladakh in 2020** sparked a military confrontation between India and China.
- In the strategically significant Tawang region of Arunachal Pradesh in 2022, Indian and Chinese troops engaged in **combat in the Yangtse area** near the India-China frontier.
- **Five "friction" points— Galwan** after the deadly clash on June 15, 2020; the **north and south banks of Pangong Lake** in February 2021; **Patrolling Point 17A in the Gogra-Hot Spring** in August 2021; and **Patrolling Point 15 in September 2022**— were resolved through 18 rounds of negotiations between the area military commanders of both sides.

Current Situation

To resolve the ongoing border standoff for more than three years, 19 rounds of commander-level talks have been concluded; however, some of the issues are yet to be resolved, e.g., disengagement at Demchok and Depsang etc.

Issues with the Recently Released Chinese Map

- The Chinese standard map of 2023 claims its stake over several disputed territories with its neighboring nations.

The claim on the disputed territories of India

- In the case of India, the released Chinese map indicates Chinese claims over the Aksai Chin region of Ladakh (which was annexed by China in the 1962 war) and some regions of Arunachal Pradesh state (claiming them to be the regions of south Tibet).

Claiming other disputed territories

- Not only India, but the territories of other nations are also claimed by China in its "standard map".
- The Chinese map claims Taiwan as its territory. In addition to this, China has also claimed the nine-dash line, thereby laying claim to a large area of the South China Sea.
- It is not the first time China has claimed many of the disputed territories on its standard map.

Impacts of the Controversial Map

- The release of this controversial map has indicated the ill intent of Chinese expansionist policies, which are challenging the sovereignty of its neighboring nations.
- Through the creation of artificial islands, China has been trying to increase its influence in the South China Sea and nearby areas of the Pacific Ocean.
- The release of this map just a few days after the joint statement of India and China to resolve the border dispute indicates Chinese double standards and ill intentions behind the step. This again raises questions about Chinese diplomatic credibility.

Way Forward

- Along with lodging serious protests against this map, India has also been focusing on developing border infrastructure so as to create a deterrent at the frontiers. India has increased its budgetary allocation in this domain by almost 400 percent as well.
- India also needs to counter the ongoing Chinese expansionist policies such as the Silk Road Economic Belt, the Maritime Silk Road or the String of Pearls, and the CPEC (China-Pakistan Economic Corridor). In this case, QUAD and other international platforms like IORA (Indian Ocean Rim Association), IONS (Indian Ocean Naval Symposium), etc. can be a counter to such expansionist policies.
- G20 and BRICS platforms can also be used to raise this issue at global level.

5. ENVIRONMENT, DISASTER MANAGEMENT, GEOGRAPHY

5.1. ENVIRONMENT

1. China, U.S. and India absent at U.N.'s Climate Ambition Summit

Current Context

The Climate Ambition Summit (CAS) in New York, as part of the United Nations General Assembly, was marked by the absence of major economies whose actions significantly influence the future of global emissions

About

- China, United States and India — who collectively account for about 42% of global greenhouse gas emissions and are the top three emitters in that order — were all absent
- India's neighbours Sri Lanka, Nepal and Pakistan, emerging economies such as South Africa and Brazil were among the listed speakers along with The European Union, Germany, France and Canada.

Climate Action Summit

- It was designed to showcase leaders who are movers and doers, have credible actions, policies and plans to keep the 1.5°C degree goal of the Paris Agreement alive and deliver climate justice to those on the front lines of the climate crisis.
- In the run-up to the summit, about 100 heads of State had written in response to a call from Secretary-General Antonio Guterres to ramp up action to address the climate crisis. However, only representatives from 34 states and 7 institutions were given the floor on the day of the summit.
- All the "main emitters" and notably all G-20 governments were urged to commit to presenting, by 2025, more ambitious economy-wide Nationally Determined Contributions featuring absolute emissions cuts and covering all gases.
- The Secretary-General's Climate Action Team

engaged governments, as well as businesses and local authorities with transition plans to reach net zero in line with the UN-backed credibility standard and accountability of net zero pledges

Indian Context

- India last updated its climate pledges in the UNFCC COP26 Glasgow in 2022 through its Panchamrit Strategy.

PM Modi's 'Panchamrit' on climate change

- India will reach its non-fossil energy capacity to 500 GW by 2030

- India will meet 50 per cent of its energy requirements from renewable energy by 2030

- India will reduce the total projected carbon emissions by one billion tonnes from now to 2030

- By 2030, India will reduce the carbon intensity of its economy to less than 45 per cent

- By 2070, India will achieve the target of Net Zero

- The scientific assessment is that India's commitment, alongside similar commitment by G-20 economies is insufficient to keep temperatures from keeping below 2C by the end of the century.
- However, India's low per capita emissions and contribution to the carbon already in the atmosphere has led to suggest that India has committed to more than its fair shar to keeping to the Paris-agreed limits.

Way Forward

- Climate action is dwarfed by the scale of the challenge. If nothing changes, we are heading towards a 2.8 degree temperature rise towards a dangerous and unstable world.
- In this context, the Climate Crisis is real and necessitates international cooperation on climate finance, phasing out fossil fuel emissions and building energy efficient infrastructure.

2. Central Empowered Committee

Current Context

The Central Government has recently notified that the "Central Empowered Committee" would now function under the administrative control of the Environment Ministry.

About the notification

- **The notification is in line with the SC judgement**, in which it suggested that the Central Empowered Committee as an institution should be a permanent statutory body instead of being an ad-hoc body.
- **According to the notification,** the Committee will now report to the Environment Ministry which will nominate its members and have the final say on the merit of its recommendations.

- **It has diluted the autonomy of the Committee on four key counts**

  - ✓ **Reporting:** The Committee will report to the Ministry, instead of the SC;
  - ✓ **Appointment:** The Ministry will pick all the members and the SC will have no role in the process;
  - ✓ **Funding:** The Ministry, and not the Court, will fund the Committee; and
  - ✓ **The provision of having two NGOs** in the Committee has been done away with. Now

anyone considered an "expert" can be included as a member.

Central Empowered Committee (CEC)

- **Formation:** The CEC was formed following the Supreme Court order in the **T.N. Godavarman Thirumalpad Vs Union of India and Others case, in May 2002.**
  - ✓ Now, it has been given the status of a permanent statutory body. under the Environment (Protection) Act, 1986.
- **Members**
  - ✓ The new CEC will be a five-member body with a chairperson.
  - ✓ Each of the members will be an expert in the field of environment, forests and wildlife.
  - ✓ The tenure of members will be for three years.

- **Function:** It was constituted as a 'green-watchdog' at the national level to:
  - ✓ **Monitor the implementation of the SC orders** regarding conservation of environment, forest and wildlife; and

- To place the non-compliance cases before the Court which may be related to encroachment removals, implementation of working plans, compensatory afforestation, plantations and other conservation issues.

- **Vested Powers**
  - ✓ **Call for any documents** from any person or the Union or the State governments or any other official;
  - ✓ **Summon any person** (seeking relief against any steps taken by the Government or any other authority, in purported compliance with the SC orders) and receive evidence from such a person either on oath or on affidavit;
  - ✓ **Seek assistance/presence of any person (s)/ official (s)** required by it in relation to its work.

- **Significance**
  - ✓ **Reconstituted in 2008**, the CEC has, in the words of the SC, "**rendered yeoman services to the cause of environment.**"
  - ✓ **The committee has filed thousands of reports** on issues referred to it by the apex court that have shaped the discourse around environment policies, which include compensatory afforestation, computing net present value of forests, etc.
  - ✓ **The CEC** has been ensuring the compliance of the SC orders, in conservation related issues, since it's formation, thereby contributing to the forest and wildlife protection efforts of India.

Challenges

- Until now, the CEC reported directly to the SC and often evaluated the Ministry's decisions, but now the Ministry will have the final say and total control over the Committee.
  - ✓ It will thus dilute the autonomy of the Committee and hamper it's functioning. It is feared that the powers of the Committee might be misused by the government to enforce its agenda.

- There will be no proper authority to check the decisions of the Ministry and the people seeking justice against their grievances would have to face difficulty in appealing.
- The SC suggested reforming the CEC and giving it the status of a permanent statutory body. The Government instead made it accountable to the Ministry itself, thus creating doubts on the scope of accountability in the CEC.

Way Forward

- The recent amendments to the Forest Conservation Act (1980) have already made the appealing provisions difficult, undermining the SC's landmark judgment in the Godavarman case. Now, dilution of the CEC's autonomy is perceived as an instance where the government has successfully reduced the role and influence of the SC.
- The government must ensure the independent and effective functioning of the CEC, and comply to the SC judgements in order to conserve India's diverse ecology.

3. World Ozone Day

Current Context

World Ozone Day was celebrated on **16th September** to commemorate the signing of the **Montreal Protocol,** an international environmental treaty for phasing out of production and consumption of Ozone Depleting Substances, that came into force in 1987.

About

- This day is celebrated every year to spread awareness among people about the depletion of Ozone Layer and the measures taken/to be taken to preserve it.
- The Ozone Cell, Ministry of Environment, Forest and Climate Change, Government of India has been celebrating the **World Ozone Day since 1995** at the National and State levels.
- **The theme** for World Ozone Day 2023 is "**Montreal Protocol: fixing the ozone layer and reducing climate change**".

Ozone Layer

- Ozone is an odorless, colorless gas made up of three oxygen molecules (O_3) and is a natural part of the environment. It occurs both in the Earth's upper atmosphere, or stratosphere, and at ground level in the lower atmosphere, or troposphere.
- **Ozone layer** exists in the Stratosphere, **between 10 km and 40 km** above the Earth's surface and protects us from UV radiation from the Sun. Ozone formed in the stratosphere is called stratospheric ozone or good Ozone.
- **Benefits of Ozone layer:** Without the Ozone layer, radiation from the sun would reach earth directly, having ill effects on human health, i.e., eye cataract, skin cancer, etc., and adverse impacts on agriculture, forestry and marine life.

Ozone depletion

- Man-made chemicals containing chlorine and bromine reach the stratosphere and undergo a complex series of catalytic reactions, leading to destruction of ozone. These chemicals are called Ozone (O_3) Depleting Substances.
- Nitrogen oxides and volatile organic compounds are emitted by cars and trucks, industrial facilities, refineries, power plants, household products and cleaning supplies, and paints and solvents.

Tropospheric (or ground-level) Ozone

- •Tropospheric (or ground-level) ozone is a short-lived climate pollutant that remains in the atmosphere for only hours to weeks.
- It does not have any direct emissions sources, rather it is a compound formed by the interaction of sunlight with volatile organic compounds (VOCs) – including methane – and nitrogen oxides (NOX) emitted largely by human activities.
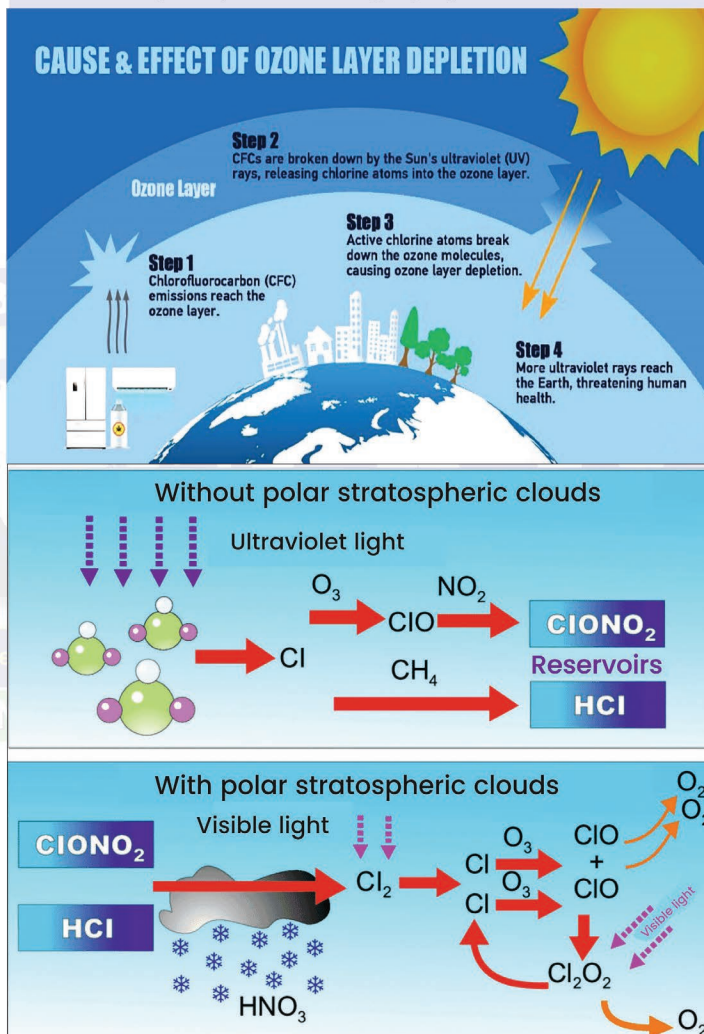
- The long-range transport of ozone and precursor emissions from local, regional, and international sources can also impact air quality.
- Wildfires and urban emissions from as far away as Asia contribute to elevated summertime ozone concentrations. Reducing emissions from these sources is essential to reducing the formation of ground level ozone.

- Ozone depletion is also caused by the photodissociation by Polar Stratospheric Clouds, closely associated with Rossby Waves.

International Efforts

- **The Vienna Convention**, an international treaty on the protection of the Ozone Layer, came into force in 1985. Under this convention, the Montreal Protocol's came into force in 1987 to repair the ozone layer to protect the earth's Ozone Layer by phasing out production and consumption of Ozone Depleting Substances for end applications.
- **The Montreal Protocol** provides a set of practical, actionable tasks to phase out ozone- depleting substances and is one of the most successful and effective environmental treaties ever negotiated and implemented, due to the unprecedented level of cooperation and commitment shown by the international community.

Efforts from India

- India, as Party to the Montreal Protocol since June 1992, has been successfully implementing the Montreal Protocol and its ozone depleting substances phase out projects and activities in line with the phase out schedule of the Protocol.
- India has phased out **Chlorofluorocarbons, Carbon tetrachloride, Halons, Methyl Bromide and Methyl Chloroform** for controlled uses as on 1 January 2010, in line with the Montreal Protocol phase out schedule.

- Currently Hydrochlorofluorocarbons (HCFCs) are being phased out as per the accelerated schedule of the Montreal Protocol.
- Hydrochlorofluorocarbons Phase out Management Plan (HPMP) Stage-I has been successfully implemented from 2012 to 2016 and Hydrochlorofluorocarbons Phase out Management Plan (HPMP) Stage- II is currently under implementation from 2017 and will be completed by the end of 2024.
  - During HPMP Stage-II implementation, India completely phased out the use of HCFC 141b in manufacturing of rigid foam, the first among the developing countries to achieve the milestone.

- India is the 1st country in the world to come out with **India Cooling Action Plan (ICAP)** which provides an integrated vision towards cooling across sectors encompassing areas such as reduction of cooling demand, refrigerant transition, enhancing energy efficiency, and better technology **options by 2037-38** through forging synergies with ongoing programs and schemes of the Government.
- ✓ India has launched another initiative for environment protection such as **LiFE mission** to combat climate change and ozone layer depletion.

4. Global Biofuel Alliance

Current Context

The Prime Minister of India launched the Global Biofuel Alliance along with the leaders of nations like Argentina, Singapore, Bangladesh, Brazil, Mauritius, Italy, USA and UAE, on the sidelines of the G-20 Summit in New Delhi.

About the initiative

- Global Biofuel Alliance is an alliance of

governments, industries and international organizations that seeks to promote the adoption

of biofuels on a global scale by promoting technological developments, encouraging the use of sustainable biofuels.

- India has launched the Global Biofuel Alliance (GBA) while holding the Presidency of the G20.

Features of Global Biofuel Alliance

- The Alliance would serve as a central knowledge repository and a hub of experts thereby acting as a catalytic platform which intends to encourage international cooperation for the advancement and widespread adoption of biofuels.
- It seeks to bring together the biggest producers as well as consumers of biofuels to promote development and deployment of biofuels.
- It also seeks to establish robust standards and certification by ensuring the participation of various stakeholders.
- So far, 19 nations and 12 international organization have shown their interest and agreed to become a member of the GBA.

Significance of Global Biofuel Alliance

- GBA, which has been supported by various regional and global organizations such as International Energy Agency, International Civil Aviation Organization, World LPG association, World Economic Forum etc., will focus on collaboration, thereby providing additional opportunities to Indian industries by exporting technology and equipment.
- It will also promote the ongoing biofuel programs of India like PM-JIVAN Yojana, GOBARdhan scheme and SATAT, thereby ensuring an increase in the income of farmers, generating more jobs in the economy and ensuring a holistic and all-round development of the Indian ecosystem.
- The global ethanol market was valued almost 100 billion USD in 2022 and several speculations predicted the compound annual growth rate of more than 5 percent by 2032. Further, it is

expected to surpass 162 billion USD by the year 2032.

- As per IEA, due to Net Zero targets, the growth potential for biofuels is almost 3.5 to 5 times by 2050, thereby creating a huge opportunity for India.
- The step is in line with India's ongoing initiatives in the field of Bioethanol such as "20 percent ethanol blending in petrol" by 2025 and so on.

Challenges for India in the Biofuels Sector

- Currently, India primarily focuses on second generation biofuels, that is, use of lignocellulosic (non-starch based fibrous plant parts) which include straw, bagasse, forest residues etc. In addition to this, crops like Jatropha and Pongamia are also used to produce biodiesels. In such a scenario, the conversion of land for non-food crop production may result in food-insecurity in India.
- Although India is promoting the use of biofuels, their burning will also result in CO2 emissions which will compromise India's INDCs and Net Zero target.
- India has been focusing on the third generation biofuels (that is biofuel formation from Algae) but it is in nascent stages and require technological advancements.
- Similarly, in the case of biodiesel and bioethanol, pre-treatment is a big challenge.

Way Forward

- More research advancements should be promoted in pre-treatment of biofuels so as to increase their efficiency.
- R&D is needed in the field of carbon sequestration mechanisms so as to check the CO_2 emissions from biofuels.

5. Global Carbon Tax

Current context

Highlighting the need to have a global conversation to device a tax mechanism during the first Africa Climate Summit, the President of Kenya Willium Ruto raised the demand for a Global Carbon Tax to be imposed on polluters.

About

- According to Ruto, the impact of climate change is eroding the growth and GDP of African nations by almost 15 percent.
- The first Africa Climate Summit was organized in Kenya on September 5, 2023.
  - ✓ The theme for this summit was "driving green growth and climate finance solutions for Africa and the world".

What is Carbon Tax?

- Carbon tax can be defined as a tax levied on the emitters of greenhouse gases. This tax can be seen as a penalizing mechanism, which encourages the emitters to adopt new technologies and switch towards cleaner fuels so as to reduce their emissions.
- There are two broad forms of carbon tax:
- **Emission tax:** It is based on the emissions of GHGs done by an entity.
- **Tax imposed on GHG-intensive goods or services**: For example, imposition of a carbon tax on petroleum and associated products.

Different types of carbon taxes that are currently operational

- Around 35 such taxation mechanisms are functional across the world. Further, more than 20 cities and almost 40 countries are already using some carbon pricing mechanisms.
- However, major GHG-emitting nations around the world like USA does not have any dedicated carbon tax mechanism at national level. Similarly, China works on emission trading system rather than carbon tax.

Does India have a dedicated carbon tax in place?

- India does not have any carbon tax or such dedicated carbon pricing mechanisms.
- However, there are several taxation mechanisms as well as schemes in place which put an implicit price on carbon.
- This includes mechanisms such as Coal Cess, Renewable Energy Certificates and the Perform Achieve Trade scheme.

The need of Global carbon tax

- The effect of climate change has been more deteriorating for the developing and the least developed nations, however, their role in greenhouse gas emission is comparatively negligible.
- Since it is evident that major GHG emitters around the globe lack dedicated carbon tax system, there is a need to have such a dedicated mechanism that can tax those "polluting nations" and bring a level-playing field for both the developed nations as well as developing ones.
- The tax collected from the "GHG emitters" can be utilized to fund the developing and LDC nations in terms of disaster resilience and technology sharing to combat climate change and its effects.
- It has been found that African nations have faced a loss of around 15 percent in their GDP due to the losses associated with climate change events. Further, the world economy may lose up to 18% of the global GDP from climate change.
- In addition to this, the LDCs further face the problems in managing this issue as they need to

pay almost five times more for their development loans as compared to other nations.

Is the idea of Global Carbon tax novel?

- The idea to "tax the polluters" is not novel as such. Way back in 1972, the idea of "**Polluter Pays Principle**" was introduced firstly by the OECD.
- Further, a dedicated fund, called the "**Green climate fund**" was also established where the intended "polluters" that is, developed nations were responsible to contribute USD 100 Million to this fund as a cost for their "polluting actions".
- In the Kyoto Protocol, three mechanisms of carbon credit, namely, Emission trading (ET), Clean development mechanism (CDM) Joint implementation (JI) were also introduced as a step to reduce carbon emissions.

Challenges associated with it

- Firstly, it is difficult to put price on the carbon emissions.
- Further, the tax levied is of indirect nature.

Thus, the tax burden shifts on the people, thereby impacting the economy of the country.

- It is very difficult to have a consensus on devising any such mechanism as majority of the polluting nations show lack of participation in such initiatives.
- Countries like India, whose per capita emissions are very low, also face challenges as there is a demand by developed nations to bring India under the pool of "paying nations" based on their total emissions.

Way forward

- A solution to this problem could be associated with reducing the impact of carbon tax by investing the revenue collected in the form of capital.
- Renewable energy, efficient transportation and energy-efficiency projects should be invested with money collected.
- There is a need to develop "political trust" so as to promote participation of all and realizing the idea of "global good".

6. Bandipur Tiger Reserve

Current Context

Recently, the Additional Principal Chief Conservator of Forests (APCCF) Vigilance had given the directions to the Regional Commissioner (RC) of Mysuru to clear the illegal constructions in the ecologically sensitive zones of Bandipur tiger reserve..

About the issue

- This action of APCCF has come in response to a complaint filed by a Wildlife Activist, Girdhar Kulkarni who reported the illegal constructions in the buffer zone and the notified Ecologically sensitive zones of the tiger reserve which are also a part of the areas dedicated as elephant and tiger corridors.
- According to the complainant, the Bandipur ESZ Monitoring Committee has given permission to the accused in 2021 to use the property (that is, 33

cottages which were constructed in the elephant corridor) for residential purposes despite the fact that this land conversion was cancelled in 2012 by the then DC of Chamarajanagar.

Eco-sensitive Zones (ESZ)

- According to the National Wildlife Action Plan of the Ministry of Environment, Forest and Climate Change (2002-16), the state government should declare the land which falls within 10 kilometers

of the boundaries of wildlife sanctuaries and national parks as "Eco-sensitive zone" or "eco-fragile zones" under the Environmental (Protection) Act, 1986.

- These ESZs act as "shock absorbers" for the wildlife protected areas. They also act as zone of transition between the areas which are highly protected and those which are given lesser protection.

About the Bandipur Tiger Reserve

- Bandipur Tiger Reserve is located in the Chamarajanagar district of Karnataka and is spread over an area of almost 874 square kilometers. The core area of the tiger reserve is around 523 square kilometers while Its buffer area is around 357 square kilometers.

- It was established as a Tiger Reserve in the year 1973. It is a part of the Nilgiri Biosphere Reserve, which is also known as the first biosphere reserve of India.

- **Geographical location**
  - ✓ The Kabini river flows in the north while the Moyar river flows in the south of the Bandipur tiger reserve. The Nugu River flows through the tiger reserve.
  - ✓ Himavad Gopalaswamy Betta is the highest point in the tiger reserve.

- **Vegetation**
  - ✓ Bandipur tiger reserve contains tropical dry deciduous forests, dry deciduous scrubs and tropical moist mixed deciduous forests.

- **Biodiversity**
  - ✓ Key faunal species:
    - ▪ Around 75 tigers reside in the Bandipur tiger reserve.
    - ▪ Other important species include stripe-necked mongoose, Chital, lion-tailed macaque, giant flying squirrel, mouse deer, sloth bear, four-horned antelope, wild dog, etc.

Core and Buffer Areas in a Tiger Reserve

- The core area is recognized as the most important area for wildlife and natural resource conservation. This area is protected by the forest department in a strict manner and no human activity is permitted there.
- Buffer area is recognized as the area which surrounds the core zone. In the buffer zone, nature is conserved along with compatible and regulated human uses of land or water. The human activities which are allowed in the buffer zone includes recreational activities, ecotourism, sustainable agriculture and forestry etc.
- A corridor represents a stretch of land which links the habitats of the animals, thereby allowing them free movement.
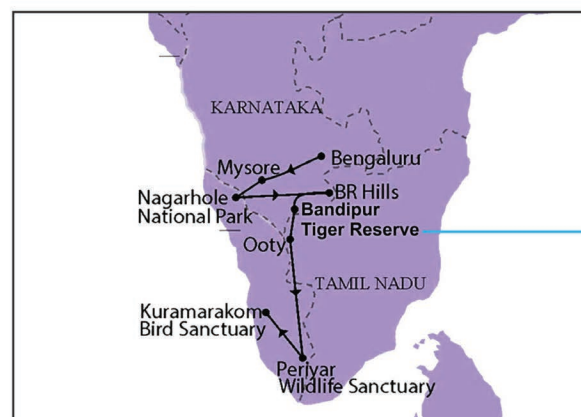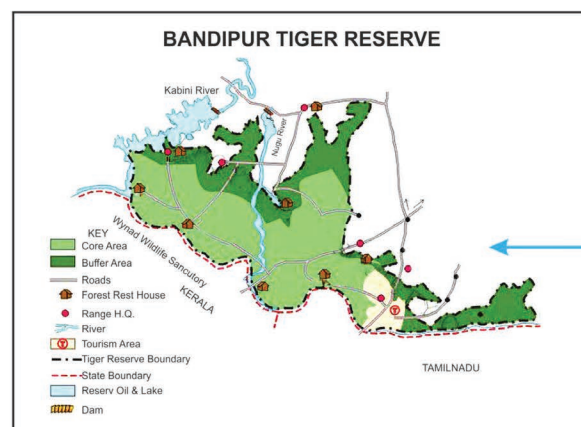
- ✓ Key floral species:
  - ▪ Mainly plant species such as **Tectona**

grandis (**Teak**), **sandalwood, Rosewood, Indian Kino Tree, Giant clumping bamboo** (**Dendrocalamus strictus**), **Indian gooseberry** (**Emblica officinalis**), **Kadam Tree** (**Adina Cordifolia**), **Axlewood** (**Anogeissus latifolia**), etc. are found in the tiger reserve.

Laws to deal with encroachment in the Ecologically Sensitive Zones under WPA, 1972

- According to section 34A of the Wildlife Protection Act, 1972, the officer of ACF (assistant conservator of forests) rank has the power to:
  - ✓ Evict any individual from the national park or the wildlife sanctuary on the grounds of occupying the government land in an unauthorized manner in violation of WPA and
  - ✓ remove any constructed infrastructural landmarks, like buildings etc.

Impact of such encroachments

- Due to encroachments in the area of wildlife protection, the quality of water, soil and other natural resources gets deteriorated. It also impacts the ecological processes.
- Further, such conflicts result in the habitat fragmentation and habitat loss for the wildlife.
- The cases of wildlife-human conflicts also increase due to such encroachments. In this, both wildlife and humans get harmed.

Way Forward

- There is a need to strictly implement the laws so as to avoid human-wildlife conflicts and loss of wildlife and its associated habitat.
- The concerned authorities must keep a record of the construction activities in the protected areas so as to keep a regular check on their environmental impacts.

7. State of India's Bird Report 2023

Current Context

The second edition of the State of India's Birds (SoIB) report, released on 25 August 2023, finds that while a few bird species like the Indian peafowl are thriving in India, many are in decline.

State of India's Birds (SoIB) Report 2023

- The State of India's Birds Report is a periodic assessment of the distribution range, trends in abundance, and conservation status for most of the bird species that regularly occur in India.
- The first report was published in 2020.
- For the second edition of the report, a mammoth 30 million field observations from over 30,000 birdwatchers spanning across the country collected and compiled the data.
- The SoIB 2023 is a first-of-its-kind collaborative effort of 13 government and non-government

organisations, including Wildlife Institute of India (WII) and others which evaluates the overall conservation status of the most regularly occurring bird species in India.

Findings of the SoIB Report 2023

- In the report, a total of 942 species of Indian birds were accessed for conservation priority by the experts and bird watchers among which 217 species were found to be stable or increasing in the last eight years.
- 204 bird species shown decline in the past three decades.

- 14 species, including India Roller, recommended for IUCN Red List reassessment.
- The State of India's Birds report 2023 shows that especially habitat specialists such as birds found in grasslands and wetlands, are in rapid decline.
- 39% of species show clear declines over the past decades.
- Birds that feed on vertebrates and carrion including Raptors and vultures have declined greatly.
- The SoIB 2023 notes that bird's endemic to the Western Ghats and Sri Lanka biodiversity hotspot have rapidly declined in India over the past few decades.
- There has been a 150% increase in the abundance of peafowl across the country over the past decades, as per the report.
- The report has classified 178 species as High Priority, 323 as Moderate Priority, and 441 as Low Priority.
- Out of 178 high conservation priority list, 94 were classified in this category based on both abundance trends and range, 45 based on range being Very Restricted, and an additional 39 based

on a combination of their range and IUCN Red List status.

Major Threats to Some Species

- The report also highlighted several major threats including forest degradation, urbanisation and energy infrastructure that bird species face across the country.
- Environmental pollutants including veterinary drugs such as nimesulide still threaten vulture populations in India.
- Of concern also are the impacts of climate change (such as on migratory species), avian disease and illegal hunting and trade.

Way Forward

- The systematic monitoring of bird populations over long periods of time is critical to understanding small-scale changes in bird populations.
- There is need of more research to understand the reasons behind the declines or increases.

8. Swachh Vayu Survekshan 2023

Current Context

The Ministry of Environment, Forest and Climate Change (MoEFCC) has announced the awards of its clean-air survey, named the Swachh Vayu Survekshan 2023.

About Swachh Vayu Survekshan

- The Swachh Vayu Survekshan is conducted by the MoEFCC to promote ranking of 131 cities in the country for implementing City Action Plans as part of National Clean Air Programme (NCAP) for reducing air pollution up to 40% by 2025-26.
- Although not based on the measurement of the air quality parameters, the actions undertaken to improve the air quality in different domains is considered for evaluation.
- Hence, it acts as a method of planning

implementational strategies to improve the air quality and assesses the cities on potential scope for better alignment with the national policy priorities.

Swachch Vayu Survekshan 2023

- The 2nd edition of the Swachh Vayu Survekshan is based on the submission of self-assessment reports and other supporting documents, by urban local bodies, in 130 identified cities under the National Clean Air Programme.
- The reports and documents have been scrutinized

by the Air Quality Monitoring Committee, chaired by the Principal Secretary, MoEFCC, and have been further examined by CPCB to designate the ranks.

- The cities were assessed on the following major aspects-
    i. Control of biomass
    ii. Municipal solid waste burning,
    iii. Road dust,
    iv. Dust from construction and demolition waste,
    v. Vehicular emissions,
    vi. Industrial emissions,
    vii. Public awareness,
    viii. Improvement in PM10 concentration.
- **Award winners in the First Category (Million Plus Cities)**
    ✓ **Rank 1:** Indore, Madhya Pradesh
    ✓ **Rank 2:** Agra, Uttar Pradesh
    ✓ **Rank 3:** Thane, Maharashtra
- **Award winners in the Second Category (Population 3 to 10 lakhs)**
    ✓ **Rank 1:** Amravati, Maharashtra
    ✓ **Rank 2:** Moradabad, Uttar Pradesh
    ✓ **Rank 3:** Guntur, Andhra Pradesh
- **Award winners in the Third Category (Population <3 lakhs)**
    ✓ **Rank 1:** Parwanoo, Himachal Pradesh
    ✓ **Rank 2:** Kala Amb, Himachal Pradesh
    ✓ **Rank 3:** Angul, Odisha

Significance

- It has been instrumental in fostering a spirit of healthy competition among towns and cities to improve their air quality standards and towards creating cleaner cities.

- It provides a tool to cities to design action plans for the same while also throwing light into the effectiveness of clean air programs, highlighting areas where further efforts are needed.

- It inspired MoEFCC to celebrate the 4th International Day of Clean Air for Blue Skies (Swachh Vayu Diwas 2023), earmarked to create stronger partnerships, conducive investments, and shared responsibility to overcome air pollution with the global theme of "Together for Clean Air.

- It has spearheaded large scale improvements, even in the designated 'Non-Attainment Cities' flagged by the Central Pollution Control Board (CPCB) for falling short of the National Ambient Air Quality Standards (NAAQS) for over five years.

    ✓ According to the Centre for Research on Energy and Clean Air (CREA), only 38 of the 131 cities that signed agreements with the Centre, Urban Local Bodies (ULBs), and State Pollution Control Boards, were able to meet their annual pollution reduction targets.

Way Forward

- Swachch Vayu Survekshan is an example of an innovative, competitive policy response to the menacing threat of air pollution, which incentivizes States to undertake proactive mitigation efforts with utmost zeal and vigour.

9. Marine Fossils in Ladakh Discovered

Current Context

In a recent discovery, Geologist Ritesh Arya found an impressive collection of marine (sea) fossils at an altitude of 16000 ft above the sea level in Ladakh.

About

- These marine (sea) fossils augment the idea that Himalayas were born as continental plates thrust out of Tethys Sea about 40 million years ago.
- Ritesh Arya, founder of the Tethys Fossil Museum, discovered an impressive collection of marine fossils during groundwater exploration in Burtse, eastern Ladakh, including **gastropods** (snail-like mollusks), **bivalves** (shellfish), and **foraminifera** (mostly microscopic organisms).

About Findings

- Preliminary investigations by the geologists suggest that the fossils morphologically resemble those of gastropods and foraminifera, similar to fossils found in the Subathu formation in Himachal Pradesh.
- They provide clear evidence of the existence of the Tethys Sea at that time—an intriguing revelation that connects India and Tibet through the waves of Tethys, showcasing a unique paleo-environmental connection.
- The large size of foraminifera shows equatorial affinities and warm conditions while the presence of palms show coastal affinities.
- The findings revealed that their presence at such heights highlights the immense tectonic forces that lifted these sediments from a near-coastal marine environment to these heights.
- The findings are not surprising. The marine animals of **Tethys** have been found at many places in Ladakh and Kashmir.

Significances of the Discovery

- **Himalayan Formation:** Ritesh Arya's discovery of marine fossils at 16,000 feet supports the theory that the Himalayas formed from the Tethys Sea around 40 million years ago, deepening our understanding of mountain formation.
- **Tethys Sea Confirmation:** Well-preserved

marine fossils validate the presence of the ancient Tethys Sea in the Himalayan region, crucial for Earth's geological history.

- **Paleo-Environment Insights:** These fossils provide a unique glimpse into Ladakh's past environment, aiding in understanding the ancient ecosystem and climate during the Eocene epoch.
- **Dating Markers: Gastropods, bivalves, and foraminifera** fossils act as dating markers, offering a precise timeline for the region's geological changes.
- **Earth's History Unfurled** : Arya's findings significantly enrich our knowledge of Earth's history during the Eocene epoch, shedding light on life's evolution and geological processes.
- **Regional Geological Understanding:** The discovery reveals the geological history of Ladakh, emphasizing the powerful forces responsible for its formation, including folding, faulting, and uplift.

Marine Species in Ladakh

Gastropods

- Gastropods (formally, Gastropoda) make up a large group (class) of molluscs. They have a muscular foot, eyes, tentacles and a special rasp-like feeding organ called the radula, which is composed of many tiny teeth.
- Most gastropods have a coiled or conical shell, which may be extremely reduced in some species or lost entirely as in slugs.
- Gastropods evolved early in the Cambrian, but since the Palaeogene they have become the most common molluscs, inhabiting both aquatic and terrestrial environments.

Bivalves

- Bivalves have inhabited the Earth for over 500 million years. They first appeared in the midddle Cambrian, about 300 million years before the dinosaurs.

- They flourished in the Mesozoic and Cenozoic eras and they abound in modern seas and oceans; their shells litter beaches across the globe.
- Some also occur in lakes and rivers. Fossil bivalves were formed when the sediments in which they were buried hardened into rock. Many closely resemble living forms, which helps us to understand how they must have lived.

Foraminifera

- Foraminifera are amoeba-like, single-celled protists (very simple micro-organisms). They have been called 'armoured amoebae' because they secrete a tiny shell (or 'test') usually between about a half and one millimetre long. T
- They get their name from the foramen, an opening or tube that interconnects all the chambers of the test.

- Fossilised tests are found in sediments as old as the earliest Cambrian (about 545 million years ago) and foraminifera can still be found in abundance today, living in marine and brackish waters.

Way Forward

- The discovery of marine fossils in Ladakh provides a unique opportunity for in-depth scientific exploration and research collaboration. Future endeavors should focus on rigorous dating techniques, interdisciplinary studies, preservation efforts, educational outreach, and further geological surveys in Ladakh. This holistic approach will enhance our understanding of Earth's history and the geological forces that shaped the region.

5.2. DISASTER MANAGEMENT

1. Morocco Earthquake

Current Context

The most powerful earthquake ever recorded in Morocco struck late night on 8 September 2023, killing more than 2,400 people and turning countless homes and buildings into rubble.

About

- According to the US Geological Survey (USGS), the quake was of **magnitude 6.8** with an **epicentre** located in the **Al-Haouz province**, in the Atlas Mountains of the historic city of Marrakech.
- The earthquake is Morocco's deadliest since 1960 when a quake killed more than 12,000 people.
- **The quake had a magnitude of 6.8, meaning it is classed as "strong." It also struck at a relatively shallow depth, making it more destructive.**
  - ✓ The USGS reported that the epicentre of the earthquake was roughly 18.5 km below the Earth's surface, though Morocco's own

seismic agency pegged the depth at 11 km. Either way, it was a fairly shallow quake.
- According to experts, such quakes are generally more dangerous as they carry more energy when

they emerge to the surface when compared to quakes that occur deeper underneath the surface.

- While deeper quakes do indeed spread farther as seismic waves move radially upwards to the surface, they lose energy while travelling greater distances.

Geographical Reasons for Morocco Earthquake

- While seismicity rates are indeed lower in the region, making earthquakes rarer, they are not completely unheard of.
- According to the USGS, large destructive earthquakes have been recorded and reported from Morocco in the western Mediterranean.
- Such quakes occur due to the northward convergence of the African plate with respect to the Eurasian plate along a complex plate boundary.
- With respect to Morocco's quake, the USGS attributed it to oblique-reverse faulting at shallow depth within the Moroccan High Atlas Mountain range.

About Earthquake

- An earthquake is a natural phenomenon that occurs when there is a sudden release of energy in the Earth's crust, resulting in the generation of seismic waves. This release of energy is

typically caused by the movement of tectonic plates beneath the Earth's surface. Earthquakes can vary in magnitude and intensity, ranging from minor tremors that may go unnoticed to major, destructive events.

- Earthquakes continue to remain the most common natural hazard that cannot be predicted as no early warning systems can be developed.

Effects of Earthquake

- **Loss of life and property:** It causes a huge loss and destruction of life and property. It brings destruction of buildings, dams, railway tracks, roads, etc.
- **Earthquake may result in other catastrophe such as tsunamis, landslides and avalanches**. On the account of the earthquakes, sometimes river also changes their course.

Morocco

- Morocco is a country located in North Africa. It is situated in the northwest corner of Africa and is **bordered by the Atlantic Ocean and the Mediterranean Sea to the west and north respectively,** while it shares **land borders with Algeria to the east and southeast.** To the south, Morocco is separated from Western Sahara by a heavily fortified border.

2. Building Resilience against Landslides

Current Context

Havoc in Himachal Pradesh brought attention on the frequency of landslides in the Himalayas, the world's youngest and roughest mountain chain.

About

- The region upholds a unique and complex environment that plays a crucial role in shaping the region's geology, climate, and biodiversity.
- Economic loss due to landslides may amount to as much as 1% to 2% of the Gross National

Product in many developing countries. [Geological Survey of India]
- Around 15% of the country's total landmass is susceptible to landslides. The Himalayas and the Western Ghats are highly vulnerable.

Landslides

- It is a geological phenomenon involving the downward movement of a mass of rock, soil, and debris on a slope.
- This movement can vary in scale from small, localized shifts to massive and destructive events.
- Landslides can occur on both natural and man-made slopes, often triggered by a combination of factors such as heavy rainfall, earthquakes, volcanic activity, human activities, changes in groundwater levels etc.
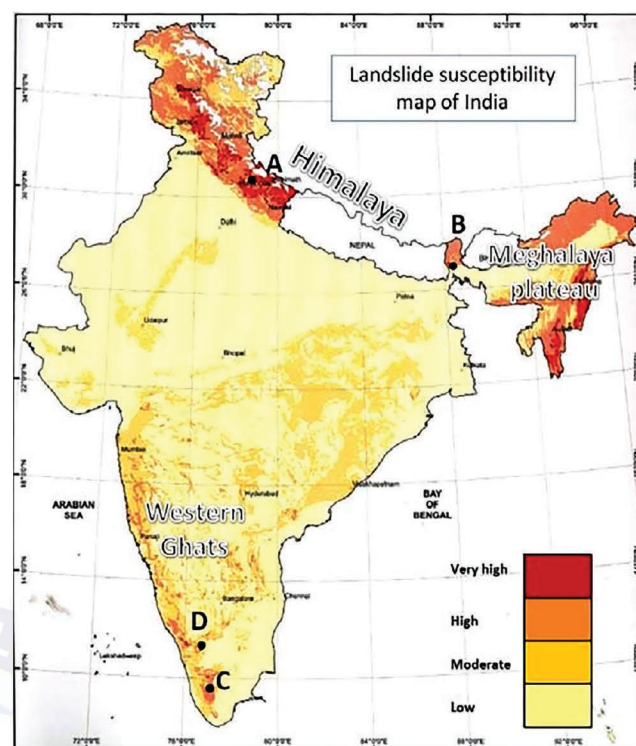
Causes

1. **Geographical Causes**

- **Geological**
  - ✓ Tectonic or neo-tectonic activities, like rock deformation, exhumation, erosion, weathering and rain/snow precipitation make the ecosystem inherently fragile.
  - ✓ The convergence of the Indian plate with the Eurasian plate in the Himalayan region has created subterranean stresses that lead to earthquakes. These loosen up the litho-structures near the mountain surface, increasing possibilities of rock movement along the slope.
  - ✓ Some of the Himalayan rocks are made of limestone, which is more prone to water and landslides than other types of rocks because it can dissolve in weakly acidic rainwater or groundwater.

- **Relief**
  - ✓ Generally, hilly regions are associated with slope instability and are prone to landslides, influenced by factors such as slope gradient, hill elevation, rock strength etc.
  - ✓ Riverine flow, the cutting down of the toes of slopes, and deforestation are some other factors while debris flow and underground water make a slope weak and landmass can slip down it.

Landslide susceptibility map of India

- **Climatic**
  - ✓ The confluence of the Westerly Disturbance, originating from the Mediterranean Sea and the South West Indian Summer Monsoon causes excessive and concentrated rainfall in parts of J&K, Himachal Pradesh and Uttarakhand leading to landslides and flash floods.

2. **Climate Change**
- Climate-induced extreme weather events like thawing, abnormally heavy rain/snow leads to avalanches, landslides, debris flow, glacial lakes outburst, floods etc.
- Climate change adversely impacts on glaciers, riverine systems, geomorphology and biodiversity, which, in turn, have increased the vulnerability of people in the mountainous states. Land degradation aggravates the problem.

3. **Anthropogenic Factors**
- Human activities like road construction, quarrying, deforestation, urbanization, agriculture etc. worsen landslides in the Himalayas.

- These disturb the natural balance by removing vegetation cover, altering drainage patterns, increasing soil erosion etc.
- They also increase the exposure and risk of human settlements and infrastructure.

Suggestions

1. **Disaster resilience**
- To live with these adversities, we need to build resilience against the geo-hazards.

2. **Harnessing technological inputs**
- Real-time monitoring, analysis and integration of data to develop an integrated Early Warning System (EWS) based on AI/ML algorithms are measures that need to be adopted urgently.
  - ✓ Landslide warning systems should factor in rainfall thresholds of a slope.
- Monitoring through web-based sensors — rain gauge, piezometer, extensometer etc.
- High-resolution mapping and assessment of the load-bearing capacity of cities is essential.

3. **Sustainable urban planning**
- Town planning to curb heavy constructions, promote proper drainage systems, slope cutting etc., with emphasis on retaining walls and adherence to building codes.

4. **Landslide hazard zonation maps**
- These are parametric, assessment-based vulnerability maps of regions to categorize risk zones.

5. **Formation of Himalayan States Council**
- Establishing a collaborative platform that brings together the disaster management authorities from different states in the Himalayan region to enable the sharing of knowledge, experiences, and resources.

6. **Sustainable Socio-Economic Development**
- Recognizing the valuable natural resources present in the region to realize the potential for sustainable socio-economic development.

7. **Sustainable Tourism**
- Promoting environmental awareness, conservation of natural resources, and respect for biodiversity and ecosystems.
- It can also provide economic incentives and social benefits for local communities, which can enhance their resilience and adaptive capacity.

8. **NDMA Guidelines on Landslides and Snow Avalanches**
- The main objectives of the NDMA guidelines are to institutionalise the landslide hazard mitigation efforts, make society aware and to prepare it to adopt suitable action to reduce risks and costs.
- **Prominent recommendations include:**

  i. Continuously updating the inventory of landslide incidences.
  ii. Completion of site-specific studies of major landslides and plan treatment measures.
  iii. Institutional mechanisms for generating awareness and preparedness about landslide hazard among various stakeholders.
  iv. Training and capacity building measures for professionals and organizations working with landslide management.
  v. An autonomous national centre for landslide research, studies and management has to be established.

Way Forward

- The question of environmentally sustainable socio-economic development of the region, however, remains and thus, the region's tourism potential could be tapped for this purpose.
- A balance must, however, be ensured between the exploitation of these resources and ecological sustainability to ensure long-term viability.

3. Himachal Pradesh demands National Disaster Tag

Current Context

Chief Minister of Himachal Pradesh urged the Prime Minister to recognize the destructive impact of heavy rains in the state by according it the tag of a 'national disaster'.

About

- Himachal Pradesh suffered losses of Rs 10,000 crore due to rain-related incidents this monsoon, demanding the calamity be declared a national disaster and a special disaster package be announced.
- The State Emergency Operation Centre stipulated that 418 people have died since the onset of monsoon (late June) while 39 are missing.

Assistance to augment Disaster Management Capacity

- The National and State Disaster Relief Funds (NDRF and SDRF), mentioned in the **2005 Disaster Management Act,** are the primary funding mechanisms available. The Central Government contributes 75% to the SDRF in general states and 90% in north-eastern and Himalayan states.
- The State government is primarily responsible for undertaking rescue, relief and rehabilitation measures in the event of a disaster. But these can be supplemented with Central assistance.
- In the event of a severe calamity where the requirement of funds for relief operations is beyond the funds available in the SDRF, additional Central assistance is provided from NDRF, after following the laid down procedures.
- After a calamity is declared to be of "rare severity/severe nature", a **Calamity Relief Fund (CRF) is set up, with the corpus shared 3:1 between Centre and State.** When resources in the CRF are inadequate, additional assistance is considered from the National Calamity

Contingency Fund (NCCF), wholly funded by the Centre.

- Relief in repayment or for grant of fresh loans to the persons affected on concessional terms, are considered once a calamity is declared "severe". Otherwise, the funds for the NDRF and SDRFs to undertake preparedness mitigation reconstruction efforts, are allocated by the Government as a part of budgetary allocations.

- **Funds for immediate relief are recommended by the Finance Commission**
  - ✓ The 15th Finance Commission adopted a new methodology for state-wise allocations, based on factors like past expenditure, risk exposure hazard and vulnerability of states.
  - ✓ Out of a total allocation of Rs. 1,28,122 crores in SDRF to all states, the Centre's share is Rs. 98,080 crores while that of the State is Rs. 30,041 crores.
  - ✓ The annual Central contribution is released in two equal instalments post the receipt of a Utilisation Certificate of the amount released in the earlier instalment and the receipt of a report from the State government on the activities undertaken by SDRF. However, in July this year, these requirements were waived "in view of the urgency" during extreme rainfall in many states.

About Severe Calamities

- This classification involves a specific procedure where the state government needs to submit a memorandum to indicate the sector-wise damages

caused and the consequent requirement of funds.

- Thereafter, an Inter-Ministerial Central Team conducts an on-the-spot assessment of damage and the quoted requirement of funds for relief operations.

- After this, specific committees examine these assessments and submit their reports. A High-Level Committee approves the quantum of immediate relief to be released from the NDRF.

- The Disaster Management Division, Ministry of Home Affairs, provides support and monitors the utilisation of funds.

Disaster Management Architecture of India

- It is primarily governed by the **Disaster Management Act (2005)** which attempts to holistically define a "disaster". However, there is no official category of "national disasters".

- The Act saw the creation of the **National Disaster Management Authority (NDMA)**, to be headed by the Prime Minister, and **State Disaster Management Authorities (SDMAs)** headed by respective Chief Ministers. Together with district-level authorities, an integrated Disaster Management was envisaged.

- **The Act also creates other key institutions like**
  - ✓ **The National and State Disaster Response Force** (NDRF and SDRF), responsible for on-ground relief and rescue work.
  - ✓ **The National Executive Committee** to prepare, review and annually update the National Disaster Management Plan.
  - ✓ **The National Institute of Disaster Management (NIDM)** for training and capacity development programs.
  - ✓ National Disaster Response Fund as a financial mechanism to fund emergency response.

- The Act also devotes several sections, various civil and criminal liabilities resulting from violation of provisions of the Act.

Way Forward

- Rising vulnerabilities due to extreme weather events, induced by climate change, necessitates a stronger policy response, with federal coordination to augment the States' financial capacities and mitigate the loss of life and property, as a result of severe calamities.

4. Three New Schemes on Disaster Management Launched

Current Context

The Union Home Ministry has been working on implementing the set of new schemes launched at the meeting with the Ministers of Disaster Management of the States and Union Territories, at Vigyan Bhawan, earlier in the year.

About

The MHA, in June, announced three schemes worth Rs 8,000 crore related to disaster management that included modernisation of fire services, flood mitigation in seven major cities and prevention of landslides in 17 states.

- Stress was put upon the culture of disaster management in our country which finds ancient roots in Chanakya's Arthashastra.

- With respect to the model fire prevention law, disaster prevention policy, thunderstorm and lightning policy and cold wave policy formulated by the Central government, an appeal was made

to the states to work on them on a priority.

- On the issue of enhancing compensation to farmers who face natural disasters, the Union Minister promised to examine such proposals, highlighting that the onus fell on States to augment their budgetary support to deal with it.

- The success of the Aapda Mitra Scheme was highlighted, under which, one lakh youth volunteers have been trained in 350 disaster-prone districts.

Fire-related Assistance Scheme

- The Centre promised to provide Rs 5,000 crore to the States to modernise and expand fire brigade services.

- India Risk Surveys 2018 highlights that India ranks 3rd in fire incidents, especially in the Northern and Western regions of the country.

- Common sources of fire disasters in urban areas include usage of wood fuel and charcoal for room heating, waste burning around courtyards, poor city infrastructure for firefighting and accessibility which increases the risk occurrence.

- Fire service is one of the most important emergency response services in the country under the 12th Schedule of the Indian Constitution (Municipal functions). At present, fire prevention and fire-fighting services are organised by the Urban Local Bodies (ULBs) of the concerned States and Union Territories (UTs).

NDMA Guidelines on Fire Safety

- NDMA Guidelines stipulates fire safety requirements for public buildings, including hospitals along with design guidelines relating to maintaining a minimum level of open space, exit mechanisms, stairs, and evacuation drills.

On Nuclear Disasters

- The National Disaster Management Authority has regularly visited states where seven nuclear

Examples of Nuclear Disasters

- Chernobyl (1986) in Ukraine, erstwhile USSR, due to system failures and accidental leak.
- Fukushima Disaster (2011) in Japan triggered by a massive earthquake and tsunami.

power stations are being built and has prepared a protocol to avert any possible disaster.

- The need to streamline Disaster Prevention measures even before the commissioning of the nuclear power plants was stressed upon in the meeting.

- A Nuclear Disaster is a mishap in any operational or abandoned facility, maybe directly associated to the nuclear fuel cycle comprising the nuclear reactor, or any facility using radioactive sources, resulting in the release of harmful levels of radioactive emissions in the environment.

- Nuclear and Radiological Emergency can appear in a nuclear facility due to system failures, accidents, other disasters etc., or due to improper handling using radiation sources at hospitals, agriculture, industries, or research institutions improper handling.

- The IAEA aids its Member States (including India) by establishing international safety standards and prescribing their application in nuclear installations from design through decommissioning.

Allocation for Urban Flooding

To mitigate the impact of floods in urban areas, seven major cities including Mumbai, Chennai, Kolkata, Bengaluru, Ahmedabad, Hyderabad and Pune have been stipulated to receive a total of Rs 2,500 crore.

- Urban flooding is the inundation of land or property in more densely populated areas (like cities), caused by rainfall, overwhelming the capacity of drainage systems.

- Unlike rural floods, Urban flooding is not only caused by just higher precipitation but also unplanned urbanisation that increases the flood

NDMA Guidelines on Urban Flooding

- CWC should maximize the real-time hydro-meteorological networks.
- Installing State-of-the-art automatic water level recorders throughout the watershed.
- Efforts to restore and revive water bodies by de-silting and other measures.
- Local scale emergency medical response systems will be established to deal with medical preparedness, emergency treatment etc.
- Encourage local residents to constitute Community Level First Responder Support.
- Suitable hedging mechanisms, like insurance of life and property.
- Public awareness on evacuation protocols.
- Media companies to expand awareness generation programmes as a part of their CSR.

peaks from 1.8 to 8 times and the flood volumes by up to 6 times.

Significance

- It heralds an era of multidimensional policy-structuring of the Disaster Management Apparatus on India under the guidance of NDMA and MHA.
- It takes into account the need of a synergetic link between Risk-Prevention, Response Mechanism and Threat Mitigation capacities of the Government.
- With increased allocation to States, it promotes the idea of Cooperative Federalism in Disaster Planning in India.

5. NDMA Emergency Alert Test

Current Context

Recently, the Department of Telecommunications, Ministry of Communications, sent an alert to test pan-India "emergency alert system" which is being envisioned for launch by the National Disaster Management Authority (NDMA).

About

- The alert was an attempt by the NDMA to test a warning mechanism where people across the country are warned through a text message on their mobile phone screen.
  - ✓ The messages were sent in both Hindi and English languages.
- The sample test message with the title, 'Emergency alert: Severe', was sent to subscribers on Jio and BSNL networks.

Emergency Cell Broadcast Technology

- It aims to enhance public safety and provide timely alerts during emergencies.
- The C-DOT Chief Executive Officer highlighted the technology is currently **available only with a foreign vendor and hence C-DOT is**

developing it in-house.
- The NDMA has started testing the technology developed by C-DOT to alert people at the time of natural disaster.
- It will be implemented by NDMA for sending

⚠ **Emergency alert: Severe**

This is a SAMPLE TESTING MESSAGE sent through Cell Broadcasting System by Department of Telecommunication, Government of India. Please ignore this message as no action is required from your end. This message has been sent to test Pan-India Emergency Alert System being implemented by National Disaster Management Aughority. It aims to enhance public safety and provide timely alerts during emergencies. Timestamp: 15-09-2023 12:19 PM #0888758

OK

out alerts at the time of disaster directly on the mobile phone screens of the citizens.

Significance

- It recognizes the need to augment warning-system mechanisms on a nationwide basis,

especially to the citizens to prevent accidents, injuries and loss of life.

- It is a prime example of a revolutionary technological intervention in the Disaster Management Architecture of the country to augment its Disaster Preparedness and Response capacities.
- It builds Public Awareness, ensures public trust in the Government-backed Disaster Management tools and services provided to citizens.
- It complements steps like the adoption of the National Disaster Alert Portal and the Mobile App Sachet App for a CAP based integrated Alert System, launched during 3rd Session of National Platform for Disaster Risk Reduction (NPDRR).

Scope of Improvement

- Detailed explanations should be provided by the NDMA to keep away any confusion regarding the applicability of this system.
- Civil Society and the Media must be involved for outreach and promotion of such facilities, guiding the citizens on how to make use of it.

About C-DOT

- The Centre for Development of Telematics (C-DOT) is an Indian Government-owned telecommunications technology development center.

- It was established in 1984 with the initial mandate of designing and developing digital exchanges but has now expanded to develop intelligent computer software applications.

- It falls under the Department of Telecommunications (DOT), Ministry of Communication with Headquarters in New Delhi.
- It is one of the few government organisations in India which have been appraised at Maturity Level 5 of CMMI-DEV v1.3.

About NDMA

- It is the apex statutory body for disaster management in India, formally constituted on 27th September 2006, as per the provisions of the Disaster Management Act, 2005,

  - ✓ The Prime Minister of India acts as its Chairperson with the presence of nine other members, one of them being the Vice-Chairperson.

- Its primary purpose is to coordinate response to natural or man-made disasters, build capacity in disaster resiliency and formulating crisis response plans.
- It may also lay down policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.
- Government of India had set up a High-Powered Committee (HPC) in August 1999 and a National Committee after the Gujarat earthquake (2001), for making recommendations on the preparation of Disaster Management plans and suggesting effective mitigation mechanisms.

  - ✓ Building on to that, the NDMA was established after India faced the wrath of the disastrous 2004 Indian Ocean Tsunami.

5.3. GEOGRAPHY

1. Red Warning Issued as World's Most Active Volcano Erupts

Current Context

Recently Hawaii's Kilauea volcano erupted again at the summit crater, prompting the US Geological Survey (USGS) to elevate the alert level.

About

- Kilauea, one of the **most active volcanoes** in the world, burst open for the third time this year.
- The agency elevated Kilauea's aviation color code **from orange to red** as it evaluates the eruption and its volcano alert from watch to warning.
- The eruption was preceded by a **period of strong seismicity and rapid uplift** of the summit.

Kilauea Volcano

- It is a **shield volcano** located on the eastern slope of Mauna Loa Volcano on the Island of Hawaii.
- The second-largest volcano in Hawaii had **been lying dormant** for the last two months after bursting open in **January and June** this year.
- Kilauea erupted almost **continuously from 1983 to 2018**, when it set off the most destructive eruption of its recorded history.
- In 2019, a huge eruption at Kilauea led to a string of earthquakes and caused the destruction of hundreds of homes and businesses. It continued to erupt for three months.
- An eruption in 2018 also led to the destruction of more than 700 homes and other structures in the nearby area.

US Geological Survey's Alert-Notification System for Volcanic Activity

The USGS alert-level system for volcanic activity has two parts:

1. Ranked terms to inform people on the ground about a volcano's status and
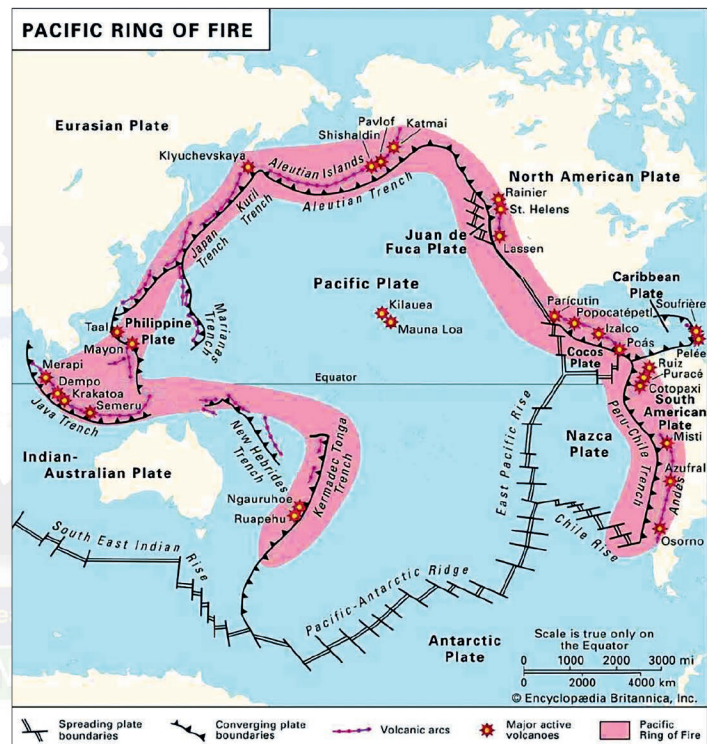
The Volcanic Explosivity Index (VEI)

The Volcanic Explosivity Index (VEI) is a scale used to measure the explosivity of a volcano. It has a range of 1 to 8 with a higher VEI indicating more explosivity.

2. Ranked colors to inform the aviation sector about airborne ash hazards.

Types of Volcanoes

- **Active Volcano:** Any volcano that has erupted within the Holocene period (in the last 11,650 years) is considered to be "active" by scientists.
- **Dormant** volcanoes are those active volcanoes which are not in the process of erupting currently,

but have the potential to do so in the future.

- **Extinct volcanoes** are ones which scientists predict will never face any further volcanic activity.
  - ✓ Ben Nevis, the tallest mountain in the UK, is an extinct volcano.

Some Famous Volcanoes in the World

- **Krakatoa, Indonesia**
- **Mount Vesuvius, Italy**
- **Mount Fuji, Japan**
- **Eyjafjallajkull, Iceland**
- **Mauna Loa, Hawaii Island, USA**
- **Mount St Helens, USA**

Shield Volcanoes vs. Composite Volcanoes

Shield Volcanoes	Composite Volcanoes
Largest of all volcanoes with basaltic composition.	Explosive eruption of cooler, more viscous lava.
Low explosivity, lava slips through fissures.	High explosivity with release of pyroclastic material.
Lava emanates in the form of cinder cones.	Lava accumulates near the vent openings, lead to creation of layer
Eg. Hawaiian Volcanos	Eg. Mt. Fuji in Japan

2. Fujiwhara Effect

Current Context

Images from the GOES-16, operated by NASA and the National Oceanic and Atmospheric Administration over the eastern Pacific Ocean, captured Hurricane Irwin on the left colliding with Hurricane Hilary on the right as the two merged before fading out over the ocean across the western coast of the United States.

About

- The National Hurricane Centre (NHC) issued its inaugural Tropical Storm Watch for certain areas of California where winters have been wetter than usual, along with multiple atmospheric storms being witnessed.
  - ✓ During one such storm, this phenomenon took place as the two Low-Pressure Systems interacted in an unexpected manner.

- In March 2023, powerful winds tormented the Bay Area and other parts of Central and Southern California, uprooting trees, shattering window glass, and disrupting the power supply.
- Fujiwhara effect was contributing to peak gusts upward of 60 to 75 mph in the Santa Cruz Mountains, with 50- to 60-mph winds across Santa Cruz and Santa Clara counties.
- The Bay Area storm came months after Typhoon

1) Storms that come within 900 miles can be influenced by each other's spin. Like two dancing skaters, storms can rotate around a central point, even as the central point moves in a single direction

900 miles — Central point

2) If one storm is much stronger than the other, it can absorb the weaker one into its circulation.
Sources: National Hurricane Center, University Corporation for Atmospheric Research

Hinnamnor, the strongest Tropical Cyclone of 2022, underwent the same effect with tropical storm Gardo in the eastern Pacific Ocean. The two cyclones were locked in a dance for over a day, before Gardo was assimilated in Hinnamnor.

About Fujiwhara Effect

- As per the National Weather Service (NWS), when two hurricanes or Cyclones/Typhoons/Willy-Willies etc., spinning in the same direction, get close together, they begin an intense dance around their common center. This interaction between two cyclones is called the Fujiwhara effect.
- Postulated by a Japanese meteorologist Sakuhei Fujiwhara, this phenomenon first found mention in a paper published in 1921. Decades after, it was observed for the first time over the western Pacific Ocean, when typhoons Marie and Kathy merged in 1964.

Key Features

- If one hurricane's intensity overpowers the other, then the smaller one will orbit the larger one and eventually crash into its vortex to be absorbed. On the other hand, if two storms of similar strengths pass by each other, they may gravitate towards each other until they reach a common center and merge, or merely spin each other around for a while before shooting off on their own paths.
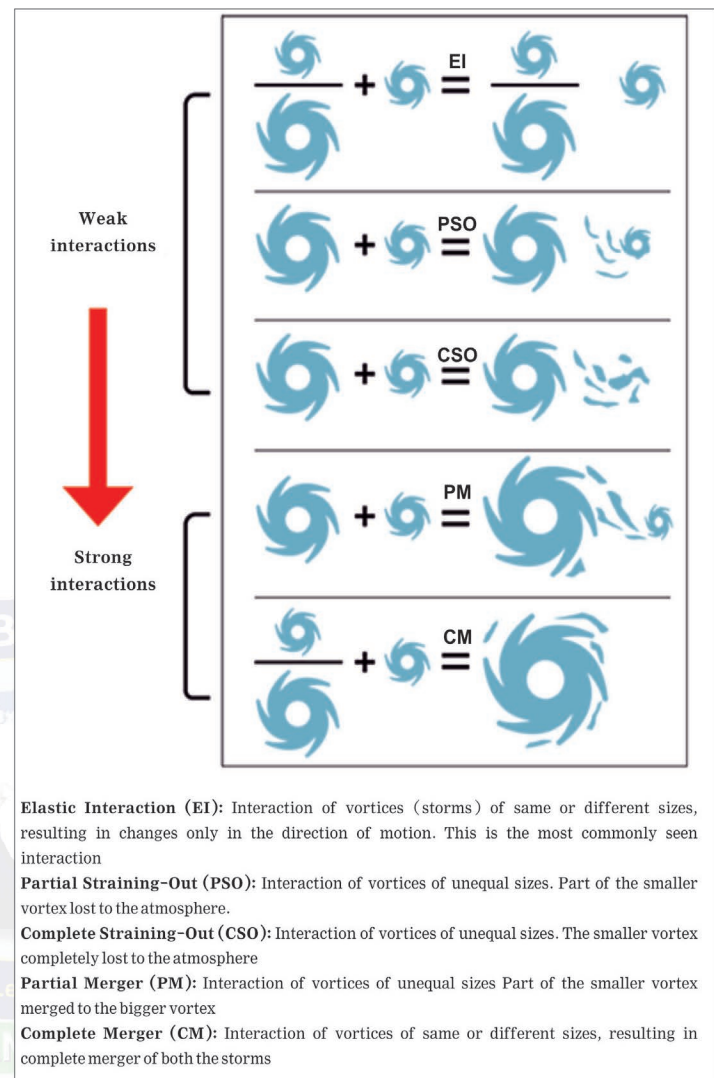- In rare instances, the two 'dancing' cyclones, if they are intense enough, may merge with one another, leading to the formation of a mega cyclone capable of wreaking havoc along coastlines.
- Hurricane scientist David Longshore, who observed the Fujiwhara effect in hurricanes Hilary and Irwin in 2017, noted that the influx of additional heat, moisture, and positive vorticity during the effect might even intensify the primary circulation of a system.
- Additionally, the occurrence of the Fujiwhara effect also makes cyclonic systems harder to predict, as every interaction between two storm systems is unique and difficult to assess within the present climate models.
- The interaction could lead to changes in the track and intensity of either or both storm

Elastic Interaction (EI): Interaction of vortices (storms) of same or different sizes, resulting in changes only in the direction of motion. This is the most commonly seen interaction

Partial Straining-Out (PSO): Interaction of vortices of unequal sizes. Part of the smaller vortex lost to the atmosphere.

Complete Straining-Out (CSO): Interaction of vortices of unequal sizes. The smaller vortex completely lost to the atmosphere

Partial Merger (PM): Interaction of vortices of unequal sizes Part of the smaller vortex merged to the bigger vortex

Complete Merger (CM): Interaction of vortices of same or different sizes, resulting in complete merger of both the storms

systems. In rare cases, the two systems could merge, especially when they are of similar size and intensity, to form a bigger storm.

Impact with Respect to Today's Climate

- Experts have noted the rising frequency of this unusual effect, attributing it to a rapidly warming world and the subsequent heating of ocean waters.
  - ✓ In the 4 years between 2013 and 2017, there were 10 cases of the Fujiwhara Effect in the northwest Pacific Ocean.
- Experts contend that a warming climate is giving rise to stronger cyclones, and thus, increasing the possibility of the Fujiwhara effect.

✓ There has been a 35 per cent increase in the strength of typhoons that have hit Taiwan between 1977 and 2016. This happened due to a 0.4 to 0.7C rise in the sea surface temperature during these 40 years in the northwest Pacific.

Way Forward

• Studying the climatological impacts of such unique phenomenon helps us build a greater understanding of the world around us, which is key to devise prudent adaptation and mitigation strategies to combat the menace of climate change.

3. Equatorial Cyclones and Pacific Decadal Oscillation

Current Context

A study published in the journal 'Nature Communications' highlighted that a combination of global warming and the Pacific Decadal Oscillation (PDO), that repeats every 20-30 years, could make cyclones that originate near the Equator more frequent in the coming years.

About

• Tropical cyclones that originate near the Equator, while being devastating, have been unusually subdued in recent decades. The last major cyclone of this kind in the Indian neighbourhood was the 2017 Cyclone Okchi which devastated Kerala, Tamil Nadu and Sri Lanka.

• The number of such equatorial-origin cyclones was 43% fewer in 1981-2010 compared with 1951-1980, and this was because the PDO was in a 'warmer' or positive phase.

• In 2019, the PDO entered a cooler, negative phase and if it remains so, could mean more tropical cyclones in the post-monsoon months that originate near the equator. It's usually rare for cyclones to form near the Equator but when the waters are warm, they can gain more moisture and rise in intensity.

About Equatorial/Low Altitude Cyclones

• They originate between 5°N and 11°N, and are much smaller in size than those in higher latitudes but intensify more rapidly.

• Cyclones forming near the equator is usually rare but when the waters are warm, they can gain more moisture and rise in intensity.

• Majority of cyclones originate in the Western Pacific Ocean. The last major cyclone of this kind in the Indian neighbourhood was the 2017 Cyclone Okchi which devastated Kerala, Tamil Nadu and Sri Lanka.

About Pacific Decadal Oscillation (PDO)

• The Pacific Decadal Oscillation (PDO) is a long-term ocean fluctuation of the Pacific Ocean. The term PDO was coined in about 1996 by Steven Hare.

• It is a cyclical event that repeats every 20-30 years and just like ENSO, has a 'cool' and 'warm' phase.

• Positive (warm) PDO represents a cooler west Pacific Ocean and warmer eastern side, and it is vice versa for negative PDO.

Impact

• PDO phase can have significant implications for the global climate, affecting Pacific and Atlantic hurricane activity, droughts and flooding around the Pacific basin.

• Thus, it can have large scale consequences on the

productivity of marine ecosystems, and global land temperature patterns.

- A warmer, positive-phase PDO implies fewer equatorial-origin cyclones. In 2019, the PDO entered a cooler, negative phase and which if continues, could mean more such cyclones in post-monsoon months.
- If both ENSO and the PDO are in the same phase, it is believed that El Niño/La Nina impacts may be magnified.

4. Heat Index

Current Context

Recently, Iran recorded a scorching heat index of 70 degrees Celsius in the coastal part of the country, a metric at which survival of life is unfathomable, if not impossible.

About

- The country had also declared public holidays on August 2nd and 3rd on account of "unprecedented heat".
- This is not the first time this year that Iran has dealt with extreme heat. In July as well, U.S.-based weather observer Colin Mccarthy reported that the Persian Gulf Airport reported a heat index of 66.7 °C.

What is Heat Index?

- Heat index, also known as apparent temperature, is a measure of how the temperature feels to humans. Relative humidity is an important factor that determines heat index, along with air temperature.

Factors of heat calculation

- Dew point, which is the temperature at which gas is transformed into liquid state, is an important factor in the calculation of heat index.
- In terms of atmospheric moisture, it's the temperature at which air cannot hold any more water vapour, and droplets of water begin to

Way Forward

- Climate anomalies are the new normal of the 21st century, in the age of climate change. This phenomenon may account for large scale extreme weather events, thus calling for urgent disaster mitigation and risk-reduction strategies undertaken by the government.

form. Dr. Steadman, who first proposed the calculation parameters, used 14 °C as the dew point in his calculations.

Effects of heat stress

- Thermal discomfort affects a variety of activities and jobs. Workers have to deal with extreme heat stress, which can hurt their work and productivity and even put their lives at risk.
  - ✓ Occupational health risks ultimately impact the nation's income and economy.
- Heat-related stress affects around 380 million people in India, affecting 75% of workers. This can lead to dehydration, acute cerebrovascular accidents, and blood clots, causing cramps, exhaustion, stress, heat stroke, and even death.
- The elderly, children, and those with psychiatric disorders are particularly affected.
- **How does high humidity impact human body ?**

India's own Heat Index

- Heat Index has been launched by IMD to provide general guidance for the regions within India where, the apparent temperature/feel like

ENSO vs PDO

S. No.	ENSO	PDO
1	A warming of the Central Equatorial Pacific, called an El Nino, frequently corresponds to reduced rainfall over India whereas cooler-than-normal temperatures, or a La Nina, is linked to excessive rainfall. The El Nino Southern Oscillation (ENSO) phenomenon, repeats in the Pacific over two-seven years.	The PDO isn't an annual occurrence as it occurs over longer periods of time (decadal scales) and, on average, corresponds to a warmer than average Western Pacific Ocean and relatively cooler Eastern Pacific, though this plays out over much longer time scales.
2	The stages of ENSO can be determined any year.	A 'positive' or 'warmer phase' of a PDO can be identified only after several years of measuring ocean temperatures and their interaction with the atmosphere.
3	An El Nino is vastly studied. Example, It is currently developing in the Pacific, the effects of which are already manifested in central and southern India, which have recorded rainfall deficits of 7% and 17% respectively.	PDO as a phenomenon is far less mainstreamed as a matter of study.
4	ENSO with a positive PDO is generally not good.	ENSO with a negative PDO brings more rain to India.

CHARACTERISTICS		
Subjects/Categories	Mid-latitude cyclone	Tropical cyclone
Other names	Frontal depression, temperate cyclone, extra tropical cyclone	Hurricane, typhoon, Willywillies (named alphabetically at the beginning of each season)
Formation	40-60^{0}N and S	around 5^{0}N and S
Occurrence	30-60^{0}N and S	Over tropical oceans 5-3^{0}N and S
Movement	West to east (driven/pushed by Westerlies)	East to west (driven/pushed by Easterlies)
Season	All year round in both hemispheres; affects South Africa in winter	Mid- to late summer, early autumn
Identifying features	Warm front, warm sector, cold front, cold sector	Stormy weather in the vortex; the eye is a calm, intense low pressure area
Weather	Weather associated with a cold front: overcast, low temperatures, strong winds, heavy rain	Warm to hot, violent winds; intense thunderstorm activity
Areas affected	Western side of continents in mid-latitudes	Eastern side of continents in tropical latitudes

temperature (considering the impact of humidity along with the temperature) are on the higher side causing discomfort for the people.

- At present, heat index is derived using the heat index equation similar to what is used by National Weather Service, National Oceanic and Atmospheric Administration (NOAA), USA.

- **Colour codes used for Experimental Heat Index (EHI) are as follows:**
  - ✓ **Green:** EHI less than 35°C.
  - ✓ **Yellow:** EHI in the range 36-45°C.
  - ✓ **Orange:** EHI in the range 46-55°C.
  - ✓ **Red:** EHI greater than 55°C.

Significance of Heat Index

- The heat index is crucial for determining the threshold levels of heat stress in different regions, as it aids individuals in taking necessary measures to protect themselves from the adverse heat effects.
- In terms of public safety, it is crucial to forecast potentially harmful heat conditions and take the necessary precautions to avoid heat-related illnesses like exhaustion or heatstroke.

Classification	Heat Index	Effect on the body
Caution	80^0F - 90^0F	Fatigue possible with prolonged exposure and/or physical activity
Extreme Caution	90^0F - 103^0F	Heat stroke, heat cramps, or heat exhaustion possible with prolonged exposure and/or physical activity
Danger	103^0F - 124^0F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
Extreme Danger	125^0F or higher	Heat stroke highly likely

- The extended heat index can indicate regional health outcomes for varying degrees of global warming, raising awareness about climate change and urging preparedness to tackle it with idealized human physiological responses.

6. ECONOMY

1. Agriculture Infrastructure Fund (AIF)

Current Context

Data revealed that Rs 9,660 crore of funds were disbursed for 19,650 projects across 26 States/ UTs till March 2023, indicating that only 9.68 per cent of the total funds were utilized.

About

- The Lok Sabha recently deliberated on the strategy for achieving the targets of the AIF Scheme by FY 2025-26.

- The scheme sanctioned 32,514 projects worth Rs 25,356 crore of loans since its inception.

About the Agriculture Infrastructure Fund (AIF)

It is a financing facility launched in 2020 aiming to provide holistic financial support to farmers, Agri-entrepreneurs, Farmer Producer Organisations (FPOs), Self Help Groups (SHGs), Joint Liability Groups (JLGs) etc. to facilitate post-harvest management infrastructure and build community farming assets throughout the country.

- AIF provides a **3% interest subvention**, credit guarantee support through Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for **loans of up to Rs. 2 crores.**
- AIF helps reduce post-harvest losses by creating and modernising agriculture infrastructure, including primary processing centres for vegetables, hi-tech hubs for agricultural machinery etc.
- The fund is managed and monitored through an online Management Information System (MIS) platform. The National, State and District level monitoring committees ensure real-time monitoring and effective feed-back.

Post-harvest Management

- These are activities, practices and techniques used to preserve and protect crops after they have been harvested.
- This includes activities such as cleaning, sorting, grading, packaging, storage, and transportation.
- The goal is to maintain the quality and safety of the crops, extend their shelf life and make it marketable for being sold and consumed later.

Evaluation of AIF

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

- AIF is associated with debt, where the interest rate subvention is facilitated up to Rs 2 crore, making the scheme's success totally dependent on the intention and ability of financial institutions.
  - ✓ Bankers look at the projects from their credit assessment lens, where feasibility depends on the project and the promoter.
- Credit guarantee cover for eligible borrowers is available for Rs 2 crore, which is small for a standard project.

- The centralised governance of the Project Monitoring Unit may result in adverse selection of agri-entrepreneurs and start-ups engaged in off-farm or e-commerce interventions, thereby increasing administrative costs.
- Despite renewed focus on inclusivity and equity, offering grants-in-aid for underprivileged and women entrepreneurs may increase the default/credit risk.

Challenges

- A convenient line of credit is not accessible to small and marginal farmers (86% of total farmers) who are hence, forced to take a greater share of loans from the informal, non-institutional lenders.
- Close to 30% of the total farm gate produce is lost due to inadequate cold chain infrastructure. Estimated annual post-harvest losses due to such infrastructural bottlenecks, have been highlighted by Niti Aayog to be close to almost Rs 90,000 crore.

- Inadequate convergence with other schemes remains a crucial factor in need of attention.

Way Forward

- Integrating traditional and frontier technologies is the need of the hour to tackle ever-increasing set of issues in building sustainable infrastructure in the agricultural sector
- Consideration should be given to grading and standardisation of procurement centres to facilitate the agricultural supply chain.
- This scheme will be successful for farm-gate-led hub-and-spoke models and guidance and mentoring for the FPOs and small-scale promoters can accelerate the adoption, and the incubators can play a pivotal role.
- Streamlining domestic markets and building backward and forward linkages with local, national and global markets must be made to boost productivity of the sector.

2. Central Bank Digital Currency (CBDC)

Current Context

Recently, the Reserve Bank of India (RBI) expressed desire to extend the use of Central Bank Digital Currency (CBDC) to the call money market.

About Call Money Market

- The call money market is one that meets short-term funds requirements within a period of one day to a fortnight.
- Also known as the "Notice Money" Market, it is highly liquid market and may be risky and volatile sometimes. No security or collateral is required for transactions.
- Its importance can be understood with the fact that it accounts for a major part of the total turnover of the money market.

About CBDC

- The CBDC or the **e-rupee (or digital rupee)** is a digital currency issued by the RBI, electronically held in a digital wallet overseen by RBI. It is recognized as a legal and thus is a mandated medium of exchange.
- As compared to deposits held in the bank, CBDC will not accrue any interest though the concerned deposits may be convertible with the Digital Rupee.
- Announced in the FY23 Budget, the RBI is now planning to go to the inter-bank borrowing market.
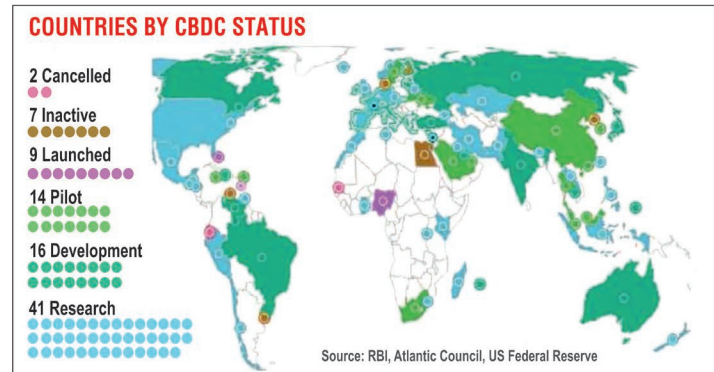
Significance of CBDCs

- It makes the rupee more attractive as a currency in comparison to other cryptocurrencies which gradually lose value over time due to debasement policies by the Central Banks.
- It would be convenient and economical to produce digital currency as compared to physical cash notes.
- It improves **traceability of Digital Transactions by authorities** in comparison to physical transactions while playing a critical role in the transition towards a cashless society
- CBDC is a step in the right direction to prevent cryptocurrencies from threatening the sovereignty of the Rupee.

Challenges

- When low-interest rates prevail, people might be tempted to convert their bank deposits into digital currencies which would considerably reduce the cash holdings of banks cripple them.
- An increased propensity of use of the CBDC could free banks from having to maintain sufficient cash deposits, eliminating the risk of bank runs which usually serves as a check on the unrestricted expansion of loan books.
- Future of CBDC as a substitute for private cryptocurrencies may be overblown as the popularity of private cryptocurrencies emerged due to its potential to show more stable purchasing power than fiat currencies.

Where the CBDC stands today?

- India's CBDC is currently in a pilot phase across the retail and wholesale segments. The pilots started in four cities and four banks. These have now been expanded to 13 banks and 26 locations, with nearly 20 lakh million users and merchants on board. The central bank has set a target of one million transactions a day by the end of 2023.
- The purpose is to understand the benefits, risks and the impact it will have on bank deposits, on

COUNTRIES BY CBDC STATUS

2 Cancelled
7 Inactive
9 Launched
14 Pilot
16 Development
41 Research

Source: RBI, Atlantic Council, US Federal Reserve

monetary policy, on use of currency by people. Understanding that requires generation of enough data.

- For settlement of government bond transactions, the use of CBDC was sanctioned since November last year. For bonds, the CBDC was used in account format.

Significance of the move

- The RBI showcased five 'Made in India' financial innovations at the 18th G-20 Summit on September 9-10. They included-
  i. Public Tech Platform for Frictionless Credit,
  ii. CBDC,
  iii. UPI One World,
  iv. Rupay On-The-Go
  v. Bharat Bill Payment System.
- The Central Bank displayed an informational video on the RBI's digital rupee and its journey, with live digital rupee transactions demonstrated by selected participant banks.
- The RBI is also looking to promote the CBDC for cross-border transactions in a step **to internationalize the rupee.**
  ✓ This shall help making the Indian rupee an internationally acceptable currency.
  ✓ It boosts the receptivity of the rupee in international trade and facilitate seamless export and import of products.
  ✓ It complements India's policy of maintaining Full Current Account Convertibility and

Partial Capital Account Convertibility to realise the full potential of the Rupee in the international market.

✓ It shall ensure rationalized use of India's Forex Reserves, acting as a means to prevent rapid depletion and overuse, even during sudden surges in the import bill.

✓ At a time when India is favourably looking upon Alternative Currency Trading Agreements with countries like Russia, UAE etc. to reduce hegemony and dependence on US Dollars, the CBDC can be a solution to a wide range of existing questions.

• Thus, a refined policy architecture is of paramount importance to the RBI and the move

is expected to be in line with RBI's efforts to mainstream India's CBDC into the interface of economic and digital spaces.

Way Forward

• India has embraced the digital revolution and has integrated its financial ecosystem to facilitate transactional business in day-to-day affairs. The CBDC is a manifestation of this very vision.

• CBDC acts as a token of India's pride as it flaunted its indigenous products in front of the global platform in the G20 Summit.

• Effort must be made to further streamline the policy backbone behind CBDCs, while promoting safe, secure and symbiotic usage of the same.

3. Issues related to crypto assets (crypto regulation)

Current Context

Recently, the Union Finance Minister said that cryptocurrencies (crypto) pose major threats to the global financial ecosystem, and called for setting up a framework for handling challenges related to such assets.

About

• The International Monetary Fund (IMF) and the Financial Stability Board (FSB) have released their synthesis papers on integrating macroeconomic and regulatory perspectives of crypto assets, on the request of India's G-20 presidency.

  ✓ It recommended against an outright ban on crypto-assets.

  ✓ Instead, it suggested introducing a licensing regime for crypto-asset platforms bringing the asset under the fold of anti-money laundering and counter-terrorist financing standards.

Crypto Assets

• Also known as cryptocurrency, they are **private sector digital assets** that depend primarily on **cryptography and distributed ledger** or similar technology.

• A cryptocurrency is a medium of exchange in digital format, which uses encryption techniques to control the creation of monetary units as well as to verify the exchange of money.

• Bitcoin is considered to be the world's best-known cryptocurrency and is the largest in the world in terms of market capitalisation, followed by Ethereum.

  ✓ Bitcoin was launched in 2009 by Satoshi Nakamoto.

Issues related to crypto assets and their regulation

• **Legal characterization of crypto & taxation**

  ✓ The main issue is whether these assets should be defined as a commodity (in which case capital gains rules apply), a currency or given a whole new different category.

- ✓ In 2022, the government had imposed a tax on "any income from transfer of any virtual digital asset" at a rate of 30%, along with a 1% tax deduction at source (TDS) on each transaction.

- **Lack of basic consumer protection laws**
  - ✓ Transactions on the cryptocurrency network are based on trust between peers and the underlying blockchain networks. However, the absence of basic consumer protection laws presents a risk.
  - ✓ Existing data laws may be unable to address data theft and financial fraud originating from crypto assets.

- **Crypto-driven illegal activities**
  - ✓ The use of crypto assets for money laundering, tax evasion, terrorism, corruption and political funding poses serious challenges.
  - ✓ Crypto assets are anonymous, global, easy to store and by and large difficult to be accessed by law enforcement agencies, which makes them favourable means of payment for illegal actors.

- **Financial stability challenge (As per IMF)**
  - ✓ Cryptocurrencies are not instantaneous; they can be expensive to transact; and are extremely volatile. So, they could lead to instability.
  - ✓ Challenges posed by the crypto ecosystem include operational and financial integrity risks from crypto asset providers; investor protection risks for crypto-assets and DeFi; and inadequate reserves and disclosure for some stable coins.

- **Economic issues**
  - ✓ Given the potential for crypto assets to facilitate tax evasion, threats to fiscal policy could intensify.

- ✓ Seigniorage (the profits accruing from the right to issue currency) may also decline.
- ✓ Increased demand for crypto assets could facilitate capital outflows that impact the foreign exchange market.
- **High energy demand:** A migration of crypto "mining" activity out of China to other emerging market and developing economies can have an important impact on domestic energy use.
  - ✓ **Increased energy demand due to crypto mining** will pose challenges, especially in countries that rely on more CO_2-intensive forms of energy, as well as those that subsidize energy costs.

Evolution: Crypto Regulations in India

- **In 2018,** the RBI banned banks and other regulated entities from supporting crypto transactions.
- **In 2019,** an Inter-ministerial committee recommended banning all private cryptocurrencies.
- **In 2020,** the SC struck down the ban on the trading of cryptocurrency as unconstitutional.
- **In 2021,** Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 introduced.
  - ✓ Under this, a plan to ban private digital currencies favours RBI-backed currency.
  - ✓ A 3-6 month exit period prior to banning the trading, mining and issuing of cryptos.
- **In 2022,** the Finance Minister introduced crypto taxation rules.
- **In 2023,** crypto come under the purview of the Prevention of Money Laundering Act (PMLA), signalling that India is taking baby steps towards its regulation.

Way Forward

- Given the concerns over greater interconnectedness between crypto assets and the traditional financial sector as well as the

complexity and volatility around crypto assets, policymakers are calling for tighter regulation.

- G-20 summit under India's presidency is a

golden opportunity to reach consensus over setting up of a global framework to regulate crypto assets.

4. Open Network for Digital Commerce (ONDC)

Current Context

A whitepaper released by Deloitte India recently observed that the Open Network for Digital Commerce (ONDC) will be a pivotal force enhancing the digital commerce sector in the country.

About

- ONDC is a remarkable opportunity for India's economy, which spans over diverse industries, thereby creating optimism about India's forthcoming growth phase, where empowerment shifts to consumers and SMEs.
- ONDC's mission of illuminating Bharat holds key to India's goal of reaching Developed Country status by 2047.

What is ONDC and how does it Work?

- Open Network for Digital Commerce (ONDC) is an initiative of the **Ministry of Commerce and Industry ,** aimed at promoting open networks for all aspects of exchange of goods and services over digital or electronic networks.
- The foundations of ONDC are to be open protocols for all aspects in the entire chain of activities concerning the exchange of goods and services, similar to hypertext transfer protocol for information exchange over internet, simple mail transfer protocol for exchange of emails and unified payments interface for payments.
- It is based on **open-sourced methodology (BeckN protocol),** using open specifications and open network protocols independent of any specific platform.
- **Aim:** Modelled after the Unified Payments Interface (UPI) project, the ONDC is aimed at:
  - ✓ Democratising the e-commerce sector in India,

What is BeckN Protocol?

- •Beckn Protocol is an open and interoperable protocol for decentralised digital commerce, the first of its kind across the globe and developed by Nandan Nilekani, Pramod Varma and Sujith Nair.
- •The network aims to help MSME players in the retail sectors to take advantage of the fast-growing e-commerce space in the country.

  - ✓ Providing alternatives to proprietary e-commerce sites, and

- Changing the fundamental structure of the e-commerce market from the current "platform-centric model to an open-network model".

ONDC's Inclusive Governance Approach

- **The ONDC was incorporated as** a Section 8 company (Under Companies Act, 2013) in December 2021, with the Quality Council of India and Protean eGov Technologies Limited as Founding Members.
- **The ONDC entity,** a not-for-profit company, manages and operates the ONDC Network.
  - ✓ **It is responsible for** building and maintaining the underlying infrastructure (common registries and protocols) as well as defining the rules of engagement and code of conduct for the Network Participants through the ONDC Network Policy and the ONDC Network Participant Agreement.

- **Funding**
  - ✓ **Since December 2021,** it has raised more than Rs 180 crore from multiple investors including private and public sector banks, depositories, development banks, and other financial institutions.
  - ✓ While **initial funding** was obtained through share allotments, the ONDC entity aims to develop a **self-sustaining financial model in the future.**
- **The involvement of government in ONDC**
  - ✓ **ONDC has been endorsed by** the Department for Promotion of Industry and Internal Trade (DPIIT) under the Union Ministry of Commerce and Industry.
  - ✓ **DPIIT is not involved in ONDC's funding,** but is at the forefront of its evangelisation through light-touch governmental oversight.
  - ✓ **The ONDC board includes** representatives from banks, the government, and independent industry and civil society members, to ensure a market plus-community driven approach in decision-making.

Significance of ONDC Framework

- The ONDC standardizes operations, promotes inclusion of local suppliers, drives efficiencies in logistics and leads to enhancement of value for consumers.
- **Presents an opportunity for businesses of all sizes to connect and transact seamlessly**
  - ✓ The ONDC framework, building on India's Digital Public Infrastructure (DPI), creates a single platform, where all the large e-commerce platforms, are accessible in one place along with local digital stores, start-ups, shops, and kirana stores.
  - ✓ This paradigm shift from "store of value" to "flow of value" brings with it, a multitude of benefits.

- **Makes e-commerce more inclusive and**
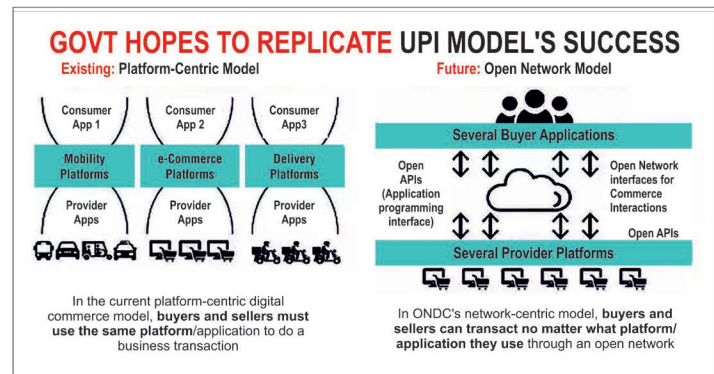
accessible for consumers
  - ✓ Consumers can potentially discover any seller, product or service, thus increasing freedom of choice for consumers.
- **Benefits for sellers**
  - ✓ **The network-centric approach of ONDC** reduces the skewed bargaining power in favour of the platforms, which often results in higher entry barriers and lower margins for sellers.
  - ✓ It levels the playing field by making goods and services equitably accessible to all, thereby benefiting all participants in the ecosystem.
- With a **unique proposition built around agility, security and profitability** at the same time, ONDC streamlines value chains, bridges gaps, and endorses innovation, thus paving the way for the next generation to explore novel paths.
- **On the agriculture front**
  - ✓ Through ONDC, farmers could gain direct access to buyers while Farmers Producer Organisations (FPOs) can establish direct connections with potential clients, bypassing the intermediaries, thus attaining greater net profits on their produce.
  - ✓ This integration optimises the value chain, facilitating trade amongst stakeholders (such as mandis, corporations, traders, hospitality establishments, and farm-to-table start-ups).

Potential Challenges with ONDC

- Lack of grievance redressal mechanism, which is a key aspect of Sevottam Model of Governance, is

a point of concern.

- As a result of this implementational bottleneck, there is an increased possibility of commercial disputes.
- Concerned goods and services may turn out to be costlier as ONDC might not be able to provide offers like cashbacks, coupons etc.
- Large quantum of investments required to build competitors to the integrated solutions offered by the big players, has become an entry barrier for digital marketplaces.
- It flagged the inability of sellers, in the marketplace, to move out of the platform

ecosystem, given that the value created by these small players is stored with the larger platforms.

Conclusion

- At present, the e-commerce sector represents just about 4.3% of retail commerce in India. But it is projected to touch $350 billion by 2030.
- ONDC aims to transform the marketplace ecosystem from an "operator-driven platform-centric model" to a "facilitator-driven interoperable decentralized" network.

5. Financial Stability and Development Council (FSDC)

Current Context

The RBI Governor-headed Sub-Committee of the Financial Stability and Development Council (FSDC-SC) resolved to remain vigilant against external vulnerabilities.

About

- The FSDC Sub-Committee reviewed major global and domestic macroeconomic and financial developments.
- It also reviewed issues of inter-regulatory coordination relating to the Indian financial sector activities of various technical groups under its purview and the functioning of State Level Coordination Committees (SLCCs) in various States/UTs.
- It resolved to remain vigilant against any build-up in vulnerabilities in the financial system as well as in the broader economy, especially from global spillovers in a dynamic and uncertain world, and to preserve financial system stability for attaining strong, sustainable and inclusive growth.

Financial Stability and Development Council

- It was set up by the Government as the apex level forum in December 2010.
- The establishment of FSDC was first proposed by

the **Raghuram Rajan Committee (2008) on financial sector reforms.**

- It is an autonomous organisation that the government established after consulting with financial market regulators.
- No funds are separately allocated to the Council for undertaking its activities.

Composition

- **Chairman**: The Chairman of the Council is the Finance Minister.
- **Members:** Its members include the heads of financial sector Regulators (RBI, SEBI, PFRDA, IRDA & FMC), Finance Secretary and/or Secretary, Department of Economic Affairs, Secretary, Department of Financial Services, and Chief Economic Adviser.
- The Council can invite experts to its meeting if required.

FSDC Sub-Committee

- The FSDC Sub-Committee has also been set up under the **chairmanship of Governor, RBI.**

- It meets more often than the full Council.
- **All the members of the FSDC are also the members of the Sub-Committee.**
- Additionally, **all four Deputy Governors of the RBI and Additional Secretary, DEA, in charge of FSDC, are also members** of the Sub-Committee.
- Executive Director, RBI (in charge of financial stability) is the Member Secretary, while the Financial Stability Unit (FSU) of RBI is the Secretariat for the Sub-Committee.

Functions

- The Council monitors macro-prudential oversight of the economy, particularly the operation of big financial conglomerates, and resolves inter-regulatory cooperation and financial sector development challenges without impinging on regulators' autonomy.
- It also emphasises upon **financial inclusion** and financial knowledge.
- The Council discusses topics surrounding the development of the financial industry and financial stability.

- It coordinates India's interactions with international financial institutions like the **Financial Stability Board (FSB) and the Financial Action Task Force (FATF).**
- The organisation seeks to reinforce and institutionalize the mechanisms for preserving financial stability, the growth of the financial sector, inter-regulatory coordination, and the supervision of macro-prudential economic regulation.

Conclusion

- Financial stability refers to the ability of financial institutions, both individually and collectively, to carry out their duties effectively, resist external shocks, and minimise the internal flaws.
- The Council addresses a variety of issues, which include those related to financial stability, the development of the financial sector, inter-regulatory coordination, financial literacy, financial inclusion, and macro-prudential oversight of the economy.

6. 6ᵗʰ Census Report on Minor Irrigation Schemes

Current Context

The Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation released the report on the 6ᵗʰ census on Minor Irrigation Schemes.

The 6ᵗʰ Census Report on MI Schemes

- As per the report, 23.14 million Minor Irrigation (MI) Schemes have been reported in India, out of which 21.93 million **(94.8%) are Ground Water (GW)** and 1.21 million **(5.2%) are Surface Water (SW) schemes.**
- **Uttar Pradesh possesses the largest number of MI schemes** followed by Maharashtra, Madhya Pradesh and Tamil Nadu.
- Leading States in GW schemes are Uttar Pradesh,

Maharashtra, Madhya Pradesh, Tamil Nadu and Telangana.
- There has been increase of about 1.42 million in MI schemes during the 6th MI census as compared to the 5th Census.
- **At the national level, both GW and SW schemes have increased by 6.9% and 1.2%, respectively.**
- For the first time, the information about gender of the owner of MI scheme was also collected in case of individual ownership.

- Out of all the individually owned schemes, 18.1% are owned by women.
- During the 6th MI census, share of total 'In use' schemes has marginally increased whereas the share of both 'Temporarily not in use' and 'Permanently not in use' schemes have the slightly declined as compared to the 5th MI census.

About Minor Irrigation (MI) Scheme

- Minor Irrigation schemes contribute a major share in the growing irrigation across the country.
- Irrigation schemes using either ground water or surface water and having a Culturable Command Area up to 2000 hectare individually are categorized as Minor Irrigation Schemes.
- **The schemes have been categorised broadly into six major types; such as Dugwell, Shallow tubewell, Medium tubewell, Deep tubewell, Surface flow schemes and Surface lift schemes.**
- **A majority of MI schemes (96.6%) are under private ownership.**

About Minor Irrigation Census

- Minor Irrigation Census is being taken up to build sound and reliable database on the minor irrigation sector.

- The data will be used for estimating the availability of Ground Water and formulation of realistic plan for Water Resources development.
- **The five censuses have been conducted with reference year 1986-87, 1993-94, 2000-01, 2006-07 and 2013-14.**
- **The 6th Minor Irrigation Census with reference year 2017-18 was completed in 32 states/UTs.**
- The census was conducted under the Centrally sponsored scheme "Irrigation Census".
- The need for conducting the census of Minor Irrigation arose as it was felt that a database of these schemes will serve the planning, development and management needs of these schemes which contribute to agriculture in a big way.

Conclusion

- The report provides results at the state and all India level by way of integrated tables supported by various statistical graphs and charts. This report will be useful for planners, policy makers, research scholars, agricultural and ground water scientists, administrators & all concerned with development of irrigation and agricultural economy of the country.

7. Fall in Household Savings

Current Context

Union Minister of Finance attributed the 46-year low savings rate in 2022-23 to changing preferences, highlighting that higher borrowings rather indicate confidence in future employment and income prospects.

About

- The Finance Ministry has dismissed apprehensions about household savings in the country dropping to a multi-decade low, arguing that households are now adding lesser financial assets than in the past.
- This is due to the fact that they have started

taking loans to buy real assets such as homes and vehicles, stressing that is a sign not of distress but of confidence.

- RBI Data claimed that net household financial savings dropped to 5.1% of the GDP in 2022-23 from 7.2% in 2021-22, the lowest since 1976-77.
- Combined with an uptick in households' financial

liabilities from 3.8% of GDP in 2021-22 to 5.8% last year, it raised concerns that the recovery from the COVID-19 pandemic may still incomplete, with high inflation denting savings.

Deciphering the fall

- Data indicates that changing consumer preference for different financial products is the real reason for the household savings.
- Between June 2020 and March 2023, the Stock of Household Gross Financial Assets went up by 37.6%, and the Stock of Household Gross Financial Liabilities went up by 42.6% as highlighted by the Finance Ministry, noting that overall net financial assets are still continue to grow despite lower fresh inflows.
- They added financial assets by a lesser magnitude than in the previous years because they have now started taking loans to buy real assets such as homes. There has been steady double-digit growth in loans for housing since May 2021, indicating that financial liabilities have been incurred to buy real assets.
- Vehicle loans have also been growing at double digits since April 2022 and by more than 20% since September 2022.
- Overall household savings have grown at a CAGR of 9.2% between 2013-14 and 2021-22 as per Ministry Data. This showed that the ratio of household savings to nominal GDP has remained constant from around 20% to 19% as of 2021-22.

Role played by NBFCs in this context

- The biggest item that seems to have led to the reduction in net financial assets added in 2022-23, is the net flow of credit from Non-Banking Financial Corporations (NBFCs) to the Household Sector.
- In 2021-22, NBFCs had lent only ₹21,400 crore to the household sector, which shot up by "a whopping 11.2 times" to almost ₹2,40,000 crores.

- Overall, NBFC retail loans outstanding were ₹8.12 lakh crore in FY22, and it went up to ₹10.5 lakh crore in FY23, a growth of only 29.6%, it said.
  - ✓ The two big components in NBFC retail loans are vehicle loans and other retail loans', which increased from ₹3.4 lakh crore and ₹3.95 lakh crore in 2021-22 to ₹3.82 lakh crore and ₹5.22 lakh crore in 2022-23, respectively.
  - ✓ These are mostly microfinance loans, loans to Self-Help Groups, Advances to individuals against gold and other loans etc. as per the operational mandates of various NBFCs in the country.

- 36% of NBFC's Outstanding Retail Loans have been for the purchase of vehicles, which doesn't signal distress on the part of households but of confidence in their future employment and income prospects.
  - ✓ The same has also been reflected in the recent Consumer Confidence Survey of RBI, and the C-Voter Survey of Consumer Optimism conducted in July and August.

Household Savings

- Household savings refer to the money kept aside by consumers after they subtract their spending from their disposable income within a given period of time.
- This can be in the form of currency, bank deposits, debt securities, mutual funds, pen pension funds, insurance, and investments in small savings schemes.
- They are a reflection of the health of the economy and indicate whether the citizens of a country can withstand any contingencies that could arise anytime.
- The household savings can be calculated as the difference between opening and closing balances of stocks of financial assets at the end of each fiscal year

Policy options for the Government to boost Household Savings

- Revised Tax Slabs, an increase in the standard deduction, and a higher limit to deductions on inter interest paid on home loans could help push financialization of household savings that could further help channel resources for fresh lending and investments in the economy.
- There could also be changes to government and social spending, as well as revisions to the pension scheme.
- Greater push towards digitalisation and greater penetration of banking services in rural areas could help mobilize higher household financial savings.
- Increasing interest rates in the economy by

Monetary Policy regulation (by Monetary Policy Committee) could pick up the rate of deposit growth in the system going forward

Way Forward

- Rising borrowing costs will pressure India's savings rates over the next year, but it will remain above the global average.
- While tangible ownership of assets keep growing, a continuous fall in household savings and its failure to pick up in a high inflationary environment will hurt investments and could even lead to widening of external pressures.
- The budgetary visions of fiscal consolidation and probity in Financial Governance is thus, the balanced way ahead.

8. RBI to Discontinue I-CRR

Current Context

Recently, RBI has made an announcement to discontinue the Incremental-Cash Reserve Ratio (I-CRR) in a phased manner.

About

- The central bank has decided to take this decision on the basis of an assessment of current and evolving liquidity conditions.
- The RBI has decided to release 25 percent of the maintained Incremental CRR on September 9 and another 25 percent on September 23. The remaining half of the I-CRR will be released on the 7th October, 2023.

Incremental CRR and its impact on liquidity in the market

- Cash Reserve Ratio can be defined as certain percentage of net demand and time liabilities (NDTL) in the form of liquid cash that the banks are required to hold with the RBI.

- Currently, the banks are required to hold 4.5 per cent of their NDTL in the form of CRR with the central bank. However, banks do not get any interest on the CRR.
- It can be recognized as a quantitative tool of monetary policy, used by RBI to regulate the money supply in the economy.
  - ✓ By increasing the CRR, RBI decreases the money supply with the banks thereby reducing their lending capacity.
  - ✓ This result in decrease of money supply in the market, thereby reducing the aggregate demand and ultimately, prices come down.
- However, in cases when there is excess liquidity in the market, the RBI can impose incremental CRR. In such a case, the banks are required to

hold even more liquid cash with the central bank, thereby helping it to manage access liquidity during high-surplus liquidity conditions in the banking system.

due to the deposit of Rs 2,000 notes would be around Rs 2.6 lakh crore. Around 10 per cent of this amount will result in RBI impounding around Rs 26,000 crore from banks as ICRR.

Why RBI imposed it?

- The RBI decided to impose the I-CRR in August, 2023 with objective to absorb huge surplus liquidity in the banking system due to numerous factors such as the return of 2,000 rupees banknotes, capital inflows as well as government spending.
- If we assume that 85% of money was received as bank deposits, then the increase in bank deposits

Significance of this step

- With the return of 2000 rupees currency to the banking system, there was an intended risk of increased money supply and consequently, increased inflation in the economy.
- With the imposition of Incremental CRR, the RBI sucked in all the surplus money with the banking sector, thereby controlling inflation in the economy.

7. SCIENCE & TECHNOLOGY

1. Aditya-L1 Mission

Current Context

On 19 September, 2023, India's first solar mission, Aditya-L1 successfully entered the trajectory towards the L1 Lagrange point to continuously study the sun.

About

- This advancement has been observed after Aditya L1 started collection of data, according to the statement made by ISRO on 18th September, 2023.
- The sensors incorporated in the **Supra Thermal and Energetic Particle Spectrometer (STEPS)**, which is a sub-system of the **Aditya Solar Wind Particle Experiment (the ASPEX)** payload on the spacecraft, have started to measure the fast-moving charged particles generated within the Sun.

The Aditya-L1 Mission

- **Aditya-L1 is recognized as India's first Solar Mission, which is a space-based observatory class dedicated to study the Sun**, launched by the Indian Space Research Organization (ISRO) on September 2, 2023, from Satish Dhawan Space Centre in Sriharikota.

- **About the Mission**
  - ✓ The first step of the mission involved the successful placement of Aditya-L1 Spacecraft by the launch vehicle in the lower Earth orbit.
  - ✓ In the subsequent steps, the orbit of the spacecraft around the Earth were raised multiple times through successful maneuvering.
  - ✓ In the recently conducted step, the spacecraft has been put into the trajectory through which, it will travel towards the L1 point.

Aditya-L1

Objectives

- ★ Knowledge of the Sun and impact of its radiation, heat, flow of particles on humans.
- ★ Study of chromosphere and corona.
- ★ Examination of coronal mass ejections (CMEs)
- ★ To analyse the corona's magnetic field and the driver of the space weather.
- ★ To understand the reason behind the higher temperature of Corona as compared to the solar surface.
- ★ To analyse reasons behind the acceleration of particles on the Sun, which results in solar wind.

Timeline

September 19, 2023 Final Maneuvre performed to successfully enter the trajectory towards the L1 point.

September 18, 2023 Collection of scientific data was started by Aditya-L1.

September 15, 2023 Fourth Earth-bound maneuvre performed to attain the orbit of 256 km x 121973 km.

September 10, 2023 Third Earth-bound maneuvre performed to attain the orbit of 296 km x 71767 km.

September 05, 2023 Second Earth-bound manoeuvre performed to increase the orbit to 282 km x 40225 km.

September 03, 2023 The first Earth-bound manoeuvre performed to attain the orbit of 245 km x 22459 km.

September 02, 2023 The launch of Aditya-L1 by PSLV-C57, India's first solar observatory to Sun-Earth L1 point.

- ✓ Finally, the spacecraft is supposed to be placed in the halo orbit around the L1 Lagrange point of the Sun-Earth system.
- **Payloads on Aditya-L1**
- The Aditya-L1 mission carries a suit of **seven scientific payloads** in order to study the sun. These payloads are:

- ✓ **Visible Emission Line Coronagraph (VELC):** Responsible to study the solar corona as well as dynamics of Coronal Mass Ejections.
- ✓ **Solar Ultra-Violet Imaging Telescope (SUIT) payload:** Measures variations in solar irradiance in the near ultra-violet and takes photographs of the solar photosphere and chromosphere in the ultra-violet (UV) range.
- ✓ **ASPEX and Plasma Analyser Package for Aditya (PAPA) payloads:** Provided with a function to study the solar wind and energetic ions along with their energy distribution.
- ✓ **Solar Low Energy X-ray Spectrometer (SoLEXS) and High Energy L1 Orbiting X-ray Spectrometer (HEL1OS):** Study of X-ray flares originating from the Sun over a wide X-ray energy range.
- ✓ **Magnetometer payload:** Measurement of interplanetary magnetic fields at the L-1 point.

- Furthermore, **ISRO has advanced its communication system from S-band to X-band throughout frequency** that functions with 8-8.5GHz, thereby making its systems compatible with the global standards, for missions dedicated to be launched beyond Earth's sphere of influence.
- **The Antenna**
  - ✓ The indigenously developed antenna and station possess auto-tracking features and can perform data reception and transmission operations across both S and X bands.
  - ✓ It is remotely operable from the ISRO Telemetry, Tracking and Command Network (ISTRAC) network control centre and is CCSDS (Consultative Committee for Space Data Systems) compliant, facilitating interoperability and cross-support among different space agencies.
- **Launch Vehicle Used:** ISRO successfully launched the **Aditya-L1 spacecraft** through the Polar Satellite Launch Vehicle (PSLV) C-57 in 'XL' configuration.
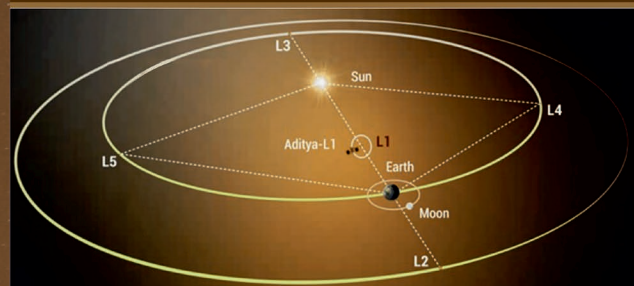

About the Lagrange Points:

Illustration of all five Lagrange points of Sun-Earth system.

There are five Lagrange points, L1 to L5, between any two-celestial body system.
- At these points or locations, the gravitational pull of the celestial bodies becomes equal to the centripetal force required to keep a smaller third body in orbit, thereby cancelling out each other's impact on the third body.
- The points can be used as 'parking spots' for spacecraft in space to remain in a fixed position with minimal fuel consumption.
- Of the **five Lagrange points,** three are unstable and two are stable.
- **The unstable Lagrange points (labelled L1, L2, and L3):** lie along the line connecting the two large masses.
- **The stable Lagrange points (labelled L4 and L5):** Also called Trojan points, they form the apex of two equilateral triangles and celestial bodies like asteroids are found here.
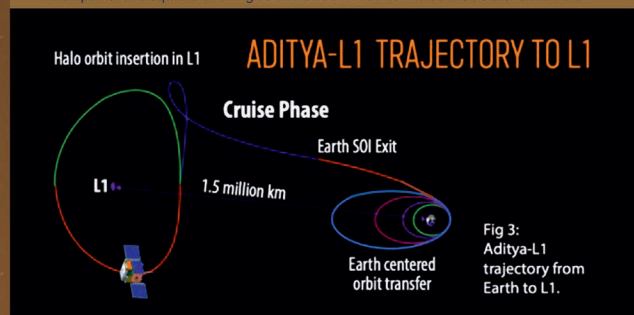
ADITYA-L1 TRAJECTORY TO L1

Fig 3: Aditya-L1 trajectory from Earth to L1.

Why L-1 Point is Selected?

- The L1 point is positioned between Sun and Earth, thus it gets a continuous and unhindered view of the Sun, while the L2 point is located behind the Earth, thereby obstructing the view of the Sun.
- The L3 point is behind the Sun and thus, the communication of the probe with Earth will be difficult. Similarly, the L4 and L5 points are relatively stable, but much farther from Earth compared to L1.

Significance of the Mission and Future Prospects

- **Space-related advantages**
  - ✓ According to ISRO, the Sun emits radiation/light in nearly all wavelengths along with various energetic particles and magnetic

fields. Thus, Aditya L1 observatory will be significant in studying those EM waves of different wavelengths and enrich the ASTROSAT with collected data (multi-wavelength space observatory of India).

✓ A closer observation and study of the Sun from space will help in understanding the different mysteries of the solar system and other celestial bodies in the galaxy.

✓ Such a long-distance space mission will increase India's potential in the space sector and provide valuable technical inputs for future missions such as Gaganyaan and Indian space station.

- **Economic advantages**
  ✓ The Indian space sector will get a boost with the success of Aditya-L1 as it will be the second successful mission within a span of few months, after the success of Chandrayaan-3 mission.

✓ With the development of space infrastructure such as "multi-purpose launch vehicles" and other economic and reliable options, India can become a partner to other nations who seek to launch their satellites.

✓ This will further increase India's share and stake in space economy.

- **Space diplomacy**
  ✓ With the availability of more reliable space data, India can get benefit in the newly emerging dimension of space war and space diplomacy.

Conclusion

- India's space capabilities are increasing and Aditya-L1 can be attributed as another chapter in India's increasing space prowess. This will open a plethora of opportunities for India and will further strengthen its stake of being the rising "global power" and a key player in space technology.

2. Scientists Accomplish Complete Genome Sequencing of Y Chromosome

Current Context

Recently, the researchers from the Telomere-to-Telomere (T2T) Consortium conducted the genome sequencing of male Y chromosomes successfully. This resulted in the creation of a comprehensive chromosomal map of the entire set of human chromosomes.

Key Takeaways from the "Genome Sequencing" of the Y-chromosome

- According to the data released by the researchers, the new discovery has revealed certain significant features:
  ✓ The Y chromosome contains relatively few genes; however, these genes code for proteins associated with spermatogenesis.
  ✓ Due to complete sequencing and study of the Y chromosome, the study of the evolution of the human population and genetic drift can be carried out.
  ✓ The reason behind this is the occurrence of

very little recombination during the inheritance of Y chromosomes across generations, in contrast to X chromosomes, which undergo significant recombination.

✓ The genes are divided into various regions even within the Y chromosome, and such regions differ greatly from one another in terms of their nucleotide sequencing and evolutionary background.

- The Y chromosome's complicated repeat structure, which includes lengthy palindromes, tandem repeats, and segmental duplication, has made it infamously challenging to sequence and assemble.

- However, the researchers of the consortium were able to read and sequence the gapless sequence of the Y chromosome with the help of modern longread "sequencing" techniques and innovative computational assembly methods.

The Y chromosome

- The human Y chromosome is one of the sex chromosomes present in the males of Homo sapiens and plays a key role in determining the biological gender of humans. An individual having an XY combination of sex chromosomes is categorized as male, while those having an XX combination are recognized as females.
- During fertilization, the female gamete always carries an X chromosome in it, while the gamete from the male may either contain an X or a Y chromosome. Thus, the male gamete determines the sex of the offspring.
- However, it is not found only in males; rather, it is also found in individuals suffering from Klinefelter's syndrome.

Significance of the Study

- The study has been able to define the importance of Y chromosomes in the functioning of organisms.
- The study further provided more clarity on the inheritance of the Y chromosome as compared to the X chromosome.
- These research-related advancements also paved the way for further advanced studies about the rate at which Y chromosomes undergo changes.

- Further, several pieces of evidence suggest that people with Y chromosomes may eventually lose genetic material, although the underlying causes are yet unknown. This study will help in the identification of such causes.

## Some Diseases Associated with Abnormalities in the Y-chromosome

- **Retinitis pigmentosa:** It is recognized as a rare, inherited degenerative eye disease that may result in severe vision impairment. An important gene related to Retinitis Pigmentosa, Y-Linked, is the RPY (Retinitis Pigmentosa, Y-Linked) gene.
- **Jacobs syndrome (XYY):** It is recognized as a chromosomal disorder associated with "**sex-chromosome trisomy,**" where the individual possesses three sex chromosomes, including two Y-chromosomes. This condition is comparatively rare compared to Klinefelter's syndrome.
- **Swyer syndrome:** The individual suffering from this disorder **possesses one X and one Y chromosome**, which are commonly found in males; however, **the individual possesses female reproductive organs**. Although the reason for this disorder is unknown, it is supposed that mutations in the genes responsible for normal sex differentiation could be the reason for this disorder.
- **Y-chromosome infertility:** In this condition, the **sperm cell-producing capacity of the individual is affected.** The reason associated with this disorder is the deletion of genes in the azoospermia factor (AZF) region of the Y chromosome.

3. India's First 700 MWe Nuclear Power Plant

Current Context

In a milestone for India's nuclear power production, the first indigenously-developed 700-megawatt electric (MWe) nuclear power reactor at the Kakrapar Atomic Power Project (KAPP) in Gujarat has started operations at full capacity.
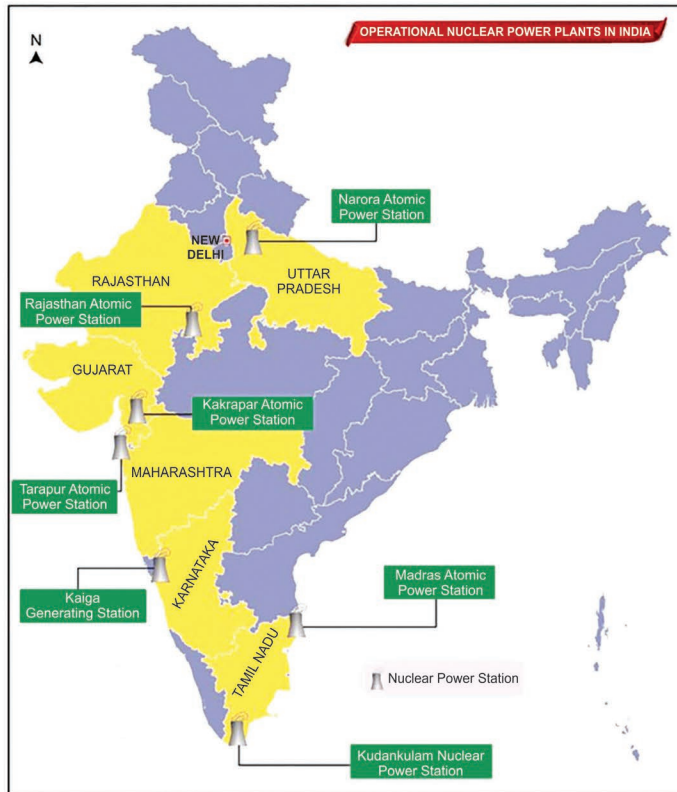
About the project

- This development manifested within three years since it achieved criticality, highlighting the initiation of a controlled, but sustained nuclear fission reaction.

- This is a historic moment in India's civilian nuclear power program given that it is the country's first 700 MWe unit and the biggest indigenously-developed variant of the Pressurised Heavy Water Reactor (PHWR).

  ✓ Till now, the biggest reactor of indigenous design was the 540 MWe PHWR, two of which have been deployed in Tarapur, Maharashtra.

- **The PHWRs** use natural uranium as fuel and heavy water as moderator. They comprise of the lion's share of India's nuclear power fleet.

Nuclear Power in India

- Nuclear energy is the fifth-largest source of electricity in India, contributing about 2% of the country's total electricity generation. India currently has over 22 nuclear reactors in 7 power plants across the country, which together produces around over 6,700 MW of nuclear power.

- The Government of India facilitates joint ventures between the Nuclear Power Corporation of India Limited (NPCIL) and various other public sector undertakings (PSUs) like the National Thermal Power Corporation Limited (NTPC) and the Indian Oil Corporation Limited (IOCL).

- Four units of the 700 MWe reactor are being constructed at Kakrapar (KAPP-3 and 4) and Rawatbhata (RAPS-7 and 8) site in Rajasthan currently. The government is also attempting to expand its nuclear footprint to other parts of the country like in Gorakhpur, Haryana.

- They're also actively pursuing the idea of an entirely indigenous thorium-based nuclear plant, "Bhavni," the first of its kind which can potentially utilize Uranium-233.
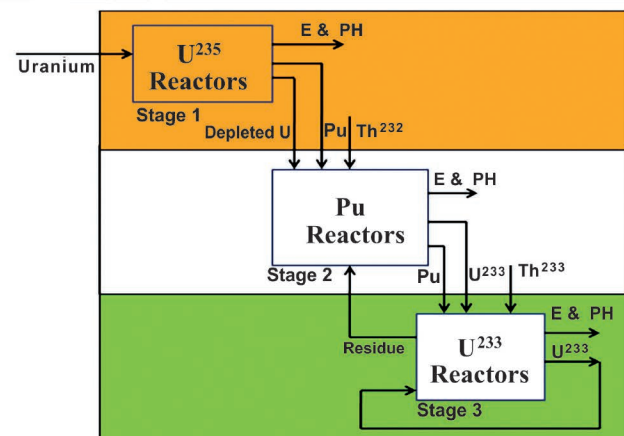
Source: International Journal of Engineering & Technology

India's Three-Stage Nuclear Program

In 1954, Homi Bhabha envisioned India's nuclear power programme in three stages to suit the country's resource profile.

Significance

- The move is symbolic of a significant scale up in technology, both with respect to the optimisation

of its PHWR design by addressing the excess thermal, while also embarking upon an improvement in the economies-of-scale.

- The stage is set for the next step in India's civilian nuclear sector— building a 900 MWe Pressurised Water Reactors (PWRs) of indigenous design.

- In terms of safety features, the PHWR technology marks the biggest advantage of using thin-walled pressure tubes instead of large pressure vessels used earlier. This distributes the pressure boundaries to a large number of small-diameter pressure tubes, lowering the severity of any possible fallout of accidental ruptures.

- It established India as a nuclear-powered, nuclear-responsible country which opposes the nuclear elitism of the NPT regime while upholding the best-case example of harnessing nuclear energy to meet civilian demands and following a path of building renewable energy capacity.

Challenges

- **India is not endowed with enough supply of enriched uranium**, which creates operational complexities while increasing the burden of finances.

- The need for India to prioritise Thorium separation facilities to facilitate ease of operations in its 3-stage program is yet to be mainstreamed as a part of its policy.

- Nuclear power plants are a capital-intensive investment and are prone to suffering **major cost overruns, something India can't afford on a regular basis.**

- The waste-propensity of such plants need to be addressed to build sustainability in the long term and prevent local opposition. Eg. As seen in **Kudankulam plant, Tamil Nadu.**

Suggestions

- DAE should liberalize the market to ease the involvement of other government companies like the National Thermal Power Corporation (NTPC) and promote competition.

- India should prioritise investment in R&D of advanced nuclear technologies, such as small modular reactors to improve efficiency, limit costs, and address safety concerns.

- India must continue building international cooperation in reaping the benefits of the global nuclear supply chain while actively seeking diplomatic channels to secure an entry into the Nuclear Supplies Group.

4. LIGO (Laser Interferometer Gravitational Wave Observatory)

Current context

Maharashtra's Hingoli hosts one of the most ambitious science programmes in the world, the LIGO observatory, which aims to study gravitational waves.

About

- LIGO-India will be the third node of the LIGO Laboratory in the US, which has observatories in Hanford (Washington) and Livingston (Louisiana).

- Once completed, LIGO-India will join a global network of gravitational-wave observatories that includes Virgo in Italy and KAGRA in Japan.

What is LIGO?

- LIGO stands for "Laser Interferometer Gravitational-wave Observatory".

- It is an international network of laboratories that detect gravitational waves, which is key to unraveling various mysteries concerning the evolution of the Universe and its celestial systems.

- It is the world's largest gravitational wave observatory and a marvel of precision engineering.
- The LIGO conceptual design has been guided by two goals i.e., maximizing the probability of detecting gravitational waves, and extracting maximum information from the waves.
- LIGO is designed to accommodate three primary objectives:

  ✓ **Observation**: The ability to monitor gravitational waves continuously (a "gravitational-wave watch").
  ✓ **Development**: The capacity for final development and full functional testing of new and advanced interferometer-based detector concepts.
  ✓ **Special Investigations**: The ability to accommodate specialized detectors to carry out scientific investigations of particular phenomena.

Background

- In 2015, LIGO made history by detecting gravitational waves for the first time.
- These waves were produced by the merger of two black holes that were 29 and 36 times the mass of the Sun, 1.3 billion years ago.
- This achievement earned the scientists involved in the project the Nobel Prize in Physics in 2017.

What is LIGO-India?

- The LIGO-India project is an initiative aimed at detecting gravitational waves from the universe.
- The essential arrangement consists of two large interferometers, each about 4 km long, arranged in an 'L' shape.
- An interferometer is a device that causes two light waves to intersect each other, and studies the resulting interference pattern.
- LIGO-India will be built by the Department of Atomic Energy and the Department of Science

Gravitational Waves

- They are ripples in spacetime produced by the movement of large celestial objects like stars and planets.
- It was first propounded by Albert Einstein's Theory of Energy-Mass Equivalence but was left unexplored by him.
- These waves are incredibly weak, making their detection very challenging.
- The study of gravitational waves is assisting scientists in understanding some of the most fundamental physical laws, such as the formation and growth of galaxies, black holes, etc.

Production of Gravitational Waves

- Cataclysmic Events: The strongest gravitational waves originate from colliding black holes, supernovae, and colliding neutron stars.
- Neutron Star Rotation: Gravitational waves can also be produced by the rotation of non-perfectly spherical neutron stars and possibly remnants of gravitational radiation from the Big Bang.

and Technology, with a memorandum of understanding with the U.S. National Science Foundation and several national and international research institution.

- The LIGO-India Observatory will enable the dramatic astronomical and astrophysics returns eagerly anticipated from the global network of LIGO Gravitational wave detectors in the coming decade.

Significance of LIGO-India

- The LIGO-India project is significant as it will be the fifth node of the planned network, thereby bringing India into a prestigious international scientific experiment.
- This project will make India a unique platform that combines the frontiers of science and technology of the quantum and the cosmos.
- It has the potential to provide unprecedented insights into the mysteries of the universe, including the nature of black holes, neutron stars, and other celestial phenomena.
- It will boost India's global reputation as a leader

of scientific and technological prowess and shall help inspire the youth of India into engaging with the field academically.

Conclusion

- LIGO-India will be the first mega science project to be set up on Indian soil, which will enable Indian students and researchers to contribute to this emerging new field of gravitational wave astronomy, and the associated developments in building cutting-edge scientific and engineering products.

5. Neurogenin 3

Current Context

Scientists from the Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG) in Dresden, Germany, and Novo Nordisk Foundation at the University of Copenhagen, Denmark, observed the Neurogenin 3's activity to learn more about their role in blood sugar regulation.

About

- Different cells in our pancreas play a unique set of roles, equally crucial in regulating our blood sugar. **Neurogenin 3 (NEUROG3) is the name of a gene found in pancreatic cells,** the mutated form of which may cause diabetes.
- The different cells in the pancreas control our blood sugar and originate from a single cell type in the pancreas, called a 'Pancreatic Endocrine Progenitor'. This cell uses a gene called NEUROG3 for a short time to do its job.

Key details

- Special tags were used to observe the NEUROG3 in these cells. By looking at flat 2D and 3D models and consequently studying them in detail, it was found that the levels of the NEUROG3 gene were different in different cells.
- Inspite of the marked heterogeneity, all the cells containing detectable NEUROG3 in turn formed cells which produce hormones.
- It was also noted that NEUROG3 works about two times slower in humans than in mice, meaning it takes more time for the gene to have an effect on humans as compared to mice.
- The researchers used the Long-Term Live Imaging method to study a phenomenon that happens in-situ in the mother's womb. The characteristic bright glow of the cells helped them combine the gene activity and map it with how the associated cells tend to behave.
- By virtue of this method, it was learned that another gene called 'KLK12' influences the movement of cells and their consequent formation of 'Islets of Langerhans' when the NEUROG3 gene starts working.

Significance

- In context of human biology, the dynamic nature of the cells and their associated behavioural patterns have remained elusive to researchers due to its brief activation period during the pancreatic growth phase.
- The revelations will potentially contribute to a better understanding of how the hormone-producing cells of the pancreas develop and could pave the way to generate more of these cells for therapeutic purposes, such as being used for production and gradual transplantation to patients suffering from diabetes.
- The results also highlight that when endocrine cells are produced for future therapeutic

applications based on the transplantation of these cells into diabetic patients, there is some flexibility in the way the NEUROG3 gene may be controlled.

Way Forward

- The study has unravelled essential details about

endocrinal regulation patterns in human physiology which attains prime importance in the wake of ever-rising number of diabetic patients. Thus, it promises to inspire more research into it to build a better understanding and find sustainable cure-mechanisms for the same.

6. Nipah Virus

Current Context

Recently, Kozhikode district of Kerala witnessed the return of the Nipah virus.

About

- Due to the confirmation of cases of viral infection, the region (including both Kozhikode and Wayanad districts) has been placed on a high alert.
- The Chief Minister of Kerala has advised the people to exercise caution.
- The Union Health Ministry has also directed the state for developing an isolation facility in the Kozhikode medical college as a precautionary measure.

What is Nipah?

- Nipah is recognized as a viral infection that primarily affects the animals like bats, dogs, pigs, horses etc.

The Nipah Virus

- The virus is of **zoonotic nature,** that is, it can also infect humans when they come in contact with the infected animals, thereby causing serious disease.
- Biologically, Nipah virus (NiV) is a **RNA virus** belonging to genus Henipavirus and family Paramyxoviridae.
- This virus is transmitted primarily by **Pteropus** spp (a specific types of fruit bats).
- Nipah virus was isolated and identified for the first time in the year 1999 during an outbreak of encephalitis and respiratory illness among pig farmers of Malaysia and Singapore and other people who were found to be in close proximity of pigs.

Symptoms

- The virus is known to cause fever as well as encephalitis (swelling of the brain). This medical condition is followed by several other health complications such as headache, difficulties in breathing, cough and sore throat, vomiting, diarrhoea, weakness and muscular pain.
- In severe cases, this encephalitis may further result in disorientation and seizures, and may even lead to death of the patient.

Reasons for concern

- The recorded Case Fatality Ratio of the Nipah Virus is found to be very high.
  - ✓ In the years 2001 and 2007, West Bengal recorded the outbreaks of Nipah virus. During these infection outbreaks, the CFRs were recorded to be around 68% and 100% respectively.
  - ✓ During the viral outbreak in Kerala in 2018, the CFR was recorded to be around 91%.
  - ✓ This CFR is relatively very high as compared to Covid-19 pandemic for which, CFR is around 1.2% as far as India is concerned.

Transmissibility of the Virus

- The trends related to transmissibility of the Nipah Virus Disease and the recorded cases of infection indicates that the virus is not as

contagious as COVID-19, influenza and measles.

- **How this disease spreads？** Being a zoonotic virus, it is usually transmitted in people who are in direct contact with infected animals or somehow consume the viral secretions on fruits, date palm sap, toddy, juice etc.
- Through intimate contact at home or in medical facilities, it can spread from one person to another.
- Handling the dead bodies of persons who have Nipah can also result in the spread of this virus.
- It is also known that the virus can spread through droplets in a cramped, enclosed area as it was recorded in Kerala during 2018 epidemic outbreak.
- Within a narrow hospital hallway used for radiological exams, the infection spread from the **index patient** to other patients. However, in the open as well as well-ventilated areas, it cannot spread.

How the government is dealing with this situation?

- The local government has begun contact tracing while the samples of the two patients have been transferred to the National Institute of Virology for detection and confirmation of the virus.
- People who had direct contact with either of the two cases are currently under quarantine.
- Further, the scientists are likely to start very soon, the search for the origin of the infection's spread from animals to humans.

Precautionary measures to prevent the infections

- As per the advisory released by the concerned authorities, various preventative measures similar to the earlier epidemics should be adopted such as carefully washing and peeling fruits before consumption.
- Avoid consumption of those fruits which possess the evidence of bat bites.
- Additionally, palm juice or sap should be boiled before consumption.

7. Pibot

Current Context

A distinguished team of researchers from the Korea Advanced Institute of Science & Technology（KAIST）ideated and developed a robot that can fly an aircraft.

About

- Named Pibot, it is a humanoid that is capable of piloting an airplane without major modifications to the conventional cockpit.
- Pibot is 5 foot 3 inches tall and weighs nearly 65 kg.

Advantageous Features and their Significance

- **Precision and control:** The developers of Pibot claim that the AI-based machine is precise in handling controls and selecting appropriate

inputs during flight. Through its human-like hands, Pibot can precisely grasp cockpit controls, including changing the aircraft thrust.
- **Communications:** The robot maintains the required communication with the Air Traffic Controllers during flight. It can take commands from the ATC personnel, particularly when ensuring safe procedures at and around airports and can communicate with them and humans in the cockpit using voice synthesis.
- **Safety safeguards:** The Pibot is capable of

navigating the airplane safely through the harshest of flight conditions by using high-precision technology to control its arms and fingers.

- **Performance enhancement:** Like any other AI-based technology, Pibot uses numerous built-in cameras to keep an 'eye' on an airplane's performance in flight and can take actions based on the current flying conditions.
- **Operational enhancements:** It is capable of memorizing global flight charts to conduct mistake-free flight missions on any air route. It can memorise aircraft operation and emergency manuals and respond immediately.
- **Improvements from autopilot model:** It mimics human performance and decision-making rather than completely relying on computer-based analytics.
- **Improvements from unmanned aerial vehicle (UAV) and human-centric model:** Pibot's functions are different from those of unmanned aerial vehicles. In fact, Pibot is claimed to be more capable than humans because it memorizes documents through big-data models that are far beyond the capabilities of humans.
- **Versatility and adaptation:** Pibot's humanoid design makes it adaptable to a wide range of roles beyond aviation. Its versatility opens doors to countless applications.
- **Humanoid form efficiency:** Despite alternative forms, Pibot's humanoid structure is optimized for compatibility with existing environments and interfaces designed for humans.
- **Military potential:** The project was commissioned by the Agency for Defense Development in South Korea, indicating potential applications in defense and military operations.

About Humanoids

- It is a type of robot or artificial entity that takes after humans and imitates their movement,

Notable Humanoid Robots

- ASIMO: Developed by Honda.
- Pepper: Developed by SoftBank Robotics.
- Atlas: Developed by Boston Dynamics.
- Vyomamitra: Developed by ISRO for Gaganyaan.

cognitive prowess and physical capabilities to some degree.

- Humanoids are designed and engineered to imitate human characteristics, both in terms of their physical attributes and sometimes their behaviours.

Applications of Humanoids

- Testing and refining robotic technologies, AI algorithms, and human-robot interaction methods.
- Facilitating tasks like patient monitoring, rehabilitation exercises etc. in Health Sector.
- Enhancing learning experiences through interactive and personalized instruction.
- Boosting customer service tasks, offering information, guidance, and assistance in public spaces like airports, malls, and hotels.
- Intervention in manufacturing sector by assisting in assembly, handling delicate tasks, and performing repetitive actions.
- Their intervention is augmented in entertainment sectors like theme parks, movies, and exhibitions, for providing immersive experiences.

Challenges and Advancements

- Developing sensors to replicate human senses, such as vision, touch etc. may dehumanize life and human essence.
- True potential can be only harnessed by designing efficient power sources and energy management systems.
- Replication of human-like cognitive abilities, such as learning, problem-solving, and emotional recognition, is an ongoing challenge.

Way Forward

- The potential of Humanoids like Pibot in life and society is sky high, must be internalized and mainstreamed into industrial and socio-economic applications to realise true benefit of science and technology as a boon to society.

8. New Variant of Covid-19

Current Context

A new highly matured COVID-19 variant BA.2.86, colloquially being referred to as 'Pirola', is driving fresh rise of infections in multiple countries.

About

- Pirola has over 30 mutations to its spike protein as compared to the Omicron variant that was prevalent in late 2021.
- The US Centres for Disease Control and Prevention's (CDC) preliminary report noted that there is inadequate evidence at the moment to conclude upon the potential severability of the variant.
- While there have been only a handful of cases of Pirola detected worldwide, severe disease and death has not been associated with it.
- India has not yet reported any case of Pirola and doctors highlight similar symptoms to most Covid-19 variants — fever, cough and cold.

Features of the new variant

- Researchers claim that this is a much more interesting subvariant when compared to the Omicron subvariant XBB.1.9., which had initially spread quickly but was not able to overwhelm the populations.
- This variant shows some degree of transmissibility, which is at odds with such highly mutated variants so far, that were not really transmitting but being detected in people with compromised immune system in one place.
- Contemporary research and its findings offer key insights on how new boosters might protect against the highly mutated variant.

- The World Health Organization (WHO) has reported only 21 cases of Pirola globally till the end of August. It has consequently, been designated as a variant under monitoring because of the multiple mutations it carries on the critical spike protein.

Challenges

- The high number of mutations is a point of concern here as it resembles similarity to the number of mutations that distinguished the Delta variant to that of Omicron.
- The strain has been picked up in at least six countries, in seemingly unrelated cases, highlighting some degree of transmission in the global community which is yet to be detected.
- Pirola's impact on survivors and vaccine recipients may be worrisome as they might be having a higher susceptibility to breakthrough infections.
- The variant's symptoms also include rashes, conjunctivitis, and diarrhoea and poses the threat of immune evasion and reduced vaccine efficacy, adding to the complexity of formulating effective policies to tackle the effects of the pandemic.

Suggestions

- Doctors have emphasized how citizens must be aware enough to take protective and preventive measures against the variant. However, the ways to remain protected are the same.

- People who are **old, have co-morbidities, continue to be at highest risk of severe disease** and hence, must be put at the centre of any policy response formulated by the Government, Local Authorities and Medical Institutions.
- Further emphasis must be put on R&D to track the variant, undergo possible sequencing of the genome, to design a scientifically backed response mechanism that includes building herd immunity via mass-vaccination.
- India must brace for any possible impact and use the **aid of agencies like the INSACOG, ICMR to tackle any emerging crisis,** if it arrives.

Conclusion

- Although, there is not enough evidence right now to conclude whether Pirola could lead to more severe disease, death, or hospitalization. It's still the same virus at its core, so the same prevention methods, i.e., masking, vaccination, and hand-washing, among others must be adopted to avoid infection.

8. INTERNAL SECURITY

1. Anantnag Operations and Terrorism in Jammu Kashmir

Current Context

The week-long joint anti-terror operation in the Garol forests in the Anantnag district ended with the two terrorists, including Lashkar-e-Taiba commander Uzair Khan, being neutralised.
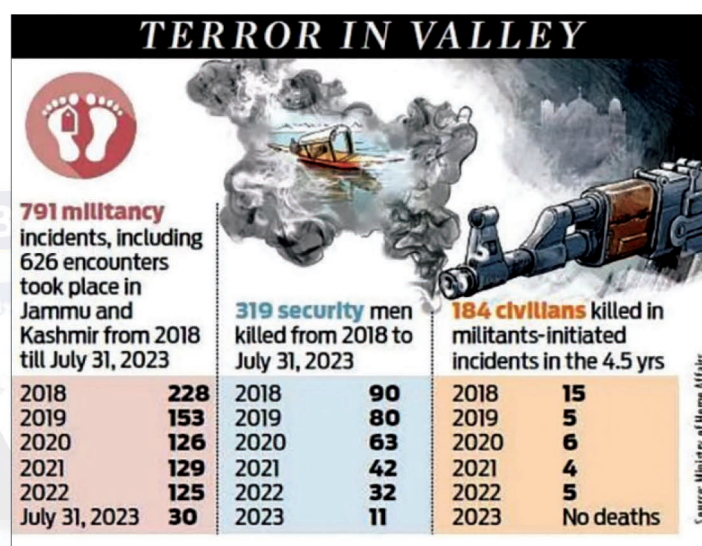
About

- While the two terrorists were killed at the encounter site, the Armed Forces are continuing to mop the area to locate and destroy explosive shells and grenades in the dense Garole forest area in Kokernag.
- One of the deadliest and longest operations in recent past, the searches saw security forces lose four of their men — including two officers, a jawan of the army, and a deputy superintendent of police (DSP).
- The incident brings to light how in spite of renewed efforts to boost security and peace in Kashmir post the abrogation of Article 370 in 2019, pocketed yet deadly acts of terrorism continue to threaten India's sovereignty and territorial integrity.

Terrorism in Jammu and Kashmir

- **Background**
  - ✓ Secessionism and subsequent government operations since 1989 have intensified the 'Us vs. Them' narrative among Kashmiris, alienating them from the Indian polity and serving as a breeding ground for rising terrorism and violent extremism.
  - ✓ The influence of Pakistan as a State Sponsor of Terrorism, has been significant as it attempts to use the situation to breed hate against India and make India "bleed with a thousand cuts".

TERROR IN VALLEY

791 militancy incidents, including 626 encounters took place in Jammu and Kashmir from 2018 till July 31, 2023

2018	228
2019	153
2020	126
2021	129
2022	125
July 31, 2023	30

319 security men killed from 2018 to July 31, 2023

2018	90
2019	80
2020	63
2021	42
2022	32
2023	11

184 civilians killed in militants-initiated incidents in the 4.5 yrs

2018	15
2019	5
2020	6
2021	4
2022	5
2023	No deaths

Source: Ministry of Home Affairs

  - ✓ State actions like crackdowns, arrests, killings of local militants, and enforcement of laws like the AFSPA have led to perceptions of India as a "colonizer" or "occupier" among Kashmiris, especially after a trend of human-rights abuses unfairly conducted on part of the Armed Forces.
- **Recent Developments**
  - ✓ Between 2014 and 2020, the region experienced a significant increase in local militancy and stone-pelting incidents. Indian armed forces responded with regular operations, like 'Operation All Out' in 2017, to eliminate militant networks and top commanders.
  - ✓ The abrogation of Article 370 in 2019 raised concerns about further antagonizing the people and breeding terrorism. However, the security situation has improved since then.

✓ This week-long operation shows how militancy remains a major challenge, especially with the Taliban takeover in Afghanistan potentially strengthening militant outfits like JeM and HuM.

Concerns Over the Revival of Militancy

- Increase in Terror-related Incidents as seen in the Rajouri-Poonch region, resulting in large scale loss of lives.
- Changing Dynamics of Infiltration from traditional tactics infiltration to refined strategies, like adopting alternative routes through Nepal and Bangladesh borders, presents a challenge for security forces.
- Factors Favoring Militants, such as the use of smart technology, operations in small groups, and the reinvigoration of sleeper cells and over ground workers, have provided militants with an edge.
- Additionally, the nexus of transnational cross-border crime with terrorism poses significant challenges to law enforcement efforts.

Addressing the Challenges

- The support of the local population plays a

crucial role in countering militancy, thus efforts should be made to understand and address any grievances or alienation within the community.
- Countering militancy requires a "whole of government" approach via coordinated efforts in governance, justice, and security.
- Examining socio-political drivers, such as developmental deficit, economic insecurity etc. can help identify and address root causes of extremism.
- Shifting attention to a positive discourse, like District Development Councils (DDCs) and grassroots development.
- Additionally, focusing on education, including addressing historical distortions and promoting relatable and applicable themes, can contribute to long-term peace.

Conclusion

Building narratives that bridge the divide between Kashmir and India is crucial, and the absence of armed conflict provides an opportunity to strengthen these efforts and bring lasting peace to the region.

2. Renewed Khalistan Movement

Current Context

Recently, Canadian Prime Minister Justin Trudeau voiced "credible allegations" linking Indian government agents to the murder of a Sikh separatist leader, Haredeep Singh Nijjar, in Canada

About

- Nijjar had been a designated "terrorist" by the Indian government in 2020 for his leadership in a movement advocating for a separate Sikh state to be carved out of Punjab called Khalistan.
- This has sparked up the Khalistani Separatist Movement which has roots in India's longstanding issues in tackling Sikh Sub-nationalism.

Khalistan Movement

- It is a secessionist movement that seeks the creation of an independent Sikh state, separate from India, called Khalistan, "the land of the pure/Khalsa".
- While Sikhs constitute a majority in Punjab, they form a minority in India, making up only 2 % of the country's vast population of 1.4 billion.
- Over the years, this demand has resurfaced, with

one of its most violent periods occurring during an insurgency in the 1970s and 1980s that gripped Punjab for more than a decade.

Indian Response

- **The Indian government views the Khalistan movement as a security threat.**
  - ✓ The movement was geared towards the demands first articulated in the Anandpur Sahib Resolution.
  - ✓ However, amidst growing religious polarization, sectarian violence, and potential militarization, PM Indira Gandhi declared the movement tantamount to secession.
- A significant flashpoint in the conflict unfolded in 1984 when PM Gandhi ordered the military's entry into the Golden Temple to remove armed separatist leader Jarnail Singh Bhindranwale and his supporters (Operation Blue Star).
- This incited outrage among Sikhs worldwide, culminating in the assassination of PM Indira Gandhi by her Sikh bodyguards.
- In 1986 and 1988, the Indian army undertook operations to root out Sikh militants from Punjab (Operation Black Thunder).
- They were held responsible for the 1985 bombing of an Air India Boeing 747 en-route from Canada to India, resulting in the tragic loss of all 329 lives on board.

Recent Trends

- Although the Khalistan movement has dwindled in support within India, it continues to find pockets of backing among sections of the Sikh diaspora in Canada, Britain, Australia, and the United States.
  - ✓ Canada is home to the largest Sikh population outside Punjab, comprising more than 2% of the country's population. It also has significant political representation.
  - ✓ In April 2023, India apprehended Sikh separatist, Amritpal Singh, for allegedly rekindling calls for Khalistan, sparking concerns of renewed violence.
- ✓ India recently criticized Canada for permitting a parade float that depicted the assassination of Indira Gandhi, interpreting it as the glorification of Sikh separatist violence.
- ✓ India has also expressed dismay over frequent public referendums on the creation of an independent Khalistan, demonstrations and vandalism by the separatists at Indian diplomatic missions in Canada, Britain, the U.S., and Australia.

Impact on Indian-Canadian Relations

- The Indian diplomatic community in Canada has consistently emphasized Ottawa's failure to address "Sikh extremism", claiming that the Khalistan movement remains active with the support of militants continuing to operate in Canada.
- The Indian Government was further outraged in 2019 when the Trudeau government removed mentions of Khalistan and "Sikh extremism" from a public report on terror threats.
- This has become a major source of foreign policy tension between the two nations. Indian Prime Minister Narendra Modi recently voiced strong concerns about Sikh protests in Canada while meeting with Trudeau during a G20 summit in New Delhi.
- This tension has had concrete repercussions, as Canada has temporarily halted discussions on a proposed trade treaty with India. Additionally, Canadian Trade Minister Mary Ng has postponed a planned trade mission to India, signaling the ongoing strain in Indian-Canadian relations.

Impacts in other areas

- It puts a dark spot in India's Multi-Cultural, Multi-Ethnic, Pluralist social identity, the fundamental existence to which lies in Unity and Diversity.

- These developments may trigger exasperation and misguided excitement among the Sikh Community which may intensify the Khalistani calls for secession.
- Progressive growth of Khalistani sentiments may lead to a resumption in armed violence, like the decade of 70s-80s when the movement manifested in form of an armed rebellion.
- It magnifies India's security challenge as the movement was, in the past, instigated into violent acts by Pakistan's ISI, thereby establishing the need to tackle this security dilemma to prevent the rise of terrorism and transnational crime.

Way Forward

- India needs to send a clear message to the international community, communicating its perception of the Khalistan issue while stressing upon non-interference and mutual respect as cardinal principles of bilateral engagement.
- At the same time, India must look to address the Khalistani movement in a way which stays clear off violence and finds answers in democratic decentralization, within the Constitutional fabric of India.

3. Exercise Bright Star-23

Current Context

An Indian Air Force (IAF) contingent participated in Exercise Bright Star-23, held in Egypt.

About

- The Ex Bright Star-23 is scheduled to be carried out from August 27 to September 16, 2023.
- This is **the first time** that a contingent from **India has also been participating** in the Ex Bright Star-23.
- Along with India, contingents from nations like the **USA, Saudi Arabia, Greece, and Qatar** will also be participating in the exercise.

Exercise Bright Star

- Ex Bright Star is recognized as a series of biennial multilateral tri-service exercises led by the USA and Egypt.

Objectives of Ex Bright Star

- The exercise is conducted to realize its objective of practicing the planning and execution of joint operations.
- Further, the exercise seeks to strengthen diplomatic relations and deep military cooperation among the participating nations.

- The **first Bright Star exercise** was successfully conducted in 1980. According to the official statement released by Egypt, around 8,000 troops and personnel from almost 34 countries will be participating in this year's exercise.

Significance of this exercise for India

- **On India-Egypt strategic relations**
  - ✓ Through this exercise, India and Egypt can strengthen their decades-old diplomatic ties.
  - ✓ Recently, during **PM Modi's visit to Egypt**, both nations agreed to **elevate bilateral relations** to strategic **partnership**.
  - ✓ With the proposed step to incorporate **Egypt in the BRICS grouping**, the scope of the India-Egypt relationship is supposed to widen. Thus, this defense exercise will help realize the idea of developing a "strategic partnership".

- **On India-USA strategic relations**
  - ✓ Both India and the USA are members of many important regional and global strategic

partnerships, such as **I2U2 and QUAD**. Along with this, India has signed several **strategic and military agreements** with the USA in the past few years.

✓ This joint military exercise will further boost India-USA strategic relations and increase its role in the **security of the West Asian region**.

On India-Greece strategic relations

✓ Recently, during PM Modi's visit to Greece, both nations agreed to raise their diplomatic ties to the level of "strategic partnerships".

• Since both nations are part of this exercise, this

will **increase mutual trust, cooperation, and coordination** among the armed forces of both nations, thereby realizing their mutual objectives.

On India Qatar relations:

✓ The exercise has the potential to widen the scope of India-Qatar strategic relations, which are primarily limited to the energy-trade sector and the presence of Indian blue-collar workers there.

• The participation of India will help it showcase its military capabilities, thereby creating a sense of deterrence in the minds of hostile neighbors like China and Pakistan.

4. Maya OS Software

Current Context

The Indian Ministry of Defence is ditching Windows for Maya OS, which is based on Ubuntu, a free and open-source Linux distro that's considered to be more secure and reliable than Windows.

About

• This is a response to the growing threat of malware and ransomware attacks, which have become more frequent and severe in recent times.

• A team of experts from various government agencies worked on Maya OS for six months, collaborated with Indian software companies and academic institutions to test and improve the OS.

• The plan is to install Maya on all computers connected to the Internet in South Block before August 15, along with the Chakravyuh protection system. The remaining computer systems should be upgraded to Maya OS by the end of the year.

Maya OS Software

• Maya OS is a new operating system that is based on Ubuntu, a popular Linux distribution that uses free and open-source software.

• The Defence Ministry has developed Maya OS with the help of various government agencies,

Key efforts to tackle Cybercrime in India

• National Cyber Security Strategy (2020)
• Computer Emergency Response Team (CERT-In)
• Indian Cyber Crime Coordination Centre (I4C)
• Cyber Swachhta Kendra (MeiTY)
• National Cyber Forensic Lab and the CyPAD initiative (Delhi Police)
• Cyber Surakshit Bharat (MeiTY)
• National Critical Information Infrastructure Protection Center (NCIIPC)
• National Cyber Crime Reporting Portal

including the Defence Research and Development Organisation (DRDO), the Centre for Development of Advanced Computing (C-DAC), and the National Informatics Centre (NIC).

• **Advantages of Maya OS**

✓ One of the main advantages of Maya OS is that it has a similar interface and functionality as Windows, making it easy for users to adapt to it.

✓ It also has a feature called Chakravyuh, which is an end-point anti-malware and antivirus software that creates a virtual layer between the user and the internet, blocking hackers from accessing sensitive data.

About Ubuntu

- Ubuntu is one of the most widely used Linux distributions in the world and it is known for its high level of security.
- Unlike Windows, which has a large number of malware and vulnerabilities due to running more services and its backwards compatibility, Ubuntu has very few malware and exploits.
- Ubuntu is also distributed as free and open-source software, which means that anyone can inspect, modify, and improve its code.
- Furthermore, Ubuntu has a built-in firewall, a strict user permission system, and regular security updates that help protect it from potential threats.

Significance

- The idea of Maya OS was conceived in 2021 after India faced several cyberattacks from foreign actors that targeted its critical infrastructure and defence systems.
- The Defence Ministry decided to create its own

operating system that would be more secure and reliable than Microsoft Windows.

- The OS has been vetted by the three Services – the Navy has already cleared it and the Army and the Air Force are currently evaluating it. This resembles the importance given to the software and efforts to ensure compatibility with service operations in the Armed Forces.
- India's critical infrastructure has seen numerous cyberattacks and security breaches in recent years. This necessitates an overhaul of the fundamentals of our cyber-infrastructure which starts from the Operating System itself.
  - ✓ **Examples of attacks:** On Kudankulum Nuclear Power Plant (KKNPP) in 2019, the Mumbai Power Grid outage in 2020, the ransomware attacks on Oil India Limited and Spice Jet servers in 2022, and the Goa Flood Monitoring System hack.

- Maya OS holds the required ability to create a deceptive layer of protection for the Defence Ministry's computers, hiding them from cyberattacks while. This finds consonance with its nomenclature after the Sanskrit word Maya which means "illusion."

5. Exercise Trishul

Current Context

Indian Air Force's (IAF) Western Air Command (WAC) conducted its annual mega training exercise Trishul, scheduled from September 4-14.

About the Exercise

- **Location:** The WAC will activate all its air combat assets and force multipliers from Leh in Kashmir to Nal in Rajasthan.
- **Purpose:** All frontline assets under the WAC such as fighter jets, transport aircraft and helicopters will be deployed to test the command's

operational preparedness, combat readiness and level of coordination.

Significance

- Exercise Trishul is poised to be one of the most substantial air maneuvers conducted by the IAF in recent times.

- Additionally, it will involve the deployment of vital assets from the Western Air Command, alongside resources from other commands, making it an extensive and comprehensive training event.
- India has shown proactiveness in modernizing its defense resources in recent times with policies of Defense Indigenization, purchase of cutting-edge technology, bilateral deals (Eg. Rafale, S-400) etc. Such exercises operationalize this vision and make it effective in real-time.
- It boosts India's international reputation as a 'Defense-ready' sovereign state and endows India with greater voice and expression during diplomatic negotiations and dialogues.
- With the increasingly adventurous military postures adopted by hostile neighbours in China and Pakistan, battle-readiness is indispensable to secure our national interest and take safeguards to defend our territorial integrity.

Exercise "Tarang Shakti"

- The IAF is also preparing to host a mega exercise early next year that is expected to bring together 12 global Air Forces.
- It will focus on improving interoperability and look to imbibe best practices of one another, thereby boosting military cooperation among the participating countries.
- It will be the biggest multi-nation air exercise to be conducted on Indian soil, involving fighter jets, military transport aircraft, mid-air refuellers and airborne warning and control systems (AWACS) aircrafts.

Conclusion

- At a time when India and China are locked in a lingering military standoff in the Ladakh sector, the exercise is significant to check combat preparedness.

6. Operational Preparedness: Indian Armed Forces

Current Context

2023 being the 'Year of Transformation' finds the Armed Forces developing several projects to reinvigorate the functional processes to usher in an era of operational readiness.

What is Operational Preparedness?

- The process of training and capacity building of a nation's armed forces in an attempt to ensure that they are ready to be deployed in any emergency and battle calls, is known as Operational Preparedness.
- It involves a series of processes including military trials, combat drills, jointly conducted exercises etc. to simulate hostile conditions and test the response of the forces to demarcate areas of improvement.

Steps taken in this regard

1. **Acquisitions and Equipments**

- AoN for capital acquisition for projects in 2022-23, worth over ₹2.71 lakh crore have been granted, 99% of which shall be procured from the domestic industry.
- Niche technologies like logistic and nano drones, counter-drones, loiter munitions, unarmed aerial vehicle or UAV-launched precision-guided missiles, and automatic spectrum monitoring systems, are being procured.

2. **Force/Department specific Moves**
- **Indian Army**
  ✓ Special drills have been conducted recently by

the Indian Army's tank formations, including the T-90 and T-72 tanks and BMP infantry combat vehicles across the banks of Indus.

- **Indian Air Force**
  - ✓ IAF's Garud Special Forces have been regularly practising dedicated counter-terrorism operations in Kashmir.
  - ✓ IAF recently held successful trials of the Heavy Drop System, from a cargo aircraft.
  - ✓ IAF's Western Air Command (WAC) has kickstarted its annual mega training exercise Trishul, scheduled from September 4-14, to test the command's operational preparedness, combat readiness and level of coordination.

- **Indian Navy and Coast Guard**
  - ✓ The Indian Navy recently held The Naval Commanders Conference where they laid out the Maritime Infrastructure Perspective Plan 2023-37, which aims to create sustainable architecture in sync with the broader policy directive of the PM Gati Shakti project.
  - ✓ Indian Coast Guard Commanders have been regularly taking stock of the assets and operational preparedness of the force and reviewed its ability to meet emerging challenges in the Area of Responsibilities (AoR).

3. **Policy Initiatives**

- The Defence Acquisition Council (DAC) has undertaken the policy of 'Defence Indigenization' via the Defence Acquisition Procedure 2020, to source 'Made in India' defence equipments as per the vision of 'Atmanirbhar' Bharat.

- Adoption of the Cold Start Doctrine, an initiative of NSA Ajit Doval, has made it an obligation for India to reform its response capacity and boost ability to conduct targeted holding attacks.

- Department of Military Affairs and the Office of the Chief of Defence Staff have been created recently, indicating attempts to design integrated-immediate response mechanisms. Eg. Setting up of an Integrated Tri-Service Command

at Andaman Islands.

- Since 2022, Indian Navy has undertaken the policy of conducting joint EEZ surveillance of the Indian Ocean Region along with friendly littoral countries like Maldives, Seychelles and Mauritius by deploying IN ships and aircraft.

4. **Diplomacy and Engagement**

- India has held the NSA-level iCET dialogue with USA in a recognition to the increasing role of emerging technologies in the defence and security apparatus.

- Initiatives like 'Sagar Mitra' to aid the Indian Ocean Littoral States embody India's engagement in highlighting the need of a 'Free, Secure, Open Indo-Pacific'.

- India has taken utmost effort to protect its defence engagement with Russia (S-400 missile acquisition) while taking its ties with Israel (Aerial Defence), France (Rafale), Germany etc. to the next level.

- India, during its Presidency at the UNSC, held the flagship Maritime Security Dialogue chaired by the PM, conveying India's readiness to defend her naval frontiers with like-minded partners (QUAD countries).

- India holds a wide range of bilateral and multilateral defence exercises like Varuna (France), Dharma Guardian (Japan), Yudh Abhyas (USA) etc. highlighting its proactive engagement with her diplomatic allies to develop operational capacity.

Significance of the steps

1. With China promoting the idea of "one mountain two tigers" in the Himalayan borders, it is imperative for India to be ready to deal with any potential skirmishes like Galwan.

2. As China proactively consolidates its "String of Pearls" in the Indian Ocean, India needs to establish herself as the Net Security Provider in the region, which will only happen if the region acknowledges

India to be ready and rear to go for any challenge.

3. It is crucial for India to have a battle-ready armed battalion as it perpetually faces the threat of terrorism and extremist non-state actors, compounded by state sponsored terrorism.

4. Such operational readiness shall also help India address the increasing propensity of transnational organized crime, with the proximity to the Golden Crescent (Afghanistan) and Golden Triangle (SE ASIA) necessitating an alert-aware-adaptive military.

Way Forward

- The army is working on several projects to reshape and remodel the functional processes to bring in a "quantum jump in its capabilities".

- As an aspiring Developed Country (2047) and an emerging voice in the global platforms, India must adopt all means necessary to protect its sovereignty and defend its territorial integrity by boasting off a strong, sturdy and battle-ready army, ready to be deployed.

7. Exercise Varuna-23

Current Context

Recently, phase II of the 21st edition of Varuna (Varuna-23) bilateral exercise between French and Indian Navy, was concluded in the Arabian Sea.

About

- During the three-day exercise, several joint operations, tactical maneuvers and underway replenishments were conducted.

- The exercise involved the participation of guided missile frigates, maritime patrol aircrafts, tankers and integral helicopters from the navies of both nations.

- Units from both the naval forces worked to increase interoperability, enhance their warfighting abilities, and showcase their capabilities to ensure security, peace, and stability in the region.

- The first phase of this exercise "Varuna-23" was conducted from 16th to 20th January this year, off India's Western Seaboard.

The Exercise Varuna

- The bilateral naval exercise between Indian and French navies was started in 1993.

- However, the name "Varuna" was officially given to this exercise in the year 2001 and since then, it became the hallmark of a strong strategic bilateral relation between India and France.

- With passing time and changing global scenario, the scope of strategic relations between India and France has increased. This military exercise provides a common platform to both the nations to deal with contemporary strategic and defence related requirements.

Maritime Challenges in the IOR and Indo-Pacific

- India and other nations in the IOR face the problem of piracy and illegal smuggling from Madagascar, Somalia and around the Gulf of Aden, Guardafui channel and Somali Sea.

- Maritime terrorism is also one of the biggest challenges that many nations in the IOR face. It involves the illegal smuggling of weapons, among other things, in the region to promote terrorism and extremism.

- China is increasing its influence in the IOR by occupying the ports (taking them on lease) in several countries like Sri Lanka (the Hambantota port), Bangladesh (Chittagong port), Pakistan

(Gwadar port) and Myanmar (Kyaukphyu port) so as to surround India from all the sides, thereby blocking military and trade linkages.

- Further, its expansion in the South China Sea and the IOR can pose a threat to economic and scientific explorations conducted by India.
- Majority of India's foreign trade is carried out through the sea routes and thus, there is a need for a free, open, secure and peaceful Indo-Pacific.

Significance of the Exercise

- This military exercise will help both the nations to adopt best practices and procedures by learning from each other's strengths.
- A strong naval cooperation in the IOR will ensure safe, free and open trade for India. This will also help in countering the issue of piracy and armed smuggling in the IOR.
- Through these military exercises, India can strengthen its claims of becoming key security partner in the IOR. This will increase India's maritime influence and strengthen its regional cooperation.
- This maritime cooperation will increase India's significance in regional groupings like Indian Ocean Rim Association, Indian Ocean Naval Symposium, The Indian Ocean Commission, Djibouti Code of Conduct, SAGAR (Security and

Other Maritime Exercises by India

- Malabar Naval Exercise: QUAD countries.
- Indra Exercise: with Russia.
- SIMBEX: with Singapore.
- Milan Exercise: Multilateral with 16 other countries.

Growth for all in the Region) etc. Through these measures, India can successfully counter the Chinese expansionist policies and its idea of "String of Pearls".

- India's stake, say and relevance in the Indo-pacific region, and consequent alliances like the QUAD will be more effective with such naval exercises.
- Through all these means, India can achieve its objective of "Free, Open and Inclusive" Indo-Pacific and be the Net Security Provider in the Indian Ocean region.

Conclusion

- With changing geopolitics, increased maritime crime and regional expansion by powerful nations, there is a need for India to strengthen its military might in the IOR and Indo-Pacific so as to deter its expansionist regional competitors. Therefore, this naval exercise is significant for India as it further strengthens its claim of being the "key security partner in the IOR".

8. Phishing Issue in India

Current Context

According to the data released by the law enforcement agencies, there has been an increase of around 212 percent year over year, in the cases of cyber fraud.

Key Highlights of the Released Data

- As of August 2023, more than 25 thousand cases of cyber fraud have been filed, compared to around 8,000 cases filed last year.
- These cases include those associated with UPI fraud,

bank fraud, and email scams. This has all accounted for a financial loss of more than Rs. 200 crore in the current year. Against this, merely 2 to 8% of the cheated money has been recovered so far.

- The data also indicates that the number of

complaints received is relatively higher. Since January 2022, **more than 2 lakh complaints** associated with cyber fraud have been received through the **NCRP (National Cybercrime Reporting Portal)**.

- These cybercrimes can be categorized into several groups:

1. **"Fake Call" scams**
   - ✓ In such a scam, the accused pose as "bank officials, technical executives, or executives of an investment company" and seek information such as credit or debit card details, net banking passwords, OTPs, etc. through which they siphon off the money.

2. **Cryptocurrency and investment scams**
   - ✓ In these scams, the accused floats a fake website to attract investors to invest in bitcoins or stocks. Then these websites are promoted through various social media platforms to phish interested candidates.

3. **"Work from home" job scams**
   - ✓ In such a scam, the accused pretends to be a recruiter, thereby offering job seekers, students, and other unemployed people work from home against a deposit fee.

- In addition to these three major categories, other frauds include **"Chinese app" scams, e-wallet scams, email takeovers, and extortion scams.**
- According to recently released data from the National Crime Records Bureau, **more than 14 thousand cases of cyber fraud were registered in 2021**.

What is Phishing?

- Phishing can be defined as the process wherein a criminal poses as a reliable person or respectable company in order to solicit sensitive information,

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Examples of other types of Cyber Attacks

- **Malware:** Software designed only to cause damage to a computer network, computer, or server. Worms, viruses, and trojans are varieties of malware.
- **DOS, DDOS:** Attackers make the network or machine unavailable by disrupting the services of the host network.
- **SQL Injection:** Many services that store data of services and websites use SQL to manage their databases. SQL injection attack target such servers by using malicious code to get confidential information.
- **Cyber Espionage:** Illegal use of computer networks to capture confidential information.
- **Cyber Warfare:** Attacking information systems using computer technology, especially for military purposes
- **Hoax:** An e-mail that warns the user of a certain system that is harming the computer. The message thereafter instructs the user to run a procedure to correct the harming system. When this program is run, it invades the system and deletes an important file.
- **Spyware:** Invades a computer and, as its name implies, monitors a user's activities without consent.

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such as bank account details, through email or website fraud.

Why is it a Matter of Concern?

- The key asset for these scammers is the consumer data available to them. This data is collected from various sources, like:
- The servers of the majority of online marketing platforms and other internet-based applications are not located in India; thus, their regulation becomes a difficult task for the government.
- Many companies sell consumer data to other global marketing giants, which is also a source of data leaks.
- In a time when the majority of government services are provided online and every consumer's data is available on all the government portals, there is always a risk of data breaches and hacking.

- India is among the top few nations vulnerable to cyber threats.

Existing Laws and Other Mechanisms to Combat Phishing

- The phishing-related crimes are dealt with under Section 66 of the IT Act, 2000.
- The newly brought law, that is, the Digital Data Protection Act, 2023, deals with the prevention, detection, or investigation of offenses or cyber incidents with the penalization of the guilty.
- CERT-In (Indian Computer Emergency Response Team), a functional organization under the Ministry of Electronics and IT, is associated with information gathering, analysis, and distribution regarding cyber security threats and cyberattacks.
- In the villages and towns, several volunteers called "cyber mitras" are present to inform the people about cybercrimes.

What Else Could be Done?

- Implementation of the law should be done in a robust manner.
- More awareness campaigns should be launched to inform more people regarding phishing.
- Data localization is the need of the hour, and the government has been trying for this as well.
- Cybersecurity infrastructure and critically important infrastructure should be made more resilient and effective against any sort of cyber threat.

Conclusion

- India has been transforming in terms of digital inclusion and looking forward to achieve the ambitious goal of "Digital India". Thus, to curb the increasing instances of phishing, there is a need of a robust data protection mechanisms so that digital services can be ensured with a minimized risk of data breach of phishing.

9. PERSONALITY, AWARDS AND SPORTS

9.1. PERSONALITY

1. Ravi Kannan

Current Context

Recently, Dr Ravi Kannan, a surgical oncologist, received the Ramon Magsaysay Award for the year 2023.

About

- Dr Ravi Kannan is a surgical oncologist by profession and the Director of the Cachar Cancer Hospital and Research Centre in Assam.
- He was awarded for his remarkable efforts in revolutionizing cancer treatment in the state of Assam, through his pro-poor and people-centric initiatives such as providing free food, medical treatment, lodging etc. to the needy people along with providing employment to the care-givers.
- Dr Ravi Kannan has also received the Padma Shri award, which is recognized as one of the highest civilian honours of India, on 26th January, 2020.

The Ramon Magsaysay Award

- Established in the year 1957, the Raman Magsaysay Award is recognized as the highest Award and Honour of Asia.
- The reward has been honoured to the individuals who display an exceptional spirit and effort to serve the people of Asia, irrespective of their background.
- This Award is conferred annually on 31st August, the date which marks the birthday of Ramon Magsaysay, the inspiration behind this award and the third President of the Philippines.
- The recipients are provided with a medallion with Ramon Magsaysay's image embossed on it, a certificate along with a cash prize.
- Across the globe, this honour is also colloquially recognized as the Nobel Prize of Asia.

Categories specified in the Award

- Six categories, including "Public Service", "Government Service," "Journalism, Literature and Creative Communication Arts", "Community Leadership," "Peace and International Understanding," and "Emergent Leadership," were initially included in the prize.
- However, after 2009, except for "Emergent Leadership", the award is no longer being conferred in this format.
- Acharya Vinoba Bhave was the first Indian as well as the first person in the world to receive the Ramon Magsaysay Award (1958) while, Mother Teresa was the first Indian woman to receive this award (1962).

9.2. AWARDS

1. Norman E Borlaug Award-2023

Current Context

Odia scientist Dr Swati Nayak has been named the 2023 recipient of the Norman E. Borlaug Award for field research and application in the field of food and nutrition.

About

- A scientist at South Asia Lead for Seed System and Product Management at International Rice Research Institute (IRRI), Dr Nayak was selected for her innovative approach to engaging farmers in demand-driven rice seed systems.
- She is the third Indian and first Odia to receive the award.
- She has so far organised more than 10,000 extensive on-farm trials for more than 500 rice varieties, working with thousands of small farmers across diverse ecosystems in Asia and Africa.
- In Odisha, Nayak and her team formulated a strategy for introducing the **drought-tolerant** rice variety 'Shahabhagi Dhan' which remains an integral part of every farm family's diet and crop rotation.
  - ✓ For this, she is referred to by the local communities **as 'Bihana Didi'.**

Norman E Borlaug Award

- The award, instituted by the World Food Prize Foundation, is named in honour of Nobel Laureate and Green Revolution's chief architect Dr Norman E Borlaug.
- Dr. Norman E. Borlaug won the Nobel Peace Prize in 1970 for his work in global agriculture, envisioned a prize.
- The award was created in 1972 and carries a cash prize of Rs 5,00,000, a gold medal, and a citation.

World Food Prize

- The World Food Prize was created in 1986 with sponsorship by General Foods Corporation.
- Dr. M Swaminathan, the Father of Green Revolution in India, was the first Indian to win this award in 1987.
- This is the foremost international honor recognizing the achievements of individuals who have advanced human development by improving the quality, quantity or availability of food in the world.
- **Fields Covered:** The award is given to recognizes contributions in any field involved in the world food supply including, but not limited to: plant, animal and soil science; food science and technology; nutrition etc.
- **Eligibility:** The award is given to exceptional scientists under 40.
- **Prize:** The $250,000 award is presented each October on or around the UN World Food Day (October 16) in a ceremony at the Iowa State Capitol in Des Moines.

2. Shanti Swarup Bhatnagar (SSB) Award-2022

Current Context

After nearly a year's delay, the Council of Scientific and Industrial Research (CSIR) publicised the list of awardees for the Shanti Swarup Bhatnagar (SSB) awards for 2022.

About

- The prestigious SSB Prize for the year 2022 has been awarded to **twelve leading scientists** across seven disciplines.
- No female scientist was chosen for SSB award-22.

Award Recipients

- **Biological Sciences**
  - ✓ Dr. Ashwani Kumar of CSIR-Institute of Microbial Technology
  - ✓ Dr. Maddika Subba Reddy of Centre for DNA Fingerprinting Diagnostics

- **Chemical Sciences**
  - ✓ Dr. Akkattu T Biju of the Indian Institute of Science
  - ✓ Dr. Debabrata Maiti of the Indian Institute of Technology (Bombay)

- **Earth, Atmosphere and Planetary Sciences**
  - ✓ Dr. Vimal Mishra of the Indian Institute of Technology (Gandhinagar)

- **Engineering Sciences**
  - ✓ Dr. Dipti Ranjan Sahoo of the Indian Institute of Technology (Delhi)
  - ✓ Dr. Rajnish Kumar of the Indian Institute of Technology (Madras)

- **Mathematical Sciences**
  - ✓ Dr. Apoorva Khare of the Indian Institute of Science
  - ✓ Dr. Neeraj Kayal of Microsoft Research Lab

- **Medical Sciences**
  - ✓ Dr. Dipyaman Ganguli of CSIR-Indian Institute of Chemical Biology
- **Physical Sciences:** Dr. Anindya Das of the Indian Institute of Science
  - ✓ Dr. Basudeb Dasgupta of Physics Tata Institute of Fundamental Research

The Council of Scientific & industrial Research (CSIR)

- The Council of Scientific & industrial Research (CSIR), the premier industrial R&D organization of India, was constituted in 1942 by a resolution of the then Central Legislative Assembly. It is an autonomous body registered under the registration of Societies Act of 1860.

About Shanti Swarup Bhatnagar Award

- The award is named after the Founder-Director of the Council of Scientific & Industrial Research (CSIR) India, and is known as the 'Shanti Swarup Bhatnagar (SSB) Prize for Science and Technology'.
- The Prize is given each year for outstanding contributions to science and technology.
- The names of the recipients are made public on 26 September, the CSIR Foundation Day, by the Director General, CSIR.

Purpose

- The purpose of the award is to recognise outstanding Indian work in science and technology.

Prize

- SSB Prizes, each of the value of Rs 5,00,000 (Rupees five lakh only), are awarded annually for notable and outstanding research, applied or fundamental, in the following disciplines: (i) Biological Sciences, (ii) Chemical Sciences, (iii) Earth, Atmosphere, Ocean and Planetary Sciences, (iv) Engineering Sciences, (v) Mathematical Sciences, (vi) Medical Sciences and (vii) Physical Sciences.

Eligibility

- Any citizen of India, engaged in research in any field of science and technology up to the age of 45 years as reckoned on 31st December of the year preceding the year of the Prize.
  - ✓ Overseas citizen of India (OCI) and Persons

of Indian Origin (PIO) working in India are also eligible.

✓ The Prize is awarded on the basis of contributions made through work done primarily in India during the five years preceding the year of the Prize.

Significance

- **Boosts Research and Development:** SSB

awards will promote research and development in the field of science and technology.

- **Attract Young Talent:** To attract the young scientist in academic research, awards like Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) award can play a key role.

- **Boost National Prestige:** The award given by the government to scientists increases the national prestige at the global level.

9.3. SPORTS

1. Asia Cup 2023

Current Context

India defeated Sri Lanka in the finals of the 16th Asia Cup 2023 by 10 wickets. With this victory, India became the champions after 5 years, owing to the magical bowling spell of Mohammed Siraj who took 6 wickets.

About

- The Asia Cup 2023 was co-hosted **by Pakistan and Sri Lanka** as per the hybrid model proposed by **the Asian Cricket Council** for the first time.
- India, Pakistan, Sri Lanka, Afghanistan, Bangladesh and Nepal competed for the Asia Cup 2023 title.
- Six-time winners and defending champions Sri Lanka reached the finals defeating Pakistan in a thriller in the Super 4 stage.

Key Highlights of the Tournament

- India lifted **their 8th Asia Cup trophy** and the first major title under Rohit Sharma's captaincy.
- Mohammed Siraj was declared the "**Player of the Match**" for his spell of 6-21 (7 Overs) in the final.
- **Shubman Gill finished** the 2023 Asia Cup as **the highest run-getter** (320).
- **Kuldeep Yadav** was declared the "**Player of the Tournament**" for **taking 9 wickets**.
- It was only the second time in the competition's ODI

history that the pacers claimed all ten wickets in a clash.

- Siraj is only **the second bowler after Ajanta Mendis** (6-13 against India in the finals of the 2008 edition) to grasp a six-for in an Asia Cup ODI.
- Siraj also became the first Indian to get four wickets in an over in international cricket.

Asia Cup

- The tournament started all the way **back in 1984** in the ODI format, although the recent editions have alternated **between ODI and T20I formats**. The 2023 edition was played as ODI (50-over) competition, keeping in mind the upcoming 50-over World Cup in India.
- **India is the most successful** side in the tournament, now holding eight titles (Seven ODI and one T20I) to their name. Sri Lanka comes in second place with six (five ODI and one T20I) titles. Pakistan has won the Asia Cup twice.
- The **inaugural edition of Asia Cup** was held in

1984 between India, Sri Lanka & Pakistan.

Format of Asia Cup 2023

- 13 games were played during this edition between 30 August and 17 September.

- The Super Fours had been another Round-Robin series of games, similar to the last one in 2022 (but it was held in the T20 format). The top two sides qualified for the final, held on 17 September in Colombo.

Asian Cricket Council

- The ACC was formed in New Delhi on the 19th of September 1983, as the Asian Cricket Conference. The aims and objectives, as stated in the original constitution, were organising, developing and promoting the game of Cricket in Asia.
- The founding members of the ACC were Bangladesh, India, Malaysia, Pakistan, Singapore and Sri Lanka. Membership subsequently increased, first with Hong Kong, then the UAE, followed by Nepal in 1990. China is

the most recent member, joining the ACC in 2004.
- In 1993, the Asian Cricket Conference became the Asian Cricket Council. There are two categories of membership at the ACC – Full and Associate – with the Test-playing countries and ICC Associate countries (Hong Kong, Kuwait, Malaysia, Nepal, Singapore, Thailand, UAE) being accorded Full Member Status with the rest of the member countries ranked as ACC Associates.

India achieves major sanitation milestone as 75% villages are now ODF Plus under Swachh Bharat Mission - Grameen

- The country has achieved yet another major milestone under the **Swachh Bharat Mission (Grameen) Phase II** with **three-fourth of the total villages in the country** i.e., **75% villages**, **achieving ODF Plus status under Phase II of the Mission**.
- An **ODF Plus village** is one which has sustained its Open Defecation Free (ODF) status along with implementing either solid or liquid waste management systems.
- **Till date,** more than **4.43 lakh villages have declared themselves ODF Plus**, which is a significant step towards achieving the **SBM-G phase II goals by 2024-25**.
- **The top performing States/UTs which have achieved 100% ODF Plus villages are –** Andaman & Nicobar Islands, D&N Haveli, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Ladakh, Puducherry, Sikkim, Tamil Nadu, Telangana, and Tripura.
- **Among States/UTs –** Andaman & Nicobar Islands, Dadra Nagar Haveli & Daman Diu, Jammu & Kashmir and Sikkim have 100% ODF Plus Model villages.
- These States & UTs have shown remarkable progress in achieving the ODF Plus status, and their efforts have been instrumental in reaching this milestone.

"Exercise Yudh Abhyas-23" set to commence in Fort Wainwright, Alaska, USA – Indian contingent departs

- The **19ᵗʰ edition of** "**Exercise Yudh Abhyas**" will be conducted from **25ᵗʰ September to**

8ᵗʰ October 2023 in **Fort Wainwright, Alaska, USA**.

- It is an **annual exercise** conducted **jointly by the Indian Army and the United States Army**.
- The **previous edition of the Exercise** was conducted **in Auli, Uttarakhand, India in November 2022.**
- Both sides will practice **a series of tactical drills to enhance interoperability** in conducting **UN peacekeeping operations.**
- Personnel from both sides will also hold detailed discussions to share their experiences and best practices.
- The **theme of the Exercise is** '**Employment of an Integrated Battle Group in Mountain/Extreme Climatic Conditions' under Chapter VII of United Nations mandate**.
- "**Ex Yudh Abhyas-23**" will facilitate both Armies to mutually **learn from each other** and further **strengthen the bonds between the two armies.**

Ek Tareekh Ek Ghanta Ek Saath

- As a run up to Gandhi Jayanti, a unique call to action has been given by the Prime Minister Narendra Modi to fellow citizens.
- On 105ᵗʰ episode of Mann Ki Baat, the Prime Minister **appealed for 1 hour of shramdaan for swachhata at 10 am on 1ˢᵗ October by all citizens collectively**, which will be a 'swachhanjali' to Bapu on the eve of his Jayanti.
- This **mega cleanliness drive** calls upon citizens from all walks of life to join in actual cleaning activities of public places like **market spaces, railway tracks, water bodies, tourist locations, religious places etc.**
- This mega cleanliness drive is part of the **Swachhata Pakhwada - Swachhata Hi Seva 2023**, being observed from **15ᵗʰ Sept till 2ⁿᵈ October**.

Indian Army contingent leaves for ADMM Plus EWG on Counter Terrorism Field Training Exercise 2023 in Russia

- Indian Army Contingent consisting of 32 personnel from a Battalion affiliated to the **Rajputana Rifles** departed for **ASEAN Defence Ministers Meeting (ADMM) Plus Expert Working Group (EWG)** on **Counter Terrorism Field Training Exercise (FTX) 2023** scheduled to be conducted from **25th to 30th September 2023 in Russia**.
- It is a **multinational joint military exercise** being hosted by Russia as a co-chair of the EWG along with Myanmar.
- **Since 2017, the ADMM Plus meets annually** to allow dialogue and cooperation among **Association of Southeast Asian Nations (ASEAN) and Plus countries**.
- The **inaugural ADMM Plus** was convened in **Ha Noi, Vietnam on 12th October 2010**.
- **This year ASEAN member states along with Plus Group** will be participating in the exercise.
- The **main objective of the exercise is** strengthening and promoting regional cooperation in the field of counter-terrorism.

Maiden India-Indonesia-Australia Trilateral Maritime Exercise

- Indian Navy's indigenously built warship INS Sahyadri, deployed in Indo-Pacific, participated in the **maiden trilateral Maritime Partnership Exercise** with the ships and aircraft from the Royal Australian Navy (RAN) and Indonesian Navy on 20-21 September 2023.
- The **trilateral exercise** provided an opportunity for the three maritime nations to **strengthen their partnership** and improve their collective capability to support a **stable, peaceful** and **secure Indo-Pacific region.**

- The exercise also provided the opportunity for the participating navies to benefit from **each other's experience and expertise**.
- **Complex tactical and manoeuvring exercises, cross-deck visits** and **cross-deck landings** of **integral helicopters** were conducted for **training of crew and enhancement of interoperability**.
- **INS Sahyadri**, the third ship of the indigenously designed and built Project-17 class multirole stealth frigates, was built at **Mazagon Dock Ltd, Mumbai**.

India's First Lighthouse Festival held in Goa

- The Union Minister of Ports, Shipping & Waterways and Ayush inaugurated India's **First Lighthouse Festival** from the **Fort Aguada Lighthouse in Panjim, Goa** on September 23, 2023.
- The three days festival, beginning **23rd September and ending on 25th September**, was celebrated across all the lighthouses in the country in an effort to transform these historic spots as tourist destinations.
- Earlier, the Minister launched a campaign 'Lighthouse Heritage Tourism' to transform **75 historic lighthouses into Tourism Spots**.
- The **initiative aims** to showcase the rich culture, significance, and allure of these magnificent structures whereby they can propel prospect of tourism and power local economy.

AI Chatbot for PM-KISAN Scheme launched

- Union Ministry of Agriculture & Farmers Welfare, Government of India launched **AI Chatbot for the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Scheme** at New Delhi on September 21, 2023.
- The AI Chatbot launch marks a significant step towards enhancing the **efficiency and reach** of the PM-KISAN scheme, and also **providing farmers prompt, clear, and accurate responses to their queries.**

- The AI Chatbot acts as a comprehensive guide for the beneficiaries, providing them with **timely and accurate responses to their queries** related to the scheme.
- This is the **first AI Chatbot integrated with a major flagship scheme of the Union government**.
- It has been **developed and improved** with the **support of EKstep foundation** and **Bhashini.**
- Currently, the Chatbot is available in **English, Hindi, Bengali, Odia**, and **Tamil.**

'Nadi Utsav': Three-day festival on Riverine Culture held

- The **fourth** 'Nadi Utsav' was organized by the **National Mission on Cultural Mapping (NMCM)** of **IGNCA** and the **Janapada Sampada Division**, from September 22 to September 24, 2023.
- **This year's** 'Nadi Utsav' was hosted in Delhi situated **on the banks of River Yamuna**.
- The **three-day event** included a variety of events, including **scholarly discussions with environmentalists and scholars on various subjects, screening of films, presentations by eminent artists, puppet shows,** and **discussions on various books**.
- This **noble initiative** was **conceived by Dr. Sachchidanand Joshi** to **create awareness** and **sensitize people about their ecology and environment**.
- The 'Nadi Utsav' **commenced in 2018**, with its **inaugural event held in Nashik (Maharashtra) city situated on the banks of River Godavri.**
- The **second** 'Nadi Utsav' took place in **Vijayawada (Andhra Pradesh) city situated on the banks of river Krishna**, and the **third in Munger (Bihar) city situated on the banks of river Ganga.**
- National Awards in the field of Science, Technology and Innovation to be known as "Rashtriya Vigyan Puraskar"
- The Government of India has come out with a new set of **National Awards in the field of**

Science, Technology and Innovation known as "Rashtriya Vigyan Puraskar".

- The **objective of the Rashtriya Vigyan Puraskar** (RVP) is to recognize the **notable and inspiring contribution made by the scientists, technologists,** and **innovators individually** or **in teams** in various fields of science, technology and technology led innovation.
- The Rashtriya Vigyan Puraskar shall be one of the highest recognitions in the field of science, technology, and innovation in India.
- **People of Indian Origin staying abroad with exceptional contributions benefiting the Indian communities or society shall also be eligible for the awards**.
- The awards shall be given in the following four categories: **Vigyan Ratna, Vigyan Shri, Vigyan Yuva-Shanti Swarup Bhatnagar**, and **Vigyan Team**.
- All Awards will have a **Sanad** and **a medal**.

SIMBEX-2023

- **Indian Naval Ships Ranvijay and Kavaratti** and **submarine INS Sindhukesari** participated in the **30th edition of the Singapore India Maritime Bilateral Exercise (SIMBEX),** an annual **bilateral Naval exercise between the Indian Navy and Republic of Singapore Navy (RSN),** which is being conducted **since 1994.**
- SIMBEX-2023 was conducted **in two phases** - **Harbour Phase** in Singapore from 21 to 24 September 2023, followed by a **Sea Phase**.
- **Besides Ranvijay, Kavaratti and Sindhukesari**, Long-Range Maritime Patrol Aircraft **P8I** also participated in the exercise.
- **The Harbour Phase** witnessed a wide range of professional interactions, cross-deck visits, Subject Matter Expert Exchanges (SMEE) and sports fixtures, aimed at enhancing interoperability and mutual understanding between the two navies.

- **The Sea Phase** of SIMBEX-2023 involved complex and advanced air defence exercises, gunnery firings, tactical maneuvers, anti-submarine exercises and other maritime operations.

TRIFED launches phase 2 of the 'Promotion of Tribal Products for North East Region' scheme

- **Tribal Cooperative Marketing Development Federation of India Ltd. (TRIFED),** under Union Ministry of Tribal Affairs, launched the **phase 2 of the 'Promotion of Tribal Products for North East Region' (PTP-NER 2.0) scheme**, from **21st September to 10th November, 2023**.
- **In this phase, 29 districts** with as many teams of TRIFED, North Eastern Handicrafts and Handlooms Development Corporation (NEHHDC) - Union Ministry of DoNER, and State Administration teams will travel the North East Region, to **once again reach out to tribal artisans and showcase their cultural richness and heritage not only to the Nation but world over.**
- The **Union Minister for Tribal Affairs** launched the Central Sector Scheme **'Marketing and Logistics Development for Promotion of Tribal Products from North-Eastern Region (PTP-NER)',** for the benefit of Scheduled Tribes of North-eastern Region, in Manipur on 18 April, 2023.
- **In the first phase of the scheme (PTP-NER 1.0), eight States were covered and 38 districts** were visited by the teams of TRIFED and NEHHDC, in close collaboration with State Administrations.

Members of Parliament bid adieu to the historic Parliament Building

- A function was organised in the Central Hall, on 19 September 2023, to commemorate the rich legacy of the Parliament of India as the Members came together to **bid adieu to the historical building** before stepping into the **New Building of Parliament**.

- In his address to MPs in the Central Hall, the **Vice-President described this transition** as a journey **from 'Tryst with Destiny' to 'Tryst with Modernity'** and called upon all Members to join the historic journey towards **Bharat @2047.**
- Underscoring that the new building of Parliament is **not just an "architectural marvel"** but also **"a testament to the dawn of Aatmanirbhar Bharat,"** the Vice-President noted that it not only serves as a **reflection of India's cultural diversity** but also stands as **a glowing symbol of** "national pride, unity, and diversity."

Ministry of Agriculture unveils game-changing initiatives for farmers

- The Union Finance Minister and Union Agriculture Minister **unveiled initiatives focused on agri-credit (KCC & MISS)** and **crop insurance (PMFBY/RWBCIS)** on September 19, 2023.
- The Ministry of Agriculture & Farmers Welfare launched three initiatives, namely the **Kisan Rin Portal (KRP), KCC Ghar Ghar Abhiyaan,** and a manual on **Weather Information Network Data Systems (WINDS).**
- These initiatives aim **to revolutionize agriculture, enhance financial inclusion, optimize data utilization,** and **improve the lives of farmers across the nation**.

Kisan Rin Portal (KRP)

- Developed collaboratively by **MoA&FW**, the Department of Financial Services **(DFS)**, Department of Animal Husbandry & Dairying **(DAH&D)**, Department of Fisheries **(DoF)**, **RBI,** and **NABARD**, **KRP is poised to revolutionize access to credit services under the Kisan Credit Card (KCC).**
- It will **also assist farmers in availing subsidized agriculture credit** through the **Modified Interest Subvention Scheme (MISS).**

Ghar-Ghar KCC Abhiyaan: Door to Door KCC Campaign

- MoA&FW's commitment to universal financial inclusion is underscored by this campaign, **ensuring that every farmer has unhindered access to credit facilities that drive their agricultural pursuits**.
- The campaign will **begin from 1st October 2023 to 31st December 2023**.

Launch of WINDS Manual

- **The Weather Information Network Data Systems (WINDS)** initiative stands as a pioneering effort to establish **a network of Automatic Weather Stations & Rain Gauges at the taluk/block and gram panchayat levels.**
- This initiative **creates a robust database of hyper-local weather data, supporting various agricultural services.**

Coastal security drill 'Operation Sajag' conducted

- **'Operation Sajag',** a drill involving **all stakeholders of the coastal security construct**, was conducted by the **Indian Coast Guard along the west coast** on September 18, 2023.
- The **drill facilitates revalidation of the coastal security mechanism** and **bring awareness among the fishermen at sea.**
- During the drill, **extensive checking and verification of documents** and **crew passes of all fishing boats, barges and craft at sea** was undertaken.
- A total of 118 ships including those from **Customs, Marine Police, Ports & Indian Navy participated in the drill**.
- The **day-long drill** is conducted **every month** and the outcomes are further progressed for improvement in the coastal security construct.

Sangeet Natak Akademi Amrit Awards presented

- The Vice-President of India, Jagdeep Dhankhar, on 16 September 2023, presented the **one-time Sangeet Natak Akademi Amrit Awards** on the occasion of Azadi Ka Amrit Mahotsav to **84 artists from the field of performing arts of India who are above the age of 75 years** and **haven't been accorded any national honour in their career so far.**
- Sangeet Natak Akademi Amrit Awards is a national honour **bestowed on performing artists** as well as **teachers and scholars in the field of performing arts**.
- The recipients are selected by the **Akademi's General Council**, consisting of distinguished musicians, dancers, theatre artists and scholars in these disciplines and nominees of the Government of India, States Governments, and Union Territories.
- The honour **carries a purse money of Rs. 1,00,000 (Rupees one lakh)** besides a **Tamrapatra** and **Angavastram.**
- **Some of the awardees include** Raghubir Malik and Dina Nath Mishra for Hindustani vocal, Gowri Kuppuswamy and Anasuya Kulkarni for Carnatic vocal, Lalitha Srinivasan and Vilasini Devi Krishnapillai for Bharatnatyam and Smita Shastri and Kumkum Lal for Kuchipudi and Odishi, respectively.
- The **awardees also include** those from the folk genre like Mahabir Nayak from Jharkhand for music, Harishchandra Prabhakar Borkar from Maharashtra for theatre and Dharmeswar Nath of Assam for dance.

Unified Portal for Agricultural Statistics launched

- Member of NITI Aayog, Professor Ramesh Chand officially **launched the Unified Portal for Agricultural Statistics (UPAg Portal)** on September 15, 2023.

- It is a **groundbreaking move** to address the **complex governance challenges, India's agriculture sector is facing.**
- This innovative platform, **designed to streamline and enhance data management in the agricultural domain,** marks a significant step towards a more efficient and responsive agricultural policy framework.
- The **UPAg Portal** is a crucial component of the **Digital Public Infrastructure for Agriculture**, **aimed at harnessing the diversity of the agriculture sector and using data as a catalyst for growth**.
- It is a pioneering initiative by the **Department of Agriculture and Farmers' Welfare**, to streamline data management in the agriculture sector.
- It **aims to provide real-time, standardized, and verified data on agricultural commodities**, **facilitating data-driven decision-making for policymakers**, **researchers, and stakeholders**. This **initiative aligns with the principles of e-governance**, bringing smartness, transparency, and agility to India's agriculture sector.

Bharat becomes the 13th country in world that can issue internationally accepted OIML Certificates

- **OIML** (International Organization of Legal Metrology) **is an intergovernmental organization** which was **established in 1955**.
- **Bharat became its member in 1956**. It has **63 Member States** and **64 Corresponding Members**.
- **Bharat** has now become authority **for issuing internationally accepted OIML certificate for selling weights & measures anywhere in the world**.
- **To sell a weight or measure in the International market**, an **OIML Pattern Approval certificate** is **mandatory**, which **Department of Consumer Affairs can issue now**.

- The domestic manufacturers can now export their weighing and measuring instrument worldwide without incurring additional testing fees, resulting in **significant cost savings**.
- By issuing the OIML approval certificates of weighing & measuring instrument to the foreign manufacturers, **Bharat will also generate forex in terms of fees etc**.
- **Bharat now joins an exclusive group of nations**, including Australia, Switzerland, China, Czech Republic, Germany, Denmark, France, United Kingdom, Japan, Netherlands, Sweden, and Slovakia, as the **13th country worldwide, authorized for issuing OIML approval certificates**.

Skill India Digital launched

- **The Union Minister for Education and Skill Development and Entrepreneurship**, on 13 September 2023, **launched Skill India Digital (SID),** a comprehensive **digital platform aimed at synergizing and transforming the skills, education, employment**, and **entrepreneurship landscape of India**.
- SID is the **Digital Public Infrastructure (DPI) for skilling, education, employment,** and **entrepreneurship ecosystem of India**.
- It is **also a comprehensive information gateway for all government skilling and entrepreneurship initiatives** – a go-to hub for citizens in pursuit of career advancement and lifelong learning.

Cabinet approves e-Courts Phase III for 4 years

- The Union Cabinet, on 13 September 2023, **approved the e-Courts Project Phase III** as a Central Sector Scheme **spanning four years (2023 onwards) with financial outlay of Rs. 7210 crore**.
- e-Courts Mission Mode Project is the prime mover **for improving access to justice using technology.**

- As part of the **National e-Governance Plan**, the e-Courts Project is **under implementation since 2007** for ICT enablement of the Indian Judiciary, the **Phase II of which has concluded in 2023**.
- The **Phase III** of the e-Courts Project in India is rooted in **philosophy of "access and inclusion".**
- The **main objective of the Phase-III** is to create a **unified technology platform for the judiciary**, which **will provide a seamless and paperless interface between the courts, the litigants and other stakeholders.**
- The Centrally Sponsored Scheme of e-Courts Phase III is being **implemented under the joint partnership of the Department of Justice, Ministry of Law & Justice, Government of India and e-Committee, Supreme Court of India**.

Centre notifies third phase of mandatory hallmarking from September 8, 2023

- The **third phase** of the mandatory hallmarking vide **Hallmarking of Gold Jewellery and Gold Artefacts (Third Amendment) Order, 2023 comes into force from September 8, 2023.**
- **The third phase of the mandatory hallmarking will cover additional 55 new districts** under the mandatory hallmarking system **thereby making the total number of districts covered under mandatory hallmarking as 343.**
- BIS has been successful in implementation of **Mandatory Hallmarking in 256 districts of the country with effect from 23 June 2021, in the first phase** and in the **additional 32 districts with effect from 4 April 2022, in the second phase** wherein more than 4 lakh gold articles are being hallmarked with HUID every day.
- **More than 26 crore articles of gold jewellery** have been **hallmarked with HUID so far**.

Sovereign Gold Bond Scheme 2023-24 (Series II)

- **Sovereign Gold Bonds 2023-24 (Series II)** was **opened for subscription** during the period **September 11-15, 2023** with **Settlement date September 20, 2023**.
- The **issue price of the Bond** during the subscription period was **Rs. 5,923 per gram**.
- The Government of India in consultation with the Reserve Bank of India had decided to allow **discount of Rs. 50 per gram from the issue price** to those investors **who applied online and the payment was made through digital mode.**
- **For such investors**, the issue price of Gold Bond was **Rs. 5,873 per gram of gold**.

Malaviya Mission - Teachers Training Programme by UGC

- The Union Minister for Education and Skill Development & Entrepreneurship launched the **Malaviya Mission - Teachers Training Programme** by the University Grants Commission in New Delhi on September 5, 2023.
- Organised by the University Grants Commission, in association with the Ministry of Education, the Malaviya Mission - Teacher Training Programme **aims to provide tailored training programmes for teachers.**
- This programme will work for the **capacity building of faculty members** in higher educational institutions.
- The Minister also announced the **renaming of Human Resource Development Centres (HRDCs)** as **Madan Mohan Malaviya Teachers' Training Centre**.

Phase-VIII of Sagar Parikrama launched

- "**Sagar Parikrama**" is an evolutionary journey envisaged across the coastal belt demonstrating solidarity amongst all fisher folk, fish farmers

and other stakeholders while also understand the on-ground challenges and problems of the fishers.

- **The first part of Sagar Parikrama was launched on 5 March 2022 from Mandvi, Gujarat (Sagar Parikrama–Phase I) and completed on 12th June 2023 at Vizhinjam, Kerala** (Sagar Parikrama–Phase VII) **covering key areas on the west coast of the country**.

- **The second part of Sagar Parikrama aims to cover the East coast of the country,** hence Phase - VIII of Sagar Parikrama resumed from Vizhinjam, Kerala **on 31st August 2023** and will continue to cover the eastern coastal states of the country in subsequent phases.

World's first prototype of the BS 6 Stage II 'Electrified Flex Fuel Vehicle' launched

- Union Minister for Road Transport and Highways, on 29 August 2023, launched the **world's first prototype of the BS 6 Stage II 'Electrified Flex Fuel Vehicle'**, developed by **Toyota Kirloskar Motor**.

- An Electrified Flex Fuel Vehicle has both a **Flexi Fuel engine** and an **electric powertrain**.

- This gives it ability to provide dual benefit of **higher ethanol use** and much **higher fuel efficiency** as is in case of a **Strong Hybrid Electric Vehicle (SHEV),** which can provide 30-50% higher fuel efficiency as it can run 40-60% in EV mode with engine shut off.

NITI Aayog and UNDP sign MoU on fast tracking SDGs

- NITI Aayog and UNDP India, on 29 August 2023, signed a **Memorandum of Understanding (MoU)** to formalise a framework of cooperation on a range of areas, including **SDG localisation, data-driven monitoring, Aspirational Districts and Blocks**, among others.

- Through this MoU with NITI Aayog, UNDP stands ready to enhance its **support for localization of the SDGs, data-driven decision-making through various indices, the Aspirational Districts and Blocks programme, and SDG financing.**

- UNDP will also provide support for NITI Aayog's work on **women's livelihoods, innovation, and Mission LiFE.**

- The MoU was **signed for a period of five years**.

- **NITI Aayog** is the **nodal institution** for **coordinating the adoption and monitoring of SDGs** at the **national and sub-national levels**. **UNDP plays the integrator role** in coordinating efforts to fast-track progress on the **SDGs within the UN system.**

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