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November
2023

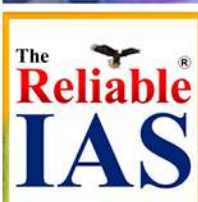
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FOR CIVIL SERVICES EXAM

Editor : Manohar E. Patil • Composer : Rajnikant Mohite

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Chapter

1

Art & Culture

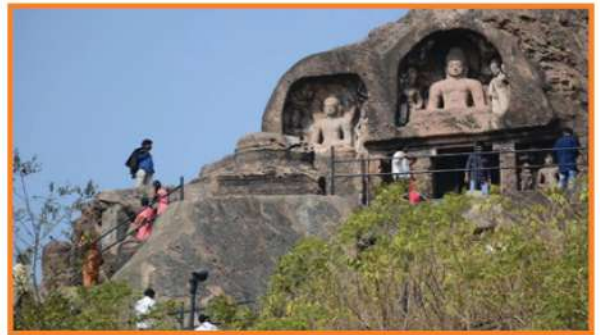
Bojjannakonda

Why in News

- The centuries-old Bojjannakonda is likely to draw tourists not only from across the country but also from nations like Bhutan, Singapore, Thailand, Sri Lanka, Cambodia and Myanmar, where Buddhism is practised even to this day.

Important Points

- The Central government has sanctioned Rs7.30 crore recently for taking up landscaping and development of tourist amenities at Bojjannakonda, which is under the control of the Archaeological Survey of India (ASI).
- The State government, on its part, has allotted a two-and-a-half acre site adjacent to the Buddhist heritage site to develop a meditation centre and landscaping.



Details

- Bojjannakonda, also known as Bojjannakonda and Lingalakonda, is an ancient Buddhist site located in the Indian state of Andhra Pradesh.

Historical Background

- Bojjannakonda is situated in the Visakhapatnam district of Andhra Pradesh, near the town of Anakapalle.
- This site dates back to the 4th and 5th centuries CE, which corresponds to the period of the Gupta Empire in India.
- During this time, Buddhism was a prominent religion in India, and several Buddhist monastic complexes, stupas, and viharas were constructed.

Architectural Features

- Bojjannakonda is renowned for its rock-cut caves and stupas.
- The site consists of two major hills, Bojjannakonda and Lingalakonda, which

are dotted with numerous rock-cut caves and stupas.

- These caves served as viharas or monastic cells for Buddhist monks.
- The architecture of these caves is a testament to the craftsmanship of that era. The intricately carved facades and entrances of the caves are notable, showcasing the artistic and architectural skills of the time.

Buddhist Heritage

- Bojjannakonda is believed to have been an important center for Buddhist learning and monastic activities during its heyday.
- The site is dedicated to Lord Buddha and is adorned with various sculptures and inscriptions related to Buddhism. It is believed that the Buddhist monks residing here practiced meditation and disseminated Buddhist teachings.

Stupas

- One of the highlights of Bojjannakonda is the presence of several stupas, both rock-cut and structural.
- These stupas are significant Buddhist monuments used for meditation and veneration. They are often adorned with intricate carvings and inscriptions that provide historical and religious insights

Inscriptions

- The site contains several inscriptions in the Brahmi script, which have been instrumental in deciphering the history and chronology of Bojjannakonda.
- These inscriptions mention the names of donors and provide valuable information about the site's patrons and benefactors.

Decline and Rediscovery

- Like many Buddhist sites in India, Bojjannakonda also witnessed a decline in Buddhist influence over time, possibly due to socio-political changes and the emergence of other religions. The site was eventually abandoned and forgotten.
- Bojjannakonda remained hidden from the modern world until its rediscovery in the mid-20th century. Archaeological excavations and research efforts have helped unearth its historical and cultural significance.

Hakki Pikki Tribe

Why in News

- Recently, 114 tribal people from the Hakki Pikki tribal community in Karnataka got title deeds to the land they had been cultivating for about a century.

Important Points

- Hakki Pikkis (Hakki in Kannada means 'bird' and Pikki means 'catchers') are a semi-nomadic tribe, traditionally of bird catchers and hunters.
- It is one of the major tribal communities in Karnataka. They also reside in the Western and Southern states of India, mostly near forest areas.
- The community migrated from Northern India, mainly Gujarat and Rajasthan, and is now mainly concentrated in Shivamogga, Davanagere, and Mysuru district of Karnataka.



They are recognized as a Scheduled Tribe in India. Occupation

- After the implementation of stricter wildlife laws, the tribe changed its occupation from hunting to selling spices, flowers, Ayurveda formulations, and herbal oils.
- They now travel globally to sell these products, especially in the African continent, where there is a demand for cheaper alternatives to Western medicine.

Language

- Despite being surrounded by Dravidian languages and living in southern India, the community speaks an Indo-Aryan language.
- Their mother tongue was designated as 'Vaagri' by scholars.
- UNESCO has listed 'Vaagri' as one of the endangered languages.

Rituals and customs

- The tribe follows Hindu traditions and celebrates Hindu festivals.
- The tribe prefers cross-cousin marriages. The society is matriarchal, where the groom gives dowry to the bride's family.
- The eldest son in a family is not supposed to cut his hair so that he can be identified easily.
- They are non-vegetarians.

Saraswati Samman

Why in News

- Tamil writer Sivasankari was honoured with the 'Saraswati Samman' in 2022 for her book of memoirs titled "Surya Vamsam."

Important Points

- Saraswati Samman is an annual award for outstanding prose or poetry literary works in any of the 22 languages of India listed in Schedule VIII of the Constitution of India. It is named after the Hindu goddess of knowledge, Saraswati.
- It was instituted by the K.K. Birla Foundation in 1991. The award carries a cash prize of ₹15 lakh, a citation, and a plaque.
- Saraswati Samman 2022 was recently awarded to a Tamil writer Sivasankari for her book of memoirs, Surya Vamsam.
- "Surya Vamsam" is a two-volume work of memoirs that not only traces the journey of an innocent child becoming a renowned author but also captures the societal transformations over the course of seven decades, as stated in the award citation.
- The selection for this award was made by a Chayan Parishad (Selection Committee) led by former Supreme Court judge Arjan Kumar Sikri.
- Sivasankari, born in 1942, has a literary career spanning over five decades, during which she has authored 36 novels, 48 novelettes, 150 short stories, five travelogues, seven collections of essays, and three biographies.
- Many of her works have been translated into various Indian languages, as well as English, Japanese, and Ukrainian.



Sivasankari works

- One of Sivasankari's greatest contributions to Indian literature is her four-volume work, 'Knit India Through Literature', which features the perspectives of literary giants in 18 languages, as expressed through their stories and interviews.
- She has also had eight of her novels adapted into films, directed by renowned filmmakers, and has won numerous awards for her writing, including the national and regional 'Best Mega Serial' awards for her novel 'Kutti', which explores the issue of girl child labor.

- In addition to her literary achievements, Sivasankari has been invited to participate in several international programs, including the International Writers Program and the International Visitors Program at Iowa University in the United States. Her works have also been recorded in her own voice for the Archives of the US Library of Congress to commemorate its bicentennial celebrations.

Puri Temple Ratna Bhandar

Why in News

- There is the demand to open the Ratna Bhandar (treasure room) of the Puri Jagannath Temple that has not been unlocked for three decades.

Important Points

- Demands to open the Ratna Bhandar gained strength after the Archaeological Survey of India (ASI) (the custodian of the 12th-century shrine) gave a requisition for repair/ conservation of the chamber.
- There are apprehensions that cracks have emerged in its walls that could endanger the precious ornaments stored there.



What is Puri temple Ratna Bhandar?

- The precious ornaments of sibling deities — Lord Jagannath, Lord Balabhadra and Goddess Subhadra given by devotees and erstwhile kings over centuries, are stored in the Ratna Bhandar of the 12th century shrine.

It is located within the temple and has two chambers:

- Bahara Bhandar (outer chamber): It is opened regularly to fetch ornaments for the deities during the 'Suna Besha' (golden attire), a key ritual during the 'Annual Rath Yatra', and also during major festivals throughout the year.
- Bhtar Bhandar (inner chamber): It has not opened in the past 38 years.
- It had 12,831 bhari (one bhari equal to 11.66gm) of gold ornaments fitted with precious stones and 22,153 bhari of silver utensils, among others.

When was the Ratna Bhandar last opened?

- According to official sources, the last inventory was made between May 13 and July 23, 1978.
- Though it was opened again on July 14, 1985, the inventory was not updated.

- Permission of the Odisha government is required to open the treasure house. Jagannatha Puri Temple
- Most of the main temple sites are located in ancient Kalinga — modern Puri District, including Bhubaneswar or ancient Tribhuvaneshvara, Puri and Konark.
- It was built by Anantavarman of the Chodaganga dynasty in the 10th century. However, the deities within the shrine are believed to be much older.
- Subsequently, in 1230, king Anangabhimha III dedicated his kingdom to the deity and proclaimed himself as the ‘deputy’ of the god.
- All those who conquered Orissa, such as the Mughals, the Marathas and the English East India Company, attempted to gain control over the temple. They felt that this would make their rule acceptable to the local people.

The Architectural Features

- These are classified in three orders, i.e., Rekha Deula, Pidha Deula and Khakhara Deula.
- The temples of Odisha constitute a distinct substyle within the Nagara Order.
- Deul (the shikhara): It is vertical almost until the top when it suddenly curves sharply inwards.
- Jagamohana (the mandapas): The hall which is almost square
- The most repeated form is the horseshoe shape, which has come from the earliest times, starting with the large windows of the chaitya-grihas.
- Compartments and niches are generally square, the exterior of the temples are lavishly carved, their interiors generally quite bare. Odisha temples usually have boundary walls.



जब **खाहिश** कुछ अलग करने की हो, तो **दिल** और **दिमाग** के बीच **बगावत** लाजिमी है

Edakkal Caves

Why in News

- Recently, Kerala Tourism launched a 2.9-crore rupee project to improve civic amenities around the Edakkal Caves in Wayanad.

Important Points

- These caves are located 3,900 feet above sea level in the majestic Ambukuthi Hills.
- The name Edakkal itself means “a stone in between”.
- The unique, intricate stone carvings date back to the Neolithic and Mesolithic ages.
- The caves are two natural formations that are believed to have been formed by a large split in a huge rock.
- These feature Neolithic-era pictorial writings believed to date to at least 6,000 BCE.



Features

- The caves sport human and animal figures besides symbols and letters.
- Inside the caves are pictorial drawings and engravings that indicate the presence of ancient human settlements in the region.
- Despite their name, the Edakkal Caves are not actually caves. They are part of a prehistoric rock shelter that was formed naturally when one huge boulder got wedged between two bigger ones.
- Human figures, animals, tools, vehicles, day-to-day occurrences, and scripts in different languages have been discovered here.
- The diversity of the engravings suggests that the Edakkal caves were inhabited several times at different points in history.
- The Muniyaras, or ancient burial sites that have been discovered in these hills have yielded a rich collection of ancient earthenware and pottery.

Someshwara inscription

Why in News

- Recently, archaeologists discovered a rare inscription connected to the Alupa dynasty during a recent archaeological exploration at Someshwara near Mangaluru, Karnataka.

Important Points

- The inscription was the first record of the Alupas dynasty that announced the death of king Kulashekara Alupendra I also mentions terms related to the Siri cult, such as Siri, Dalya and Chattara (Chatra).
- The human figures shown in the inscription represent Kulashekara Alupendra himself.
- A Kesava is responsible for the erection of the edifice in honour of Kulashekara Alupendra.
- It has two panels on the top, and in between the two panels the first line is engraved.
- The rest of the inscription written below the panels is in the Kannada script and the language of 12th century characters announces the death of Alupendra I.
- The Keerthi sthamba or pillar found in the inscription is a replica of the original pillar found in the premises of a church in Kulashekara, Karnataka.
- It was significant in the study of Tuluva history and culture.



Depiction of Kulashekara Alupendra in the inscription:

- In the first figure, he is standing in Tribhanga (tri-bent posture) and holds a sword in his right hand while the left hand rests on a gurani (shield).
- To the left of this panel, divided by a pillar, the King is shown in a sitting posture on a mound resting both his palms on the centre of his legs in dhyana mudra.

Who was Kulashekara Alupendra?

- Kulashekara Alupendra I was a famous ruler of the Alupas of South Canara.
- He established a new city called Kulashekara in Mangaluru, Karnataka.
- He laid down strict rules and regulations for temple administration, which are still followed in all temples in this region.

- He was the first ruler to give royal patronage to Tulu language and culture.
- He ruled from both the capitals, Mangaluru and Barkuru.
- He ruled Tulunadu from 1156-1215 A.D., as per the records found.

Origins of the Soma cult

- The Soma cult was founded by Soma Sharma of Gujarat in the 11th century AD and it spread across the country.
- The Someshwara temple at Someshwara was built during the time of Kulashékara Alupendra in honour of Soma and adorned with Nava Durgas.
- Independent Navadurga sculptures in sitting posture are found in the temple.
- Alupendra I ruled Tulunadu from 1156-1215 A.D., as known from his other records.
- Though the present inscription is undated, it is datable to 12th century on the basis of paleography.

Bhimashankar Temple

Why in News

- At the Bhimashankar temple, tensions ran high recently when a brawl broke out between two sets of religious leaders known as pujaris over who would lead the puja.

Important Points

- It is an ancient Hindu shrine dedicated to Lord
- **Location** : It is located in the Sahyadri hills in the Pune District of Maharashtra.
- It is considered one of the 12 holy Jyotirlinga shrines in India.
- In recent times, Bhimashankar has gained tremendous significance since it was declared a “Wildlife Sanctuary”. This sanctuary is a part of the Western Ghats.
- Bhimashankar is the source of the river Bhima.



History

- It was built around the 13th century. It is a testament to the skills of the Vishwakarma sculptors.
- Structures such as the shikhara (spires) were added by Maratha Empire

tatesman Nana Phadnavis in the 18th century.

- The Maratha ruler, Chhatrapati Shivaji Maharaj, is also believed to have facilitated worship here through his endowments.

Architecture

- It is a composite of old and new structures in the Nagara style of architecture.
- The temple features huge court spaces, intricate carvings on walls, and colossal pillars.
- The sanctum of the temple, called Garbhgriha, has been constructed at a lower level inside which the sacred Jyotirlinga is present.
- The Swayambhoo, or self-emanated Shiv Linga, is precisely in the center of the floor of the Sanctum Sanctorum.
- The massive pillars and doorframes of the temple are awash with exquisite mythological carvings of divine figures and holy symbols.
- The temple also houses an ancient shrine of Lord Shani which is considered very auspicious by the devotees.
- The statue of Nandi, the revered bull who's the vehicle of Shiva, is present right at the entrance of the temple. What are Jyotirlingas?
- A Jyotirlinga is a shrine where Lord Shiva is worshipped in the form of a Jyotirlingam.
- There are currently 12 main Jyotirlingas in India.
- The 12 Jyotirlinga temples in India take the name of the presiding deity. Each considered a different manifestation of Lord Shiva.

12 Jyotirlingas in India are

- Somnath Jyotirlinga in Gir, Gujarat
- Mallikarjuna Jyotirlinga in Srisailam, Andhra Pradesh
- Mahakaleshwar Jyotirlinga in Ujjain, Madhya Pradesh
- Omkareshwar Jyotirlinga in Khandwa, Madhya Pradesh
- Baidyanath Jyotirlinga in Deogarh, Jharkhand
- Bhimashankar Jyotirlinga in Maharashtra
- Ramanathaswamy Jyotirlinga in Rameshwaram, Tamil Nadu
- Nageshwar Jyotirlinga in Dwarka, Gujarat
- Kashi Vishwanath Jyotirlinga in Varanasi, Uttar Pradesh
- Trimbakeshwar Jyotirlinga in Nasik, Maharashtra
- Kedarnath Jyotirlinga in Rudrapur, Uttarakhand
- Ghrishneshwar Jyotirlinga in Aurangabad, Maharashtra

Dhordo in United Nations World Tourism Organization's list

Why in News

- Dhordo in Gujarat made it to the United Nations World Tourism Organization's (UNWTO) best villages list.

Important Points

- The UNWTO is a United Nations agency focusing on responsible tourism.
- These villages have been chosen for how they're growing visitor numbers without ruining what it is the visitors are coming to see.
- The accolade recognizes rural destinations that are embracing tourism as a driver of development and new opportunities for jobs and income, while preserving and promoting community-based values and products.
- The initiative also recognizes villages for their commitment to innovation and sustainability in all its aspects – economic, social and environmental.
- It also recognizes the focus on developing tourism in line with the Sustainable Development Goals (SDGs).
- A grand total of 32 villages across the globe made the list.
- There's no ranking – instead, the destinations are listed alphabetically by country.
- Each country was allowed to submit up to three villages for consideration – and only Spain succeeded in qualifying all three of its villages.
- Called the “Best Tourism Villages” initiative, while enacting sustainable tourism, and reducing emissions and waste the program aims to :
 - ✓ combat rural depopulation,
 - ✓ advance gender equality,
 - ✓ innovation,
 - ✓ infrastructure and investment, and
 - ✓ reduce regional income and development inequality.



Copyright of Religious Texts

Why in News

- The Delhi High Court has found large-scale infringement in the reproduction on the Internet of copyrighted works of the Bhaktivedanta Book Trust, which publishes books and commentaries on Indian religious philosophy and spiritualism, especially classic Vaishnava texts.

Important Points

- In an order, the court allowed the trust to approach tech companies Google and Meta with takedown orders against those reproducing copyrighted works on the Srimad Bhagavad Gita.



About the trust

- The Bhaktivedanta Book Trust was established in 1970 by Bhaktivedanta Swami Prabhupada (Sri Prabhupada).
- He also founded the Gaudiya Vaishnava religious organisation International Society for Krishna Consciousness (ISKCON), colloquially known as the Hare Krishna Movement.

Are religious texts protected by copyright ?

- Religious scriptures are in the public domain, and in copyright law, no exclusive intellectual property rights apply to creative works in the public domain.
- So, the Old Testament and New Testament, or the King James Version (KJV) of the Bible, one of the most widely used translations of the Bible, are not protected by copyright.
- However, many modern translations of the Bible are copyright-protected because they represent new creative works by the translators.
- For example, the New International Version (NIV), which was first published in 1978, is copyright-protected.
- Permission would be needed or the terms set by the holder of the copyright would have to be followed in order to use the NIV text for certain purposes.
- While the Ramayana and Mahabharata are not protected by copyright, the television series Ramayana created by Ramanand Sagar or B R Chopra's Mahabharata are transformative works that would be protected.

The copyright law in India

- Indian copyright law protects original work, a creative and independently created expression fixed in a tangible medium.
- The law grants the creator/ author of the work the exclusive right to use, reproduce, distribute, perform, and display their work.
- The law also protects transformative work which is a creative/ artistic work that takes existing material (text, music, art) and significantly modifies, reinterprets, or builds upon it to create something new and distinct.

The case of the petitioner Bhaktivedanta Book Trust

- The trust said that its founder's works published in various Indian and foreign languages had simplified the religious books and scriptures making it easy for the common man to understand.
- The copyright of his work would vest with the trust after he died in 1977.
- The trust claimed that certain websites, mobile apps, and Instagram handles were making available a large number of the trust's copyrighted works almost in a verbatim manner on their online platforms without its permission, which amounted to infringement.

What did the HC say ?

- In its interim order, the court said adaptation of the scriptures, including explanation, meaning, interpretation or creating any audio visual works, would be entitled to copyright protection.
- The court said this is so because these are the original works of the authors themselves.
- Thus, there can be no objection in the actual reproduction of the text of Srimad Bhagavad Gita or similarly other spiritual books.
- However, the manner in which the same is interpreted by different gurus and spiritual teachers being varied in nature, copyright would vest in respect of the original parts of the literary works which preach, teach or explain the scripture.
- Since Srila Prabhupada had himself handed over the copyrights to be administered by the trust, the works cannot be reproduced without authorization, licence or the permission of the trust.
- The HC found that the shlokas in Prabhupada's books, as well as their anuvaad (translation) and tatparya (intention) had been reproduced by the defendant entities.
- The court agreed that if not checked, such piracy would cause an immense loss of revenue to the trust.

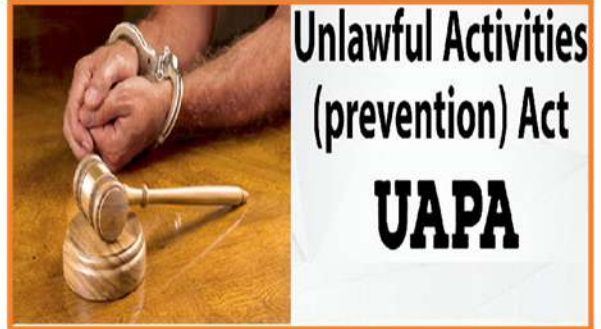
Chapter
2

Polity & Governance

UAPA Act

Why in News

- The Delhi Police has sealed the office of news portal NewsClick, by invoking the UAPA Act, alleging it received money for pro-China propaganda.



Important Points

- UAPA presents an alternate criminal law framework where the general principles of criminal law are reversed. By relaxing timelines for the state to file chargesheets and its stringent conditions for bail, the UAPA gives the state more powers compared with the Indian Penal Code (IPC).
- **Enacted** : 1967
- **Mandate** : It is aimed at “more effective prevention of certain unlawful activities of individuals and associations for dealing with terrorist activities”.
- **Unlawful activity** : Unlawful activity means any conduct which constitutes a crime or which contravenes any law whether such conduct occurred before or after the commencement of this Act and whether such conduct occurred in the Republic or elsewhere.

IN THE LOK SABHA

NATIONAL INVESTIGATION AGENCY AMENDMENT BILL, 2019

Empowers NIA to probe terror attacks targeting Indians, Indian interests on foreign soil

Allows NIA to probe cyber-crimes and cases of human trafficking

Allow the Centre and states to designate sessions courts as special court for trial



UNLAWFUL ACTIVITIES (PREVENTION) ACT AMENDMENT BILL

UAPA Bill empowers NIA DG to approve seizure/attachment of property in case

Inspector of NIA can investigate offences under chapter IV and VI

PROTECTION OF HUMAN RIGHTS (AMENDMENT) BILL

Increase NHRC members from two to three, one of which will be a woman

A retired Supreme Court judge could also be considered as chairperson

- Terrorist act: Section 15 of the ACT defines “terrorist act” and is punishable with imprisonment for a term of at least five years to life.

Power to central government

- The Act assigns absolute power to the central government, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.
- Applicability: The provisions of this Act apply also to—
 - (a) citizens of India outside India;
 - (b) persons in the service of the Government, wherever they may be; and
 - (c) persons on ships and aircrafts, registered in India, wherever they may be.

Unlawful Activities Prevention Act (UAPA) Amendment Act 2019

- ✓ The Act empowers the government to designate individuals as terrorists.
- ✓ Under the Act, the central government may designate an organisation as a terrorist organisation if it:
 - ✓ commits or participates in acts of terrorism,
 - ✓ prepares for terrorism,
 - ✓ promotes terrorism, or
 - ✓ is otherwise involved in terrorism.
- Approval for seizure of property by NIA: Under the Act, an investigating officer is required to obtain the prior approval of the Director General of Police to seize properties that may be connected with terrorism.
- The Act defines terrorist acts to include acts committed within the scope of any of the treaties listed in a schedule to the Act.
- The Schedule lists nine treaties, including the Convention for the Suppression of Terrorist Bombings (1997), the Convention against Taking of Hostages (1979) and the International Convention for Suppression of Acts of Nuclear Terrorism (2005).
 - ✓ Issues with UAPA
 - ✓ Low conviction: According to a source, in 2018-20, as many as 4,690 people were arrested under the UAPA but only 3% were convicted.
 - ✓ Sharp Rise in Use: This caution is significant given the

Hard line

The UAPA Bill, 2019, amends the Unlawful Activities (Prevention) Act, 1967. Some highlights:

TERRORISM: Under the Act, the central government may designate an organisation as a terrorist organisation if it: (i) commits or participates in acts of terrorism, (ii) prepares for terrorism, (iii) promotes terrorism, or (iv) is involved in terrorism. The Bill additionally empowers the government to designate individuals as terrorists on the same grounds

SEIZURE OF PROPERTY: Under the Act, an investigating officer must obtain prior approval of the DGP to seize properties that may be connected with terrorism. If the investigation is conducted by an officer of the National Investigation Agency (NIA), the approval of the Director General, NIA is mandatory

INVESTIGATION: Under the Act, investigation of cases may be conducted by officers of the rank of DSP or ACP or above. Officers of the NIA, of the rank of Inspector or above, can also investigate cases

sharp surge in the state's use of this provision in a sweeping range of alleged offences – against tribals in Chhattisgarh, those using social media through proxy servers in Jammu and Kashmir; and journalists in Manipur among others.

- ✓ Stringent Provision of bail: The standard for bail under the UAPA is that it cannot be granted unless the court is of the view that the accused is innocent of the alleged offence.
- ✓ It means that the onus of proof of innocence for the purpose of obtaining bail is effectively reversed. It is for the accused to show that he is innocent.
- ✓ Highly Discretionary: It confers upon the government broad discretionary powers and also authorizes the creation of special courts with the ability to use secret witnesses and to hold closed-door hearings.
- ✓ Ignoring Fundamental Rights: It can simply be used to bypass fundamental rights and procedures. For instance, those arrested under UAPA can be incarcerated up to 180 days without a charge sheet being filed.
- ✓ It thus directly violates Article 21 of the constitution.
- ✓ Related Supreme Court Rulings:
 - ✓ In 2019, the SC defined prima facie narrowly to mean that the courts must not analyse evidence or circumstances, but look at the “totality of the case” presented by the state.
 - ✓ In NIA v Zahoor Ahmed Watali, the SC read the bail provisions strictly, holding that courts must only be satisfied that a prima facie case can be made out to deny bail, and not consider the merit or the admissibility of the evidence.

Bihar Caste Survey

Why in News

- According to the latest caste survey conducted by the Bihar government, the State has a diverse social composition with more than 63% of its population belonging to the Other Backward Classes (OBCs) and Extremely Backward Classes (EBCs).

Important Points

- The survey took into account a person's economic situation in addition to their caste, which will help build new policies and programmes for the advancement of all classes.



Caste Census: A contentious issue

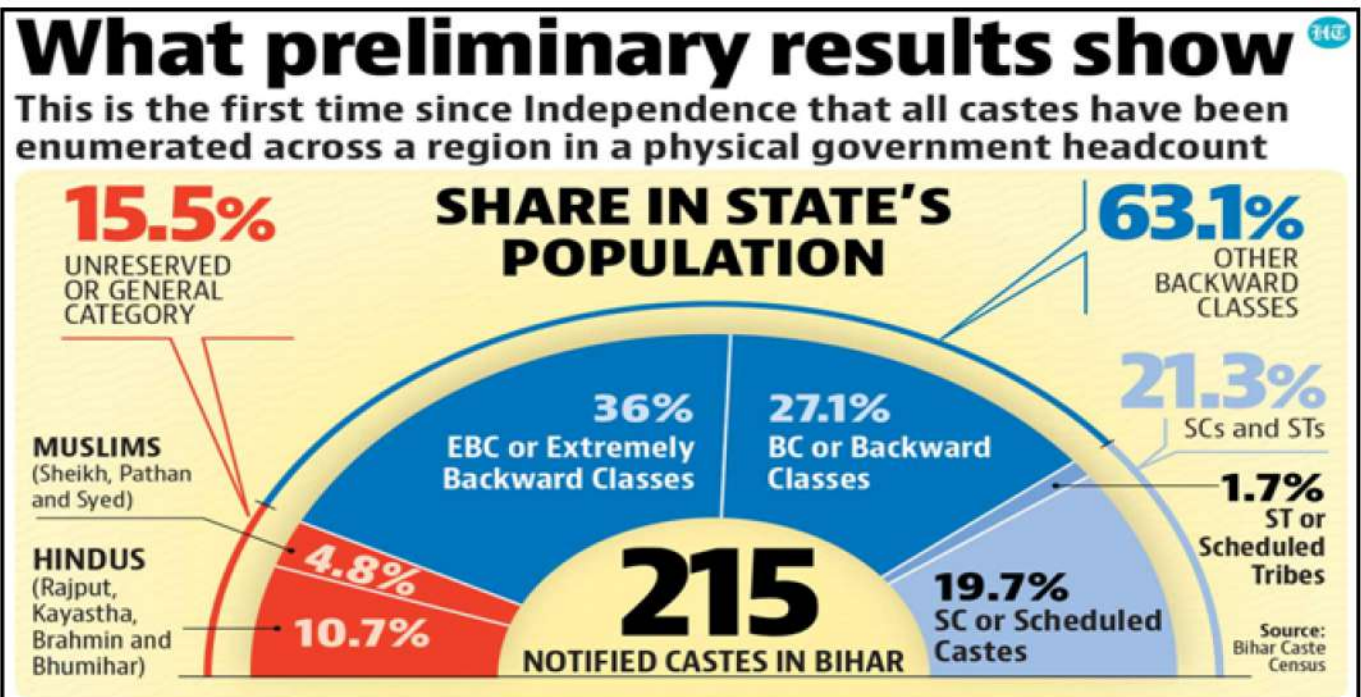
- Data on Scheduled Castes and Scheduled Tribes were published following every

independent India census from 1951 to 2011, but no information on other castes. Before that, caste information was included in every Census up until 1931.

- Caste-based data, however, was gathered but not released in 1941. There would not have been an all-India caste table, according to MWM Yeats, the census commissioner at the time.
- The contention was that the time has passed for this large, expensive table to be a part of the main project.
- As a result, there is now no accurate estimate for the population of OBCs, different groupings within the OBCs, and other disadvantaged groups.

What is the caste survey in Bihar?

- The caste survey results were made public by the Bihar government.
- The national census, which was intended to be performed in 2021 but has yet to begin, was only going to include members of the scheduled castes (SCs) and scheduled tribes (STs), but the Nitish government decided to survey on its own last year.
- The Bihar assembly had unanimously approved the caste survey idea twice, first in 2019 and once in 2020. Nitish Kumar, the chief minister from the Janata Dal United (JD-U) party, was working with the Bharatiya Janata Party (BJP) at the time, which now sits in the Opposition.
- The state administration began the survey procedure this year.
- In the interim, Nitish severed connections with the BJP and established a coalition government with erstwhile enemy the Rashtriya Janata Dal (RJD) and others in what is known as the “Mahagatbandhan” (Grand Alliance) to rule the state.
- The Grand Alliance is part of a 28-party national opposition alliance, INDIA, which aims to unseat Prime Minister Narendra Modi in the general elections of 2024.



- The caste census got off to a rocky start in January and was put on hold by the Patna High Court due to petitions opposing it. However, once the courts approved the exercise in August and dismissed the pleas, the exercise was continued.
- The exercise was funded with Rs 1 billion by the Nitish government last year, and the deadline was set for February 2023. However, the exercise started in January instead of February, and the results were released nine months later than expected.
- Although it is officially referred to as a “caste survey,” in all actuality, it is a census because the exercise tallied the state’s population and recorded it according to the caste identification of the people enumerated.

The Bihar caste survey’s results

- According to the Bihar caste survey, the ‘backward communities’ make up about 63 per cent of the state’s population.
- Out of Bihar’s estimated population of 130 million, the largest group is the extremely backward classes (EBCs), which make up about 36 per cent.
- With roughly 27.13 per cent, the other backward classes (OBCs) come in second.
- According to the caste study, the Yadavas, an OBC group that includes the family of former Bihar chief minister and Rashtriya Janata Dal (RJD) leader Lalu Prasad Yadav, make up the largest social group in the state with a 14.27 per cent share of the population. The Janata Dal-United (JD-U) of Nitish is in coalition with the RJD, and Tejashwi, the son of Lalu, is the deputy chief minister of Bihar.
- According to the caste study, scheduled castes (SCs), also known as Dalits, make up 19.65 per cent of the state’s population, and scheduled tribes (STs) make up roughly 1.68 per cent of the population of Bihar.
- About 15.52 per cent of the people in the state fall under the “unreserved category,” often known as the “general” category. This group is referred to as the “upper castes” in general.
- The survey report, titled Bihar Jaati Adharit Ganana (Bihar caste-based survey), also revealed that the total population of the state is 13 crore.

The caste survey’s sociopolitical importance

- The demand for adequate representation of historically underrepresented communities in public institutions and politics is linked to the call for the caste survey.
- Currently, there is a 15 per cent reservation for scheduled castes (SCs) in government employment and higher education, a 7 per cent reservation for scheduled tribes (STs), and a 22 per cent reservation for other backward classes (OBCs).
- Political parties make their estimates in states and for Lok Sabha and Assembly seats during elections. The Mandal Commission put the OBC population at 52 per cent; other estimates have been based on data from the National Sample Survey.

Censorship

Why in News

- A new report titled 'Freedom on the Net 2023: The Repressive Power of Artificial Intelligence' has been released by Freedom House, a Washington DC-based non-profit organization.

Important Points

- It is the 13th edition of an annual study of human rights online, covering developments between June 2022 and May 2023.
- It evaluates Internet freedom in 70 countries, accounting for 88% of the world's Internet users.
- The report evaluates countries on five censorship methods — Internet connectivity restrictions, blocks on social media platforms, blocks on websites, blocks on VPNs, and forced removal of content.



What is Censorship ?

- Censorship is the suppression of speech, public communication, or other information.
- This may be done on the basis that such material is considered objectionable, harmful, sensitive, or "inconvenient".
- Censorship can be conducted by governments, private institutions and other controlling bodies.

Major Highlights

- The environment for human rights online has deteriorated in 29 countries, with only 20 countries registering net gains.
- Decline in Internet Freedom : The global Internet freedom has declined for the 13th consecutive year.
- The sharpest rise in digital repression was witnessed in Iran, where authorities shut down Internet service, blocked WhatsApp and Instagram, and increased surveillance in a bid to quell anti- government protests.
- China, for the ninth straight year, ranked as the world's worst environment for Internet freedom, with Myanmar the world's second most repressive for online freedom.
- Use of AI : It has raised a red flag on the increasing use of artificial intelligence by governments for censorship and spread of disinformation.
- Legal Repercussions: People faced legal repercussions for expressing themselves



online in a record 55 countries this year, and the number of countries where authorities carry out widespread arrests and impose multi-year prison terms for online activity has risen sharply over the past decade, from 18 in 2014 to 31 in 2023.

- **Role played by Elections:** Ahead of election periods, many leaders criminalised broad categories of speech, blocked access to independent news sites, and imposed other controls over the flow of information to sway balloting in their favour.

Indian Scenario

- On a range of 1 to 100 where '100' represented highest digital freedom and '1' the worst repression, India scored 50, while Iceland, with 94, emerged as the country with the best climate of Internet freedom.
- India also figured among the list of countries that blocked websites hosting political, social, or religious content, deliberately.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules require large social media platforms to use AI-based moderation tools for broadly defined types of content
- — such as speech that could undermine public order, decency, morality, or the country's sovereignty, integrity, and security, or content that officials had previously ordered removed.

Abortion Rights

Why in News

- In a recent case before the Supreme Court of India, a two-judge bench faced a complex issue related to the termination of a 26-week pregnancy.

Important Points

- The case involves a 27-year-old woman who already has two children and is suffering from postpartum depression.
- A six-member medical board advised against terminating the pregnancy on October 6, citing several reasons.



Reasons Against Termination

- Risk of Postpartum Psychosis: Termination at an advanced stage could lead to postpartum psychosis, a severe mental condition characterized by hallucinations and delusions.
- Prior Cesarean Sections: The woman had undergone cesarean sections during her two previous pregnancies, increasing the risk of complications.
- Viability of the Foetus: Most importantly, the baby is already viable and has a reasonable chance of survival.

Medical Questions Raised

- The doctor has raised four key medical issues in the clarification sought from the court :
- Foetal Viability: The doctor emphasizes that the baby is currently viable, showing signs of life and a strong chance of survival. This raises the question of whether foeticide, the stopping of the foetal heart, can be performed before termination.
- Potential Consequences: The doctor highlights that if foeticide is not performed, a preterm and low birth weight baby may require a long stay in the intensive care unit with a high risk of immediate and long-term physical and mental disabilities, affecting the child's quality of life.
- Parental Decision: In the event that the baby is born, a directive is needed regarding the parents' decision to keep the child, as it could have significant physical, mental, emotional, and financial implications.
- Adoption Process: If the parents decide to put the child up for adoption, the process must be clearly defined.



**जिस-जिस पर यह जग हंसा है,
उसी ने इतिहास रचा है।**

Current Abortion Laws in India

- The Medical Termination of Pregnancy law in India permits abortion up to 20 weeks in cases where there is a risk to the woman's life, affects her physical or mental well-being, the foetus has abnormalities, or the pregnancy resulted from a failure of contraception.
- Abortion beyond 20 weeks may also be allowed based on the advice of a medical board.
- India has a central law called The Medical Termination of Pregnancy (MTP) Act, which permits licensed medical professionals to perform abortions in specific predetermined situations as provided under the legislation.
- Before the enactment of the MTP Act in 1971, the medical termination of pregnancy was governed by the Indian Penal Code (IPC).
- Most of these provisions aimed at criminalising abortions, except where the procedure was done in good faith in order to save the woman's life.
- The provisions failed to make a distinction between wanted and unwanted pregnancies, making it extremely onerous for women to access safe abortions.
- In 1971, the MTP Act was enacted by Parliament as a "health" measure, "humanitarian" measure and "eugenic" measure, to decriminalise abortion in certain defined circumstances and under due supervision of registered medical practitioners.
- Under the 1971 law, a pregnancy could only be terminated under Section 3(2) if it did not exceed 20 weeks.
- It laid down that the pregnancy can be terminated on the opinion of one doctor if

it is done within 12 weeks of conception and two doctors if it is done between 12 and 20 weeks.

- The 2021 amendment to the MTP Act: Rule 3B permitted abortion up to 24 weeks for women due to change of marital status during the ongoing pregnancy (widowhood and divorce), besides in cases of survivors of rape, victims of incest, and other vulnerable women (like differently-abled women and minors).
- Significantly, the 2021 amendment replaced the word “by any married woman or her husband” with the words “any woman or her partner”, bringing within the fold of the law pregnancies outside marriage institutions.

Muslim Women’s Right to Divorce

Why in News

- The Supreme Court will examine a 2021 ruling of the Kerala High Court affirming a Muslim woman’s right to pronounce extrajudicial divorce by way of “khula”.

Important Points

- In 2021 a judgment by a Kerala High Court Bench dealt with the conditions of khula. It said that a Muslim woman’s right to khula is “absolute” and “does not depend upon the consent or assent of the husband”.
- The SC will now reconsider whether Muslim women lost their right to extrajudicial divorce after the passage of the Dissolution of Muslim Marriages Act, 1939.
- Extrajudicial divorces are those that take place without the court’s intervention.



What is khula ?

- Khula refers to the right of a Muslim woman to unilaterally divorce her husband. This is similar to the right of talaq conferred upon Muslim men under Sharia law. The recognition of khula as a form of divorce stems directly from the Holy Qur’an.
- However, scholars differ on the manner in which khula has to take place.
- According to the Hanafi school of Islamic jurisprudence, the husband’s consent is a prerequisite for a valid khula.
- The sitting Kerala H C judge, has said that a wife’s right to khula is analogous to the husband’s right to pronounce talaq, on being convinced of the irretrievable breakdown of the marriage.

Other forms of extrajudicial divorce available to Muslim women

- Talaq-e-Tafwiz: This is contract-based divorce. As Islam views marriage as a

contract, the parties are free to choose the terms of their contract and decide how their marital lives will be regulated. If a husband violates any condition agreed upon at the time of marriage, the wife will be entitled to divorce without the court's intervention.

- However, the conditions in the contract should be reasonable, and not go against public policy. For instance, if the husband marries again without the wife's permission, or neglects her, etc., are valid grounds for divorce.
- **Mubaraat:** This is a form of separation by mutual consent. The offer to dissolve the marriage may come from either side. Once both parties enter into mubara'at, all mutual rights and obligations of the spouses come to an end. Both Shi'a and Sunni sects deem this form of divorce to be irrevocable.
- **Faskh:** This is divorce through the intervention of the court, or an authority like a qazi. While khula is given by one of the spouses and mubara'at by both spouses, Faskh is decided by a third party or external authority like an arbitrator, mediator, or judge.

Muslim Personal Law (Shariat) Application Act, 1937

- The Muslim Personal Law (Shariat) Application Act, 1937, recognises both judicial and extrajudicial divorce. Section 2 of the Act recognises all forms of extrajudicial divorce except Faskh.
- Section 5 of the Act, which allows the dissolution of marriage by court in certain circumstances, allows a district judge to dissolve a marriage based on the woman's plea.
- However, despite the existence of the Sharia Act, the Hanafi school did not allow women to obtain a decree from the court to dissolve their marriage.
- To resolve this situation, two years after the passage of the 1937 Act, the Dissolution of Muslim Marriages Act, 1939, was enacted.

Dissolution of Muslim Marriages Act, 1939

- The 1939 Act was passed to clarify and consolidate the provisions of the law relating to the dissolution of marriage by Muslim women.
- The Act extended the right to extrajudicial divorce to all Muslim women, regardless of the school of Islamic jurisprudence they followed.
- Section 5 of the Shariat Act was repealed and replaced with Section 2 of the 1939 Act, which laid down nine grounds for Muslim women to obtain a decree for dissolution of marriage. These grounds included cruelty, desertion, and husband's imprisonment for seven years or more.
- The 1939 Act recognised the Faskh route of extrajudicial divorce. All other modes of extrajudicial divorce under Section 2 of the Shariat Act remained untouched.

Electoral Bonds Scheme

Why in News

- The Supreme Court recently referred petitions challenging the 2018 Electoral Bonds Scheme to a five-judge Constitution Bench.

Important Points

- The top court is hearing petitions filed by two NGOs Common Cause and ADR, Congress leader Jaya Thakur and the CPI(M), challenging the scheme.
- While the Centre has termed the scheme “a big step towards electoral reform” which “will ensure transparency” and “accountability”, petitioners have contended that it affects transparency in political funding.



What is the Electoral Bonds Scheme ?

- Announced in the 2017 Union Budget, electoral bonds are interest-free bearer instruments used to donate money anonymously to political parties.
- Such bonds, which are sold in multiples of Rs 1,000,
- Rs 10,000, Rs 1 lakh, Rs 10 lakh, and Rs 1 crore, can be bought from authorised branches of the State Bank of India (SBI).
- The political parties can choose to encash such bonds within 15 days of receiving them and fund their electoral expenses. If a party hasn't encashed any bonds within 15 days, SBI deposits these into the Prime Minister's Relief Fund.
- There is no limit on the number of bonds an individual or company can purchase.
- Rationale: It aims to establish a transparent method of funding political parties which is vital to the system of free and fair elections.
- Political parties continue to receive most of their funds through anonymous donations which are shown in cash.

Why is the scheme facing a legal challenge and what are its larger criticisms?

- The scheme is challenged as “an obscure funding system which is unchecked by any authority”.
- Also, before the electoral bonds scheme was announced, there was a cap on how much a company could donate to a political party: 7.5 per cent of the average net profits of a company in the preceding three years.
- However, the government removed this limit by amending the Companies Act, 2013, opening the doors to unlimited funding by corporates.

Final hearing in apex court

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Petitioners urged the bench to decide the matter preferably before the bonds window for the 2024 LS elections opens.

TO BE HEARD ON: Oct 31 & Nov 1

TILL THEN: Centre, other parties have been told to submit written submissions in the matter

WHAT IS THE ELECTORAL BOND SCHEME?

Electoral Bonds, which were notified in Jan 2018 as a source of political funding, are issued by SBI. Donations under it enjoy 100% tax exemption and identities of donors are kept confidential both by the bank as well as the recipient party.



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- This amendment to the Companies Act may lead to “private corporate interests taking precedence over the needs and rights of the people of the State in policy considerations”.
- The anonymity of donors under the scheme further makes the process opaque instead of meeting its aim of bringing about transparency.
- It has been also claimed that because such bonds are sold via a government-owned bank (SBI), it leaves the door open for the government to know exactly who is funding its opponents.
- Critics have highlighted that more than 75 percent of all electoral bonds have gone to the ruling party at centre in 2022.
- Further, one of the arguments for introducing electoral bonds was to allow common people to easily fund political parties of their choice but more than 90% of the bonds have been of the highest denomination (Rs 1 crore) as of 2022.

Importance

- It is to be seen what decision the Supreme court takes on the issue. But, In the case of continuance of the Scheme, the principle of anonymity of the bond donor must be done away with.
- The bonds should ensure that the funds being collected by the political parties are accounted for clean money, thereby fulfilling the tenets of free and fair elections.

November 2023

SC Verdict on Same Sex Marriages

Why in News

- The Supreme Court unanimously ruled against legalising same sex marriage in India.

Highlights

- The fundamental right to marry: Judges agreed that there is no fundamental right to marry and the majority view is that the legislature or Parliament must decide on bringing in same-sex marriage.
- This is because granting same-sex couples the right to marry or enter into a union will involve changes to a vast range of legislative architectures and policies.
- Interpretation of Special Marriage Act: The verdict mentioned that the SC cannot strike down the provisions of the Special Marriage Act (SMA) or read words differently.
- The petitioners had asked the SC to interpret the word marriage as between “spouses” instead of “man and woman” and to strike down provisions of the SMA that are gender-restrictive.
- All judges unanimously agreed that it is not possible to tweak the Special Marriage Act, 1954 by using gender neutral language to allow same-sex marriage.
- Right to adopt a child: The specific guidelines by the Central Adoption Resource Authority (CARA) disallows same-sex or unmarried couples from jointly adopting a child.
- The verdict found that it is discriminatory to assume that only married, heterosexual couples can provide a safe space for raising children.
- Ultimately, the court shifted the burden to the executive — and encouraged it to reconsider the laws on adoption in line with the best interests and welfare of children.
- Civil unions: The bench also ruled in a 3:2 verdict against civil unions for non-heterosexual couples.
- A ‘civil union’ refers to the legal status that allows same-sex couples specific rights and responsibilities that are normally conferred upon married couples.
- Although a civil union resembles a marriage, it does not have the same recognition in personal law as marriage.
- All judges took note of the Centre’s stand that a high-level Cabinet committee will look into rights that can be conferred on non-heterosexual couples.



Special Marriage Act of 1954

- All marriages in India can be registered under the respective personal law Hindu Marriage Act, 1955, Muslim Marriage Act, 1954, or under the Special Marriage Act, 1954.
- The Special Marriage Act, 1954 is an Act of the Parliament of India with provision for civil marriage for people of India and all Indian nationals in foreign countries, irrespective of religion or faith followed by either party.
- The couples have to serve a notice with the relevant documents to the Marriage Officer 30 days before the intended date of the marriage.

Arguments in Favour of Same Sex Marriages in India

- The right to marry will mean LGBTQIA+ couples can avail the benefits and rights that come with the institution of marriage, such as insurance, adoption, and inheritance.
- Civil unions are not an equal alternative and do not address constitutional anomalies due to exclusion.
- The exclusion sends a message that the latter's marriages are not as significant as "real" marriages.
- Over 50 countries allow adoption rights of same-sex couples, which is more than the countries that allow same-sex marriages.
- The exclusion of same-sex couples from adopting has the effect of reinforcing the disadvantage already faced by the queer community.
- Law cannot make an assumption on good and bad parenting based on the sexuality of individuals.

Arguments Against Same Sex Marriages in India

- The fundamental importance of marriage remains that it is based on personal preference and confers social status.
- Importance of something to an individual does not per se justify considering it a fundamental right, even if that preference enjoys popular acceptance or support.
- While the concept of gender may be fluid, the concepts of mother and motherhood are not.
- Entire architecture of laws is to protect the interest and the welfare of children who are naturally born to heterosexual persons, and the State is justified in treating heterosexuals and homosexuals differently.
- The court could not interpret the SMA to include same-sex couples since the objective of the legislation is not to include same-sex couples within the realm of marriage.
- The court stated that a queer person has the right to choose an emotional, intimate and/ or live-in partner, even if such a relationship does not amount to a marriage or civil union.

- This is largely a restatement of the law laid down in ‘Navtej Singh Johar’, where the court had decriminalised homosexuality by striking down Section 377 of the Indian Penal Code.
- It has become amply clear that extending marriage to queer couples is a far more complex issue than the petitioners may have initially anticipated.
- New laws will have to be written, and wholesale amendments will have to be made to existing laws.
- The legislature must now take the lead in re-evaluating and improving Indian family law to make it more inclusive, gender-just, and non-discriminatory.

SC's says 'No Fundamental Right to Marry'

Why in News

- Recently some constitutional experts have raised a question on the recent verdict of the Supreme Court of India, with respect to same sex marriage.

Important Points

- Recently, the SC agreed that there is no fundamental right to marry under the Constitution.

Legality of Same-Sex Marriages in India

- The Right to marry is a statutory right rather than a fundamental or constitutional right under the Indian Constitution.
- Even though marriage is governed by a number of legislative acts, India's Supreme Court rulings are the only ones that have led to marriage's recognition as a Fundamental right.
- The right to marry is inextricably linked to the liberty guaranteed by the Constitution as a fundamental right, as is the ability of each individual to make decisions to exercise one's liberty to lead a respectful life.
- In the Supriyo Chakraborty case, the Supreme Court of India ruled that marriage is not a fundamental right. Because of this, the Court ruled that same-sex couples cannot get married. Experts believe that this is a wrong decision.
- Nonetheless, the court unanimously ordered that same-sex couples be shielded from harassment. The Court also issued directives to raise awareness among the authorities in this regard and even ordered the formation of a committee to investigate several matters.



November 2023

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Problems faced by the LGBTQ+ community

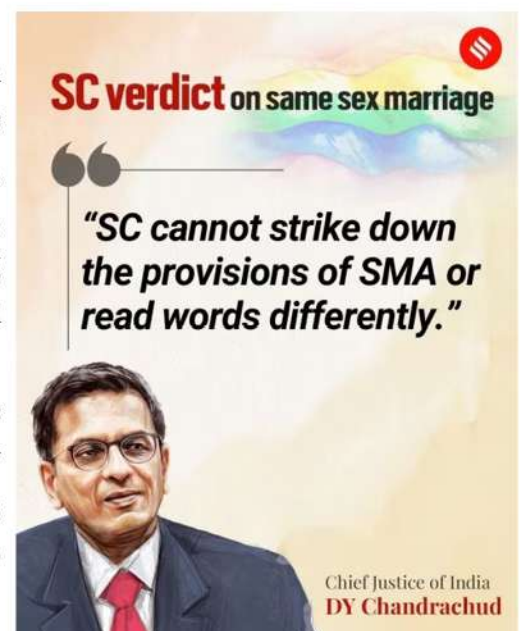
- **Discrimination and Stigmatization:** which manifest in various ways, such as employment discrimination, housing discrimination, and exclusion from certain social and religious communities.
- **Violence and Hate Crimes:** Hate crimes, harassment, and physical violence against LGBTQ+ individuals are ongoing concerns. These incidents have serious physical, emotional, and psychological consequences.
- **Mental Health Issues:** LGBTQ+ individuals are at higher risk of experiencing mental health challenges, including depression, anxiety, and suicidal thoughts, often because of social isolation, discrimination, and family rejection.
- **HIV/AIDS Disparities:** LGBTQ+ individuals, particularly gay and bisexual men, continue to be disproportionately affected by HIV/AIDS. Access to healthcare and prevention methods like Pre- Exposure Prophylaxis (PrEP) remains a serious concern.

Human Rights Declaration

- Experts argue that the Court ignored the fact that India was an original signatory to the Universal Declaration of Human Rights (UDHR), the founding document of all human rights in the world.
- As India is a signatory to the UDHR, and as such, state legislatures and the national parliament must enact laws that support the UDHR.
- More significantly, Indian courts have interpreted laws and the Constitution in accordance with the UDHR and other international agreements.
- The Supreme Court held, citing Article 16 of the Universal Declaration of Human Rights and the Puttaswamy case, that the right to marry the person of one's choice is fundamental to Article 21 of the Constitution.

SC Verdict

- According to SC judgment in Navtej Singh Johar and others v. Union of India (2018), one is entitled to all constitutional rights likewise, LGBTQ people "are entitled, as all other citizens, to the full range of constitutional rights including the liberties protected by the Constitution" in addition to having "equal protection of the law".
- SC in the NALSA case held that persons are entitled to identify their own gender. They may be born as males but if they want to identify as females or transgenders, they are entitled to do so.



- Pursuant to that, the Transgender Persons (Protection of Rights) Act was passed by Parliament which provides the procedure for changing one's gender and protection against discrimination in diverse establishments, private or state.

How MPs ask questions in Lok Sabha

Why in News

- Trinamool Congress MP Mahua Moitra said she welcomes answering questions from the CBI and the Lok Sabha Ethics Committee pertaining to cash for query allegations against her.

Important Points

- Earlier, Lok Sabha Speaker had referred the bribe-for-query complaint against MP Mahua Moitra to the Ethics Committee of the Lower House.
- The BJP MP had accused Mahua Moitra of accepting money from a businessman to ask questions in Parliament.



Procedure for raising the questions in Lok Sabha

✓ Existing rules

- The procedure for raising questions is governed by:
- Rules 32 to 54 of the "Rules of Procedure and Conduct of Business in Lok Sabha" and Directions 10 to 18 of the "Directions by the Speaker, Lok Sabha".

✓ Procedure

- To ask a question, an MP has to first give a notice addressed to the lower house's Secretary-General, intimating their intention to ask a question.

✓ The notice usually contains

- the text of the question,
- the official designation of the Minister to whom the question is addressed,
- the date on which the answer is desired, and
- the order of preference, in case the MP tables more than one notice of questions for the same day.

✓ Number of questions a member can ask

- A Member is allowed to give not more than five notices of questions, both for oral and written answers, in all, for any day.
- Notices received in excess of five from a Member for a day, are considered for the subsequent day(s) concerning that Minister(s) during the period of that session only.

- Usually, the period of notice of a question is not less than 15 days.
- 2 Ways through which MPs can submit the notices of their questions
- First, through an online 'Member's Portal', where they have to enter their ID and password to get access.
- Second, through the printed forms available in the Parliamentary Notice Office.



✓ Role of Speaker

- After submission of the notices, the next stage is when the Speaker of Lok Sabha examines the notices of the questions in the light of the laid-out rules.
- It is the Speaker, who decides if a question, or a part thereof, is or isn't admissible.
- Conditions for the admissibility of questions
- There are numerous rules that govern the admissibility of a question raised by an MP.
- For example, questions shall not ordinarily contain more than 150 words.
- They should not contain arguments, defamatory statements, refer to the character or conduct of any person except in their official or public capacity.
- Queries raising larger issues of policy are not allowed, for it is not possible to enunciate policies within the limited compass of an answer to a question.
- A question is not admissible if its subject matter is pending judgment before any court of law or any other tribunal or body set up under law or is under consideration before a Parliamentary Committee.
- A query also cannot seek information on matters which may weaken the unity and integrity of the country.

Different types of questions

✓ Starred questions

- A starred question is asked by an MP and answered orally by the Minister-in-charge.
- Each MP is allowed to ask one starred question per day.
- Starred questions have to be submitted at least 15 days in advance (so that the Minister-in-charge has the time to prepare the answers) and only 20 questions can be listed for oral answers on a day.
- When a question is answered orally, supplementary questions can be asked thereon.
- Starred questions are better suited to inquire about the government's views on issues and its policy inclination.

✓ Unstarred questions

- An unstarred question receives a written reply from the Ministry. These also need to be submitted at least 15 days in advance.
- Only 230 questions can be listed for written answers in a day.
- Unlike starred questions, unstarred questions do not permit any follow-up questions.
- Unstarred questions are more conducive for getting answers to queries related to data or information

✓ Short-notice questions

- Short notice questions are ones pertaining to a matter of urgent public importance.
- They can be asked with less than 10 days' notice, with reasons for the short notice.
- Like a starred question, they are answered orally, followed by supplementary questions.

✓ Questions addressed to private Members

- The question to a private Member is addressed to the MP themselves.
- It is asked when the subject matter pertains to any Bill, Resolution or any matter relating to the Business of the House for which that MP is responsible.

✓ Importance of raising questions

- Asking questions is an inherent and unfettered parliamentary right of an MP.
- The exercise is meant to act as a parliamentary device to practise legislative control over executive actions.

It can be used to :

- get information on aspects of administration and government activity,
- criticise government policies and schemes,
- throw light on government lapses, and
- push ministers to take substantive steps for the common good.



जब **खाहिश** कुछ अलग करने
की हो, तो **दिल** और **दिमाग** के
बीच **बगावत** लाजिमी है

Politicization of Bureaucracy

Why in News

- Recently the Union government has asked all departments to deploy officers to showcase its achievements across the country, creating a political row.

Important Points

- The circular is issued by the Department of Revenue, Ministry of Finance to nominate bureaucrats as “rath prabharis” for “showcasing achievements of the last nine years of government of India through the Viksit Bharat Sankalp Yatra.”
- Joint Secretaries, Directors, and Deputy Secretaries will be appointed as Rath Prabharis (chariots in-charge) for the roadshow.
- A similar order had been issued by the Ministry of Defense directing soldiers on annual leave to promote government schemes as “soldier-ambassadors”.
- Similarly, the Ministry of Defense is setting up 822 ‘selfie points’ where citizens can click a picture of the current Prime Minister of India.



Impact of Politicization of Bureaucracy

- Resistance from the opposition:** Opposition has alleged that the ruling dispensation is attempting to politicize the bureaucracy by drafting civil servants into government propaganda ahead of elections.
- Violation of the Central Civil Services (Conduct) Rules, 1964, which directs that no government servant shall take part in any political activity.
- Apprehensions about partisanship:** While both the bureaucracy and the military are strictly under the control of the political executive, they are insulated from partisan politics.
- Erosion of Neutrality:** The primary role of the bureaucracy is to implement government policies and programs impartially. Politicization can compromise this neutrality, as civil servants may be pressured to favor political objectives over the public interest.
- Undermining Professionalism :** A professional and competent civil service is essential for effective governance. Politicization can lead to the appointment of individuals based on political connections rather than merit, eroding professionalism and competence.
- Loss of Public Trust:** When citizens perceive that civil servants are serving political interests rather than the public good.

Reasons for the recent development

- Public service delivery is the government’s duty, and it is the public servants who are responsible in reaching out to the grassroots to ensure schemes’ saturation.
- Civil and military officials are expected to remain loyal to the government elected by the citizens, regardless of their personal ideological inclination.
- Expediting the implementation of schemes, ensuring that policies promised during election



Chapter
3

Environment & Ecology

The International Coral Reef Initiative (ICRI)

Why in News

- To protect and restore Coral reef ecosystems, the International Coral Reef Initiative (ICRI) announced a plan to raise \$12 billion from public and private sources.

Important Points

- The effort to protect coral reefs through an alliance of nations raising \$12 billion is certainly a positive step in addressing the threats facing these vital ecosystems. Coral reefs are indeed under significant stress due to factors like climate change, pollution, and overfishing.
- The goal of the ICRI to “secure the future” of 125,000 square kilometres of shallow-water tropical coral reefs and to double the areas under effective protection by the end of the decade is an ambitious and important objective.



International Coral Reef Initiative (ICRI)

- The International Coral Reef Initiative (ICRI) is a global partnership with the primary goal of preserving coral reefs and related ecosystems worldwide.
- It was founded in 1994 by eight governments: Australia, France, Japan, Jamaica, the Philippines, Sweden, the United Kingdom, and the United States of America. ICRI has since expanded to include over 100 members, including both nations and organizations.

Objectives

- ICRI's foremost objective is to promote the adoption of best practices in the sustainable management of coral reefs and associated ecosystems. This involves developing and sharing strategies to protect these fragile environments. This includes measures to mitigate the human-induced stresses that are causing significant degradation to coral reefs.
- ICRI is committed to enhancing the capacity of nations and organizations to effectively manage and conserve coral reefs. This includes providing training, technical assistance, and resources to support reef management efforts, especially in developing nations.

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November 2023



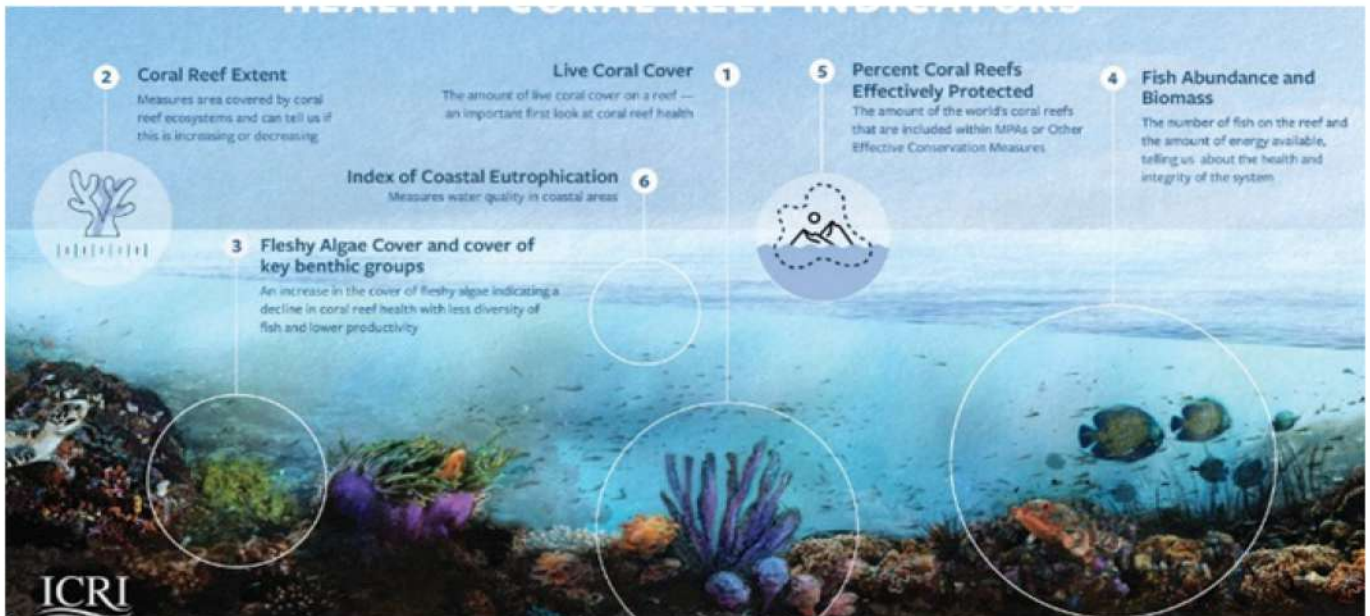
- ICRI plays a crucial role in raising global awareness about the importance of coral reefs and the threats they face. By engaging at all levels, from local communities to international organizations, ICRI helps highlight the significance of coral reefs to environmental sustainability, food security, and social and cultural well-being.

ICRI's operational framework includes

- **Integrated Management** : ICRI promotes integrated approaches to reef management that consider ecological, economic, and social aspects. This holistic approach ensures that reef management decisions take into account the interplay between environmental conservation, economic interests, and the well-being of local communities.
- **Science** : ICRI supports scientific research and monitoring to better understand coral reefs and their ecosystems. This scientific knowledge is crucial for informed decision-making and conservation efforts.
- **Capacity Building** : Building the capacity of nations and organizations to manage and conserve coral reefs effectively is a cornerstone of ICRI's work. This includes providing training, technical support, and resources to equip stakeholders with the necessary tools and knowledge.
- **Review** : ICRI regularly reviews its progress and outcomes to adapt and improve its efforts. This adaptive management approach allows the initiative to respond effectively to changing circumstances and emerging challenges.

Operational Structure

- ICRI operates through a Secretariat, which is hosted by member states for a specific term (typically around two years). The Secretariat is responsible for advancing ICRI's objectives through a specific Plan of Action. It also organizes General Meetings of Members at least annually and may organize side events at major international summits and conferences to raise awareness of ICRI's work.



- ICRI functions on the ground through its networks and committees, which can organize regional meetings and workshops on specific topics related to coral reef conservation. Member states may choose to implement ICRI's objectives through National Coral Reef Initiatives, aligning their efforts with the global partnership's goals.

Mount Kun

Why in News

- One soldier died and three are missing after a group of Indian Army mountaineers was caught in an avalanche on Mount Kun in Ladakh.

Important Points

- Mount Kun, also known as Kunlun, is a prominent mountain range in Central Asia that extends through China, Tibet, and parts of Pakistan and India.

About Mount Kun

✓ Geographic Location

- Mount Kun, part of the larger Kunlun mountain range, is situated in Central Asia.
- It extends across several countries, primarily China and Tibet, and stretches from the Pamir Mountains to the Qilian Mountains.
- The range is known for its impressive peaks, including Mount Muztagh Ata and Mount Kongur.

✓ Historical Significance

- Mount Kun has a rich history, with archaeological evidence suggesting that it was a crucial route on the ancient Silk Road.



✓ Cultural and Mythological Importance

- The mountain range has deep cultural and mythological significance in Chinese and Tibetan traditions.
- It is often associated with stories of mythical creatures and is considered a sacred place by many indigenous communities.

Geographic Features of Mount Kun

✓ Formation and Geology

- Mount Kun has a diverse geological history, with rocks ranging from sedimentary to metamorphic.
- It has been shaped by tectonic forces and glacial activity over millions of years.

✓ Glaciers and Rivers

- The mountains of Kunlun are the source of several major rivers, including the Yangtze and Yellow Rivers in China.

Significance

✓ Environmental Significance

- Biodiversity and Ecosystems: Despite the harsh climate and high altitudes, Mount Kun hosts a variety of wildlife and plant species, some of which are unique to the region. It is home to rare species like the snow leopard and Tibetan antelope.
- Climate and Water Sources: The mountains significantly influence the climate of the surrounding areas, particularly the monsoon patterns in the Indian subcontinent. They also serve as vital water sources for millions of people living downstream.

✓ Mount Kun in Culture and Religion

- Influence on Art and Literature: The majestic beauty of Mount Kun has inspired artists, poets, and writers for centuries, resulting in a rich cultural legacy.
- Role in Buddhism and Taoism: The mountains have deep spiritual significance in Buddhism and Taoism, with monasteries and temples dotting the landscape. They are associated with meditation and religious retreats.

✓ Geopolitical Importance

- Borders and Political Conflicts: Mount Kun spans regions with complex geopolitical boundaries, leading to historical and contemporary border disputes.
- International Relations: The region's strategic location and natural resources have implications for international relations, particularly in the context of the China-India-Pakistan nexus.
- Strategic Significance: Mount Kun holds strategic importance due to its proximity to border areas and as a source of critical resources like water.

Global Estimation of the Impact of Disasters on Agriculture

Why in News

- Recently, The Impact of Disasters on Agriculture and Food Security report released by the Food and Agriculture Organization of the United Nations (FAO).

About the report

- It brings the first-ever global estimation of the impact of disasters on agricultural production focused on crops and livestock.
- It also notes that the figure may be higher if systematic data on losses in the fisheries and aquaculture and forestry sub sectors were available.
- It shows that about \$3.8 trillion worth of crops and livestock production has been lost over the last 30 years
- The loss corresponded to an average of \$123 billion per year, or 5 percent of annual global agricultural gross domestic product (GDP).



Key Highlights

- Losses by product groups:** Agriculture is one of the most highly exposed and vulnerable sectors in the context of disaster risk, given its profound dependence on natural resources and climate conditions.
- Recurrent disasters have the potential to erode gains in food security and undermine the sustainability of agrifood systems.
- losses in cereals amounted to an average of 69 million tonnes per year in the last three decades – corresponding to the entire cereal production of France in 2021
- Meats, dairy products and eggs showed an average estimated loss of 16 million tonnes per year, corresponding to the whole production of meats, dairy products and eggs in Mexico and India in 2021.
- Regional differences:** Global losses mask significant variability across regions, subregions and country groups.
- Asia experienced by far the largest share of the total economic losses.
- Africa, Europe and the Americas also displayed a similar order of magnitude.
- In absolute terms, losses were higher in high-income countries, lower-middle-income countries and upper-middle-income countries
- Cascading impacts of disasters:** Disaster events have increased from 100 per year in the 1970s to around 400 events per year worldwide in the past 20 years.
- Disaster events impact is also expected to worsen, as climate-induced disasters amplify existing social and ecological vulnerabilities.

- Underlying disaster risk drivers include climate change, poverty and inequality, population growth, health emergencies caused by pandemics, practices such as unsustainable land use and management, armed conflicts and environmental degradation.
- In extreme cases, disasters result in the displacement and outward migration of rural populations.
- Farmers, particularly smallholders farming under rain-fed conditions, are the most vulnerable actors in the agrifood systems and bear the brunt of disaster impacts.

Suggestions and recommendations

- Supporting the adoption of farm-level disaster risk reduction good practices can help small-scale farmers to avoid losses and enhance their resilience.
- Investment in farm-level disaster risk reduction good practices can perform on average 2.2 times better than previously applied practices.
- Proactive and timely interventions in response to forecasted hazards are crucial to build resilience by preventing and reducing risks in agriculture.
- Improving data and information on the impacts of disasters on all subsectors of agriculture — crops, livestock, fisheries and aquaculture and forestry;
- Developing and mainstreaming multisectoral and multi-hazard disaster risk reduction approaches into policy and programming at all levels; and
- Enhancing investments in resilience that provide benefits in reducing disaster risk in agriculture and improve agricultural production and livelihoods.

Tradable Green Credit

Why in News

- The Government has introduced a program where an individual or entity can earn green credit and trade it on a dedicated exchange.

Green Credit programme

- Green Credit: It refers to a unit of an incentive provided for a specified activity; delivering a positive impact on the environment.
- A Green Credit programme is being launched at the national level to leverage a competitive market-based approach for green credit for incentivizing environmental actions of various stakeholders. This programme is a follow-up action of the 'LiFE'-(Lifestyle for Environment) campaign.



How to avail green credit ?

- Registration of the activity: The applicant needs to register the activity with the

Trading green

The programme will cover 8 types of activities, including tree plantation, water management and sustainable agriculture



■ Applicant shall register activity via web site

■ Activity will then be verified by a designated agency

■ Based on its report, administrator shall grant credit certificate

Administrator electronically through a website to avail green credit. The activity will then be verified by a designated agency and based on its report the Administrator shall grant the applicant a certificate of green credit.

- Calculation of green credit: Calculation in respect of any activity undertaken shall be based on equivalence of resource requirement, parity of scale, scope, size, and other relevant parameters required to achieve the desired environmental outcome.
- A Green Credit Registry will also be included. The Administrator will establish and maintain a trading platform.

Objectives of the initiative

- The initiative encourages industries, companies, and other entities to meet their existing or other obligations, under any law that is in force for the time being, and encourages other persons and entities to undertake voluntary environmental measures by generating or buying green credit.
- The programme will incentivise environmentally-positive actions through a market-based mechanism and generate green credit, which shall be tradable and made available for trading on a domestic market platform.
- However, the green credit generated or procured to fulfill any obligation, in compliance with any law, that is in force for the time being shall not be tradeable.

Buff-Breasted Sandpiper

Why in News

- Recently, a rare bird from the arctic tundra, Buff-breasted sandpiper, was sighted in Kannur, Kerala.

Buff-breasted Sandpiper



- Appearance :** The Buff-breasted Sandpiper is considered one of the most delicately beautiful of all shorebirds.
- Breeding and Migration :** These birds breed in the open arctic tundra of North America and usually migrate to South America for winters.
- Habitat :** During migration, they are commonly found in North American habitats, primarily on dry, open ground such as prairies and pastures.
- Mating Behavior :** Male Buff-breasted Sandpipers gather in groups on display territories known as leks. They display their eye-catching underwings to compete for the attention of females.
- Long-Distance Migrant :** This species is a champion long-distance migrant, traveling thousands of miles from their high-Arctic nesting grounds to winter on the grasslands of Brazil, Argentina, Uruguay, and Paraguay.
- Conservation Status :** The Buff-breasted Sandpiper is categorized as “Near Threatened” according to the International Union for Conservation of Nature (IUCN).

Key Facts about the Arctic Tundra:

- Biome Description:** The Arctic tundra is the northernmost biome, characterized by vast, dry, rocky landscapes with few trees.
- Geographical Range:** It covers the land north of the Arctic Circle up to the polar ice cap and reaches as far south as the Hudson Bay area of Canada and the northern part of Iceland.
- Etymology:** The word “tundra” originates from the Finnish word “tunturi,” meaning ‘treeless plain.’
- Permafrost:** One crucial characteristic of the tundra is permafrost, which refers to permanently frozen ground. The tundra’s soil is rocky and nutrient-poor, with slow organic matter decomposition.
- Carbon Sink:** Despite the absence of trees, the tundra is a significant carbon sink due to large amounts of organic matter found in peat and humus deposits.
- Temperature:** Temperatures in the tundra range from 15.5°C in summer to -60°C in winter. Mean temperatures remain below 0°C for six to ten months of the year.
- Annual Precipitation :** The annual precipitation in the tundra is around 150 to 250mm. Most of this precipitation does not evaporate due to the low temperatures.

Centre Raises MSP for Rabi Crops

Why in News

- The Cabinet Committee on Economic Affairs (CCEA) has increased the Minimum Support Prices (MSP) for all Rabi crops for the financial year 2024-25.

Important Points

- MSP is the guaranteed amount paid to farmers when the government buys their produce.
- MSP is based on the recommendations of the Commission for Agricultural Costs and Prices (CACP), which considers various factors such as cost of production, demand and supply, market price trends, inter-crop price parity, etc.
- CACP is an attached office of the Ministry of Agriculture and Farmers Welfare. It came into existence in January 1965.
- The Cabinet Committee on Economic Affairs (CCEA) chaired by the Prime Minister of India takes the final decision (approve) on the level of MSPs.
- The MSP is aimed at ensuring remunerative prices to growers for their produce and encouraging Crop Diversification.

✓ Crops Under MSP

- The CACP recommends MSPs for 22 mandated crops and fair and remunerative price (FRP) for sugarcane.
- The mandated crops include 14 crops of the kharif season, 6 rabi crops and 2 other commercial crops.

✓ Three Kinds of Production Cost:

- The CACP projects three kinds of production cost for every crop, both at state and all-India average levels.



- Cabinet nod for MSP hike for Rabi crops
- Absolute highest increase in MSP has been approved for lentil at Rs.425 per quintal
- Margin over All-India weighted average Cost of Production

• Wheat - 102%	• Gram - 60%
• Rapeseed & Mustard - 98%	• Barley - 60%
• Lentil - 89%	• Safflower - 52%

- 'A2': Covers all paid-out costs directly incurred by the farmer in cash and kind on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc.
- 'A2+FL': Includes A2 plus an imputed value of unpaid family labour.
- 'C2': It is a more comprehensive cost that factors in rentals and interest for owned land and fixed capital assets, on top of A2+FL.
- CACP considers both A2+FL and C2 costs while recommending MSP.
- CACP reckons only A2+FL cost for return.
- However, C2 costs are used by CACP primarily as benchmark reference costs (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States.

✓ Need for MSP :

- The twin droughts of 2014 and 2015 forced the farmers to suffer from declining commodity prices since 2014.
- The twin shocks of Demonetisation and the Rollout of GST, crippled the rural economy, primarily the non-farm sector, but also agriculture.
- The slowdown in the economy after 2016-17 followed by the pandemic further ensured that the situation remains precarious for the majority of the farmers.
- Higher input prices for diesel, electricity and fertilisers have only contributed to the misery.
- It ensures that farmers receive a fair price for their crops, which helps in reducing farm distress and poverty. This is particularly crucial in states where agriculture is a major source of livelihood.

Who decides what the MSP would be and how?

- The Cabinet Committee of Economic Affairs announces the MSP at the start of each sowing season, taking into account the recommendations of the Commission for Agricultural Costs and Prices (CACP).
- While recommending MSPs, the CACP looks at following factors:



- the demand and supply of a commodity;
- its cost of production;
- the market price trends (both domestic and international);
- inter-crop price parity;
- the terms of trade between agriculture and non-agriculture (that is, the ratio of prices of farm inputs and farm outputs);
- a minimum of 50 per cent as the margin over the cost of production; and the likely implications of an MSP on consumers of that product.

Concerns Related to MSP in India:

✓ Limited Extent:

- The MSP is officially announced for 23 crops, but in practice, only two, rice and wheat, are extensively procured and distributed under the National Food Security Act (NFSA).
- For the rest of the crops, the MSP implementation is ad-hoc and insignificant. This means that the majority of farmers growing non-target crops do not benefit from the MSP.

✓ Ineffective Implementation:

- The Shanta Kumar Committee, in its 2015 report, revealed that only 6% of the MSP was actually received by farmers.
- This suggests that a significant portion of farmers, around 94%, do not benefit from the MSP. The primary reason for this is inadequate procurement mechanisms and market access for farmers.

✓ Skewed Crop Dominance:

- The focus on MSP for rice and wheat has led to a skewed cropping pattern in favor of these two staples. This overemphasis on these crops can have ecological, economic, and nutritional implications.
- It may not align with market demands, thereby limiting income potential for farmers.

✓ Middlemen Dependency:

- The MSP-based procurement system often involves intermediaries such as middlemen, commission agents, and officials from Agricultural Produce Market Committees (APMCs).
- Smaller farmers, in particular, may find it challenging to access these channels, leading to inefficiencies and reduced benefits for them.

✓ Burden on Government:

- The government shoulders a significant financial burden in procuring and maintaining buffer stocks of MSP- supported crops. This diverts resources that could be allocated to other agricultural or rural development programs.

Little Ice Age (LIA)

Why in News

- A recent study showed the signature of moist conditions during the Little Ice Age (LIA) from the Western Ghats, India.

Important Points

- It was one of the coldest periods of the past 10,000 years, a period of cooling that was particularly pronounced in the North Atlantic region.
- This cold spell, whose precise timeline scholars debate but which seems to have set in around 600 years ago, was responsible for crop failures, famines, and pandemics throughout Europe, resulting in misery and death for millions.
- The Little Ice Age followed the Mediaeval Warming Period (roughly 900–1300 CE) and preceded the present period of warming that began in the late 19th and early 20th centuries.



Impact on climate:

- It is best known for its effects in Europe and the North Atlantic region.
- Alpine glaciers advanced far below their previous (and present) limits, obliterating farms, churches, and villages in Switzerland, France, and elsewhere.
- Frequent cold winters and cool, wet summers led to crop failures and famines over much of northern and central Europe. In addition, the North
- Atlantic cod fisheries declined as ocean temperatures fell in the 17th century.

Key findings of the study

- It showed significant variations in rainfall patterns during that age, challenging the conventional notion of a uniformly cold and dry climate with reduced monsoon rainfall during the LIA.
- It suggested that northward movement of the Inter Tropical Convergence Zone (ITCZ), positive temperature anomalies, increased sunspot numbers, and high solar activity could be driving climate change and increased South West Monsoon.
- They attributed the weakest phase of the Indian Summer Monsoon (ISM) across the Indian subcontinent during the LIA, in general, to the southward shift of the ITCZ, resulting from increased northward energy flux across the equator during a cold northern hemisphere.
- The high-resolution palaeoclimatic records generated in the present study could be helpful in developing paleoclimatic models for future climatic predictions and

also for scientifically sound policy planning.

- Knowledge and understanding of climate change and Indian Summer Monsoon (ISM) variability during the Holocene could be of immense interest to strengthen the understanding of the present ISM-influenced climatic conditions, as well as of possible future climatic trends and projections.

Siena Galaxy Atlas (SGA)

Why in News

- Recently, astronomers have created a beautiful atlas of 400,000 galaxies in the cosmic neighbourhood of Milky Way and named it the Siena Galaxy Atlas.

Important Points

- It is a digital atlas that was created to get to know our universe better through several of the known galaxies.
- It was created using data from three astronomical surveys collected between 2014 and 2017 at Cerro Tololo Inter-American Observatory (CTIO) and Kitt Peak National Observatory (KPNO). Together, these surveys are known as the DESI Legacy Surveys.



How is it different from other atlases?

- It is dependent on state-of-the-art digital images captured by advanced technology, unlike previous atlases, which relied on antiquated equipment and photographic plates.
- As it is built on the images captured with highly sensitive instruments, it boasts the most accurate data.
- It is also the first cosmic atlas to feature the light profiles of galaxies- a curve that describes how the brightness of the galaxy changes from its brightest point to its dimmest.

Significance

- Cosmic atlases help astronomers spot patterns that help categorise new discoveries, such as stars that suddenly flare and then disappear (thus called 'transients').
- These atlases also allow astronomers to identify which objects are contenders for detailed follow-up studies.
- It helps in investigating everything from the births and evolutions of galaxies to the distribution of dark matter and propagation of gravitational waves through space.

Hang Gliders

Why in News

- The Directorate General of Civil Aviation (DGCA) recently issued a new set of regulations regarding the operation of powered hang gliders.

Important Points

- A hang glider is a type of aircraft that uses air currents to stay aloft.
- Unlike other aircraft, hang gliders have no engine or propeller.
- Instead, they rely on the wind to keep them in the air.



How does it work?

- Since a hang glider is unpowered, it can't take off from low ground. It has to be launched from somewhere high, like a hill or mountain.
- Gravity is the main force on a hang glider. This is the weight of the pilot and the wing.
- The weight produces the thrust that keeps the aerofoil moving through the air.
- The aerofoil shape of the wing stops the hang glider from dropping like a stone. It produces lift.
- The aerofoil forces the air flowing over the top of the wing to travel faster, thereby 'stretching' it to produce a low-pressure area.
- Meanwhile, the downward and forward motion of the wing compresses the air flowing under the wing.
- The aerofoil is then drawn up into the area of low pressure, producing lift.
- During the flight, the pilot controls the aircraft by the trapeze, both to change the direction and to vary the speed.

Powered Hang Gliders:

- A powered hang glider is an aircraft that combines the features of a traditional hang glider with those of a powered aircraft.
- They typically have a small engine attached to the frame, which allows the pilot to take off and stay in the air without having to rely on thermals or other weather conditions.
- This can make them a good option for anyone who isn't experienced enough to take advantage of the winds to stay in the air.

DGCA Regulations on Powered Hang Gliders :

- No individual is permitted to operate a powered hang glider without prior authorization from a DGCA-approved examiner or instructor.
- The qualified examiner or instructor must have a minimum of 50 hours of experience on powered hang gliders, including at least 10 hours on a dual machine.
- Furthermore, the approved examiner or instructor is responsible for conducting thorough checks and authorising other individuals to fly.
- Individuals must meet specific criteria before conducting test flights on a powered hang glider. This includes holding a valid Commercial Pilot Licence (CPL) with at least 25 hours of flying experience on a powered hang glider.
- Alternatively, an individual must possess authorization along with 50 hours of flying experience on a powered hang glider, as stipulated in the revised regulations.
- DGCA has mandated that any transaction involving the sale or transfer of a powered hang glider must be accompanied by a certificate issued by the DGCA. This certificate will only be granted following a thorough background check of prospective buyers conducted by the Ministry of Home Affairs (MHA).
- No owner or operator is allowed to lease, rent, or lend a powered hang glider to any individual or entity.
- The use of any remote sensing equipment, weapons, or photography and video recording devices on a powered hang glider is strictly prohibited without explicit permission from the MHA, unless it is deemed necessary for the safe operation of the aircraft or as specified by the relevant guidelines.
- Security measures approved by the Bureau of Civil Aviation Security (BCAS) shall be adopted at the place of parking as well as at the place of operation before each flight by the owner or operator.



**जीत निश्चित हो तो कायर भी
लड़ सकते हैं, बहादुर तो वो होते हैं,
जो हारने के भय से मैदान नहीं छोड़ते**

Drought in Amazon Rainforests

Why in News

- The Amazon rainforest is reeling from an intense drought. Numerous rivers vital for travel have dried up. As a result, there is no water, food, or medicine in villages of indigenous communities living in the area.

Important Points

- The Amazon rainforest, also known as Amazon jungle or Amazonia, is a lush tropical rainforest located in the Amazon biome that blankets most of the Amazon basin in South America.
- Encompassing an area of 7 million square kilometers, this region includes more than 3,300 formally recognized indigenous territories and spans across nine countries.
- Brazil holds the lion's share of this forest, covering 60% of its expanse, followed by Peru (13%) and Colombia (10%).



✓ Unprecedented Drought in the Amazon Rainforests:

- Between July 2023 and September 2023, eight Brazilian states experienced the lowest recorded rainfall levels in over 40 years.
- Projections indicate that below-average rainfall is anticipated to continue until year-end.
- This ongoing drought is emerging as another contributing factor to the escalating degradation of the Amazon, often referred to as the Earth's "lungs" due to its storage of over 150 billion metric tonnes of carbon.

✓ Ramifications of the Prolonged Drought:

- The Rio Negro, one of the planet's largest rivers by discharge volume, has dwindled to a record low level of 13.59 meters.
- The drought has also severely impacted the Madeira River, a critical Amazon tributary, causing the suspension of operations at the fourth-largest hydroelectric dam in Brazil, Santo Antonio, due to historically low water levels.
- An alarming number of fish and river dolphins, locally known as Boto, have been discovered dead due to the decreased water levels.
- The decomposing carcasses of these aquatic creatures have contaminated water sources in certain areas, forcing residents to employ this water for cooking, bathing, and drinking.
- Brazilian authorities express concerns that approximately 500,000 individuals may be adversely affected by the drought by the end of October.

- Manaus, the largest city and the capital of the Amazonas state, which has been severely impacted by the drought, declared states of emergency in 55 out of 62 municipalities due to the severe water scarcity.
- The abnormally dry conditions have heightened the Amazon rainforest's susceptibility to wildfires, leading to 2,700 wildfires reported in the state of Amazonas this month, marking the highest figure ever recorded for the month of October in the past 25 years.
- Smoke generated from these wildfires has significantly diminished air quality in Manaus, a city housing two million residents situated at the heart of the Amazon, reaching hazardous levels.

Underlying Causes of the Amazon Drought:

✓ Historical Precedence :

- While periods of drought are not unprecedented in the Amazon, the rainforest experienced a severe dry spell in 2021, marked as one of the worst in at least nine decades.
- The current drought, however, seems even more severe due to the simultaneous occurrence of two natural events that have disrupted cloud formation, exacerbating the region's already deficient rainfall levels.

✓ Influence of El Nino:

- El Nino is characterized by an abnormal warming of surface waters in the equatorial Pacific Ocean, altering global weather patterns.
- This weather phenomenon is known to escalate the probability of extreme heat events and record-breaking temperatures in numerous regions worldwide, including both terrestrial and oceanic environments.

✓ Elevated Atlantic Ocean Temperatures :

- Another contributing factor is the exceptionally high water temperatures observed in the northern tropical Atlantic Ocean.
- The process begins with the warming of ocean waters, which leads to the ascent of heated air into the atmosphere, ultimately reaching the Amazon rainforest.
- The influx of warm air impedes cloud formation, resulting in a significant reduction in rainfall.

✓ Alarming Research Findings for the Future of the Amazon Rainforests:

- A body of research conducted over the years has indicated that as global temperatures rise, the Amazon will experience more frequent and prolonged droughts.
- A study published in the journal "Proceedings of the National Academy of Sciences" (PNAS) in 2022 posited that if current rates of fossil fuel combustion persist, the Amazon could confront major droughts in 90% of years by 2060.
- Another study, featured in the journal "Nature" in 2022, emphasized that the Amazon rainforest's capacity to rebound from extended droughts has diminished over the past two decades, approaching a critical tipping point.

- Beyond this tipping point, the Amazon would transition from a luxuriant green forest to a drier, open savanna, resulting in the release of substantial carbon stores, further intensifying global warming.
- Over the past five decades, approximately 17% to 20% of the Amazon's expanse has been destroyed.
- Experts underscore the urgency of curbing deforestation and greenhouse gas emissions to safeguard the Amazon, as well as the need to restore degraded areas through reforestation efforts.

Sikkim flood on hydel projects

Why in News

- Recently, a sudden surge in the Teesta river washed away habitations in Sikkim, the Chungthang Dam, several bridges and parts of National Highway 10.

What triggered the floods?

- The floods in the Teesta river in Sikkim and West Bengal was triggered by a phenomenon called GLOF (Glacial Lake Outburst Flood).
- GLOF is a sudden release of water from a lake fed by glacier melt that has formed at the side, in front, within, beneath, or on the surface of a glacier.
- In case of the Sikkim floods, a large chunk of ice may have fallen from the glacier into the lake creating waves that toppled the moraine dam leading to a GLOF and causing severe flash floods downstream in the Teesta.



Status of hydel power projects :

- The 1,200 MW Teesta Stage III hydropower project located at Chungthang village in north Sikkim collapsed.
- The Chungthang dam, which has a majority stake of the State government under Sikkim Urja, has stopped generating electricity and has filed an insurance claim.
- After the floods, not only the Teesta Stage III hydro power project, but all the operational hydel power projects on the Teesta river in Sikkim have practically become defunct.
- Electricity generation of about 1,806 MW from hydel power projects in Sikkim has come to a halt because of the floods.
- The Sikkim government is yet to quantify the extent of damage in monetary terms.
- The loss due to GLOF-triggered floods will be in thousands of crores and certainly higher than the Sikkim earthquake (2011), where the loss was estimated to be RS. 7,425 crore.

Waiting to Happen! What was the Trigger?



As South Lhonak glacier continued to retreat amid global warming by another 400 m between 2008 and 2019, lakes only grew

Glacial lake outburst flood (Glof) like disaster was waiting to happen

Trigger could be anything from cloudburst to landslide, avalanche or earthquake

Mitigation Steps

First field expedition of glacial lake conducted in August 2014, followed by another in 2016 which resulted in a project to start siphoning off lake water

Three pipelines were installed to siphon off 150 millitres of water per second at that time

Central Water Commission initiated an advisory to evaluate the South Lhonak glacier

Early warning system was set in place in some locations by Centre for Development of Advanced Computing

Himalayan Problem

Problem of receding glaciers and the spectre of Glof devastation faces the entire Himalayan region as global warming provides new triggers in the young mountain ranges



Add to that the build-up of infrastructure, habitation, road networks and hydropower plants

A 2021 study warned that 'both the existing and planned hydropower plants are exposed to potential outburst floods from glacial lakes'

Outlook

- Activists and scientists are calling for a rethink on proposed hydel power projects.
- In the aftermath of the tragedy, the government should scrap the proposed Teesta IV project and review the upcoming Teesta VI project.
- The Sikkim government directed the State's Vigilance Police to conduct a comprehensive inquiry into any criminal irregularities in the construction of Teesta III dam project and submit a report.

Construction Dust

Why in News

- Mega infrastructure projects have draped Mumbai city with construction dust at a scale unprecedented in sweep and volume.

Important Points

- Record levels of airborne particulate matter, PM_{2.5} (fine particles that are 2.5 microns or less in diameter) and PM₁₀ (diameter of 10 microns or less) have been detected that together make up a lethal cocktail of pollutants which can be inhaled.

✓ What it consists?

- Construction dust throws up particulate matter whose composition is a mixture of liquid and solid elements that include cement, sand, stone, wood, chemicals, and even metal.
- Cement use releases chemical irritants like sulphur dioxide, nitrogen oxides (NO_x), and volatile organic compounds (VOCs), which irritate the respiratory tract.



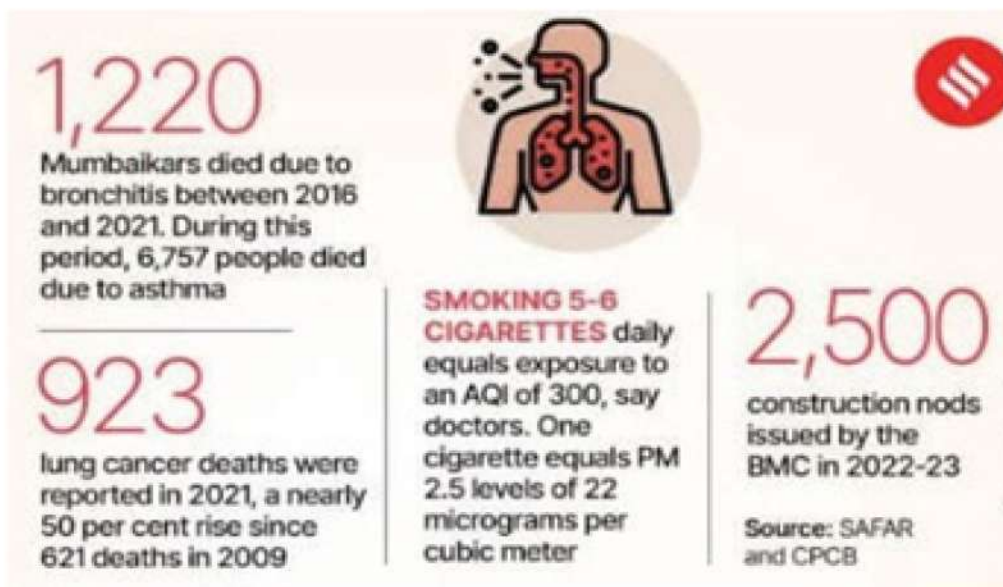
- Studies have also shown that cement production may incorporate heavy metals like lead, cadmium and chromium, and their inhalation is also behind severe health problems, including neurological disorders, kidney damage, and cancer.

Impact :

- Cement handling, common to all construction, generates PM2.5 and PM10 that can deeply penetrate the respiratory system.
- The finer PM2.5 can travel to and embed in deeper parts of the lungs while PM10 usually deposits on the larger airways of the lung's upper region.
- Inhaling these particles can cause lung irritation, inflammation, and worsen pre-existing conditions like asthma and chronic obstructive pulmonary disease (COPD), resulting in symptoms like continuous coughing and wheezing.
- Extended exposure can result in throat irritation, coughing, and breathlessness, potentially contributing to or worsening respiratory diseases
- Exposure to PM2.5: Long-term (months to years) exposure to PM2.5 has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children.
- Exposure to PM 10: The effects of long-term exposure to PM10 are less clear, although several studies suggest a link between long-term PM10 exposure and respiratory diseases.

Effects on construction workers

- Construction workers are particularly vulnerable to the adverse effects of airborne particles from construction activities.
- Prolonged exposure to construction dust can result in occupational diseases such as silicosis, a debilitating lung condition.
- Fine dust particles can enter the bloodstream, increasing the risk of heart and lung diseases in workers.



Outlook

- **Proper equipment** : Adequate workplace safety measures, including proper personal protective equipment and dust control, are essential to safeguard the health of those in the construction industry while mitigating the air pollution generated.
- **Awareness** : As the impact of construction dust is quite significant on health, experts call for more awareness, being mindful while carrying out construction work, and being careful while handling debris.
- **Measures by government** : Besides stringent implementation of guidelines, civic bodies must also take measures to recycle the waste material and debris from the construction sites as well as take measures to reuse the recycled debris again on construction sites. The municipal corporation needs to ensure that it develops a strong policy to control and mitigate dust.
- **Segregation of waste** : A lot of waste is generated during construction and demolition work, which must be disposed of carefully. A critical aspect is the segregation of this waste followed by transporting it to the recycling plants. This recycled waste can again be used for construction work.

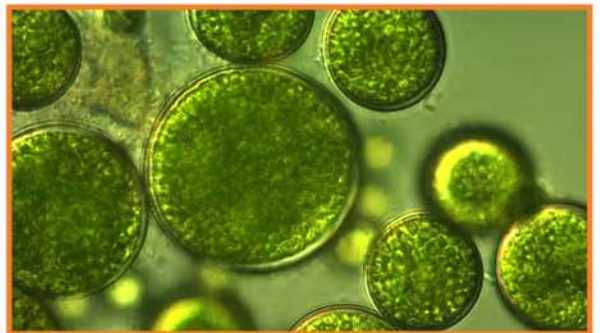
Microalgae

Why in News

- Microalgae, which form the base of the food chain in the ocean and capture carbon dioxide from the atmosphere, appear to rely on a unique strategy to cope with global warming, according to a new study.

How the microalgae are adapting?

- As climate change reduces the availability of nutrients in the sea, marine microalgae or eukaryotic phytoplankton fire up a protein called rhodopsin.
- It is related to the protein in the human eye responsible for vision in dim light.
- This light-responsive protein is helping the microalgae flourish with the help of sunlight in place of traditional chlorophyll.



What are Microbial rhodopsins?

- Microbial rhodopsins are proposed to be major light capturers in the ocean.
- Estimates suggested they may absorb as much light as chlorophyll-based photosynthesis in the sea, which also captures light to generate energy and food.

Need for adaptation

- Global warming is increasing drought on land and the same thing happens in the ocean:
- The warmer the surface water gets, the lower are the nutrients in these surface water layers.
- There is less mixing between the surface waters and nutrient-rich deeper waters as the oceans warm.
- So nutrients become scarce at the surface, impacting the primary producers such as microalgae that are present in the top layer.
- Algae starve and, therefore, produce less food and capture less carbon dioxide from the atmosphere

Key findings of the study

- To understand the role of rhodopsins, researchers cloned them in the lab and confirmed that they capture light to generate energy.
- Rhodopsins were found to be more concentrated in low latitudes, where there is less mixing of ocean waters and lower concentrations of nutrients, including dissolved iron.
- For algae to produce food and to remove carbon dioxide from the atmosphere, they need sunlight.
- To harness sunlight, the microalgae require a lot of iron.
- However, 35 per cent of the surface of the ocean does not have enough iron to support the growth of algae, he explained.

Relevance of Southern Ocean

- This is particularly relevant for the Southern Ocean, which is the largest iron-limited aquatic ecosystem.
- But they are home to the largest populations of consumers such as krill, fish, penguins and whales, which depend on primary producers such as microalgae.

Significance of the study

- These findings have the potential to reduce the negative effects of changing environmental conditions, such as ocean warming and even the reduction in the productivity of crops.
- The same mechanism could be deployed to enhance the activity of microbes that cannot use light, such as yeast.
- These can be modified so that they can use light for growth, which is desirable in biotechnology, such as the production of insulin, antibiotics, enzymes, antivirals and even biofuel.

Chapter

4

Economy

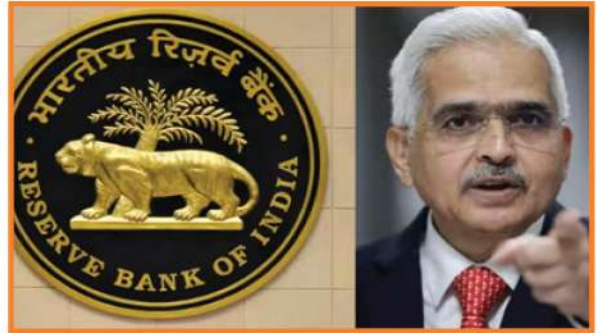
RBI's Status Quo

Why in News

- The Reserve Bank of India (RBI) has maintained its status quo on key interest rates for the fourth consecutive time in its recent Monetary Policy Committee (MPC) meeting.

Important Points

- The RBI has maintained a withdrawal of accommodation stance since June 2023, when it raised the repo rate by 25 basis points (bps) to 6.5%. This was the first rate hike since February 2020, when the repo rate was at 5.15%. The RBI cited rising inflationary pressures, supply-side shocks and global uncertainties as the reasons for tightening monetary policy.
- Since then, the RBI has kept the repo rate unchanged at 6.5% for four consecutive meetings, including the latest one on October 6, 2023.
- The MPC voted unanimously to keep the repo rate unchanged and five out of six members voted to retain the withdrawal of accommodation stance. The RBI said that it will continue to monitor inflation closely and will take further measures as necessary to anchor inflation expectations.



Implications for the economy and financial markets

- It signals that the RBI is concerned about inflation and is willing to sacrifice some growth for price stability. The RBI has revised its inflation projection for 2023-24 from 5.1% in August to 5.4% in October, citing higher commodity prices, supply chain disruptions, demand pressures and fiscal slippages as upside risks. The RBI's inflation target is 4% with a tolerance band of +/- 2%.
- It indicates that the RBI is preparing for a gradual normalization of monetary policy as the economy recovers from the pandemic shock. The RBI expects GDP growth to rebound to 9.5% in 2023-24 from a contraction of 7.3% in 2020-21, supported by robust consumption, investment, exports and government spending. The RBI also expects growth momentum to sustain in 2024-25 at around 8%.
- It affects the borrowing costs and bond yields in the market. The withdrawal of the accommodation stance implies that there is less scope for further rate cuts by the RBI and that there could be more rate hikes in the future if inflation persists. This increases the expectations of higher interest rates and reduces the demand for bonds, leading to higher

bond yields. Higher bond yields also increase the cost of borrowing for the government, corporates and households.

Steps to cope with the withdrawal of accommodation

- The government has announced various fiscal measures to support the economy during and after the pandemic, such as stimulus packages, tax relief, expenditure reprioritization, asset monetization and privatization plans. The government has also revised its fiscal deficit target for 2023-24 from 6.8% of GDP in February to 6.4% of GDP in July, indicating some fiscal consolidation.
- The government and the RBI have coordinated their actions to ensure smooth market functioning and debt management. The government has adopted a flexible and transparent borrowing calendar and has accepted the RBI's recommendations on the size, timing and maturity of bond issuances. The RBI has also conducted special OMOs, operation twists and G-SAPs (government securities acquisition programmes) to support the bond market and ease the yield curve.
- The government and the RBI have also taken steps to address the structural issues and supply-side bottlenecks that contribute to inflation. The government has announced various reforms in the agriculture, labour, infrastructure and financial sectors to improve productivity, efficiency and competitiveness. The RBI has also enhanced its communication and guidance on inflation expectations and policy outlook.

Challenges

- The persistence of inflation above the RBI's target range for several months could erode the credibility and effectiveness of monetary policy. It could also reduce the real income and purchasing power of consumers, especially the poor and vulnerable sections. It could also affect the external balance and exchange rate stability.
- The uncertainty and volatility in the global environment could affect India's growth prospects and financial stability. The emergence of new variants of COVID-19, the divergence in monetary policies among major economies, the geopolitical tensions, and the fluctuations in commodity prices and capital flows are some of the factors that could create shocks and spillovers for India.
- The trade-off between growth and inflation could become more challenging as the economy recovers from the pandemic. The RBI may face a dilemma between supporting growth with lower interest rates or containing inflation with higher interest rates. The RBI may also have to balance between providing adequate liquidity to the system or draining excess liquidity from the system.

Production Linked Incentive (PLI) scheme for white goods

Why in News

- The revised guidelines for the Production Linked Incentive (PLI) scheme for white goods in India reflect significant changes aimed at providing more oversight, clarity, and flexibility for participating companies.

Important Points

- The scheme is operational now. Out of 64 selected beneficiaries, 15 beneficiaries, who have opted for the gestation period up to 31st March, 2022, have started commercial production.
- Rest of the beneficiaries who have opted for Gestation period upto 31st March, 2023 are at different stages of implementation.
- The PLI Scheme for White Goods is designed to create a complete component ecosystem for Air Conditioners and LED Lights Industry in India and make India an integral part of the global supply chains.
- Domestic Value addition is expected to grow from the current 15-20% to 75-80%.

Highlights of the Revised Guidelines

- Revised Formula: The government has introduced a revised formula for calculating the value of production for captive use, sales to group companies, and related parties under the PLI scheme for white goods.
- Oversight and Verification: The Project Management Agency (IFCI in this case) is responsible for verifying incentive claims by selected manufacturers. The Department for Promotion of Industry and Internal Trade (DPIIT) has been given the authority to visit the manufacturing sites of the beneficiaries.



- **Dispute Resolution:** There were disputes over the quantum of incentive claims made by companies like Samsung. After the re-verification of output numbers, the issues have been settled, and the company will receive a revised incentive amount.
- **Guidelines for Related-Party Sales:** The guidelines allow the use of cost-plus criteria for determining arm's length price for sales to related parties, certified by a Cost Accountant. The value of additional output due to new investments is the basis for claiming incentives.
- **Return of Extra Money:** Companies that receive incentives based on claims that do not match statutory compliances must return the extra money received as incentives.
- **Extended Claim Filing Period:** The deadline for filing claims for a financial year has been extended to January 15th of the following year, providing companies with more time to file their claims.
- **Additional Production Site:** Companies have three years (instead of two) from the date of commercial production to inform the government about additional production sites they have set up.
- **Calculation of Investments:** The pending tool room will be added to the calculation of plant and machinery for determining the quantum of investments made by the companies.

Production Linked Incentive Scheme (PLI):

- Production Linked Incentive or PLI scheme is a scheme that aims to give companies incentives on incremental sales from products manufactured in domestic units.
- The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country's reliance on imports from other countries.
- It was launched in April 2020, for the Large Scale Electronics Manufacturing sector, but later towards the end of 2020 was introduced for 10 other sectors. This scheme was introduced in line with India's Atmanirbhar Bharat campaign.

The scheme initially targeted three industries :

- ✓ **Mobile and allied Component Manufacturing**
- ✓ **Electrical Component Manufacturing and**
- ✓ **Medical Devices.**

MPC Meeting

Why in News

- Recently, Reserve Bank of India (RBI) in its bimonthly Monetary Policy Committee (MPC) Meeting has retained benchmark interest rates unchanged for the 4th time in a row. The MPC kept the policy Repo Rate Unchanged at 6.50%.

Important Points

In the most recent MPC (Monetary Policy Committee) meeting, several crucial decisions and insights emerged:



- Repo Rate Held Steady** : The RBI unanimously decided to maintain the policy repo rate at 6.5% as a measure to balance economic growth and inflation control.
- GDP and Inflation Forecasts** : The RBI retained its real GDP growth forecast for 2023-24 at 6.5% and the average CPI inflation forecast for FY24 at 5.4%. However, the MPC raised its headline inflation projection for the second quarter to 6.4%.
- Inflation Target Commitment** : The RBI Governor emphasized a commitment to the 4% inflation target and underlined the importance of readiness to take timely actions to prevent food and fuel price shocks from affecting underlying inflation trends.
- Liquidity Management** : The RBI will actively manage liquidity in line with the monetary policy stance and may conduct Open Market Operations (OMO) sales as needed.
- Enhanced Gold Loan Limits** : The RBI announced the doubling of lending limits for Gold Loans under the Bullet Repayment Scheme (BRS) for urban cooperative banks to Rs 4 lakh, benefiting banks that have met their Priority Sector Lending (PSL) targets.
- Stance on Accommodation**: The RBI reiterated its stance of 'withdrawal of accommodation,' indicating a cautious approach as long as risks to inflation persist. This means reducing the money supply to counter further inflation.

Reasons for Maintaining Unchanged Benchmark Rates

- Economic Resilience**: Despite facing various uncertainties and challenges, the Indian economy has demonstrated resilience. This confidence in the economy's ability to withstand potential shocks contributed to the decision.
- Cumulative Impact of Previous Rate Hikes**: The MPC recognized the cumulative effect of prior policy repo rate increases, amounting to 250 basis points. Given the time required for these rate hikes to take full effect in the economy, the committee chose to maintain the rates in the current meeting.
- Commitment to Inflation Target**: The MPC remains dedicated to aligning inflation with the 4% target on a sustainable basis. The existing policy stance is considered essential to

achieve this objective without an immediate rate adjustment.

- Concerns about Food Price Shocks: The committee expressed concerns about the possible resurgence of food price shocks affecting headline inflation. Keeping rates unchanged may serve as a precautionary measure to closely monitor the situation and be prepared to respond promptly if inflationary pressures intensify.
- Concerns Flagged by the RBI in its MPC Meeting

The RBI raised several concerns during its MPC meeting:

- High Inflation as a Major Risk: The RBI considers high inflation a significant risk to both macroeconomic stability and sustainable growth. Despite a decrease in core inflation (excluding food and fuel components), uncertainties persist in the overall inflation outlook. Factors such as reduced kharif sowing for essential crops, low reservoir levels, and fluctuations in global food and energy prices contribute to this uncertainty.
- External Headwinds: The RBI highlighted various external headwinds, including geopolitical tensions, geoeconomic fragmentation, volatility in global financial markets, and a global economic slowdown. These external factors pose risks to the economic outlook and require careful consideration.
- Importance of Financial Stability: The RBI emphasized the importance of financial stability, considering it fundamental to price stability and growth. While acknowledging the financial sector's robust balance sheet, the RBI stressed the need for vigilance and strengthened internal surveillance mechanisms, particularly concerning the rise in personal loans.

Monetary Policy Instruments at RBI's Disposal Qualitative Instruments:

✓ Moral Suasion

- Non-binding persuasion and communication to influence banks' lending and investment decisions.

✓ Direct Credit Controls

- Regulation of credit flow to specific sectors or industries through RBI directives or credit limits.

✓ Selective Credit Controls

- Targeted measures that focus on specific types of loans, like consumer credit, to manage demand in specific economic areas.

✓ Quantitative Instruments:

Cash Reserve Ratio (CRR)

- The portion of a bank's deposits held as cash reserves with the RBI, affecting the funds available for lending.

✓ **Repo Rate**

- The interest rate at which RBI lends short-term funds to commercial banks, influencing their borrowing costs and lending rates.

✓ **Reverse Repo Rate**

- The interest rate at which banks can park excess funds with the RBI, setting a floor for short-term interest rates and managing liquidity.

✓ **Bank Rate**

- The rate at which RBI provides long-term funds to banks and financial institutions, impacting long-term money market rates.

✓ **Open Market Operations (OMOs)**

- RBI's buying or selling of government securities in the open market, affecting money supply and banking system liquidity.

✓ **Liquidity Adjustment Facility (LAF)**

- Comprises the repo rate and reverse repo rate, used by banks for short-term liquidity needs and daily liquidity management.

✓ **Marginal Standing Facility (MSF)**

- The rate at which banks can borrow overnight funds from RBI using government securities as collateral, serving as a secondary funding source.

✓ **Statutory Liquidity Ratio (SLR)**

- A percentage of a bank's net demand and time liabilities (NDTL) to be maintained in approved securities.



**घायल तो यहाँ हर परिंदा
है, मगर जो फिर से
उड़ सका, वही जिंदा है**

Wilful Defaulter

Why in News

- Recently RBI's Proposed Six-Month Timeline for Wilful Defaulter Classification

Important Points

- The Reserve Bank of India (RBI) in a recent draft proposed that lenders should classify a borrower as a wilful defaulter within six months of their account being declared a non-performing asset (NPA).

Timeline for Identification :

- Lenders must identify wilful defaulter borrowers within six months of their accounts being declared non-performing assets (NPAs).
- Previous system had no specific time constraint for identification.

Threshold for Assessment:

- Lenders must assess wilful default for accounts with outstanding amounts over Rs 25 lakh within six months of them becoming NPAs.

Identification Committee :

- A committee formed by lenders, known as the Identification Committee, reviews evidence of wilful default.

Penalties and Restrictions :

- Policies require non-discriminatory photo publishing for wilful defaulters.
- No credit is allowed to wilful defaulters for up to one year after their removal from the List of Wilful Defaulters (LWD).
- No credit for new ventures is permitted for five years after LWD removal.



जो सही करने की हिम्मत
उसी में आती है जो गलती
करने से नहीं डरते है।

Guarantors and Investigation :

- Guarantors can be pursued without exhausting remedies against principal debtors.
- Investigation of wilful default is necessary before transferring credit to others or Asset
- Reconstruction Companies (ARCs).

About Wilful Defaulter:

- Wilful defaulters are entities that have the ability to repay money but intentionally fail to do so.
- The concept of 'Wilful Defaulter' was introduced by the Reserve Bank of India (RBI) through its Master Circular, which defined the term and provided guidelines for banks and financial institutions to determine instances of wilful default.

Criteria for Wilful Default :

- According to the RBI, a wilful default is deemed to have occurred in the following circumstances:
- When there is a default in repayment obligations by a unit (company/individual) despite having the capacity to repay, indicating a deliberate intention not to repay the loan.
- When funds obtained for a specific purpose are diverted for other uses.
- When funds have been siphoned off and not utilized for the intended purpose, without any justifiable assets to account for the usage.
- When assets purchased with lenders' funds are sold off without the knowledge of the bank/lender.
- In cases where group companies of wilfully defaulting units fail to honor guarantees or letters of comfort provided to lenders when invoked, such group companies are also considered wilful defaulters.



**जीवन की सबसे बड़ा पल वो होगा
जब IAS बांके अपने माँ - बाप
के साथ ऐसी फोटो लोगे।**

Stock Splits

Why in News

- Stock splits are routine corporate actions where a company divides its existing shares into multiple shares, reducing the price per share without changing its market capitalization.

Important Points

- A stock split occurs when a company divides its existing shares into multiple shares, altering the nominal value of its stock without affecting its market capitalization.
- Stock splits are typically expressed as a ratio, such as 2-for-1, 3-for-1, or any other combination. In a 2-for-1 split, for instance, shareholders receive two shares for every share they previously owned. While the overall value of the investment remains the same, the price per share decreases proportionally.
- The primary goal of a stock split is to reduce the stock price, making it more accessible to a broader range of investors.

Motives Behind Stock Splits

- By reducing the share price, stock splits enhance liquidity, making it easier for investors to buy and sell shares. Increased liquidity can lead to a more active and efficient market.
- Lower stock prices make shares more affordable for individual investors, encouraging broader participation in the market. This accessibility often attracts retail investors, thereby diversifying the shareholder base.
- Lower stock prices can create a positive psychological impact on investors. Individuals may perceive a lower-priced stock as more affordable and attractive, leading to increased demand.
- Companies often execute stock splits to signal confidence in their future performance. A split can convey the message that the company anticipates sustained growth, bolstering investor confidence.

WHAT ARE STOCK SPLITS?

A stock split is a multiplying or dividing of a company's outstanding share count that doesn't change its overall market value or capitalization, since no new capital is being paid into the company.

Common Stock splits:

2 for 1 or
3 for 1



Reverse Stock splits:

1 for 5 or
1 for 10

- Stock splits can lead to adjustments in options and derivatives contracts, ensuring continuity and preventing market disruptions.

Implications for Investors

- Stock splits do not have immediate tax implications for investors. However, when shares received through a split are eventually sold, capital gains taxes apply based on the adjusted cost basis, considering the split ratio.
- While the stock price decreases after a split, the dividend yield (dividends per share divided by the stock price) remains unaffected. Investors often view a stable or growing dividend yield positively.
- Stock splits can influence investor perception of a company's value. While the intrinsic value of the investment remains constant, a lower stock price might attract more investors, potentially driving up the stock price in the long run.
- Stock splits can lead to short-term price fluctuations. The market's reaction to a split can be influenced by investor sentiment, market conditions, and the company's overall performance.
- Studies suggest that while stock prices often experience a short-term surge after a split due to increased demand, the long-term impact on stock performance is uncertain. Investors should consider the company's fundamentals and market conditions when making investment decisions post-split.

Market Dynamics and Investor Behavior

- Stock splits challenge the Efficient Market Hypothesis, as the price adjustment does not correspond to any fundamental change in the company's value. This anomaly allows researchers to study investor behaviour and market inefficiencies.
- Behavioral finance theories propose that investors might overreact to positive news of a split, leading to a temporary price surge, or underreact, resulting in undervaluation. These behavioural biases can create trading opportunities for savvy investors.
- Institutional investors, such as mutual funds and pension funds, often adjust their portfolios in response to stock splits. Understanding their strategies can provide insights into market trends and investor sentiment.
- Stock splits can trigger algorithmic trading strategies. Automated algorithms are programmed to detect and exploit market anomalies, potentially amplifying price movements during and after a split.

Angel tax for start-ups

Why in News

- The Central Board of Direct Taxes (CBDT) has recently directed its officers to not carry out scrutiny of angel tax provisions for start-ups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT).

Important Points

- The tax department has asked its field officials to not do verification for the recognised start-ups for cases pertaining to Section 56 (2) (viib) of the Income-tax Act, which was amended in the Finance Act, 2023 bringing in non-resident investors also under the angel tax levy.
- Citing issuance of scrutiny notices to start-up companies under the CASS (Computer-Assisted Scrutiny Selection), the CBDT in its directive has stated that procedure has been laid out for the assessment of such startup companies, which have been recognized by the DPIIT and no verification is required for such start-ups for notices related to the amended provisions for angel tax.



Angel tax

- Angel tax is an income tax (at the rate of 30.6 percent) levied when an unlisted company issues shares to an investor at a price higher than its fair market value.
- It was first introduced in 2012 to deter the generation and use of unaccounted money through the subscription of shares of a closely held company at a value that is higher than the fair market value of the firm's shares.
- Earlier, it was imposed only on investments made by a resident investor. However the Finance Act 2023 proposed to extend angel tax even to non-resident investors.

Changes made for angel tax in Budget 2023-24 :

- The provision earlier stated that when an unlisted company, such as a start-up, receives equity investment from a resident for issue of shares that exceeds the face value of such shares, it will be counted as income for the start-up and be subject to income tax under the head 'Income from other Sources' for the relevant financial year.
- With the amendment, the government had proposed to also include foreign investors in the ambit, meaning that when a start-up raises funding from a foreign investor, that too will now be counted as income and be taxable.

The DPIIT-recognised startups were excluded from the angel tax levy.

- In May 2023, the Finance Ministry had exempted investors from 21 countries including the US, UK and France from the levy of angel tax for non-resident investment in unlisted Indian start-ups.
- However, the list excluded investment from countries like Singapore, Netherlands and Mauritius – which have traditionally been key geographies for start-ups to raise money.

Leniency plus' norms

Why in News

- The Competition Commission of India (CCI) has released a draft of revised lesser penalty regulations that provides for introduction of a “leniency plus” programme

Important Points

- It is a new cartel detecting tool and sheds light on how the competition watchdog intends to operationalize it.
- The “Leniency Plus” regime was part of the Competition (Amendment) Act 2023
- Leniency Plus is a proactive antitrust enforcement strategy aimed at attracting leniency applications by encouraging companies already under investigation for one cartel to report other cartels unknown to the competition regulator.
- The benefit that would entail such disclosure is a reduction of penalty in the first cartel to the person disclosing the information, without prejudice to the company obtaining lesser penalty regarding the newly disclosed cartel.
- This “leniency plus” regime is already recognised in jurisdictions like the UK, US, Singapore, and Brazil.



Competition Commission of India

- It is a statutory body of the Government of India, was established in March 2009 under the Competition Act, 2002.
- The goal of CCI is to create and sustain fair competition in the economy that will provide a ‘level playing field’ to the producers and make the markets work for the welfare of consumers.
- The priority of the Commission is to eliminate practices having adverse effects on competition, promote and sustain competition, protect the interests of consumers, and ensure freedom of trade in the markets of India.
- Mandate: To implement provisions of The Competition Act, 2002, which prohibits anti-competitive agreements and abuse of dominant position by enterprises; regulates mergers and acquisitions (M&A), which can have an adverse effect on competition within India. Thus, deals beyond a certain threshold are required to get clearance from CCI.

Composition :

- It has the composition of a quasi-judicial body, with one chairperson and six additional members.
- All members of the CCI are appointed by the Central Government.
- Headquarters: New Delhi.

What is Cartelisation?

- Cartels, which involve a group of businesses colluding to keep prices high, have been viewed by economists as a significant threat to the market economy.
- When businesses cooperate with each other rather than compete against each other, there could be many adverse consequences for consumers.

Bombay Stock Exchange (BSE)

Why in News

- The Bombay Stock Exchange (BSE) recently increased the transaction charges on the equity derivatives segment.

Important Points

- It is the oldest and largest stock exchange in India.
- It was established in 1875 as the Native Share and Stock Brokers' Association.
- In 1957, the Indian Government gave recognition to the BSE under the Securities Contracts Regulations Act.
- It is located on Dalal Street, Mumbai, and lists over 6000 companies.
- BSE boasts a variety of trading options in equity, fiat, debt instruments, derivatives, and mutual funds.
- In addition, it offers multiple trading services like clearing, settlement, risk management, and investor awareness.



How does the BSE work?

- The BSE employs an advanced, electronically managed trading portal to facilitate financial trades.
- The exchange allows shareholders to place orders online without requiring external help from industry experts.
- This process is possible through the direct BSE market access offered by the portal.
- Investors can trade on the BSE share market via a brokerage firm. For this, they need to pay a pre-determined price to the broker.
- The direct investment option is only for a section of investors with bulky BSE transactions to their credit.
- The BSE stock exchange has the Bombay Online Trading Platform (BOLT) to ensure a safe trading experience.
- The BSE Sensex stocks follow a T+2 transaction settlement scheme which implies that each transaction on the exchange takes two days to complete processing.
- BSE market complies with the regulatory guidelines imposed by SEBI to ensure investors' safety and capital market efficiency.

What is Sensex?

- Sensex is the benchmark index of the BSE.
- It was launched on January 1, 1986, as a basket of 30 stocks representing the country's largest, financially-sound companies listed on the BSE.
- The term 'Sensex' is a blend of words 'Sensitive' and 'Index' and was coined by stock market expert Deepak Mohini.
- The Sensex reflects the movements in the Indian stock market. It is considered the benchmark index of the Indian stock market.

How is the Sensex calculated ?

- It was calculated based on the market capitalisation, or "Full Market Capitalisation", when it was launched but shifted to a "Free-float Market Capitalisation" methodology from September 1, 2003.
- Free-float is the proportion of total shares issued by the company that is readily available for trading to the general public. It does not take into account promoters' holdings, government holdings, and other shares that will not be available in the market for trading in the ordinary course of events.

What are Derivatives?

- A derivative is a contract between two parties which derives its value/price from an underlying asset.
- The commonly used assets are stocks, bonds, currencies, commodities and market indices.
- These instruments allow investors and traders to speculate on the price movements of the underlying asset without owning it directly.
- The value of the underlying assets keeps changing according to market conditions. The basic principle behind entering into derivative contracts is to earn profits by speculating on the value of the underlying asset in future.
- Derivatives serve various purposes, including hedging against risks, providing leverage, and facilitating price discovery.

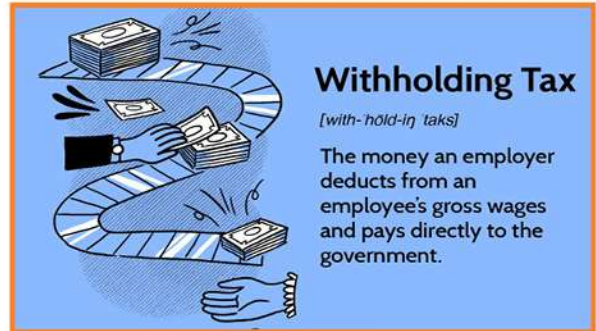
Withholding Tax

Why in News

- The Supreme Court (SC) recently held that without an express notification, the companies cannot, automatically, claim lower withholding tax of 5%, even if provided for in the Direct Tax Avoidance Agreement (DTAA).

Important Points

- Withholding tax is withheld or deducted from certain types of income, such as wages, dividends, interest, and royalties, when they are paid to the recipient (non-resident individual).
- It is also known as Retention tax.
- The purpose of withholding tax in India is to ensure that the government receives a portion of the income tax owed by the recipient.
- Withholding tax is applicable in the case of payments made to non-resident individuals.
- If the income is paid in India, the person responsible for payments to NRI must deduct the withholding tax at the time of payment or when the amount is credited to the NRI's account, according to Section 195 of the Income Tax Act.
- The amount of withholding tax in India depends on the type of income, the amount of income earned, and the tax laws of the country where the income is earned.
- The tax rate is decided as prescribed in the Income Tax Act, 1961, or Double Taxation Avoidance Agreement (DTAA), whichever is lower.
- The central government of India collects this tax.
- India has signed DTAA with many countries to avoid taxing individuals twice for the same income (in India and the partner country). Currently, India has DTAA treaties with more than 80 countries around the world.



How to determine tax liability for withholding tax?

- To calculate tax liability, it is important to know the residential status of any person: "Resident Indian" and "Non-Resident Indian".
- An individual is considered to be a resident in India for tax purposes if he or she satisfies any of the following conditions:
 - Stays in India for 182 days or more during the financial year, or
 - Stays in India for 60 days or more during the financial year and for 365 days or more during the 4 years immediately preceding the financial year.
- If an individual does not meet either of these conditions, he or she will be considered a non-resident for tax purposes.

Income earned or received in India:

- If an individual is a resident of India for tax purposes, he or she will be taxed on his or her global income, including income earned or received in India and outside India.
- If an individual is a non-resident of India for tax purposes, he or she will be taxed only on the income earned or received in India.

Citizenship or place of birth:

- Citizenship or place of birth is not a determining factor for residential status for tax purposes in India.
- An individual may be a citizen of India or born in India but may still be considered a non-resident for tax purposes if he or she does not meet the criteria outlined above.

Difference between Withholding Tax and TDS?

- Withholding Tax: It is the amount that is deducted in advance, and the same is deposited with the government before the amount is paid to the payer. It is generally applicable on payments to non – residents, that are foreign transactions.
- TDS (Tax Deducted at Source): A person (deductor) who is required to make a payment of a specific nature to another person (deductee) must deduct tax at source and send it to the Central Government's account. It is applicable on specified transactions under the income tax act, 1961 to both resident and non-resident.
- Both withholding tax and TDS serve the same purpose: to ensure that taxes are collected at the source of income. They are used to ensure tax compliance and prevent tax evasion.



जब **खाहिश** कुछ अलग करने की हो, तो **दिल** और **दिमाग** के बीच **बगावत** लाजिमी है

4% Hike in DA

Why in News

- Centre approves 4% hike in DA for central govt employees

Important Points

- The Union Government recently took a significant step to benefit Central government employees and pensioners by increasing the Dearness Allowance (DA) and Dearness Relief (DR) by 4%. This increase will be effective from July 1, 2023.



Increase in Dearness Allowance and Relief

- Union Minister Anurag Thakur announced a 4% increase in Dearness Allowance and Dearness Relief.
- The DA will go up from 42% to 46%.
- This decision benefits a large number of people, including 48.67 lakh central government employees and 67.95 lakh pensioners.

Determining Dearness Allowance

- The dearness allowance for employees and pensioners is calculated based on the Consumer Price Index for Industrial Workers (CPI-IW), published monthly by the Labour Bureau.
- The release of the additional installment of DA and DR will be applicable from July 1, 2023.

Cabinet Approval

- The Union Cabinet, chaired by Prime Minister Narendra Modi, approved the release of this additional installment of DA and DR, aligning with the recommendations of the 7th Central Pay Commission.
- This 4% increase aims to compensate for the rising prices and inflation.

Financial Implications

- The combined impact on the government's finances, due to both Dearness Allowance and Dearness Relief, is estimated to be Rs. 12,857 crore per year.
- This increase will directly benefit around 48.67 lakh Central Government employees and 67.95 lakh pensioners.

Diwali Bonuses and Ad-Hoc Bonuses

- Additionally, the government approved Diwali bonuses for Group C and non-gazetted Group B level officials, including paramilitary forces.

- The finance ministry set a limit of Rs.7,000 for non-productivity linked bonuses (ad hoc bonuses) for central government employees for the year 2022–2023.

Bonus for Non-Productivity Linked Employees

- The Department of Expenditure, under the finance ministry, granted a non-productivity linked bonus (ad-hoc bonus) equivalent to 30 days' emoluments for the accounting year 2022- 23.
- This bonus extends to central government employees in Group 'C' and all non-gazetted employees in Group 'B,' who are not covered by any productivity-linked bonus scheme.

About DA

- The Dearness Allowance (DA) is a calculation on inflation and allowance paid to government employees and pensioners in India, Bangladesh and Pakistan.
- Dearness Allowance is calculated as a percentage of an Indian citizen's basic salary to mitigate the impact of inflation on people.
- The DA for the central government employees is calculated based on the latest Consumer Price Index for Industrial Workers (CPI-IW). The Labour Bureau, a wing of the Labour Ministry, publishes the CPI-IW data every month.
- There is a set formula to calculate the Dearness Allowance of central government employees and pensioners.
- At present, central government employees and pensioners get a 38 per cent DA and Dearness Relief, respectively.

DA Revision

- To fight against rising inflation, the central government increases the Dearness Allowance periodically.
- It is usually revised twice every year — in January and July.
- The announcement of the hike in DA and the payout is usually done in March.



जो सही करने की हिम्मत
उसी में आती है जो गलती
करने से नहीं डरते है।

Chapter
5

Science & Technology

Commercial Spyware

Why in News

- The commercial spyware is being extensively used by the governments around the world.

What is Spyware?

- It is defined as malicious software designed to enter a device, gather sensitive data, and forward it to a third party without the user's consent.
- It is used for commercial purposes like advertising, malicious spyware is used to profit from data stolen from a victim's device.



What is Commercial Spyware?

- It is a software that allows an attacker to keep an eye on the victim's device, potentially stealing data and causing harm in the real world.
- It can take away all the information from mobile devices but also turn on the camera and microphone without the owner's knowledge, effectively turning handsets into a spying device.

How are the Devices Targeted?

- Spyware gets attached to websites and downloads without going much into the notice of the user. There are many software's that get downloaded without any warning alongside the needed software and are very dangerous for our computer system.
- Another way of spyware entering systems is when the user clicks unverified links or downloads malicious contents on the computer system.
- When spyware enters the computer system it unethically accesses the information that it is not authorized to view.
- In most cases, it supplies this information to third-party users leading to data leaks. Sensitive information such as passwords and bank information.

Facts and Figures :

- ✓ According to the Carnegie Endowment for International Peace, during 2011-2023, at least 74 governments contracted with commercial firms to obtain spyware or digital forensics technology.
- ✓ In 2022, as per The New York Times, the FBI in the U.S. had bought a version of the Pegasus spyware and that Mexican authorities had deployed NSO products against journalists and political dissidents.
- ✓ According to Trade Data, in 2023, an Indian defence agency purchased equipment from an Israeli spyware firm that is being billed as a potential Pegasus alternative.

Threats and Problems Posed by Commercial Spywares

- The spyware can steal personal information that can be used for identity theft.
- If one has visited online banking sites, spyware can have access to bank account information or credit card details and sell it to third parties or use them directly.
- Spyware can also manipulate search engine results and deliver unwanted websites in your browser, which can lead to potentially harmful websites or fraudulent ones.

How to Prevent Spyware?

- Tech giants including Meta, Google, and Apple have taken concrete steps to address the problem of commercial spyware firms exploiting bugs in their software.
- Installing Antivirus: The best way to protect a system from spyware is to install a good quality Antivirus such as MalwareBytes, Adaware, etc.
- Beware of Cookie Settings: There are some websites that transfer confidential information alongside cookies. It is always advisable to keep a check on the cookie settings and set the settings to high security.
- Beware of the Pop-ups on Websites: It is not recommended to click on the pop-ups that appear on websites without reading them.
- Never Install Free Software: It is advised to always be very cautious when installing free software on systems. Most of the time free software has spyware attached to them and it can directly leak confidential user information.
- Always read Terms & Conditions: Always read Terms and Conditions before installing apps on the system. Never accept policies that breach privacy. Download only trusted and verified apps from Google PlayStore or Apple PlayStore for mobile phones to protect them from Spyware.

Matrix-M malaria Vaccine

Why in News

- The R21/Matrix-M malaria vaccine has been recommended for use by the World Health Organisation (WHO) after meeting required safety, quality and effectiveness standards.

Important Points

- The vaccine has been developed by the University of Oxford and the Serum Institute of India, leveraging Novavax's adjuvant technology.
- To date the R21/Matrix-M malaria vaccine has been licensed for use in Ghana, Nigeria and Burkina Faso.
- The R21 vaccine is the second malaria vaccine recommended by WHO, following the RTS,S/AS01 vaccine, which received a WHO recommendation in 2021.
- The R21 and RTS,S vaccines act against *P. falciparum*, the deadliest malaria parasite and the most prevalent on the African continent.



What is Malaria?

- Malaria is a life-threatening disease spread to humans by some types of mosquitoes. It is mostly found in tropical countries.
- **Transmission :** It is caused by plasmodium protozoa. The plasmodium parasites spread through the bites of infected female Anopheles mosquitoes. Blood transfusion and contaminated needles may also transmit malaria.
- Types of parasites: There are 5 Plasmodium parasite species that cause malaria in humans and 2 of these species – *P. falciparum* and *P. vivax* – pose the greatest threat. The other malaria species which can infect humans are *P. malariae*, *P. ovale* and *P. knowlesi*.
- *P. falciparum* is the deadliest malaria parasite and the most prevalent on the African continent. *P. vivax* is the dominant malaria parasite in most countries outside of sub-Saharan Africa.
- Symptoms: Fever and flu-like illness, including chills, headache, muscle ache and fatigue.

Disease Burden -

- According to the World malaria report, there were 247 million cases of malaria in 2021 compared to 245 million cases in 2020. The estimated number of malaria deaths stood at 619 000 in 2021 compared to 625 000 in 2020.

- Four African countries accounted for just over half of all malaria deaths worldwide: Nigeria (31.3%), the Democratic Republic of the Congo (12.6%), United Republic of Tanzania (4.1%) and Niger (3.9%).

Initiatives to Control Malaria by WHO

- The WHO's Global technical strategy for malaria 2016–2030 aims to reduce malaria case incidence and mortality rates by at least 40% by 2020, at least 75% by 2025 and at least 90% by 2030 against a 2015 baseline.
- 'E-2025 Initiative': The WHO has identified 25 countries with the potential to eradicate malaria by 2025 under the initiative.
- High Burden to High Impact (HBHI) initiative: WHO has initiated the initiative in 11 high malaria burden countries, including India.

Indian Government Initiatives to Control Malaria:

- The Government of India set a target to eliminate malaria in India by 2027.
- In India, a National Framework for Malaria Elimination (NFME) has been developed and launched in 2016 aligned with the Global Technical Strategy (GTS) for malaria elimination 2016-2030.
- Malaria Elimination Research Alliance-India (MERA-India): It was established by the Indian Council of Medical Research (ICMR) as a conglomeration of partners working on malaria control.

Geospatial Intelligence

Why in News

- During the summer of 2023, the United States experienced a string of exceptional natural disasters, including extreme heat, Canadian wildfires, severe flooding, and a powerful hurricane. The application of geospatial intelligence could prove instrumental in alleviating these crises.

Important Points

Geospatial Intelligence

- Geospatial intelligence leverages tools like Geographic Information System (GIS), Global Positioning System (GPS), and Remote Sensing for geographic mapping and analysis.

Spatial Data Collection

- These tools capture spatial information linked to the geographical location on Earth, often referred to as geotagging.



Location data can be categorized as :

- Static: Examples include road positions, earthquake events, or malnutrition rates in specific regions.
- Dynamic: This category covers data related to moving entities such as vehicles, pedestrians, or the spread of diseases.

Intelligent Mapping

- Geospatial technology can be employed to generate intelligent maps, aiding in the identification of spatial patterns within extensive datasets.

Supporting Decision Making

- Geospatial intelligence aids decision-making processes by prioritizing and allocating scarce resources based on their significance and urgency.

Significance of Geospatial Intelligence

- Cyclone Monitoring and Response
- Geospatial intelligence is essential for the National Hurricane Center to track cyclone formation, location, and trajectory.
- This information is crucial for resource allocation, issuing warnings, and managing evacuations.

Disaster Response and Relief

- After the 7.8 magnitude earthquake in Turkey and Syria (February 2023), geospatial intelligence identified damage and helped locate survivors.
- It facilitated the setup of aid stations and distribution of emergency supplies.

Climate-Related Event Prediction

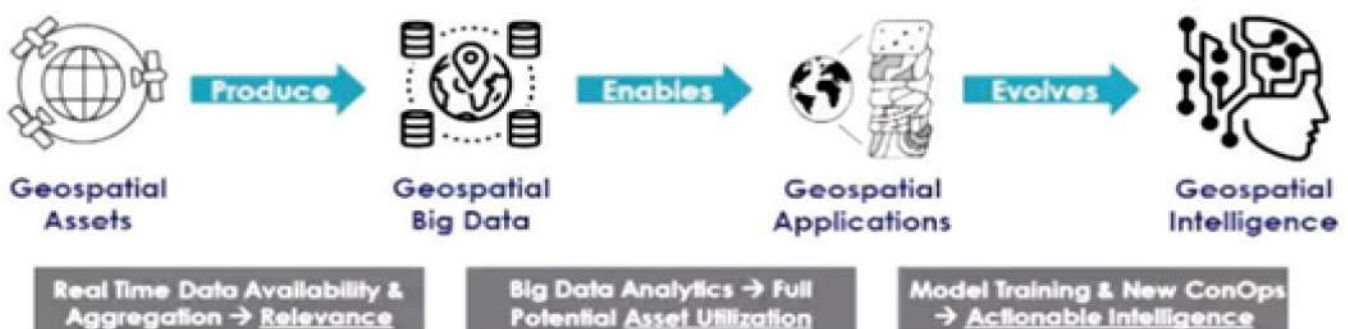
- Monitoring temperature, precipitation, snowpack, and polar ice assists in predicting and preparing for climate change-induced extreme weather events.

Border Management

- Satellite images provide critical information, such as tracking Russian ground forces in the Ukrainian conflict and monitoring border infiltrations.

Supply Chain Management

- GPS technology and geospatial data enhance the efficiency of global supply chain management, providing vital cargo movement information to governments and businesses.



Urban Development

- High-resolution imagery aids city planners in designing safer and more efficient communities, including features like bicycle lanes and traffic management.

Autonomous Vehicles

- Geospatial intelligence supports the development of autonomous vehicles by providing detailed ground-level data, contributing to safer and smarter transportation systems.
- Digital Twins and Modeling
- Digital twins, virtual replicas of real systems, are used for modeling and predicting outcomes, proving effective in simulating weather and terrain in conflict settings.
- Growing Need for Geospatial Intelligence
- Climate Change and Urbanization
- Rising temperatures and rapid urbanization have heightened the demand for geospatial intelligence.
- It assists in safeguarding communities and adapting to evolving environmental conditions.

Economic Growth in the Industry

- The geospatial intelligence industry is on a trajectory of substantial growth, with forecasts predicting an increase from \$61 billion in 2020 to over \$209 billion by 2030.
- This growth reflects its pivotal role in shaping a safe and informed future.

Data-Driven Agriculture

- Agriculture is becoming increasingly data-driven, with geospatial intelligence playing a vital role.
- It empowers farmers to make informed decisions regarding crop management, soil quality, irrigation, and pest control.
- In a country like India, where agriculture contributes around 18% of GDP and employs 48% of the workforce, this technology becomes particularly significant.

Government Initiatives to Promote Geospatial Technology in India

- **Geospatial Information Regulation Bill, 2021:** The government introduced the Geospatial Information Regulation Bill, 2021, which aimed to regulate the acquisition, dissemination, and use of geospatial information in India. It focused on setting guidelines for mapping and geospatial data collection, with a particular emphasis on national security concerns.
- **National Geospatial Policy, 2022:** The government launched the National Geospatial Policy, 2022, designed to streamline the utilization of geospatial intelligence and promote its various applications in the country.

Challenges in Geospatial Intelligence

- **Limited Demand Awareness:** There is a lack of significant demand for geospatial services and products in India, primarily due to insufficient awareness among potential users in both the government and private sectors.

- **Skills Gap:** The shortage of skilled manpower at all levels within the geospatial industry poses a significant challenge.
- **Data Availability:** The unavailability of high-resolution foundation data is a constraint. This data forms the basis for various applications and services.
- **Data Sharing and Collaboration:** A lack of clarity regarding data sharing and collaboration inhibits co-creation and asset maximization.
- **Lack of Tailored Solutions:** There is a dearth of ready-to-use solutions specifically tailored to address India's unique challenges and requirements in the geospatial domain.

Phonotaxis

Why in News

- Scientists have called the movement by an animal in response to a sound - Phonotaxis.

Phonotaxis

- It is the movement of an organism in relation to a sound source.
- Occurrence: It has mostly been observed among crickets, moths, frogs, and toads, among a few other creatures.



There are two types of phonotaxis: positive and negative -

Positive Phonotaxis

- The purpose of positive phonotaxis is attraction.
- It usually happens when the females of a particular species – including those of crickets and frogs – are attracted to the sounds made by the males.

Negative Phonotaxis

- Negative phonotaxis serves to repel or warn, such as when the sound of a predator nearby signals to an animal that it needs to move away.
- Crickets in particular have been found to steer themselves away from low-intensity ultrasound typically associated with bats (which use it for echolocation).

What does Research says?

- In 1984, scientists found that Mediterranean house geckos use positive phonotaxis to their advantage.
- The fields that these geckos inhabited were also home to male decorated crickets which used species-specific sounds to attract the females from their burrows.
- The geckos recognized and followed this call until they reached the burrow, where they consumed the female crickets.

Ozone Hole Detected Over Antarctica

Why in News

- Satellite measurements over Antarctica have detected a giant hole in the ozone layer.

Important Points

- Ozone layer, also called ozonosphere, is a region of the upper atmosphere, between roughly 15 and 35 km (9 and 22 miles) above Earth's surface which contains relatively high concentrations of ozone molecules (O₃).
- Approximately 90 percent of the atmosphere's ozone occurs in the stratosphere, the region extending from 10–18 km (6–11 miles) to approximately 50 km (about 30 miles) above Earth's surface.
- The ozone layer effectively blocks almost all solar radiation of wavelengths less than 290 nanometres from reaching Earth's surface, including certain types of ultraviolet (UV) and other forms of radiation that could injure or kill most living things.



What are Ozone Holes?

- The 'ozone hole' is not really a hole — it refers to a region in the stratosphere where the concentration of ozone becomes extremely low in certain months.
- The 'ozone holes' most commonly talked about are the depletions over Antarctica, forming each year in the months of September, October and November, due to a set of special meteorological and chemical conditions that arise at the South Pole, and can reach sizes of around 20 to 25 million sq km.
- Such holes are also spotted over the North Pole, but owing to warmer temperatures than the South Pole, the depletions here are much smaller in size.

Ozone creation and destruction

- The production of ozone in the stratosphere results primarily from the breaking of the chemical bonds within oxygen molecules (O₂) by high-energy solar photons. This process, called photodissociation, results in the release of single oxygen atoms, which later join with intact oxygen molecules to form ozone.
- The amount of ozone in the stratosphere varies naturally throughout the year as a result of chemical processes that create and destroy ozone molecules and as a result of winds and other transport processes that move ozone molecules around the planet.
- Over the course of several decades, however, human activities substantially altered the ozone layer.

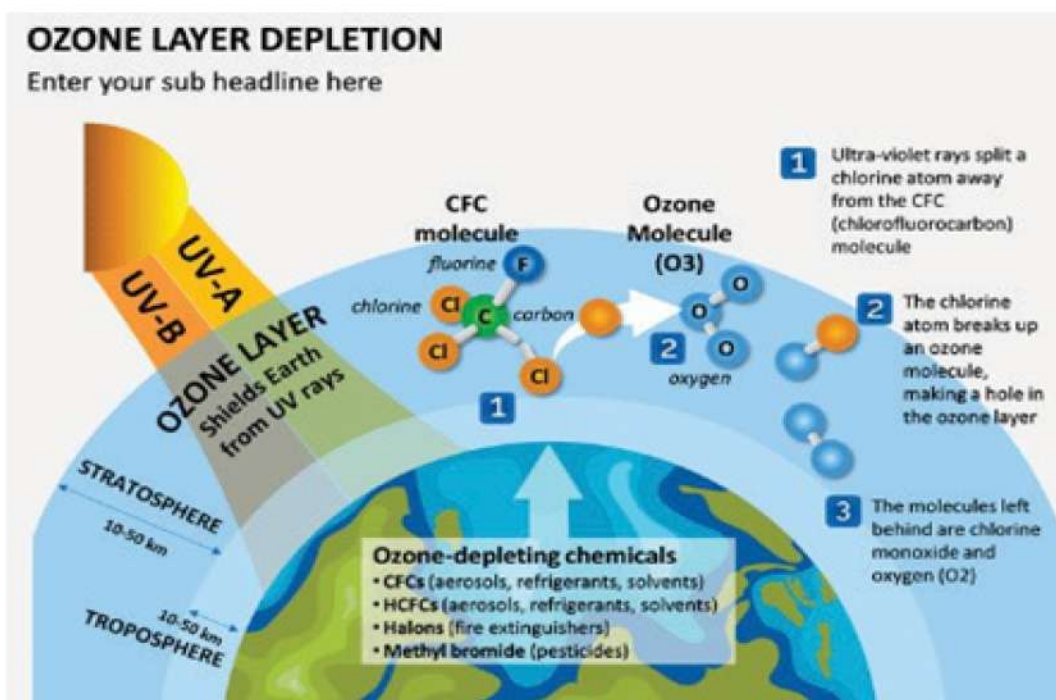
- Ozone depletion, the global decrease in stratospheric ozone observed since the 1970s, is most pronounced in polar regions, and it is well correlated with the increase of chlorine and bromine in the stratosphere.
- Those chemicals, once freed by UV radiation from the chlorofluorocarbons (CFCs) and other halocarbons (carbon-halogen compounds) that contain them, destroy ozone by stripping away single oxygen atoms from ozone molecules.
- As the amount of stratospheric ozone declines, more UV radiation reaches Earth's surface, and scientists worry that such increases could have significant effects on ecosystems and human health.

Ozone Holes Grow and Shrink Every Year

- The size of the ozone hole over Antarctica changes annually, typically opening in August and closing in November or December.
- It's caused by special winds over Antarctica due to the Earth's rotation, creating a shield over the continent that prevents mixing with surrounding air. When the winds calm down, the hole closes.

Causes of the Giant Ozone Hole in 2023

- The large ozone hole this year may be linked to volcanic eruptions at Hunga Tonga in Tonga during December 2022 and January 2023.
- Normally, gas from volcanic eruptions stays below the stratosphere, but this one released a lot of water vapor into the stratosphere.
- The water vapor, through chemical reactions, impacted the ozone layer and altered its heating rate. It also contained elements like bromine and iodine that can deplete ozone.
- There isn't strong evidence to attribute this ozone hole to human activities.



Is Climate Change Reopening Ozone Holes?

- Ozone depletion isn't a primary driver of global climate change, but rising temperatures could have an influence on ozone holes.
- Mitigation efforts for ozone holes were effective since the 1980s, but the 2020 and 2021 ozone holes were unusually deep and long-lasting, with wildfires in southeastern Australia contributing to the 2020 hole.
- The impact of ozone holes on Earth's climate is not entirely clear; some data suggests they might have cooling effects by reducing the greenhouse gas effect.

International Classification of Diseases (ICD)

Why in News

- The Centre seeks to include traditional Indian medicines in the 11th revision of the World Health Organisation's International Classification of Diseases (ICD).

Important Points

- The traditional Indian medicine system is categorized into Ayurveda, Siddha, Unani and Yoga, Naturopathy, and Homoeopathy
- The International Classification of Diseases (ICD) by the World Health Organization is a vital system used worldwide by healthcare professionals. It helps diagnose and report diseases and collect health data.
- The ICD is regularly updated to keep up with changes in medical knowledge and practices.
- Each disease or health condition in the ICD is given a special code. These codes are used in medical records, death certificates, and health data documents.
- The ICD is a crucial tool for healthcare professionals and researchers. It aids in diagnosing and treating diseases, monitoring disease spread, and creating health policies.
- India has traditional medicine systems like Ayurveda, Siddha, Unani, and Yoga, with a long history. They play a significant role in the country's healthcare.
- Integrating traditional medicine into global healthcare has been tough due to the lack of standardized terms and categories for these conditions.
- The Indian government aims to integrate Ayurveda into the global healthcare system. This initiative will create a common language for healthcare professionals worldwide and encourage research and evidence-based practices in traditional medicine.
- In the ICD-11, there was already a module (Module-1) for traditional medicine conditions from ancient China. This recognized the importance of traditional Chinese medicine globally, not only in China but also in countries like Japan and Korea.

India's quest to update ICD-11

- **Universal Language:** The ICD provides a universal language that enables healthcare professionals worldwide to share standardized information.
- **Traditional Medicine Module:** The 11th revision includes a module dedicated to traditional medicine conditions, offering a standardized way to collect and report data on these conditions internationally.
- **Formal Recognition:** Ayurveda and related Indian traditional healthcare systems are formally recognized and widely practised in India, making a strong case for their inclusion.
- **Chinese Medicine Inclusion:** After a decade of consultations, ICD-11 included Module-1, covering traditional medicine conditions originating in ancient China.

Key Highlights of the Initiative

- The Indian government is working to include Ayurveda and other traditional healthcare systems in the 11th revision of the ICD (International Classification of Diseases).
- This initiative aims to create a common language for describing traditional medicine conditions. It will help healthcare professionals, researchers, and institutions worldwide communicate effectively.
- Standardizing the terminology in traditional medicine is crucial for research and evaluating the effectiveness of these treatments. It helps establish evidence-based practices in Ayurveda and related systems.
- The initiative supports efforts to regulate traditional medicine as an integral part of the health system. This integration is vital for making traditional medicine a part of mainstream healthcare and information systems.
- The ICD-11 revision involves a shift to digital coding, making it easier to access and use the classification system in the modern age.
- The ICD-11 has around 17,000 unique codes and over 1,20,000 codable terms, making it a comprehensive and adaptable system for classifying diseases and healthcare conditions.
- Including Ayurveda in the ICD connects traditional medicine practices with global medical standards. This integration promotes collaboration between different healthcare systems.
- Integrating traditional medicine into the ICD allows reporting of adverse events. It enables traditional medicine to be included in insurance coverage and reimbursement systems, in line with WHO's goals for universal health coverage.

Significance of the Initiative

- Standard terms and categories are vital for clear communication in traditional medicine. They aid in research, evidence-based practices, and global collaborations.



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November 2023

- The initiative enables in-depth research, enhancing our understanding of traditional Indian medicine. This knowledge contributes to its development and integration into modern healthcare practices.
- Integrating traditional medicine ensures public safety and widens healthcare choices for patients, promoting a regulated and safer healthcare system.
- Inclusion in insurance and reimbursement systems makes traditional medicine more accessible to people, aligning with
- WHO's goal of universal health coverage.
- International recognition preserves India's cultural and medical heritage, promoting the rich tradition of Ayurveda and related systems.
- Individuals gain access to centuries-old traditional Indian medicine, offering a unique approach to healing and wellness, and expanding healthcare choices.
- Integration into the ICD fosters collaboration between traditional and conventional healthcare, promoting the exchange of knowledge and practices worldwide.



महानता वह नहीं होती कि
आप गिर गए और उठे ही
ना महानता उसे कहते हैं **जवाब**
गिरकर बार-बार उठते हैं

Mistral

Why in News

- Mistral AI released a 7.3 billion parameter language model positioned to compete against Meta's Llama 2.

Important Points

- Mistral, a French tech startup and Artificial Intelligence (AI) company was set up by former Meta (META.O) and Google AI researchers.
- It raised a record 105 million euros (\$113.5 million) in its seed funding round, just after launch, and has claimed first place for the most powerful LLM in the nifty size LLM space.
- It has released its model on GitHub under the Apache 2.0 licence, free and for everyone, unlike OpenAI's GPT models, and claimed its LLM is more capable than Llama 2, an open-source language model of Meta.



Mistral vs. Llama 2

- Mistral claimed its AI had beat Llama 2's 7 billion and 13 billion parameters versions quite easily in multiple benchmarks.
- Matter of accuracy: Mistral's model showed an accuracy of 60.1% on the Massive Multitask Language Understanding (MMLU) test which covers maths, history, law and other subjects, while the Llama 2 models showed an accuracy of around 44% (7 billion parameters) and 55% (13 billion parameters).
- In commonsense reasoning and reading comprehension benchmarks, Mistral outperformed Llama 2's models again.
- The French startup AI's accuracy was at 30.5% and 47.5% on the zero-shot Humaneval and three-shot MBPP benchmarks. Llama 2's 7 billion model delivered results of 31.1% and 52.5%.
- Only in coding, Mistral was behind Meta's AI mode.

Large Language Model (LLM)

- It largely represents a class of deep learning architectures called transformer networks. A transformer model is a neural network that learns context and meaning by tracking relationships in sequential data, like the words in this sentence.
- A transformer is made up of multiple transformer blocks, also known as layers, which can be stacked to make deeper transformers and powerful language models.
 - ✓ **Transformers were first introduced by Google in the 2017 paper "Attention Is All You Need."** Importance of LLM:

- Historically, AI models had been focused on perception and understanding. However, LLMs, which are
- trained on internet-scale datasets with hundreds of billions of parameters, have now unlocked an AI model's ability to generate human-like content.
- The applications for these LLMs span across a plethora of use cases. For example, an AI system can learn the language of protein sequences to provide viable compounds that will help scientists develop groundbreaking, life-saving vaccines.
- As LLMs have grown in size, so have their capabilities. Broadly, LLM use cases for text-based content can be divided up in the following manner:
 1. Generation (e.g., story writing, marketing content creation);
 2. Summarization (e.g., legal paraphrasing, meeting notes summarization);
 3. Translation (e.g., between languages, text-to-code);
 4. Classification (e.g., toxicity classification, sentiment analysis); and
 5. Chatbot (e.g., open-domain Q+A, virtual assistants).
- Enterprises across the world are starting to leverage LLMs to unlock new possibilities.

Challenges of LLMs:

- Compute, Cost, and Time intensive workload: Significant capital investment, technical expertise, and large-scale compute infrastructure are necessary to maintain and develop LLMs.
- Scale of Data Required: As mentioned, training a large model requires a significant amount of data.
- Technical Expertise: Due to their scale, training and deploying large language models are very difficult and require a strong understanding of deep learning workflows, transformers, and distributed software and hardware, as well as the ability to manage thousands of GPUs simultaneously.

Deepfake Technology

Why in News

- The Central government is looking to invoke a law that would require WhatsApp to share details about the first originator of a message. The basis for this are multiple deepfake videos of politicians circulating on WhatsApp.

Important Points

- Deepfakes are a compilation of artificial images and audio put together with machine-learning algorithms to spread misinformation and replace a real person's appearance, voice, or both with similar artificial likenesses or voices.

- It can create people who do not exist and it can fake real people saying and doing things they did not say or do.

Background

- The term deepfake originated in 2017, when an anonymous Reddit user called himself “Deepfakes.”
- This user manipulated Google’s open-source, deep-learning technology to create and post pornographic videos.
- The videos were doctored with a technique known as face-swapping.
- The user “Deepfakes” replaced real faces with celebrity faces.



Where can it be used?

- It is used to generate celebrity porn videos, produce fake news, and commit financial fraud among other wrongdoings.
- It is now being used for nefarious purposes like scams and hoaxes, election manipulation, social engineering, automated disinformation attacks, identity theft and financial fraud.
- Deepfake technology has been used to impersonate former U.S. Presidents Barack Obama and Donald Trump, India’s Prime Minister Narendra Modi, Facebook chief Mark Zuckerberg and Hollywood celebrity Tom Cruise.

Measures to address the threats related to deepfakes:

- Collaborative actions and collective techniques across legislative regulations, platform policies, technology intervention, and media literacy can provide effective and ethical countermeasures to mitigate the threat of malicious deepfakes.
- Media literacy: Media literacy for consumers and journalists is the most effective tool to combat disinformation and deepfakes. Media literacy efforts must be enhanced to cultivate a discerning public. As consumers of media, we must have the ability to decipher, understand, translate, and use the information we encounter. Even a short intervention with media understanding, learning the motivations and context, can lessen the damage. Improving media literacy is a precursor to addressing the challenges presented by deepfakes
- Legislative regulations: Meaningful regulations with a collaborative discussion with the technology industry, civil society, and policymakers can facilitate disincentivising the creation and distribution of malicious deepfakes.
- Technological solutions: We also need easy-to-use and accessible technology solutions to detect deepfakes, authenticate media, and amplify authoritative sources.

Outlook

- Deepfakes can create possibilities for all people irrespective of their limitations by augmenting their agency. However, as access to synthetic media technology increases, so does the risk of exploitation.
- Deepfakes can be used to damage reputations, fabricate evidence, defraud the public, and undermine trust in democratic institutions.
- To counter the menace of deepfakes, we all must take the responsibility to be a critical consumer of media on the Internet, think and pause before we share on social media, and be part of the solution to this infodemic.

Consanguinity

Why in News

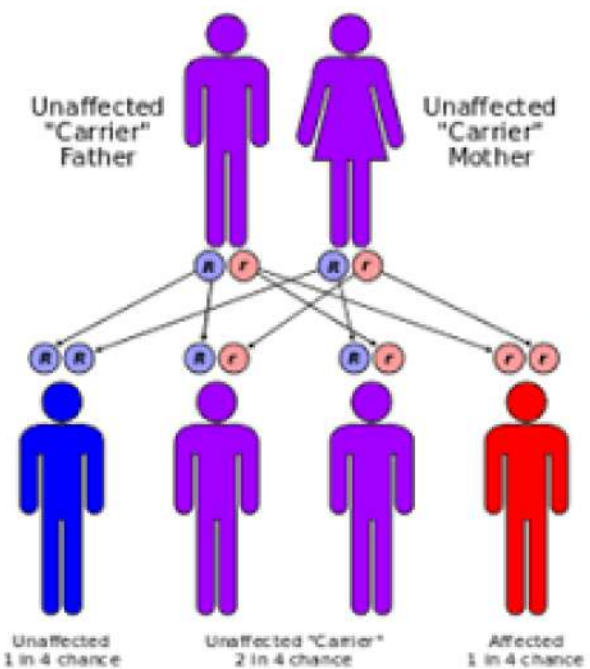
- Recent studies delve into the influence of consanguinity on genetics and health. It elucidates how this widespread tradition affects disease susceptibility and the development of human traits within global populations.

Important Points

- **Social and Genetic Aspects:** Consanguinity encompasses both social and genetic dimensions. Socially, it involves marriages between blood relatives, such as cousins or siblings. Genetically, it refers to unions between closely related individuals, often referred to as inbreeding.
- **Implications:** The concept of consanguinity has implications for both family structures and population genetics.

Key Takeaways from Studies

- **Consanguinity** Approximately 15-20% of the world's population practices consanguinity, with a higher prevalence in regions like Asia and West Africa.
- **Historical Practices :** Some ancient human civilizations, such as the Egyptians and Incas, are believed to have practiced consanguinity.
- **Genetic Evidence :** Genetic evidence, such as DNA analysis, suggests that historical figures like King Tutankhamun of Egypt were born to parents who were blood relatives.
- **Endogamous Groups in India :** India is home to over 4,000 endogamous groups where people marry within the same caste, tribe, or group. This practice makes



India a significant area for consanguinity studies.

- **Health Impacts** : Studies have shown that consanguinity can lead to increased mortality rates and a higher prevalence of recessive genetic diseases in populations where it is practiced. This is due to the higher likelihood of inheriting two copies of a harmful recessive gene when closely related individuals have children.

Benefits

- **Preservation of Tradition**: In some societies, consanguineous marriages are a longstanding tradition that helps preserve cultural and social norms.
- **Social Safety Net**: Consanguineous relationships can provide a built-in social safety net. Relatives are more likely to assist each other during financial, emotional, or medical crises, reducing the burden on external social services.
- **Cultural Compatibility**: In some cases, marrying close relatives may reduce the risk of incompatibility in terms of cultural, religious, or social backgrounds, potentially leading to more stable marriages.
- **Selective Breeding in Controlled Settings**: In controlled breeding settings, mating closely related individuals is a widely used technique to eliminate harmful genetic traits and enhance desirable qualities in plants and animals. This can lead to better agricultural yields and improved livestock quality.

Challenges

- **Increased Risk of Genetic Disorders** : The most significant challenge of consanguinity is the increased risk of offspring inheriting genetic disorders due to the sharing of common recessive genes. Conditions like cystic fibrosis may be more prevalent among the offspring of close relatives.
- **Limited Genetic Diversity** : Marrying close relatives can lead to limited genetic diversity in the population, potentially reducing overall resilience to diseases and environmental changes.
- **Complex Family Dynamics** : In consanguineous families, complex family dynamics can develop as multiple roles and relationships intersect, potentially leading to conflicts and tensions related to decision-making and family hierarchies.
- **Erosion of Autonomy** : In closely-knit consanguineous communities, there can be an erosion of individual autonomy, where decisions related to marriage, family planning, and other life choices are heavily influenced by the family or community, potentially limiting personal freedom.
- **Silencing of Domestic Violence** : In consanguineous relationships, women may be discouraged from reporting domestic violence due to familial and cultural pressures to preserve family respect. This silence can perpetuate the cycle of abuse, making it difficult to seek help or intervention in cases of domestic violence.

Outlook

- Consanguinity, being a practice deeply rooted in culture and tradition, requires a thoughtful and balanced approach. Here's a way forward to address the associated challenges:
- **Respect for Cultural Values** : It's essential to respect and acknowledge cultural values and practices related to consanguinity. Recognize that these practices are an integral part of many societies.
- **Education and Awareness** : Promote education and awareness about the potential risks and benefits of consanguinity. Ensure that individuals and communities are well-informed about the implications of such marriages.
- **Legal Safeguards** : Implement legal safeguards that protect the rights and interests of individuals involved in consanguineous marriages. These safeguards can include ensuring consent, minimum age requirements, and addressing potential issues related to inheritance and property rights.
- **Support Services** : Provide access to support services such as personalized medicine and genetic counseling. These services can help individuals understand and manage the potential health risks associated with consanguinity.
- **Empowerment** : Empower individuals to make informed choices about their relationships while preserving their cultural heritage. Encourage open dialogue within families and communities to make choices that are both culturally and medically sound.
- **Research and Data Collection** : Encourage research and data collection on the prevalence and impact of consanguinity in different regions. This can help tailor interventions and support services more effectively.
- **Collaboration** : Foster collaboration between healthcare providers, educators, policymakers, and community leaders to address the multifaceted challenges related to consanguinity.



जिस-जिस पर यह जग हंसा है,
उसी ने इतिहास रचा है।

Bio-Decomposer for Stubble Burning in Delhi

Why in News

- Recently, the Delhi Government has initiated the spraying of a Bio-Decomposer to tackle Stubble Burning. However, the effectiveness of the microbial solution largely depends on its timing of application, according to farmers.

Stubble Burning

- Stubble burning is intentionally setting fire to the straw stubble that remains after grains, like paddy, wheat, etc., have been harvested. The practice was widespread until the 1990s, when governments increasingly restricted its use.
- The burning of stubble, contrasted with alternatives such as ploughing the stubble back into the ground or collecting it for industrial uses, has a number of consequences and effects on the environment.



Effects of Stubble Burning

✓ Helpful effects

- Kills slugs and other pests
- Can reduce nitrogen tie-up

✓ Harmful effects

- Loss of nutrients

✓ Pollution from smoke

- Damage to electrical and electronic equipment from floating threads of conducting waste
- Risk of fires spreading out of control
- The main adverse effects of crop residue burning include the emission of greenhouse gases (GHGs) that contributes to the global warming, increased levels of particulate matter (PM) and smog that cause health hazards, loss of biodiversity of agricultural lands, and the deterioration of soil fertility

✓ Alternatives to Stubble Burning:

- In-Situ Treatment of Stubble: For example, crop residue management by zero-tiller machine and Use of bio-decomposers.
- Ex-Situ (off-site) Treatment: For example, Use of rice straw as cattle fodder.
- Use of Technology– For example Turbo Happy Seeder (THS) machine, which can uproot the stubble and also sow seeds in the area cleared. The stubble can then be used as mulch for the field.

✓ Bio-Decomposer to Address Stubble Burning

- A bio-decomposer is developed to expedite the natural decomposition of crop residues.
- Typically, it comprises a mixture of various microorganisms, including fungi, bacteria, and enzymes working together to break down plant material into enriching organic matter for the soil.

Examples of Microorganisms

- **Bacteria** : Bacillus, Clostridium, E. coli, Salmonella
- **Fungi**: Mushrooms, Molds, Yeasts
- **Other Organisms** : Earthworms, Insects (Beetles, Flies, Ants, Maggots), Arthropods (Millipedes, Woodlice)

Pusa-Biodecomposer :

- Pusa-Biodecomposer is a fungi-based liquid solution designed to soften tough crop residues, making them easily mixable with soil to act as compost.
- The fungi thrive at temperatures around 30-32 degrees Celsius, coinciding with the conditions during paddy harvesting and wheat sowing.
- It produces enzymes that break down cellulose, lignin, and pectin in paddy straw.
- Developed by the Indian Council of Agricultural Research (ICAR) and named after ICAR's Pusa campus in Delhi.
- Besides crop residues, it rapidly converts animal waste, dung, and other waste into organic manure.

Benefits

- Enhances soil fertility and crop productivity by turning stubble into manure and reducing the need for future fertilizer use.
- An efficient, cost-effective, and practical solution to combat stubble burning.
- Environmentally friendly, aligning with the Swachh Bharat Mission's goals.

Efficacy and Considerations

- Application of the microbial solution is aimed at decomposing paddy straw left in the field post-harvest.
- It requires spraying after harvest, plowing into the soil, and light irrigation over 20-25 days for effective decomposition.
- Timely application aligning with the harvest is crucial for maximizing its effectiveness.
- Various factors such as crop rotation, labor availability, and crop type impact its relevance for farmers.
- Weather conditions, particularly rain during September and October, play a role in its application and effectiveness.

Dengue

Why in News

- In 2023 close to 95,000 dengue cases were recorded in India until September leading to over 90 deaths.

Dengue

- Dengue is a viral infection caused by the dengue virus (DENV), transmitted to humans through the bite of infected mosquitoes. It is more common in tropical and subtropical climates.
- DENV is an RNA virus of the Flaviviridae family with four serotypes (DENV-1 to 4).



Infection with one serotype provides lifelong immunity to that type, but subsequent infections with different serotypes can lead to severe, life-threatening forms of the disease.

- Symptoms: Most people who get dengue won't have symptoms. But for those that do, the most common symptoms are high fever (40°C/104°F), severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands, rash.

Transmission

- **Vector** : The virus is transmitted to humans through the bites of infected female mosquitoes, primarily the Aedes Aegypti mosquito.
- **Human-to-mosquito transmission** : After feeding on a DENV-infected person, the virus replicates in the mosquito midgut before disseminating to secondary tissues, including the salivary glands.
- **Extrinsic incubation period (EIP)** : The time taken from ingesting the virus to actual transmission to a new host is termed the extrinsic incubation period (EIP). The EIP takes about 8–12 days when the ambient temperature is between 25–28°C. Once infectious, the mosquito can transmit the virus for the rest of its life.
- **Other transmission modes** : There is a possibility of maternal transmission of Dengue (from a pregnant mother to her baby), transmission via blood products, organ donation and transfusions.

Burden of Dengue

- Global Scenario: About half of the world's population is at risk of dengue with an estimated 100–400 million infections occurring each year. Dengue outbreaks occur

in many countries of the world, including in the Americas, Africa, the Middle East, Asia, and the Pacific Islands.

- **Indian Scenario :** In India West Bengal recorded the highest share of cases — 11% of India's total in the 15-year period between 2008 and 2022. It was followed by Punjab (8.9%) and Uttar Pradesh (7.1%).

Prevention

- There is no specific antiviral treatment for dengue, so prevention relies on controlling mosquito populations and raising public awareness.
- The mosquitoes that spread dengue are active during the day. The best way of protection is to protect yourself from mosquito bites.
- **Dengvaxia :** So far one vaccine, Dengvaxia, has been approved and licensed in some countries. However, only persons with evidence of past dengue infection can be protected by this vaccine.

New Evolutionary Law

Why in News

- Scientists have proposed a new evolutionary law that can explain the evolution of living and non-living entities, from minerals to stars.

Important Points

- As per the study, Natural systems, living and non-living entities, evolve to states of greater patterning, diversity and complexity.
- As life evolved from single-celled to multi-celled organisms, Earth's minerals, for example, became more complex, creating diversity. This, in turn, drove biological evolution.
- Biodiversity leads to mineral diversity and vice-versa. The two systems, biological and mineral, interacted to create life as we know it today, the researchers explained.



About the study:

- The researchers proposed that evolution occurs when a new configuration or a new arrangement of atoms and molecules works well and functions improve.
- Selection of function, they explained, is key to evolution. Darwin defined function as primarily with survival but the new study highlights at least three kinds of functions that occur in nature.
- The first function is stability, which means systems made up of stable arrangements of atoms or molecules will continue to survive.

- The second one includes dynamic systems with energy supply.
- The third is “novelty” — the tendency of evolving systems to explore new configurations or arrangements that can give rise to new behaviours or characteristics.
- An example of novelty is when single-celled organisms evolved to use light to make food. Other examples include new behaviours among multicellular species such as swimming, walking, flying and thinking.
- Similarly, early minerals on Earth possessed a stable arrangement of atoms, which acted as foundations for the evolution of the next generations of minerals. These minerals were then incorporated into life. For example, minerals are present in living organisms’ shells, teeth and bones.
- For example, in the early years of the Solar System, Earth was home to 20 minerals, which evolved to almost 6,000 known minerals today thanks to ever more complex physical, chemical and ultimately biological processes over 4.5 billion years.
- As for stars, the first ones that formed after the Big Bang had two main ingredients: Hydrogen and helium. Those earliest stars used these ingredients to make about 20 heavier chemical elements. The next generation of stars consequently produced almost 100 more elements.
- The universe generates novel combinations of atoms, molecules, cells, etc. Those combinations that are stable and can go on to engender even more novelty will continue to evolve.
- The law has implications for a wide range of complex evolving systems. It might apply to various domains of science, ranging from astrophysics to ecology to artificial intelligence.

White Phosphorus

Why in News

- Amnesty International and Human Rights Watch (HRW) have accused the Israel Defense Forces (IDF) of using white phosphorus munitions in Gaza and Lebanon.

What is white phosphorus?

- White phosphorus is a pyrophoric that ignites when exposed to oxygen, producing thick, light smoke as well as intense 815-degree Celsius heat. White phosphorus emits a distinct garlic-like odor.
- Pyrophoric substances are those which ignite spontaneously or very quickly when in contact with air.
- Under the Globally Harmonized System of Classification and Labeling of Chemicals, the internationally agreed-upon system to standardize chemical hazard classification and communication, white phosphorus falls under “Pyrophoric solids, category 1”, which includes chemicals that catch fire “spontaneously” when exposed to air.

Military uses of white phosphorus

- White phosphorus is dispersed in artillery shells, bombs, and rockets. The Munitions can either be ground- burst for more concentrated smoke, or air-burst in order to cover a larger area.
- It is used as a smokescreen to hide troop movement on the ground. The smoke acts as a visual obscurant. White phosphorus is also known to mess with infrared optics and weapons tracking systems, thus protecting forces from guided missiles.
- White phosphorus can also be used as an incendiary weapon.

How harmful is white phosphorus?

- Upon exposure, white phosphorus can cause severe burns, often down to the bone. The burns are difficult to heal, and susceptible to infections. Particles of white phosphorus that remain lodged in the body can reignite if in contact with air.
- Inhaling white phosphorus particles or smoke can cause respiratory damage and harm to internal organs.
- White phosphorus can also devastate infrastructure and property, damage crops and kill livestock, with raging fires, especially in windy conditions.

First use of White phosphorus munitions

- Irish nationalists in the late 19th century first used white phosphorus munitions, in a formulation known as “Fenian fire”. World War I and World War II.
- The US invasion of Iraq in 2004 and the Nagorno-Karabakh conflict have also witnessed the use of White phosphorus.
- Legal status of white phosphorus munitions
 - The use of white phosphorus is regulated under the International humanitarian law (IHL). However there is no blanket ban on White phosphorus munitions. It is not considered a chemical weapon because its operational utility is primarily due to heat and smoke, rather than toxicity.
- The use of white phosphorus is governed by the Convention on Conventional Weapons (CCW), specifically Protocol III, which deals with incendiary weapons. Palestine and Lebanon have joined Protocol III, while Israel has not ratified the protocol.
- Protocol III of CCW, prohibits the use of airdropped incendiary weapons in



“concentrations of civilians”. As per HRW, it has two significant loopholes.

- First, it restricts some but not all use of ground-launched incendiary weapons where there are concentrations of civilians.
- • Second, the protocol’s definition of incendiary weapons covers weapons that are “primarily designed” to set fire to and burn people, and thus arguably excludes multipurpose munitions such as those containing white phosphorus, which are considered to primarily be “smoking” agents.

Renewable Energy Project in Ladakh

Why in News

- The Cabinet Committee on Economic Affairs, approved the project on Green Energy Corridor (GEC) Phase-II – Inter-State Transmission System (ISTS) for 13 GW Renewable Energy Project in Ladakh.

Important Points

- The Prime Minister, during his Independence Day Speech in 2020, announced the setting up of 7.5 GW Solar Park in Ladakh.
- After extensive field survey, the Ministry of New and Renewable Energy (MNRE) prepared a plan to set up 13 GW Renewable Energy (RE) generation capacity along with 12 GWh Battery Energy Storage System (BESS) in Pang, Ladakh.
- For evacuating the huge quantum of power, it will be necessary to create an inter-state transmission infrastructure.

About the Project

- The project is targeted to be set up by FY 2029-30 with Central Financial Assistance (CFA) @ 40 percent of the project cost.
- Power Grid Corporation of India Limited (POWERGRID) will be the Implementing Agency for this project.
- The transmission line for evacuating this power will pass through Himachal Pradesh and Punjab up to Kaithal in Haryana, where it will be integrated with the National Grid.
- This project is in addition to Intra-State Transmission System Green Energy Corridor Phase-II (InSTS GEC-II), which is already under implementation in the States of Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh.

Significance

- The project will contribute to achieving the target of 500 GW of installed electricity capacity from non- fossil fuels by year 2030.

- The project will also help in developing long term energy security of the country and promote ecologically sustainable growth by reducing carbon footprint.
- It will generate large direct & indirect employment opportunities for both skilled and unskilled personnel in power and other related sectors, especially in Ladakh region.

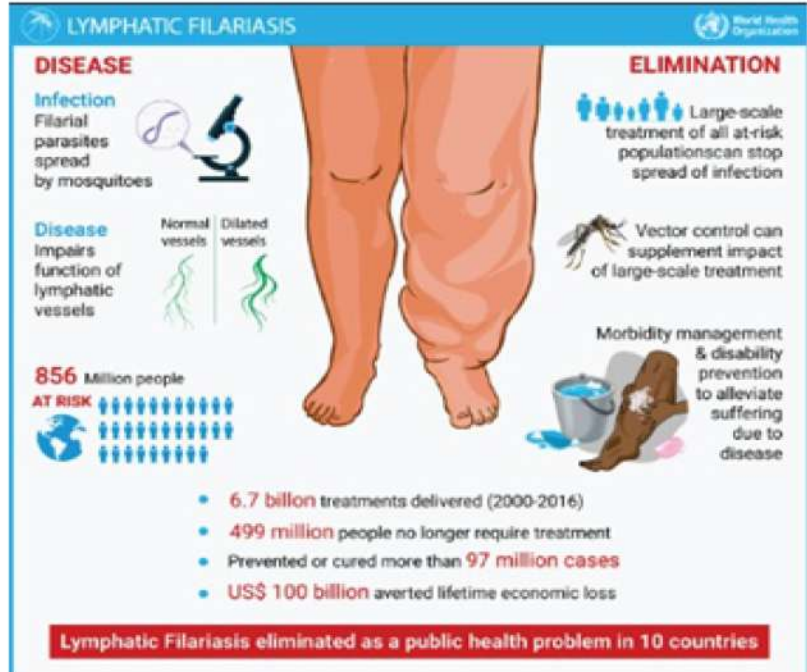
Lymphatic Filariasis

Why in News

- Lao PDR becomes second country in 2023 after Bangladesh to eliminate lymphatic filariasis.

Important Points

- Lao People's Democratic Republic has eliminated lymphatic filariasis (LF), a disease that cripples and has significant social and economic impact on the affected communities.
- This is the country's second neglected tropical disease (NTD) to be eliminated in six years, following the elimination of trachoma as a public health hazard in 2017.
- Lao PDR is now the second country after Bangladesh to eliminate lymphatic filariasis (LF) in 2023.
- Nineteen countries have been able to eliminate LF.
- Of the 19 countries, 11 belong to the WHO Western Pacific Region (WPR).



Four countries in the WHO South-East Asia region have also eliminated LF:

- ✓ Bangladesh, the Maldives, Sri Lanka and Thailand.
- ✓ In WHO Africa region, two countries, Malawi and Togo have eliminated the disease.
- ✓ The disease has been eliminated in the WHO Eastern Mediterranean's Yemen too.

Tackling LF

- The most cost-effective method for treating all affected residents of LF-endemic areas and stopping future transmission is mass drug administration (MDA).
- WHO recommends the triple therapy combination of ivermectin (I), diethylcarbamazine (D) and albendazole (A), for MDA against LF.
- LF, also known as elephantiasis, is a preventable mosquito-borne infectious disease targeted for global elimination as a public health problem.
- It occurs when one of the filarial parasites — *Wuchereria bancrofti*, *Brugia malayi* and *B. timori* — are transmitted to humans through mosquito bites.
- The parasites nest in the lymph vessels, damaging them.
- This leads to hydrocele, lymphedema, and elephantiasis.

About LF

- Lymphatic filariasis is a disease caused by parasitic worms known as filarial worms.
- It is a leading cause of permanent disability worldwide.
- While most cases have no symptoms, some people develop a syndrome called elephantiasis, which is marked by severe swelling in the arms, legs, breasts, or genitals.
- It is the first of the mosquito-borne diseases to have been identified.
- The worms are spread by the bites of infected mosquitoes.

Three types of worms are known to cause the disease

- ✓ *Wuchereria bancrofti*,
- ✓ *Brugia malayi*, and
- ✓ *Brugia timori*
- *Wuchereria bancrofti* is the most common.



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Death In India's Prisons

Why in News

- Recently, the Supreme Court Committee on Prison Reforms found suicide to be the leading cause of 'unnatural' deaths in India's prisons.

Important Points

- According to the Supreme Court Committee among Indian prisoners, the number of custodial deaths has seen a steady rise since 2019, and 2021 has recorded the highest number of deaths so far.
- Uttar Pradesh recorded the highest number of overall deaths, with 481 inmates dying in 2021. Rajasthan was the state which had 52 unknown causes of deaths.



Classification of Prison Deaths

- Prison deaths are labeled as 'natural' or 'unnatural' by the Prison Statistics India report published by the National Crime Records Bureau (NCRB) every year.
- 'Natural' deaths account for ageing and illness. Illness has been sub categorized into diseases such as heart conditions, HIV, tuberculosis, and cancer, among others. In 2021, a total of 2,116 prisoners died in judicial custody, with almost 90% of cases recorded as natural deaths.
- Unnatural deaths are deaths other than ageing or illnesses. These are reclassified as:
 - Suicide (due to hanging, poisoning, self-inflicted injury, drug overdose, electrocution, etc.),
 - Death due to inmates, assault by outside elements,
 - Death due to negligence or firing,
 - Accidental deaths (natural calamities like earthquakes, snakebites, drowning, accidental fall, burn injury, drug/alcohol consumption, etc.)

Unnatural Deaths of Inmates in Prisons in 2021

- As per a report by the Commonwealth Human Rights Initiative (CHRI) the suicide rate among inmates was found to be more than twice that recorded in the general population.
- After suicide, most unnatural deaths are due to "other" reasons or murder by inmates.

Issues with Classification

- An 'unclear' distinction: The Supreme Court in a judgment said NCRB's distinction between natural and unnatural deaths is "unclear."
- Under-reported deaths: The prison deaths are under-reported and rarely investigated, resulting in a majority of deaths being classified as 'natural'.
- Pandemic challenge: the PSI report classified deaths due to COVID-19 as 'natural' deaths — at a time when the occupancy rate of prisons was 118% of their capacity, and almost 40,000 more undertrials were held in prisons.

Concerns Regarding Prison Conditions

- Shortage of staff: A sanctioned staff of 3,497 people (out of which only 2,000 roles were filled), was responsible for looking after 2,25,609 prisoners in 2021 (this number has shot up to 5,75,347 as of September 2023, according to the National Prisons Information Portal).
- Unevenly distributed vacancies: States like Bihar and Uttarakhand had over 60% of positions lying vacant. Moreover, the total strength of staff includes personnel charged with medical, executive, correctional, ministerial and other duties; not everyone is trained to provide medical aid.
- Mental illnesses: Almost 1.5% of the prison population suffers from mental illnesses, as per the CHRI report. It indicates a dearth of correctional staff including psychologists, limited access to mental healthcare resources, inadequate identification of mental illnesses in inmates along with heightened vulnerability and stigma. Only 5% of expenditure is spent on medical facilities, per the PSI 2021 report.
- Underutilized fund: Between 2016 and 2021, money earmarked for spending on inmates was underutilized. Rs6,727.30 crore was the average national expenditure against a sanctioned Rs7,619.2 crore in 2021.
- Congested prisons: According to the National Crime Records Bureau's 2021 statistics, there were 5,54,034 people in prisons across India, as against a capacity of 4,25,609.
- Infrastructural deficiencies: The infrastructural deficiencies are both a cause and effect of "callousness and neglect of the health of individuals in jail custody.

Recommendations for Welfare of Prisoners

- The Supreme Court in a 1996 judgment articulated the social obligation towards prisoners' health, noting that they suffer from a "double handicap":
- "First, the prisoners do not enjoy the access to medical expertise that free citizens have. Their incarceration places limitations on such access; no physician of choice, no second opinions, and few if any specialists.



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- Secondly, because of the conditions of their incarceration, inmates are exposed to more health hazards than free citizens.”
- The Model Prison Manual of 2016 and the Mental Healthcare Act of 2017, outline inmates’ right to healthcare.
- It includes adequate investment in healthcare facilities, setting up mental health units, training officers to provide basic and emergency care, and formulating suicide prevention programmes to thwart such instances.
- In June 2023 the NHRC issued an exhaustive advisory to States, highlighting that suicides arise out of both medical and mental health issues. The NHRC’s recommendations are as;
- Regular check and vigil on bed sheets and blankets of inmates be exercised to ensure that these are not used to make ropes, etc. to attempt suicide.
- Gatekeeper Model: (devised by the World Health Organization, WHO), to strengthen mental health care in prisons be implemented for training of carefully selected inmates to identify prisoners at risk of suicide.
- Measures to tackle the issue of addiction among prisoners are undertaken by regular visits of mental health care professionals and de-addiction experts.
- Adequate number of telephones for contact with friends or family of the prisoner to be ensured in accordance with relevant regulations.
- Existing vacancies of Prison staff should be filled up particularly those of Prison Welfare Officers, Probation Officers, Psychologists, and Medical Staff, and the strength should be suitably augmented to include Mental Health professionals.

Child sexual abuse material (CSAM)

Why in News

- YouTube, Telegram and X (Twitter) have been told to pro- actively filter child sexual abuse material (CSAM) out “on the Indian Internet” by the Ministry of Electronics and Information Technology recently.

Important Points

- The notices to the platforms says, they would lose intermediary liability protections if they didn’t take action, meaning that the companies would
- themselves be open to legal action alongside users who posted CSAM.



Child sexual abuse material (CSAM)

- Child sexual abuse material (child pornography) refers to any content that depicts

sexually explicit activities involving a child.

- Due to rapid technological changes, online child sexual exploitation offenses are increasing in scale and complexity.
- Modern smartphones are the ideal child exploitation tool for offenders, as they can be used to photograph, record, or watch live child sexual abuse; store or access CSAM stored remotely; connect with victims and other offenders; and distribute and receive CSAM.
- The market for CSAM among individuals with a sexual interest in children drives the demand for new and more egregious images and videos.
- The production of CSAM creates a permanent record of the child's victimization.

Effects of child sexual abuse materials:

- Children shown in CSAM are victimized twice: first by the person committing the sexual abuse, and again by those who view it. It affects differently for different children.
- Guilt, shame, and blame: Survivors might feel guilty about not having been able to stop the abuse, or even blame themselves if they experienced physical pleasure.
- Intimacy and relationships: It's possible that first experiences with sex came as a result of sexual abuse. As an adult, intimacy might be a struggle at times. Some survivors experience flashbacks or painful memories while engaging in sexual activity.
- Self-esteem: Survivors may struggle with low self-esteem, which can be a result of the negative messages received from abusers, and from having personal safety violated or ignored.
- Low self-esteem can affect many different areas of a survivor's life such as in relationships, in careers, and even in a survivor's overall health.
- Post-traumatic stress disorder: It's normal for survivors of sexual violence to experience feelings of anxiety, stress, or fear. If these feelings become severe, it might be a condition known as post-traumatic stress disorder (PTSD).
- Substance and alcohol abuse: It's possible for survivors to grow up and rely on alcohol and substances to cope and it can begin in early adolescent years and can last throughout adulthood.

Keeping children safe on the internet

- Protect identity. Avoid sharing personally-identifying information about oneself and loved ones through social networks. Doing so can lead to unwanted attention and harassment.
- Report inappropriate images. If you receive or view inappropriate or sexual images through text message or online, report it to police or Use a secure Internet connection.
- Be mindful of privacy settings. Check privacy settings, such as location services

and contact information, when using social media. Be aware that making data publicly available means anyone can see it.

- Be watchful of physical, behavioral, and emotional signs: To keep an eye on sudden changes in behavior. If a child tells you that someone makes them uncomfortable, even if they can't say anything specific, listen to them carefully.
- Talk with kids. Help children set up social media accounts. Laying the groundwork for open communication can encourage your child to share about any unusual online conversations or activities down the road.

India's diabetes crisis

Why in News

- In June 2023, a study conducted by the Madras Diabetes Research Foundation in collaboration with the ICMR and the Union Health Ministry revealed alarming statistics about India's diabetes crisis.

Important Points

- According to the study, 11.4% of India's population, approximately 10.13 crore people, are living with diabetes.
- According to the WHO, a major reason for this is the consumption of unhealthy, ultra-processed foods and beverages. These statistics demand immediate attention and concrete actions to address the root causes of this public health crisis.



Key findings of the study

- Living with diabetes: 4% of India's population, or 10.13 crore people, are living with diabetes.
- Pre-diabetic: 3% of the population, or an additional 13.6 crore people, are pre-diabetic.
- Obese Population: 6% of the population would be considered obese as per the BMI measure.
- The consumption of ultra-processed foods: a significant contributor

Contents of Ultra-Processed Foods:

- Ultra-processed foods encompass a wide range of products, including carbonated drinks, instant cereals, chips, fruit-flavored drinks, instant noodles, cookies, ice cream, bakery items, energy bars, sweetened yogurts, pizzas, processed meat products, and powdered infant formulas.
- These items are often characterized by their convenience and long shelf life.

Increased Risk of Diabetes with Scientific Evidence:

- A concerning statistic reveals that a mere 10% increase in daily consumption of ultra-processed food is associated with a 15% higher risk of type-2 diabetes among adults.
- These foods are often high in sugar, fat, and salt, all of which contribute to insulin resistance and elevated blood sugar levels.

Impact on Weight Gain

- Ultra-processed foods are engineered to be hyper-palatable. They often contain combinations of sugars, fats, and artificial additives that stimulate the appetite and lead to overconsumption.
- This excessive calorie intake can result in weight gain, a known risk factor for type 2 diabetes.

Structural Alteration

- When food undergoes extensive processing, its original structure is often destroyed. Cosmetic additives, colors, and flavors are added to enhance taste and appeal.
- This altered structure and excessive processing can disrupt the body's natural regulation of hunger and satiety, leading individuals to eat more and gain weight.

Association with Cardiovascular Risks

- The negative effects of ultra-processed foods extend beyond diabetes. Obesity and diabetes are key risk factors for heart disease and premature mortality.
- Research indicates that those who consume more than four servings of ultra-processed foods per day face a significantly higher risk of cardiovascular mortality compared to those who consume fewer than two servings per day.
- A similar trend is observed for all-cause mortality.
- Exploitative marketing practices

Shifting Focus to Low- and Middle-Income Countries

- In many high-income countries, the sale of sugar-sweetened beverages has declined over the past two decades due to growing awareness of their health impacts.
- To compensate for this loss of sales, food companies have shifted their attention to low- and middle-income countries, where there may be less stringent regulations and a growing consumer base.

Aggressive Marketing and Advertising

- These companies invest substantial amounts of money in marketing and advertising ultra-processed food and beverages in countries like India.
- These aggressive marketing campaigns often target vulnerable populations, including children and the emerging middle class.

- Techniques like the use of cartoon characters, incentives, gifts, and celebrity endorsements are employed to make these products more appealing.
- Blaming Individuals vs. Addressing Systemic Issues:
- The food industry tends to place blame on individuals, suggesting that personal choices are responsible for unhealthy dietary habits.
- However, the environment created by aggressive marketing and the easy accessibility of ultra-processed foods play a significant role in shaping these choices.

Following are the key findings of the study conducted by the Madras Diabetes Research Foundation in collaboration with the ICMR and Union Health Ministry:

- The highest prevalence of diabetes was found in Goa (26.4%), Puducherry and Kerala (nearly 25%)
- The study notes a national prevalence of 11.4% diabetes, 15.3% pre-diabetes, 35.5% hypertension, 28.6% generalised obesity, 39.5% abdominal obesity and 24% hypercholesterolemia in India



- In numbers, there were 101 million people in the country with diabetes, 136 million with pre-diabetes, while 315 million people had high blood pressure, 254 million had generalised obesity, and 351 million had abdominal obesity

Impact on Public Health

- The consequences of these marketing strategies are severe. They contribute to a deepening public health crisis, with diabetes being a ticking time bomb.
- Sugar-sweetened beverages, in particular, are highlighted as a major source of added sugar in diets, putting people at a higher risk of type 2 diabetes and other health issues.

The need for regulatory intervention

- Industry Opposition: The food industry resists marketing restrictions, citing economic concerns and portraying themselves as stakeholders.
- False Promises: Some industry initiatives, like 'Eat Right,' may appear health-focused but could divert attention from unhealthy product impacts.
- Impact on Regulation: Industry partnerships can hinder strong regulatory policies aimed at reducing ultra-processed food consumption.
- Role of Regulatory Authorities: Lackluster responses and industry dominance in regulatory bodies may impede effective public health regulations.
- Complementary Efforts: While exercise is essential, it should complement regulatory policies addressing marketing and warning labels on unhealthy foods.
- Balancing Interests: Governments must prioritize citizens' health, striking a balance between industry interests and public well-being when implementing evidence-based, transparent regulations.

Strategy to safeguard: Mandatory Provisions

- To protect the public from the manipulative strategies of the food industry, the

government must establish a legal framework or even an ordinance under Article 123 of the Constitution.

- This framework should focus on reducing or halting the consumption of ultra-processed foods and could include:
 - Defining 'healthy food'
 - Implementing warning labels on unhealthy food
 - Imposing restrictions on the promotion and marketing tactics of unhealthy food and beverages
 - Raising public awareness about the risks associated with consuming such foods
- Global Examples
 - Several countries, including South Africa, Norway, and Mexico, have recently taken similar actions to regulate food labeling and marketing.
 - The Indian government has the opportunity to demonstrate its commitment to public health by enacting similar laws.
 - Much like the Infant Milk Substitutes, Feeding Bottles, and Infant Foods Act, which successfully regulated commercial baby food, this proposed legislation could make significant strides in curbing the consumption of unhealthy foods and beverages.

3.21 lakh appeals pending with Information Commissions

Why in News

- The report raised concern over the reduced capacity of Information Commissioners at a time the appeals and complaints are steadily increasing.

Important Points

- Three State Information Commissions are defunct, six including the Central Information Commission (CIC) are headless and 3.21 lakh complaints and appeals are pending – this is the status of transparency regime in the country which completed 18 years of its existence.
- The 'Report Card on the Performance of Information Commissions in India, 2022-23' said that the 2019 assessment had found that as of March 31 that year, a total of 2,18,347 appeals/complaints were pending in the 26 Information Commissions from which data was obtained, which climbed to 2,86,325 as of June 30, 2021 and then crossed three lakh as of June 30, 2022.
- Four Information Commissions are defunct— Jharkhand, Telangana, Mizoram and Tripura, as no new Information Commissioners were appointed upon incumbents demitting office.
- Six Information Commissions are currently headless — the Central Information Commission, and the State Information Commissions of Manipur, Chhattisgarh, Maharashtra, Bihar, and Punjab.

■ Computing the time Commissions would take to dispose of an appeal taking into account average monthly disposal rate in West Bengal with a pendency of 11,871 cases would take around 24 years and one month to dispose of an appeal filed this year. This is slightly better than last year's rate by two months.

■ In comparison, Uttar Pradesh which has 27,163 pending cases may take seven months to clear an appeal and Karnataka with 41,047 pending cases may take one year and 11 months.

Case backlog

The time taken to dispose a complaint filed was computed using the average monthly disposal rate and the pendency

Information Commission	Estimated time for disposal
West Bengal	24 years and 1 month
Chhattisgarh	4 years and 4 months
Maharashtra	4 years
Arunachal Pradesh	2 years and 11 months
Odisha	2 years and 7 months
Madhya Pradesh	1 year and 11 months
Karnataka	1 year and 11 months
Telangana	1 year and 7 months
Kerala	1 year
Himachal Pradesh	1 year

Maharastra with the highest pendency of 1.11 lakh cases may take four years to deal with a complaint filed this year.

■ The report also noted that Information Commissions did not impose penalties in 91 per cent of the cases where penalties were potentially imposable. In terms of penalty imposition, of the 23 commissions which provided relevant information, penalty was imposed in a total of 8,074 cases. Penalty amounting to Rs 15.37 crore was imposed by 23 commissions during the period under review.

■ The UP SIC disposed of the highest number of cases (48,607), followed by the CIC (27,452) and Karnataka (21,516). The SIC of Maharashtra registered the highest number of appeals and complaints (30,479) even though this data pertains only to 6 months and not the whole period under review as data for January to June 2023 was not provided by the SIC.

■ The SIC of Karnataka registered 30,207 appeals and complaints, while Uttar Pradesh registered 29,637 and the CIC registered 20,083 appeals/complaints.

Right to Information Act 2005

■ RTI Act 2005 was passed based on the "Shourie Committee" report and RTI movement by Mazdoor Kisan Shakti Sangthan in the 1990s...

■ Applicable to government at all levels: Central, state, local and bodies owned, controlled or substantially financed by government, including NGOs.

■ Suo moto declaration: Every public authority should provide possible suo moto information to the public at regular intervals.

■ Three levels for attaining information: Public information officers (PIOs) followed by the first appellate authority, followed by appeal to the State Information Commissions (SICs) and Central Information Commission (CICs).

Fixed timelines to provide information

1. PIOs have to provide information within 30 days in normal cases, 48 hours if it is a matter of life or liberty of a person.
2. First appellate authority within 30 days (45 days in exceptional cases) from the date of filing appeal.
3. SIC/CIC – No time limit for disposal.

Global Hunger Index 2023

Why in News

- India ranked 111th out of 125 countries in the Global Hunger Index 2023, a standing the government termed “erroneous and having malafide intent”.

About Global Hunger Index (GHI)

- Created in 2006, the GHI was initially published by the US-based International Food Policy Research Institute (IFPRI) and Germany-based Welthungerhilfe.
- In 2007, the Irish NGO Concern Worldwide also became a co-publisher.
- In 2018, IFPRI stepped aside from its involvement in the project and the GHI became a joint project of Welthungerhilfe and Concern Worldwide.



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What does GHI Indicate?

- The global hunger index is a means of monitoring whether countries are achieving hunger-related Sustainable Development Goals (SDGs). It can be used for international ranking.
- Goal 2 of the SDGs aims to end hunger and all forms of malnutrition by 2030.
- It also commits to universal access to safe, nutritious and sufficient food at all times of the year.

How is GHI Defined?

The GHI captures three dimensions of hunger:

- ✓ Insufficient availability of food,
- ✓ Shortfalls in the nutritional status of children and
- ✓ Child mortality
- ✓ Accordingly, the Index includes the following four equally weighted indica-

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tors: Countries are ranked on a 100-point scale, with 0 and 100 being the best and worst possible scores, respectively.

Consequences & Implications:

- Hunger is one of the world's major problems and, therefore, one of its most important challenges.
- Hunger and undernourishment form a vicious circle, which is often "passed on" from generation to generation.
- The children of impoverished parents are often born underweight and are less resistant to disease; they grow up under conditions that impair their intellectual capacity for their whole lives.
- Factors that contribute to a high global hunger index have been identified as:
 - ✓ Low income and poverty,
 - ✓ War and violent conflict,
 - ✓ General lack of freedom,
 - ✓ Low women's status, and
 - ✓ Poorly targeted and delivered health and nutrition programmes.

India's Position

- India ranked 111th out of 125 countries in the Global Hunger Index-2023 with the country reporting the highest child wasting rate at 18.7 per cent.
- India ranked 107th out of 121 countries in 2022.
- With a score of 28.7 in the Global Hunger Index-2023, India has a level of hunger that is serious, according to a report based on the index.
- The 2023 GHI score for the world is 18.3, considered moderate and less than one point below the world's 2015 GHI score of 19.1.
- India's neighbouring countries Pakistan (102th), Bangladesh (81st), Nepal (69th) and Sri Lanka (60th) have fared better than it in the index.
- South Asia and Africa South of the Sahara are the world regions with the highest hunger levels, with a GHI score of 27 each, indicating serious hunger.

Criticism of the Report by the Union Government

- The Ministry of Women and Child Development (MoWCD) yet again questioned the GHI and called it a "flawed measure of hunger that doesn't reflect India's true position".
- It said that data recorded on its Poshan Tracker portal showed child wasting prevalence of 7.2% among a total of 7.24 crore under-five-year-olds whose data was captured, whereas the GHI used a value of 18.7% for child wasting.
- The ministry further said two other indicators, namely stunting and wasting, are outcomes of complex interactions of various other factors like sanitation, genetics,



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environment and utilisation of food intake apart from hunger which is taken as the causative/outcome factor for stunting and wasting in the GHI.

- The second objection the MoWCD reiterated was the alleged use of a telephone-based opinion poll to calculate undernourishment, one of the indicators used in GHI.
- The GHI has maintained that it doesn't use the poll, but relies on data from India's Food Balance Sheet to calculate undernourishment.
- The Ministry argued that three out of the four indicators used for calculation of the index are related to the health of children and cannot be representative of the entire population.



ऐसी मेहनत ही क्या,
जिसमे सपने मजबूर ना
सच होने के लिए

AUKUS

Why in News

- The UK has awarded a £4 billion (\$4.9 billion) contract to BAE Systems, Rolls-Royce, and Babcock to design and manufacture nuclear-powered attack submarines, known as SSN-AUKUS.

Important Points

- These submarines are expected to be the largest, most advanced, and most powerful attack submarines ever operated by the Royal Navy. They will incorporate cutting-edge sensors, design, and weaponry.
- The first SSN-AUKUS submarine is set to be delivered into service in the UK in the late 2030s, with the first Australian submarines following in the early 2040s.
- This program marks the first time that the US has shared nuclear-propulsion technology with a country other than the UK, indicating a significant level of trust and cooperation between the AUKUS nations.
- In addition to the SSN-AUKUS submarines, the AUKUS program involves the potential sale of up to five Virginia-class nuclear-powered submarines by the US to Australia in the early 2030s. It also includes plans for US and UK submarines to be deployed in Western Australia by 2027 to assist in training Australian crews.



AUKUS Group

- The AUKUS Group is a trilateral security partnership for the Indo-Pacific region, announced in 2021 by Australia, the United Kingdom and the United States.
- The main objective of this pact is to enhance the collective security and stability of the three countries in the face of rising challenges from China and other actors in the region.
- The pact also aims to foster cooperation on emerging technologies, such as artificial intelligence, quantum computing, undersea capabilities and hypersonic weapons.

Background

- The AUKUS Group is not a new alliance, but rather a deepening of the existing ties among the three countries, which already share extensive intelligence through the Five Eyes alliance that also includes Canada and New Zealand.
- The AUKUS Group is also seen as a complement to the Quad, a grouping of India, USA, Australia and Japan that focuses on broader issues such as maritime security, climate change, disaster relief and vaccine diplomacy.

Significance of the AUKUS Group lies in several key aspects:

Response to Changing Geopolitical Landscape

- The AUKUS Group is a strategic response to the shifting dynamics in the Indo-Pacific region, particularly in response to China's expanding military and economic influence. It acknowledges the need for a collective approach to address these challenges.

Upholding a Rules-Based Order

- AUKUS demonstrates a commitment to a rules-based international order and freedom of navigation. By working together, the member countries aim to maintain stability and security in the region, ensuring that international laws and norms are respected.

Shared Vision of a Free and Open Indo-Pacific

- The group emphasizes the importance of a free and open Indo-Pacific region. This vision aligns with principles such as sovereignty, human rights, and democracy, promoting a space where countries can coexist peacefully and prosper economically.

Collaboration on Cutting-Edge Technologies

- AUKUS facilitates collaboration on advanced military technologies, particularly in the realm of nuclear submarines. Sharing such sensitive technology signifies a high level of trust and confidence among the member countries. Additionally, it opens avenues for cooperation in various other critical fields such as cybersecurity, artificial intelligence, quantum computing, undersea capabilities, and hypersonic weapons. These technologies are crucial in maintaining military and strategic superiority in the face of evolving threats.

Breaking Traditions and Strengthening Alliances

- By breaking the tradition of restricting advanced technologies, especially nuclear submarine technology, to only their closest allies, the US and the UK are signalling a deepening of their alliance with Australia. This move strengthens existing alliances and builds new partnerships, fostering a network of nations committed to mutual security and cooperation.

Deterrence and Strategic Advantage

- AUKUS enhances the military capabilities and interoperability of the member countries. This not only acts as a deterrence against potential adversaries but also provides strategic advantages in the geopolitical arena. The shared technological advancements create a formidable force, dissuading aggressive actions and ensuring regional stability.

India's response to the formation of the AUKUS Group

- India's approach to the AUKUS Group and its broader engagement in the Indo-Pacific region reflects its strategic objectives and efforts to navigate the complex geopolitical landscape.
- India's welcoming stance towards the AUKUS Group demonstrates its recognition of the group's potential contributions to regional stability and security. By expressing interest in working closely with AUKUS, India aims to forge partnerships that can address common challenges and enhance security in the Indo-Pacific.
- India's emphasis on multipolarity reflects its desire to avoid a unipolar or bipolar regional order dominated by any single power. Inclusivity in the Indo-Pacific region aligns with India's vision of cooperative security and open dialogue.
- India's approach to regional geopolitics involves balancing its interests in countering China's influence with the need to maintain constructive relations with its neighbours and other global powers. It aims to safeguard its strategic autonomy while pursuing its national interests.
- India's engagement in various areas, including maritime security, climate change, disaster relief, and vaccine diplomacy, underscores its commitment to addressing a wide range of challenges in the Indo-Pacific. This multifaceted approach enhances its relevance and influence in the region.

Israel's Iron Dome and Yom Kippur war

Why in News

- The Hamas militant group launched its worst attack inside the Jewish state's territory since 1948, killing at least 250 Israelis and abducting several others.

Important Points

- The surprise attack has brought back memories of the Yom Kippur war. Journalists have shared an undated video on X of the Iron Dome, Israel's air defence system, intercepting rockets coming in from Gaza.

Iron Dome

- It is a short-range, ground-to-air, air defence system that includes a radar and Tamir interceptor missiles that track and neutralise any rockets or missiles aimed at Israeli targets.

- It is used for countering rockets, artillery & mortars (C-RAM) as well as aircraft, helicopters and unmanned aerial vehicles.
- Origin: The genesis of the Iron Dome goes back to the 2006 Israeli- Lebanon war, when the Hezbollah fired thousands of rockets into Israel. The following year, Israel announced that its state-run Rafael Advance Systems would come up with a new air defence system to protect its cities and people.
- Success rate: The Iron Dome was deployed in 2011. While Rafael claims a success rate of over 90%, with more than 2,000 interceptions, experts agree the success rate is over 80%.



How does Iron Dome work?

- The Iron Dome operates through three primary systems working in coordination to shield the deployed area from threats:
 - ✓ Detection and Tracking Radar: This radar identifies incoming threats.
 - ✓ Battle Management and Weapon Control System (BMC): The BMC acts as an intermediary between the radar and the interceptor missile.
 - ✓ Missile Firing Unit: This unit launches interceptor missiles.
- The Iron Dome is operational in all weather conditions, including day and night.
- Each missile contains a proximity fuse, which is a laser-controlled fuse that activates when it is within ten meters of the target, releasing shrapnel to destroy it.
- The warhead is detonated to match the missile and target velocities for effective interception.
- The Iron Dome serves as a crucial defense system for Israel, protecting against various threats, especially rocket attacks from hostile entities.

The Yom Kippur War

- The Yom Kippur War, also known as the October War or Ramadan War, took place from October 6 to 25, 1973.
- It was a conflict between Israel on one side and Egypt and Syria on the other.

Significance of Yom Kippur:

- Yom Kippur is the holiest day in Judaism and Samaritanism, observed on the 10th day of the lunar month of Tishri, which usually falls in September or early October.
- It is known as the Day of Atonement.

Background

- Following its decisive victory in the Six-Day War of 1967, Israel had gained a reputation for being unbeatable.
- Israel also captured territories from its neighboring countries during the war, including the Golan Heights from Syria and the Sinai Peninsula from Egypt.
- Six years later, in 1973, Egypt and Syria launched a coordinated attack on Israel.
- Israel was caught off guard as it did not expect an attack during the Holy Islamic month of Ramadan.
- Many Israeli soldiers were on leave for Yom Kippur, further delaying their response.
- Initially, both Syria and Egypt made territorial gains.

Aftermath:

- Israel eventually halted the advances of Syrian and Egyptian forces after three days and launched counterattacks.

Comparison with Current Violence:

- The recent attacks on Israel have been compared to the Yom Kippur War for several reasons:
- Deadliest Attack Since Yom Kippur War: The current violence marks the deadliest attack on Israel since the Yom Kippur War, with over 2,500 Israeli soldiers killed during the Yom Kippur conflict.
- Criticism for Unpreparedness: Similar to the Yom Kippur War, the recent attacks on Israel caught the state by surprise, despite Israel's advanced intelligence and interception systems.
- Timing: The attacks occurred during the observance of Simchat Torah, a significant Jewish holiday that marks the end of the annual cycle of Torah readings and the start of a new one.

Significance of the Yom Kippur War:

Israel's Vulnerability :

- The Yom Kippur War shattered the perception of Israel's invincibility. The heavy casualties it suffered during the conflict demonstrated that Israel could be seriously harmed, if not defeated, in battle.
- This realization had a lasting impact on Israel's military and strategic thinking.

Egypt's Strategy :

- Egypt's strategy in launching the Yom Kippur War was not necessarily to defeat Israel militarily, given Israel's superior military capabilities. Instead, it aimed to inflict significant damage on Israel, making it more amenable to negotiations.
- The war achieved its objective by bruising Israel and pushing it towards the negotiating table.

For Egypt :

- As a result of the conflict, Israel returned the Sinai Peninsula to Egypt under the 1978 Camp David Accords.
- The 1979 Egyptian-Israeli peace treaty, which followed the war, marked a historic moment as it was the first instance of an Arab country officially recognizing Israel as a state and establishing diplomatic relations.
- The Yom Kippur War played a crucial role in paving the way for peace between Egypt and Israel, reshaping regional dynamics.

For Syria :

- The Yom Kippur War did not bring favorable outcomes for Syria. Israel ended up occupying more of the strategically significant and fertile Golan Heights plateau, a territory it continues to hold to this day.
- Syria's attempt to regain control of the Golan Heights during the war was unsuccessful, leading to a continued state of conflict and territorial dispute with Israel.

India and Tanzania Bilateral Relations**Why in News**

- The President of the United Republic of Tanzania undertook a State Visit to the Republic of India .

Tanzania and India**Overview :**

- Tanzania and India have enjoyed traditionally close, friendly and cooperative relations. Tanzania is India's largest and closest development partner in Africa.

Political :

- From the 1960s to the 1980s, the political relationship involved shared commitments to anti-colonialism, non-alignment as well as South-South Cooperation and close cooperation in international fora.
- Both sides agreed to continue with high-level political dialogue through the Joint Commission mechanism at the Foreign Ministers' level and bilateral meetings between Leaders.

Economic :

- India and Tanzania are important partners in terms of bilateral trade and investment.
- India is amongst the top five investment sources for Tanzania whereby 630 investment projects worth USD 3.74 billion have been registered and thus creating 60,000 new jobs.



- The two countries expressed a desire to expand bilateral trade using Local currencies. Reserve Bank of India has cleared the way for trade using local currencies i.e. Indian Rupee (INR) & Tanzanian Shilling by allowing the authorized banks in India to open Special Rupee Vostro Accounts (SRVA) of correspondent banks of Tanzania

Defence :

- Both India and Tanzania share the unanimous view that terrorism represents the gravest security threat to humanity.
- In the defense sector, They agreed on a five-year roadmap.
- It will add new dimensions to areas like military training, maritime cooperation, capacity building and defense industry.
- The two sides agreed to enhance cooperation in maritime security in the Indian Ocean region.
- They expressed satisfaction over the first ever India-Tanzania Joint Exclusive Economic Zone (EEZ) surveillance exercise conducted in July 2023 when the Indian Naval Ship Trishul visited Zanzibar and Dar es Salaam.
- India and Tanzania held bilateral maritime exercises in October 2022 during the visit of the Indian Naval Ship Tarkash.

Energy and Environment :

- India and Tanzania have close cooperation in the energy sector too.
- Tanzania has decided to join the Global Biofuels Alliance launched by India at the G20 Summit.
- Tanzania's decision to join the International Big Cat Alliance, will enhance global efforts to conserve big cats.

International forums :

- Both sides have active participation in UN Peacekeeping Operations and have contributed towards regional security initiatives.
- They agreed on the need for reform of the United Nations Security Council through expansion in both categories of membership.
- India and Tanzania agreed to cooperate under the framework of the Indian Ocean Rim Association (IORA) to ensure a peaceful, prosperous and sustainable Indian Ocean Region.

Education, Skill Development and Development of ICT :

- India has made significant contributions to Tanzania's skill development and capacity building through ICT centres, vocational training, defence training, Indian Technical and Economic Cooperation (ITEC) and Indian Council for Cultural Relations (ICCR) scholarships.
- The Indian side offered collaboration in areas of space technologies and digital public infrastructure under India Stack including Unified Payments Interface (UPI) and Digital Unique Identity (Aadhar).



Health :

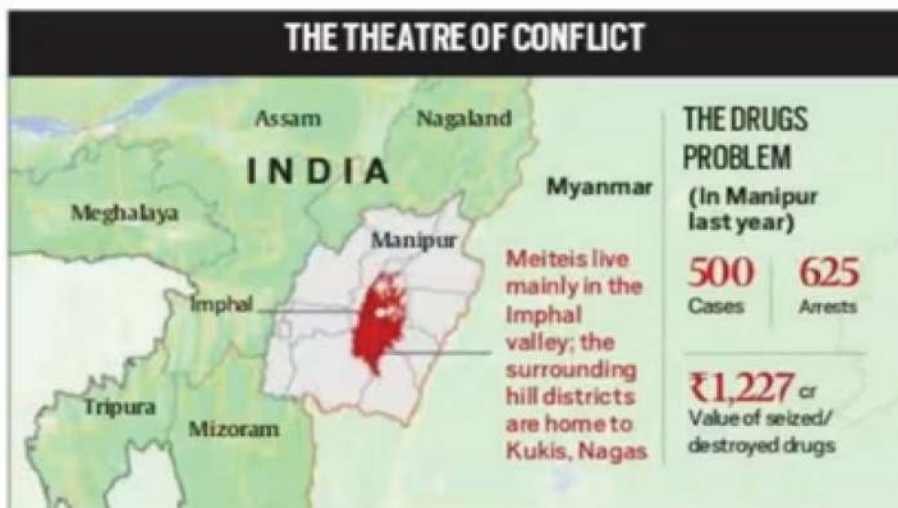
- Both sides agreed to work for collaboration in the health sector.
- The Tanzanian side appreciated the donation of 10 ambulances by the Government of India aimed at assisting in the provision of prompt medical care to patients and support to hospital infrastructure.
- Both sides also highlighted the excellent track record of bilateral cooperation in the implementation of grant projects including donation of radiation therapy machines, “Bhabhatron II”, essential medicines.
- People to People Relations and Cultural Exchanges: Both leaders underscored the importance of strong people-to-people contacts, cultural exchanges, academic linkages and tourism between the two countries.

Future Outlook

- India and Tanzania are maritime neighbors with a long history of trade and people to people linkages therefore Tanzania has an important place in India’s vision of SAGAR (Security and Growth for all in the Region).
- Technology forms an important base for the development journey of both nations.
- The agreement on digital public goods sharing will bolster our partnership.
- Both sides should harmonise trade volume data and take initiatives to further enhance bilateral trade volumes by organizing visits of business delegations, business exhibitions and interaction with business communities.
- Both leaders looked forward to increased interoperability between their Armed Forces.

Smart Fencing along Myanmar Border**Why in News**

- The Ministry of Home Affairs has said that an advanced smart fencing system of 100 km along the Indo- Myanmar Border is in the pipeline to strengthen the existing surveillance system.



What is Smart Fencing?

- Smart fencing entails deploying laser-activated fences and technology-enabled barriers to plug vulnerable gaps along frontiers
- Smart fencing uses a number of devices for surveillance, communication and data storage. Sensors like thermal imager, underground sensors, fiber optical sensors, radar and sonar will be mounted on different platforms like aerostat, tower and poles as part of the smart fence
- India's first 'smart fence' pilot project under the CIBMS project was launched in two 5-km patches along the India-Pak border.

Need for Smart Fencing

- The system will provide for round-the-clock surveillance on the border and in different weather conditions be it dust storm, fog or rain.
- Unfenced border and unregulated migration from Myanmar have been attributed as some of the factors responsible for the ethnic violence in Manipur
- Intelligence reports suggest that several northeast-based insurgent groups who have their camps in Myanmar keep coming to this side of the border to further fuel the already aggravated situation of Manipur.
- Manipur is affected by the activities of Meitei, Naga, Kuki, Zomi, and Hmar insurgent groups.
- The Government of India and the Government of Manipur entered into a Cessation of Operation (CoO) Agreement with Zeliangrong United Front (ZUF) group of Manipur in December 2022.

Free Movement Regime on the IMB

- India shares a 1,643 km long border with Myanmar which passes through the states of Arunachal Pradesh (520 km), Nagaland (215 km), Manipur (398 km) and Mizoram (510 km).
- The FMR is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa.
- The FMR was implemented in 2018 as part of Act East policy. The FMR was supposed to provide impetus to local trade and business. The region has a long history of trans-border commerce through customs and border haats.

Why is the FMR being discussed critically?

- FMR has been criticised for unintentionally aiding illegal immigration, drug trafficking, and gun running.



India's borders -

- India shares land borders with China, Bhutan, Nepal, Pakistan, Afghanistan, Bangladesh and Myanmar.
- India's borders are unique due to the variety of terrains through which these borders pass, namely deserts, mountains, glaciers and forests.
- It is obvious that managing such large borders in diverse terrain conditions pose myriad challenges.

India's strategy to guard its borders

- Construction activities: As part of the strategy to secure the borders and also to create infrastructure in the border areas of the country, several initiatives have been undertaken by the Border Management Division.
 - These include: Construction of fence, floodlighting, roads, Border Out Posts (BOPs), Company Operating Bases (COBs) and
 - Deployment of technological solutions along the India-Pakistan, India-Bangladesh, India-China, India- Nepal, India-Bhutan and India-Myanmar borders.
 - Deployment of troops & surveillance: The Indian Army and the BSF are deployed in multiple layers to form an anti-infiltration grid. The border fence and deployment of other surveillance devices have helped in reducing infiltrations.
 - Along Bangladesh, Nepal, Bhutan and Myanmar borders: Our borders with these countries are guarded primarily by paramilitary forces, and they have to deal with the smuggling and trafficking of humans, drugs, arms, illegal migration and movement of suspected insurgents.
 - Porous borders with Bangladesh and Myanmar and open borders with Nepal pose challenges in dealing with these nefarious activities.
 - Drugs Challenge: Drones have proved to be an effective tool in smuggling drugs across the border.
1. It will take more than mere vigilance on the border to deal with this menace.
 2. Improving the intelligence network within the state to nab the drug dealers on our side of the border must be the main priority of our security forces.

Asian Games

Why in News

- The 19th Asian Games recently concluded in Hangzhou, China.

Important Points

- Before the Asian Games, the Far Eastern Championship Games were held. After the Second World War, many Asian countries gained independence and Guru Dutt Sondhi, a member of the Indian International Olympic Committee, proposed the idea of Asian Games.
- The Asian Games, also known as Asiad, are the oldest and most prestigious event, regulated by the Asian Games Federation from 1951 to 1978 and since 1982, Olympic Council of Asia regulates the Asian Games.
- The Symbol: Rising sun with interlocking rings
- Athletes from all Asian countries are welcomed to participate in this event and Thailand boasts an impressive record of hosting this magnificent sporting event a staggering four times- 1966, 1970, 1978, and 1998.
- The Asian Games is recognised by the International Olympic Committee and is the second largest multi-sport event after the Olympics. Like the Olympic Games, they are held every four years.
- The Games follow the sports programme of the Olympics, with athletics and swimming as core sports, as well as featuring disciplines which reflect the diverse sporting culture of the continent such as South East Asia's sepak takraw, South Asia's kabaddi and East Asia's wushu.
- The first edition of the Asian Games was held in New Delhi in March 1951. The ninth edition of the Asian Games was also held in New Delhi in November and December 1982.
- India is one of the seven countries to have participated in all the editions of the Asian Games.



2023 Edition (Originally scheduled for 2022)

- Venue: Hangzhou, People's Republic of China, from 23 September to 8 October, 2023.
- Next Edition: 2026 in Nagoya, Japan
- Theme: 'Tides Surging in Asia'.



- Mascot: "Memories of Jiangnan", composed of Chenchen, Congcong and Lianlian, are three robots known as "The Three Little Ones", which reflect the internet prowess of Hangzhou city and Zhejiang province.
- Toppers: China topped the list with 383 – 201 gold medals, 111 silver medals and 71 bronze.
- More than 12,000 athletes from all 45 members of the Olympic Council of Asia competed in the 19th Asian Games.
- India's performance: 28 gold, 38 silver and 41 bronze to a total of 107 medals. This is the best-ever performance of the Indian contingent at the continental event.

Sri Lanka and Bangladesh looking for RCEP Membership

Why in News

- Sri Lanka and Bangladesh are considering joining the Regional Comprehensive Economic Partnership (RCEP) after India's withdrawal from the trade agreement in 2019.

Important Points

RCEP Agreement

- The Regional Comprehensive Economic Partnership (RCEP) is a trade agreement under negotiation between 16 countries, comprising the 10 ASEAN members and the 6 countries with which ASEAN has free trade agreements (Australia, China, Japan, New Zealand, South Korea, and Australia).
- With almost 25% of worldwide exports, 30% of global GDP, and nearly half of the world's population covered, the pact is regarded as the "largest" regional trade agreement.

Why did India decide to leave RCEP?

- Unfavourable Trade Balance: India was concerned about the growing trade imbalance it was experiencing with the majority of RCEP



* India withdrew from the Regional Comprehensive Economic Partnership negotiations in November 2019.

members, as imports were exceeding exports.

- **Dumping of Chinese Goods:** When India joined the Regional Comprehensive Economic Partnership (RCEP), it was concerned that lower-priced Chinese goods would flood the Indian market, hurting native industries.
- **Rejecting the Auto-Trigger Mechanism:** India proposed an auto-trigger mechanism that would have increased product tariffs upon reaching a predetermined threshold for imports. Other RCEP nations, however, opposed this idea.
- **Protection of Domestic Industry:** India was worried about tariffs on steel and dairy products being reduced or eliminated. This might have made domestic industry vulnerable to fierce rivalry.
- **Absence of Agreement on Rules of Origin:** India was concerned about possible rules of origin violations that would permit goods to be shipped through other nations and escape India's higher tariffs.

What were the implications of India Leaving the RCEP?

- **Check on Chinese Goods:** Even though Chinese items are already widely available in the Indian market, India's withdrawal enables it to retain some control over the influx of Chinese goods.
- **Protection of Domestic Industry:** By avoiding the RCEP, India's domestic industries are shielded from lower-priced imports.
- **Strengthening China's Economic Power:** China supports the Regional Comprehensive Economic Partnership (RCEP), and India's withdrawal could increase China's economic clout in the area.
- **Declined Trade Prospects:** India loses out on trade prospects with nations that make up a sizeable chunk of world trade by refusing to join the Regional Comprehensive Economic Partnership (RCEP).
- **Global Supply Networks:** In the modern manufacturing world, it is frequently necessary to integrate into global supply networks. This integration may have been made easier via RCEP.
- **Acceptance of Freer Trade:** By signing the RCEP, India would have demonstrated its commitment to freer trade, which would have drawn businesses wishing to move away from China.
- **Impact on India's Act East Policy:** India's Act East policy, which attempts to deepen relations with nations in the Indo-Pacific area, may be impacted by its withdrawal.
- **Missed Reforms Opportunity:** India had the chance to advance essential reforms that would have improved competitiveness under the RCEP.

What are the implications if our neighbouring countries like Sri Lanka and Bangladesh join RCEP?

Trade Possibilities :

- Bangladesh and Sri Lanka would have more trade opportunities with RCEP

members, who account for a sizeable share of the world economy if they were to join the group.

- It might increase these nations' exports, which would be advantageous to their economy.

Economic Integration :

- Through RCEP, Bangladesh and Sri Lanka would have greater access to a wider market and more integration into the Asia-Pacific economic scene.
- These nations' economies could flourish as a result of this integration, luring in foreign capital.

Competitiveness

- Bangladesh and Sri Lanka may be compelled to increase their competitiveness in the international market if they join RCEP.
- To effectively compete with other RCEP member nations, they might need to enhance the calibre and productivity of their industries.

Trade Focus Shift :

- By joining RCEP, Bangladesh and Sri Lanka might potentially become less dependent on any one market by shifting their trade priorities from their subcontinental trading partners to a more varied group of nations.

Impact on India

- As they get access to the RCEP market, Bangladesh and Sri Lanka may compete with India in several areas.
- Indian companies might have to adjust to the heightened competition in the area.
- What is the motivation for neighbouring countries to join RCEP?
- Viewing RCEP and other free trade agreements as a means of expanding its market and enhancing its competitiveness vis-à-vis global competitors, Sri Lanka is a country grappling with a financial crisis.



अगर सूख के तरह
जलना है तो रोज उगना पड़ेगा ।

Kenya-led Security Mission

Why in News

- The United Nations Security Council (UNSC) has approved the foreign security mission, led by Kenya, to restore security, protect critical infrastructure and control spiraling violence in Haiti.

Important Points

- The Haitian government sought international support to assist the national police in 2022, after the country plunged into a crisis when a group of gangs called “G9 and Family” seized control of the entry of the main fuel port Varreux in the capital protesting the government’s decision to cut fuel subsidies.
- This has resulted in widespread killings of people. Mass looting and burning of houses have led to the displacement of thousands of people, with around 200,000 fleeing their homes. As per estimates, almost half the population is in need of humanitarian assistance.



Haiti’s historical and political background -

- Haiti is a country in the Caribbean Sea that includes the western third of the island of Hispaniola and such smaller islands as Gonâve, Tortue (Tortuga), Grande Caye, and Vache. The capital is Port-au-Prince.
- Haiti is bordered to the east by the Dominican Republic, which covers the rest of Hispaniola, to the south and west by the Caribbean, and to the north by the Atlantic Ocean.
- After being under French rule for two centuries, Haiti became the first postcolonial black republic in 1804. It was also under United States occupation from 1915 to 1934.
- Once the richest of the French colonies, Haiti is now the poorest country in the Western Hemisphere, prone to national disasters and political instability.

United Nations Peacekeeping

- It is a unique global partnership which brings together the General Assembly, the Security Council, the Secretariat, troop and police contributors and the host governments in a combined effort to maintain international peace and security.
- Background: United Nations Peacekeeping began in 1948 when the Security Council authorized the deployment of military observers to the Middle East. The first military observers were sent by the UN Security Council to oversee the Israeli-Arab Armistice Agreement in 1948.

- Roles: UN peacekeepers provide security and the political and peacebuilding support to help countries make the difficult, early transition from conflict to peace.
- Peacekeepers help prevent conflict, protect civilians, advance political solutions, promote human rights, and support democratic processes.
- They also help build the capacity of state institutions and services and ensure that women and youth can participate in and lead peace processes.
- There are currently 12 UN peacekeeping operations deployed on three continents.
- The three basic principles that guide U.N 's Peacekeeping missions are: Consent of the parties; Impartiality; Non-use of force except in self-defense and defense of the mandate.

History of India's contribution

- India's contribution to UN Peacekeeping began with its participation in the UN operation in Korea in the 1950s.
- The UN entrusted the Indian armed forces with subsequent peace missions in the Middle East, Cyprus, and the Congo.
- India also served as Chair of the three international commissions for supervision and control for Vietnam, Cambodia, and Laos established by the 1954 Geneva Accords on Indo-china.
- Currently there are around 5,500 troops and police from India who have been deployed to UN Peacekeeping missions, the fifth highest amongst troop-contributing countries.

Blue Helmets

- Blue Helmets are the military personnel of the U.N. that work alongside the U.N. Police and civilian colleagues to promote stability, security, and peace processes.
- The personnel get the name from the iconic blue helmets or berets they wear.



जिस-जिस पर यह जग हंसा है,
उसी ने इतिहास रचा है।

Passenger ferry service between India and Sri Lanka

Why in News

- An international, high-speed passenger ferry service between Nagapattinam on the eastern coast of Tamil Nadu and Kankesanthurai in the northern province of Sri Lanka, has resumed.

Important Points

- The initiative is a revival of maritime connections that trace back to the early 1900s.
- The Indo-Ceylon Express or Board Mail, which operated between Chennai and Colombo via the Thoothukudi port, was halted in 1982 due to the civil war in Sri Lanka.
- The resumption of ferry services follows the signing of an MoU on passenger transportation by sea, signed by the two countries in 2011.
- The plan was first mooted after the war in 2011, during a period when Sri Lanka was earnestly attempting to shed its image as a “refugee-producing” country.



Current Developments

- The high-speed ferry is operated by the Shipping Corporation of India and has a capacity of 150 passengers.
- The distance of about 60 nautical miles (110 Km) between Nagapattinam and Kankesanthurai will be covered in approximately 3.5 hours depending on sea conditions.
- The vessel to be used as the ferry is called Cheriyaipani.
- The Government of India’s efforts to start the ferry service are in line with the Government’s priority to enhance connectivity with neighbours and in the wider Indian Ocean Region.
- The Nagapattinam port is one of the non-major ports under the maintenance of the Tamil Nadu Maritime Board, and is located on the shores of the Bay of Bengal at the estuary of the Kaduvaiyar river that flows south of the town between Akkaraipettai and Keechankuppam fishermen villages.
- The Union Ministry of External Affairs had sanctioned Rs. 8 crore to upgrade the infrastructure at the port.

Importance

- A direct passenger ferry between Sri Lanka and India will provide an efficient and cost-effective means of travel for the people of the two countries, boost tourism and trade links and strengthen people-to-people ties.
- The ferry will also enhance economic activity around the two ports and invigorate local economies.
- The ferry service will help strengthen cultural, commercial, and civilisational ties between the two nations.
- The launch affirmed the 'neighbourhood first' policy of India. Further, it would help improve cooperation in disaster management, maritime security, and ease of business between the two nations.

Future Outlook

- The Governments of India and Sri Lanka will continue to work towards commencement of ferry services between other ports, including the traditional route between Rameswaram- Talaimannar.

India's Bid for the 2036 Olympics

Why in News

- Prime Minister Modi recently confirmed India's formal bid to host the 2036 Olympic Games, raising questions about the financial implications and benefits of hosting this prestigious event.

Important Points

- India would bid to host the 2036 Olympics. PM Modi made the announcement during the inauguration of the 141st International Olympic Committee (IOC) session at the Jio World Centre in Mumbai.
- India is hosting the IOC session for the second time after a gap of about 40 years.
- The IOC's 86th session was held in New Delhi in 1983.
- As per the selection policy, the IOC first gets into an informal dialogue with interested host countries. If the world body is satisfied with the planning and capability of the candidate, then it enters a "targeted dialogue" when the IOC's Executive Board invites the "preferred host" to refine and present their proposal. There is no fixed timeframe for electing the hosts.

Selecting the Olympics Host City -

- International Olympic Committee (IOC) Decision: The host city is chosen by the International Olympic Committee members through a secret ballot, with the



majority vote determining the winner.

- **Competition and Diplomacy:** Securing the opportunity to host the Olympics involves significant financial resources and diplomatic efforts. Typically, winners are announced 7-8 years before the event.

Cost of Hosting the Olympics -

- **Expensive Endeavor:** Bidding for the Olympics is a costly proposition, with countries spending \$50-100 million, even for unsuccessful bids. In case of a successful bid, the expenses can soar into billions of dollars.
- **Examples of Expenditure:** Tokyo spent \$150 million for its failed 2016 bid and even more for the successful 2020 bid. Toronto refrained from bidding due to the \$60 million cost for the 2024 bid.
- **Infrastructure Investment:** Hosting the Olympics entails building stadiums and enhancing infrastructure to accommodate athletes and tourists.

Funding the Olympics Expenses -

- **Local Government Responsibility:** The majority of expenses, especially on infrastructure, are shouldered by the local government and are spread across the country's budget.
- **Borrowing for Cost Overruns:** Countries often resort to borrowing to cover cost overruns. The IOC contributes some revenue to the host country, but it constitutes a relatively small amount, e.g., \$1.5 billion for Rio De Janeiro in 2016.

Assessing the Worth of Hosting the Olympics -

- **Benefits of Hosting:** Hosting the Olympics elevates a country's global status, promotes it as an investment and tourist destination.
- **Cautions on Overspending:** Excessive spending can have dire consequences, as seen with Canada's 30-year debt from the 1976 Montreal Games, the impact on Greece's financial crisis after the 2004 Athens Olympics, and Rio's \$900 million bailout request from the Brazilian government.
- **Positive Outcomes:** In some cases, such as Beijing, hosting the Olympics led to significant GDP growth acceleration, by at least 0.8%.

India's Prospects

- **Favorable Timing:** India's bid aligns well with its status as the world's most populous and fastest-growing major economy.
- **Past Experience:** Having previously hosted the 1982 Asian Games and the 2010 Commonwealth Games, India possesses a favorable track record, which the IOC takes into consideration.
- **Gujarat's Bid:** Gujarat is contemplating bidding for the 2026 Commonwealth Games, which could further demonstrate India's hosting capabilities.
- **Economic Power:** India's ascent as an economic powerhouse enhances its candidacy's appeal to other nations.

India's Role in the Middle East Crisis

Why in News

- As tensions continue to escalate in the Middle East, diplomatic efforts have gained momentum. US President Joe Biden's decision to visit Israel to assess Israeli plans is a significant development.



Important Points

- The world finds itself sharply divided on this issue, with emerging geopolitical faultlines becoming increasingly solidified. These divisions are not limited to international boundaries but are also being mirrored within nations. Given India's growing interests in the Middle East, it cannot remain indifferent to the reverberations from its extended neighborhood.

India's Growing Stake in the Middle East -

- Remarkable Foreign Policy Achievement: India's engagement in the Middle East, under Prime Minister Modi's leadership, stands as a remarkable foreign policy achievement. This success transcends the often-debated.
- Building Strong Ties: Prime Minister's efforts have resulted in India building strong ties with key stakeholders in the Middle East. These relationships have given India a distinct and influential role in the region.
- Beyond Ideology: While the India-Israel relationship has been growing steadily since the 1990s, Prime Minister Modi has emphasized the need for India's Arab partners to build a relationship that addresses 21st-century challenges, shifting the focus away from religious heritage.

India's Balanced Approach

- Pragmatism in Diplomacy: India's approach to the Middle East is marked by pragmatism and balance. It seeks to navigate the complex dynamics of the region with a steady hand.
- Solidarity with Israel: India's expression of solidarity with Israel in the wake of a terror attack should not be viewed as a shift in policy, but as a natural response to support a friendly nation in a time of crisis.
- Support for a Two-State Solution: India's Ministry of External Affairs reaffirms its support for negotiations aimed at establishing a sovereign, independent, and viable Palestinian state living in peace alongside Israel. This stance reflects India's long-standing position and commitment to a peaceful resolution.

India's Transformational Role

- **Recognizing Regional Shifts:** India's engagement with the Middle East is shaped by its keen recognition of the transformative changes taking place in the Arab world. It was among the first to acknowledge and adapt to these shifts.
- **Pragmatic Engagement:** India's foreign policy in the Middle East is no longer riven solely by religious considerations. Instead, it emphasizes pragmatic engagement with regional stakeholders.
- **Critical Player:** This transformational role positions India as a critical player in the region. It allows India to respond effectively to emerging challenges and opportunities in a rapidly changing Middle East.
- **As the Middle East sees soaring tensions,** Indian diplomacy will inevitably be under scrutiny. While challenges in the region aren't new for New Delhi, what has evolved is its ambition to play a significant role in alignment with changing strategic realities.

Montreux Convention

Why in News

- The Turkish Ministry of National Defence recently announced that it will impose restrictions on the passage of warships belonging to countries not bordering the Black Sea within the framework of the Montreux Convention.

Important Points

- It is an agreement concerning the Dardanelles Strait and the Bosphorus Strait, also known as the Turkish straits or the Black Sea straits.
- The Turkish straits are the only maritime passage between the Black Sea and the Mediterranean Sea.
- According to the 1936 Montreux Convention Regarding the Regime of the Straits, often referred to simply as the Montreux Convention, Turkey has control over the Turkish Straits.
- In the event of a war, the pact gives Turkey the right to regulate the transit of naval warships and to block the straits for warships belonging to the countries involved in the conflict.
- Merchant vessels enjoy freedom of passage through the Turkish Straits, while passages of vessels of war are subject to some restrictions that vary depending on whether these vessels belong to the Black Sea littoral States or not.
- Besides some general restrictions applicable to all, vessels of war belonging to non-littoral States are subject to specific restrictions, such as those regarding maximum aggregate tonnage and duration of stay in the Black Sea.



The principal provisions of the Convention ruling the passage of vessels of war are:

- Aircraft carriers, whether belonging to the littoral States or not, can in no way pass through the Turkish Straits.
- Only submarines belonging to littoral States can pass through the Turkish Straits for the purpose of rejoining their base in the Black Sea for the first time after their construction or purchase, or for the purpose of repair in dockyards outside the Black Sea.
- The total number and maximum aggregate tonnage of all foreign naval forces which may be in the course of passage through the Turkish Straits are limited to 9 and 15,000 tons respectively.
- The maximum aggregate tonnage which non-littoral States may have in the Black Sea is 45,000 tons.
- In this regard, the maximum aggregate tonnage of the vessels of war that one non-littoral State may have in the Black Sea is 30,000 tons.
- Vessels of war belonging to non-littoral States cannot stay more than 21 days in the Black Sea.
- Passages through the Turkish Straits are notified to Türkiye through diplomatic channels prior to intended passages.
- The notification time is 8 days for vessels of war belonging to littoral States, and 15 days for those of non-littoral States.



Article 19 of the Convention

- Vessels of war belonging to belligerent powers, whether they are Black Sea Powers or not, which have become separated from their bases, may return thereto.
- That means warships can return to their original bases through the passage, and Turkey cannot prevent it.
- For example, a Russian fleet registered in the Black Sea but currently located in the Mediterranean Sea is allowed to pass through the Bosphorus and Dardanelles straits and return to its base.

Invocation of Vienna Convention by India and Canada

Why in News

- Amid the ongoing standoff between India and Canada, the Canadian government announced it has recalled 41 diplomats posted in India, and their family members.

Important Points

Vienna Convention on Diplomatic Relations :

- The Vienna Convention on Diplomatic Relations (1961) is a United Nations treaty that set some common principles and terms on how countries must treat each other's diplomatic representatives.
- It was signed by 61 countries in 1961.
- It puts forth a framework for diplomatic interactions between independent nations and aims to ensure the 'development of friendly relations among nations'.
- Aim: To ensure friendly relations and maintain proper communication channels between countries.



The principle of diplomatic immunity :

- One prominent example of such principles is that of diplomatic immunity.
- It's the privilege of exemption from certain laws and taxes granted to diplomats by the country in which they are posted.
- It was framed so that diplomats can function without fear, threat or intimidation from the host country.
- Diplomatic immunity flows from two conventions, popularly called the Vienna Conventions :
 - the 1961 Vienna Convention and
 - the Convention on Consular Relations, 1963.

Today, 193 countries have ratified the convention, meaning they agree it should be legally binding on them.

- Ratification means that a country should seek approval for the treaty on the domestic level and enact a law in their country to give effect to it.
- India ratified it through the Diplomatic Relations (Vienna Convention) Act of 1972.

1961 Vienna Convention and recalling diplomats -

- Article 11 of the convention states that the receiving State may, at any time and without having to explain its decision, notify the sending State that the head of the mission or any member of the diplomatic staff of the mission is persona non grata or unwelcome.

- In any such case, the sending State shall either recall the person concerned or terminate his functions with the mission.
- If the sending State refuses or fails within a reasonable period to carry out its obligations here, that is if they refuse to recall their diplomats, the receiving State may refuse to recognise the person concerned as a member of the mission.
- In the absence of specific agreement as to the size of the mission, the receiving State may require that the size of a mission be kept within limits considered by it to be reasonable and normal.



**जीत और हार आपकी सोच पर
निर्भर करती है, यदि मान लोगे तो हार
होगी और ठान लोगे तो जीत**

Chapter
8

Government Scheme

National Means-cum-Merit Scholarship Scheme (NMMSS)

Why in News

- The Ministry of Education recently started online registration for the National Merit cum Means Scholarship Scheme for the year 2023-24.

Important Points

- It is a Centrally Sponsored Scheme launched in May, 2008.
- Objective : Award scholarships to meritorious students of economically weaker sections to arrest their dropout at class VIII and encourage them to continue the study at secondary stage.



Benefits:

- One lakh fresh scholarships are awarded by the Ministry of Human Resource Development to selected students every year for study in classes from IX to XII in recognized Government, Government-aided, and local body schools.
- The amount of scholarship is Rs. 12000/- per annum (Rs. 1000/- per month) per student.
- NMMSS scholarships are disbursed directly into the bank accounts of selected students by electronic transfer through the Public Financial Management System (PFMS) following DBT mode.

Eligibility criteria:

- Students whose parental income from all sources is not more than Rs. 3,50,000/- per annum are eligible to avail the scholarship.
- The students must have minimum of 55 % marks or equivalent grade in Class VII examination for appearing in selection test for award of scholarship (relaxable by 5% for SC/ST students).
- The students should be studying as regular student in a Government, Government-aided and local body school.
- The students studying in the Navodaya Vidyalaya Samiti (NVS), Kendriya Vidyalaya Sangathan (KVS) and residential schools are not eligible for the scholarships under the NMMSS.
- There is reservation as per State Government norms.
- Selection Test: Each State and UT conducts its own test to select students for awarding the National Means-cum-Merit Scholarship.

- NMMSS is boarded on the National Scholarship Portal (NSP) - a one stop platform for scholarship schemes given to students.

Payments Infrastructure Development Fund (PIDF) Scheme

Why in News

- Reserve Bank of India (RBI) recently extended the Payments Infrastructure Development Fund (PIDF) scheme by another two years and will include beneficiaries of the PM Vishwakarma scheme.

Important Points

- It was first launched by the RBI in January 2021 for a period of three years.
- Objective: Increasing the number of payment acceptance devices multifold in the country.
- PIDF is a fund set up by the RBI, in consultation with major authorised card networks, to facilitate the development of payment acceptance infrastructure in tier-3 to tier-6 cities and the north-eastern states of India.
- The Union Territories of Jammu and Kashmir and Ladakh will also be given special focus.
- Beneficiaries of the PM SVANidhi Scheme in Tier-1 and 2 centres were later included in August 2021.

RBI ANNOUNCES CREATION OF Payments Infra Development Fund

- RBI Will Make Initial Contribution Of Rs 250 Cr To The Fund
- Fund To Encourage Deploying Points of Sale (PoS) Infra In Tier-3 To Tier-6 Centres, North Eastern States
- Banks, Card Networks To Invest 50% In PIDF; Card Issuing Banks & Card Networks Will Contribute To Cover Operational Expenses
- RBI To Also Contribute To Yearly Shortfalls If Necessary
- PIDF Will Be Governed Via Advisory Council, Managed & Administered By RBI



Funding:

- The PIDF is funded by the RBI and the major authorized card networks in India.
- The scheme provides financial assistance to banks and non-bank financial companies (NBFCs) for the deployment of PoS terminals and other payment acceptance infrastructure in eligible regions.

Allocation

- When establishing criteria for fund allocation, the primary objective will be to identify and assist merchants who have not yet adopted payment acceptance technology, specifically those who lack any payment acceptance devices.
- These merchants may be eligible to receive one physical and one digital acceptance device each through the program.
- Merchants providing essential services (transport, hospitality, etc.), government payments, fuel pumps, PDS shops, healthcare, kirana shops, street vendors, etc., may be covered, especially in the targeted geographies.

Governance:

- The PIDF will be governed through an Advisory Council and managed and administered by the RBI.
- The implementation of targets shall be monitored by the RBI with assistance from card networks, the Indian Banks' Association (IBA) and the Payments Council of India (PCI).

What is PM Vishwakarma scheme?

- It is a Central Sector Scheme launched on 17th September, 2023, with a financial outlay of Rs.13,000 crore.
- Time period: Five years (FY 2023-24 to FY 2027-28).

Aim:

- This initiative supports small businesses, focusing on traditional artists and craftspeople.
- It provides small workers and craftsmen with financial help, training, improved methods, and skill mentoring.
- It also aims at improving the quality as well as the reach of the products and services of artisans and craftsmen.
- Under this scheme, the artisans and craftspeople will be provided recognition through the PM Vishwakarma certificate and ID card, credit support upto 1 lakh (first tranche) and Rs.2 lakh (second tranche), with a concessional interest rate of 5%.

Key Facts about PM SVANidhi Scheme:

- Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) Scheme was launched by the Government of India in June, 2020.
- Objective: To empower street vendors by not only extending loans to them but also for their holistic development and economic upliftment.
- The scheme intends to facilitate-collateral free working capital loans of up to Rs.10,000/- of one-year tenure, to approximately 50 lakh street vendors.
- Nodal Ministry: Ministry of Housing and Urban Affairs

Andhra Pradesh's Guaranteed Pension System

Why in News

- Andhra Pradesh's Guaranteed Pension System (GPS) blends elements from both old and new pension schemes, offering the advantages of a guaranteed pension while not overly straining the state's finances. This innovative system holds the potential to preserve India's hard-won pension reforms.

What is the Andhra Pension System?

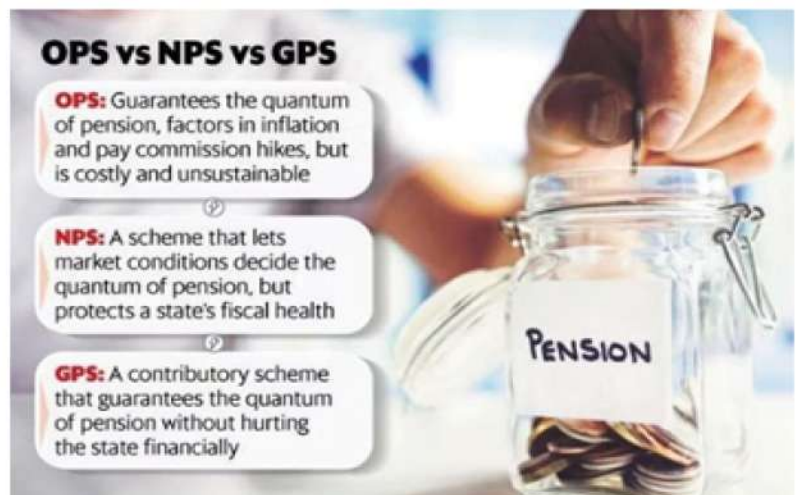
- **A Hybrid Approach:** The Andhra Pradesh Guaranteed Pension System Bill, 2023, recently approved by the state assembly, introduces a unique blend of the Old Pension Scheme (OPS) and the New Pension Scheme (NPS) implemented in 2004.
- **Contributory Guarantee:** This system ensures government employees a monthly pension equivalent to 50% of their last-drawn salary, including dearness allowance relief.
- **Reason for Introduction:** Andhra Pradesh introduced GPS as a response to resistance against NPS, which was viewed by many as inferior to the earlier scheme. The return to OPS was considered fiscally unsustainable, with the potential to drive the state's fiscal deficit to 8% by 2050.

Breakthrough created

- **Long-standing Pension Reforms:** India struggled for over a decade to implement pension reforms that led to the introduction of NPS in 2004.
- **Growing Discontent:** Over time, public sentiment favored those receiving pensions under the old scheme, leading to discontent.
- **Political Promises:** Political parties capitalized on this discontent, pledging to return to the old scheme if elected.
- **Andhra's Middle Path:** Andhra Pradesh's GPS offers a middle ground, preventing a regressive return to the old scheme while addressing concerns about NPS.

How does the Andhra System work?

- **Enhancing Attractiveness:** The contributory system guarantees a pension equivalent to 50% of the last drawn salary.
- **Balancing Financial Burden:** Any shortfall in NPS returns is covered by the government.
- **Current NPS Pensions:** Presently, NPS pensions amount to around 40% of an employee's last drawn salary. Therefore, the government only has to fund the remaining balance.



Alternative to NPS

- **Contributory Nature:** NPS is a contributory scheme, with both employees and employers contributing to a corpus invested for returns.
- **Uncertainty:** In NPS, the pension amount is not guaranteed, as it depends on corpus returns influenced by market conditions.
- **Ignoring Inflation:** NPS does not consider inflation or pay commission recommendations.
- **Market Dependency:** Opposition to NPS is fueled by fears of further reductions in pension due to adverse market conditions.

Why not revert to the Old Pension Scheme?

- **Budgetary Constraints:** Under OPS, pensions were financed through the budget.
- **Unsustainable Growth:** Pension liabilities for all states saw a compound annual growth rate of 34% for a 12-year period ending in 2021-22.
- **Budgetary Impact:** In 2020-21, pension outgo accounted for 29.7% of states' revenues.

SHRESTHA Scheme

Why in News

- The Ministry of Social Justice & Empowerment has launched the “Scheme for Residential Education for Students in High Schools in Targeted Areas (SHRESHTA)”.

About the Scheme:

- **Aim :** To provide seats to the meritorious SC students in the best private residential schools in the country.
- **Implementation:** It is being implemented in two Modes:
 - **Schooling under CBSE/State Board Affiliated Private Residential Schools:**
 - Under this mode, meritorious students will get admission to selected private schools of CBSE and State Boards.
 - These students will be selected through the National Entrance Test for SHRESHTA (NETS), conducted by the National Testing Agency (NTA).
 - Selected students will be admitted to private residential schools in the 9th and 11th grades, enabling them to complete their education up to the 12th standard.
 - **Eligibility :** Under this scheme, around 3000 SC students with parents' annual income of up to 2.5 lakh are selected annually based on their merit.



Admission to NGO-operated schools :

- Under this mode of education, schools and hostels run by voluntary organizations (VOs) and NGOs, will offer education up to class 12.
- Schools and hostels receiving grant-in-aid and demonstrating satisfactory performance will continue to benefit under this mode.

Benefits :

- Under this for the students taking admission, their entire fee including school fees (tuition fees) and hostel fees (mess charges) will be waived.
- Admissible fees for each class are specified as follows- 9th: Rs1,00,000, 10th: Rs 1,10,000, 11th : Rs 1,25,000, 12th: Rs 1,35,000.
- Students can take the benefit of a bridge course within the selected schools, which focuses on the individual academic requirements of students and aids their adjustment to the school environment.
- The cost of the bridge course, equivalent to 10% of the annual fee, is also covered under the scheme and the progress of these students will be monitored by the Ministry of Education.

Gyan Sahayak Scheme**Why in News**

- The Gyan Sahayak Scheme, introduced by the Gujarat state government, has stirred controversy, facing opposition from various quarters of society.

Important Points

- The scheme seeks to address teacher vacancies in government schools through contractual appointments until regular appointments are finalized.
- Many states in India have opted for the contractual filling of govt job vacancies ever since the regime change in 2014.

Understanding the Gyan Sahayak Scheme

- Interim Solution: The scheme aims to temporarily fill teaching positions in primary, secondary, and higher secondary government schools until regular appointments could be made.
- Basis in National Education Policy (NEP) 2020: The scheme draws inspiration from the NEP 2020, which emphasizes the need for teachers with interdisciplinary skills, beyond traditional academic subjects.

Scope of the Scheme :

- **Applicability:** The Gyan Sahayak Scheme is applicable to government and grant-in-aid schools, particularly Mission

Schools of Excellence:

- **Vacancy Statistics:** The government announced the hiring of 15,000 Gyan Sahayaks for primary schools and 11,500 for secondary and higher secondary schools.
- **Salary Structure:** Gyan Sahaks receive varying monthly salaries based on their school level: Rs 21,000 for primary, Rs 24,000 for secondary, and Rs 26,000 for higher secondary.
- **Vacancy Context:** Gujarat reports an estimated 32,000 teaching vacancies in government and grant-in-aid schools, primarily affecting primary and secondary schools. Some secondary schools rely on Pravasi teachers to meet staffing needs.

The National Education Policy, 2020 promises multiple entry and multiple exit (MEME) for students, offering 'greater attention to life aspirations and greater flexibility' for students

- NEP says it removes 'rigid boundaries' and creates new possibilities for 'life-long learning'

- An academic bank of credit will digitally store the academic credits earned by a student

- Students can opt for it at graduate, Master's and doctoral levels

- Kerala government had decided not to implement MEME in the State

- A certificate will be provided after completing one year of study, a diploma after two years, and a degree after a three-year programme



- State will allow multiple entry, but exit will be allowed either after three years with a degree or after four years with an Honour's degree

Eligibility Criteria

- **Primary Gyan Sahayak:** Candidates must have cleared the Gujarat Examination Board's Teachers Eligibility Test (TET)-2.
- **Secondary and Higher Secondary Gyan Sahayak:** Candidates should have cleared the Teacher Aptitude Test (TAT).
- **Age Limit:** Both primary and secondary school Gyan Sahayaks must be under 40 years of age, while higher secondary school Gyan Sahayaks can be up to 42 years old.
- **Merit-Based Selection:** Selection involves the preparation of a merit list based on percentile ranks from TET-2 results, followed by the allocation of Gyan Sahayak positions to School Management Committees (SMCs) through district education officers.

What are the terms of appointment, salary, age, contract period?

- The contract of 11 months for Gyan Sahayaks is to be automatically cancelled on completion. School Management Committees have the power to make such contracts.
- At the end of the contract period, the work will be reviewed on the basis of which a new contract can be drawn.

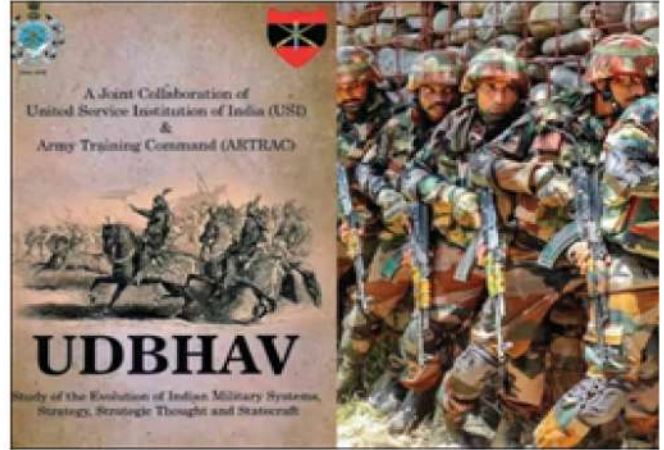
Indian Army's Project Udbhav

Why in News

- Union Defence Minister Shri Rajnath Singh unveiled 'Project Udbhav' during the inauguration of the Indian Military Heritage Festival.

Important Points

- Defence Minister Rajnath Singh launched the Project Udbhav and inaugurated the first edition of the Indian Military Heritage Festival in Delhi.
- The objective of the IMHF is to acquaint future thought leaders with the dynamics of comprehensive national security with special emphasis on India's strategic culture, military heritage, education, modernisation of security forces and Atmanirbhar Bharat.
- Reports and papers prepared during various seminars, workshops, and panel discussions will serve as a base for creating valuable publications for wider dissemination and further references.
- Going forward, a series of events and workshops, will dwell on various facets of our strategic culture and culminate in January 2024, with a publication, to document and institutionalise such knowledge.



Project Udbhav:

- Project Udbhav is a collaboration between the Indian Army and the United Service Institution of India (USI), a defence services think tank.
- The project, named 'Udbhav', translates to 'origin' or 'genesis', recognizing the profound knowledge embedded in our nation's historical texts spanning centuries.
- At its core, the project seeks to amalgamate ancient insights with modern military practices, creating a comprehensive approach to tackle present-day security challenges.
- This initiative aims to bridge the gap between age-old wisdom and contemporary military education.
- India's ancient knowledge system, rooted in a 5000-year-old civilizational legacy, boasts a repository of intellectual texts and manuscripts.
- Project Udbhav, as per MoD, aims to facilitate a profound understanding of these systems and their enduring relevance in the modern era.

Inspiration Behind Project Udbhav:

- The initiative builds upon earlier research by the Army Training Command, resulting in the compilation of the 'Compendium of 75 Stratagems' based on ancient Indian scriptures.

- The project draws inspiration from revered texts like Chanakya's Arthashastra which emphasises the importance of strategic partnerships and diplomacy, aligning with contemporary practices.
- Similarly, Thirukkural, the classical Tamil text, champions ethical conduct in all endeavors, including warfare, aligning with modern codes of ethics and principles of the Geneva Convention.
- The records of history also offer invaluable lessons from prominent military campaigns and leaders.
- The empires of Chandragupta Maurya, Ashoka, and the Cholas serve as examples of flourishing influence during their times.
- Noteworthy is the Ahom Kingdom's 600-year rule, marked by repeated defeats of the Mughals.

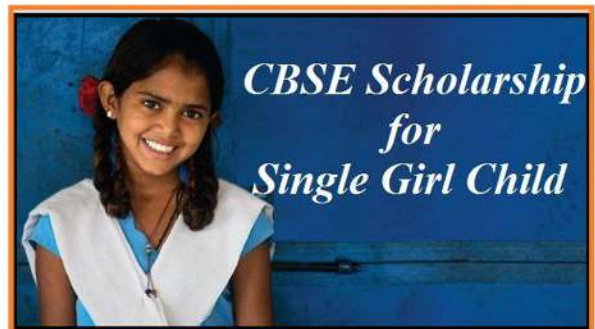
CBSE Merit Scholarship Scheme for Single Girl Child

Why in News

- The Central Board of Secondary Education (CBSE) recently extended the registration date for the CBSE Merit Scholarship Scheme for Single Girl Child, 2023.

Important Points

- It was launched by the Ministry of Education.
- The scheme is aimed at recognising the efforts of parents in promoting education among girls and providing encouragement to meritorious students.
- The objective of the scheme is to provide scholarships to meritorious single girl students who are the only children of their parents, have passed the CBSE Class X Examination with 60% or more marks, and are continuing their further school education in Classes XI and XII.
- It provides financial aid every month to the selected students, so they can continue their higher education.



Eligibility Criteria:

- The applicant should be the single girl child of her family.
- The applicant should have secured 60% or more marks in the CBSE Class 10th Examination and be studying Class 11th and 12th in school (affiliated with CBSE).
- The tuition fee should not be more than ₹1,500/- per month during the academic year. In the next two years, the total enhancement in tuition fees in such a school shall not be more than 10% of the tuition fee charged.
- The applicant must be an Indian National.

- The student must continue her school studies in Classes 11th and 12th.
- Applicants who have the status of Non-Resident Indian (NRI) are also eligible to apply. The tuition fee for the NRIs has been decided maximum of Rs. 6,000/- per month.

Benefits

- The scholarship offers a maximum of Rs. 500 per month.
- The amount is payable for a maximum period of two year Payment will be made through ECS/NEFT.
- The scholarship is eligible for renewal annually upon successful completion of class XI, contingent upon the scholar's achievement of 50% or more aggregate marks in the exam determining promotion to the next class.
- Renewal or continuation of the scholarship requires the prior approval of the Board if the scholar discontinues the current course of study or changes schools.
- Satisfactory conduct and regular attendance are necessary for maintaining the scholarship.



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जो सही करने की हिम्मत
उसी में आती है जो गलती
करने से नहीं डरते है।

Chapter

9

Miscellaneous

Nobel Peace Prize 2023

Why in News



- Narges Mohammadi, an Iranian activist, was awarded the Nobel Prize for Peace in 2023.

Important Points

- The Nobel Committee recognized her dedication to fighting against the oppression of women in Iran and her relentless advocacy for human rights and freedom.
- It is awarded annually to individuals or organizations that have made significant contributions to promoting peace and fraternity between nations, reducing standing armies, and advancing the cause of peace.

Background

- Narges Mohammadi was born in Iran in 1972. Her family's history is deeply rooted in political activism, starting with their involvement in the Iranian Revolution of 1979, which ultimately led to the establishment of an Islamic republic after the monarchy's downfall.



- Mohammadi's journey into activism was profoundly influenced by two significant childhood experiences. Her mother's regular visits to her imprisoned brother left a lasting impression, as did her exposure to daily television announcements of executed prisoners.

Transition to Activism

- From a young age, Narges Mohammadi was actively engaged in various causes, including advocating for women's rights in Iran and protesting against the death penalty and harsh sentences for political protesters.
- She worked as an engineer in Tehran but was eventually dismissed from her job due to government directives.

Involvement in Human Rights Organizations

- In the 2000s, she became part of the Center for Human Rights Defenders in Iran, founded by the renowned Iranian lawyer Shirin Ebadi, with a mission to abolish the death penalty.
- Shirin Ebadi herself received the Nobel Peace Prize in 2003 for her efforts in defending human rights in Iran.

November 2023

UPSC

Arrests and Imprisonments

- Narges Mohammadi faced her first arrest in 2011 and has had multiple encounters with the Iranian judiciary.
- She has been convicted five times, arrested 13 times, sentenced to a total of 31 years in prison, and received 154 lashes. Additional judicial cases were opened against her in 2023, potentially leading to more convictions.
- Even while incarcerated, she organized protests alongside fellow women prisoners, standing up against the Iranian government.
- In 2022, she authored a book titled 'White Torture,' recounting her experiences in solitary confinement and including interviews with other Iranian women who had also undergone such punishment.

Previous Awards and Recognition

- Narges Mohammadi received prominent awards in the West for her activism, including the 2023 PEN/Barbey Freedom to Write Award and the 2023 UNESCO/Guillermo Cano World Press Freedom Prize.
- In 2022, she was featured in the BBC's list of 100 inspiring and influential women from around the world.

Legacy of Iranian Nobel Peace Prize Laureates

- Narges Mohammadi joins the ranks of Iranian Nobel Peace Prize laureates, with Shirin Ebadi being the first to receive the award in 2003 for her efforts in promoting democracy and human rights.
- Both women have faced persecution and imprisonment for their work in defending the rights of women, children, and political activists.

About the Prize

- The Nobel Peace Prize, established by the will of Swedish industrialist, inventor, and armaments manufacturer Alfred Nobel, is one of the five prestigious Nobel Prizes, alongside those in Chemistry, Physics, Physiology or Medicine, and Literature.
- Since its inception in March 1901, the Nobel Peace Prize has been awarded annually, with some exceptions, to individuals or organizations that have made significant contributions to promoting peace, fraternity between nations, and the reduction or abolition of standing armies.

Selection Process

- The Nobel Peace Prize recipient is chosen by the Norwegian Nobel Committee, a five-member committee appointed by the Parliament of Norway. Since 2020, the prize has been awarded in the Atrium of the University of Oslo.
- In the past, the prize ceremony was held in various locations, including Oslo City Hall (1990–2019), the Norwegian Nobel Institute (1905–1946), and the Parliament (1901–1904).



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November 2023

Controversies

- Due to its inherently political nature, the Nobel Peace Prize has been the subject of numerous controversies throughout its history.
- The Norwegian Nobel Committee invites qualified individuals to submit nominations annually. Nominators include members of national assemblies and governments, members of international courts, academics, previous recipients, and members of the Norwegian Nobel Committee itself.

Nominations and Secrecy

- Nominations are submitted by the beginning of February in the award year, and committee members can submit nominations until the first Committee meeting after this deadline.
- The statutes of the Nobel Foundation prohibit the public disclosure of nominations, considerations, or investigations related to awarding the prize for at least 50 years after it has been awarded. This confidentiality is a hallmark of the Nobel Peace Prize process.

Selection and Announcement

- Nominations are initially considered by the Nobel Committee, leading to the creation of a shortlist of candidates. This shortlist is then reviewed by permanent advisers to the Nobel Institute, including its Director and Research Director, along with Norwegian academics with expertise in relevant subject areas.
- The Committee seeks a unanimous decision, but this is not always achievable. Typically, the final decision is reached in mid-September, and the announcement is made in early October.

Award Ceremony and Medal

- The Nobel Peace Prize is presented in the presence of the King of Norway and the Norwegian royal family on December 10th each year, coinciding with the anniversary of Alfred Nobel's death.
- The Nobel laureate receives a diploma, a medal, and a document confirming the prize amount, which was worth 9 million SEK as of 2019.
- The ceremony's venue has changed over the years but has been held at Oslo City Hall since 1990.

Design of the Nobel Peace Prize Medal

- The medal for the Peace Prize was designed by Norwegian sculptor Gustav Vigeland in 1901. It features a unique profile sculpture of Alfred Nobel.
- The reverse side of the medal portrays three men in a 'fraternal bond,' along with the inscription 'Pro pace et fraternitate gentium' ("For the peace and brotherhood of men").
- The medal's edge is inscribed with the year of its awarding, the name of the recipient, and "Prix Nobel de la Paix."

Drone (Amendment) Rules, 2023

Why in News

- Recently, the Ministry of Aviation has notified the Drone (Amendment) Rules, 2023 for drone pilots.

Important Points

- The new rules have been introduced under the authority granted by the Aircraft Act, of 1934.

Aim:

- To promote and facilitate drone operations across India.
- To make India a global Drone Hub by 2030.
- To encourage more individuals especially in Rural areas and in the Agricultural Sector, to embrace drone technology and its benefits.



Need for the New Rules

- Earlier having a passport to obtain a Remote Pilot Certificate caused difficulties for many individuals, especially in the Agricultural sector in rural areas.
- To address the issue and liberalize drone operations, government-issued identity proof like Voter ID, Ration Card, or Driving License, and address proof can be used instead of a passport.

Eligibility for Remote Pilot Certificate:

- Individuals should be between 18 to 65 years of age.
- They should have passed class 10 or its equivalent from a recognized board.
- They should have completed training as specified by the DGCA from any authorized remote pilot training organization.
- The certificate will be valid for ten years.
- Exception: No Remote Pilot Certificate is required when the drone is of size up to 2kg for non-commercial drone use.

Drone Categories

- Nano** : Less than or equal to 250 grams.
- Micro** : Greater than 250 grams and less than or equal to 2 kg.
- Small** : Greater than 2 kg and less than or equal to 25 kg.
- Medium** : Greater than 25 kg and less than or equal to 150 kg.
- Large** : Greater than 150 kg.

Drone Market in India

- India's potential: Drones and allied component industries can boost India's manufacturing potential by approximately \$23 billion by 2030.
- Market size: India's drone manufacturing industry crossed annual sales of Rs 60 crore in FY 2021 and is expected to grow to Rs 900 crore by FY 2024.

Drone Pilot Training Institutes in India

- Indira Gandhi Rashtriya Uran Akademi
- Tamil Nadu signed a memorandum of understanding with the Indira Gandhi Rashtriya Uran Akademi (IGRUA), De Drone World Solutions aimed at producing 2,500 drone pilots a year.
- Government Aviation Training Institute
- The Bombay Flying Club
- Sangam City's Naini Aerospace Limited (NAeL) in Prayagraj
- NAeL tied up with a Prayagraj start-up Empyrean Robotics Technologies

TRAI can't regulate OTT platforms

Why in News

- The Telecom Disputes Settlement and Appellate Tribunal (TDSAT) has issued an interim order clarifying that Over the Top (OTT) platforms, such as Hotstar, fall outside the jurisdiction of the Telecom Regulatory Authority of India (TRAI).

Important Points

- The All India Digital Cable Federation (AIDCF) initiated the petition, alleging that Star India's free streaming of ICC Cricket World Cup matches on mobile devices through Disney+ Hotstar is discriminatory under TRAI regulations.
- This is because viewers can only access matches on Star Sports TV channels by subscribing and making monthly payments.



Diverging Opinions on OTT Regulation

- IT Ministry vs. DoT: The IT Ministry contends that internet-based communication services, including OTT platforms, do not fall under the jurisdiction of the DoT, citing the Allocation of Business Rules.
- DoT's Draft Telecom Bill: The DoT proposed a draft telecom Bill that classifies OTT platforms as telecommunications services and seeks to regulate them as telecom operators. This move has encountered objections from MeitY.

- TRAI's Attempt at OTT Regulation
- Changing Stance: TRAI, after three years of maintaining that no specific regulatory framework was required for OTT communication services, began consultations on regulating these services.
- Consultation Paper: In June, TRAI released a consultation paper seeking input on regulating OTT services and exploring whether selective banning of OTT services could be considered as an alternative to complete Internet shutdowns.
- Telecom Operators' Demand: Telecom operators have long advocated for "same service, same rules" and have pushed for regulatory intervention for OTT platforms.

Significance of TDSAT's Order

- TDSAT decision holds significance due to ongoing debates over the regulation of OTT services.
- TRAI and the Department of Telecommunications (DoT) have been attempting to regulate OTT platforms, while the Ministry of Electronics and Information Technology opposes these efforts.
- Recommendations and Monitoring
- In September 2020, TRAI recommended against regulatory intervention for OTT platforms, suggesting that market forces should govern the sector.
- However, it also emphasized the need for monitoring and intervention at an "appropriate time."
- The recent TDSAT ruling on OTT platform jurisdiction adds complexity to the ongoing debate over the regulation of these services in India.
- While TRAI and the DoT seek regulatory measures, the IT Ministry contends that such services fall outside the purview of telecommunications regulation.
- The evolving landscape highlights the need for a nuanced approach to balance the interests of various stakeholders, including telecom operators, government authorities, and the broader public.

Lakhpati Didi

Why in News

- The Lakhpati Didi Initiative is a significant effort launched by the Indian government under the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM).

Important Points

- This initiative, announced by the Prime Minister on Independence Day in 2023, aims to empower women in rural areas by encouraging them to start micro-enterprises within their villages.

Key objectives and features of the Lakhpati Didi Initiative

- The primary goal of the initiative is to encourage women to establish micro-enterprises and become economically self-sufficient. The focus is on training women in various skills, enabling them to earn a sustainable income of at least Rs 1 lakh per annum per household.
- Women in self-help groups (SHGs) are provided training in diverse skills such as plumbing, LED bulb making, drone operation and repair, tailoring, and weaving. This training equips them with the necessary skills to generate income.
- The government plans to train two crore (20 million) women under this initiative. These women will be members of self-help groups (SHGs) in their respective communities.
- Upon completion of the training, women are given opportunities to use their acquired skills for income generation. This aspect ensures that the training translates into tangible economic benefits for the participants.
- The initiative is implemented by the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM), which is a flagship poverty alleviation program led by the Ministry of Rural Development, Government of India.
- The Ministry of Rural Development is adopting a comprehensive approach, involving various government departments and agencies, to maximize the impact of the Lakhpati Didi Initiative. This approach includes convergence efforts to transform the rural economy and enable the success of the initiative.
- Lakhpati Didi Initiative is a demand-driven program that aims to reduce poverty by providing self-employment and skilled-wage employment opportunities to poor households. The mission focuses on social mobilization, financial inclusion, sustainable livelihoods, and social development to empower rural communities and enhance their access to entitlements. Through these efforts, the government aims to create sustainable and diversified livelihood options for the rural poor, thereby contributing to poverty reduction and economic empowerment at the grassroots level.



Mera Yuva Bharat

Why in News

- Centre to create autonomous body Mera Yuva Bharat to ‘harness immense youth energy for nation-building’.

Important Points

- After the passage of the women’s reservation Bill last month, the government has launched an initiative to tap into a big constituency—the 40-crore youth population—ahead of the Lok Sabha elections.
- Government approved the establishment of an autonomous body called Mera Yuva Bharat (MY Bharat) for “youth-led development and to provide equitable access to the youth”.

Key Features

- Benefits individuals in the age group of 15- 29 years, aligning with the National Youth Policy.
- For adolescents, beneficiaries are in the age group of 10-19 years.
- Facilitates access to resources and opportunities for youth, enabling them to become community change agents and nation builders.
- Promotes youth as a bridge (Yuva Setu) between the Government and citizens.
- Aims to harness the immense energy of youth for nation-building.

The establishment of MY Bharat will result in :

- Leadership development in youth.
- Enhancing leadership skills through experiential learning.



- A focus on making youth social innovators and community leaders.
- Prioritizing Youth Led development for active involvement.
- Better alignment of youth aspirations with community needs.
- Improved efficiency through the convergence of existing programs.
- Acts as a one-stop shop for young people and government ministries.
- Establishes a centralized youth database.
- Enhances two-way communication for youth engagement in government initiatives and activities.
- Ensures accessibility by creating a physical ecosystem.

Need :

- India's youth play a pivotal role in shaping the nation's future, especially as the country marks 75 years of independence under Vision 2047.
- Vision 2047 requires a framework that brings together rural, urban, and rural youth on a single platform.
- Existing departmental schemes, developed over the past 50 years, were designed to meet the needs of rural youth based on the understanding prevailing at the time.
- Rapid urbanization and changing landscapes necessitate a reevaluation of these approaches.
- Creating a unified framework for rural, urban, and rural youth is imperative, and MY Bharat aims to fulfill this need.
- There is a pressing requirement for a contemporary, technology-driven platform for the government to engage with today's youth.
- In the fast-paced, digitally connected world, technology can effectively connect youth with programs to enhance their skills and engage them in community activities.
- MY Bharat will expand the outreach efforts of the Department of Youth Affairs.
- The platform seeks to establish a "phygital" ecosystem, combining physical and digital elements, to empower youth as catalysts for community transformation.
- Notably, a recent nation-wide program, "Meri Maati Mera Desh," hosted on the yuva.gov.in portal, involved 50 million young participants who planted 23 million saplings to create Amrit Vatikas across India.

Global Internet Freedom in 2023

Why in News

- According to a report by Freedom House (a Washington DC-based non-profit) on the state of Global Internet Freedom in 2023, there is a concerning trend of declining Internet freedom for the 13th consecutive year, with 29 countries experiencing a deterioration in the environment for human rights online.

Important Points

- The report, titled 'Freedom on the Net 2023: The Repressive Power of Artificial Intelligence', has raised a red flag on the increasing use of artificial intelligence by governments for censorship and spread of disinformation.
- The report, the 13th edition of an annual study of human rights online, covers developments between June 2022 and May 2023. It evaluates Internet freedom in 70 countries, accounting for 88% of the world's Internet users.
- As per the report, the sharpest rise in digital repression was witnessed in Iran, where authorities shut down Internet service, blocked WhatsApp and Instagram, and increased surveillance in a bid to quell anti-government protests.
- China, for the ninth straight year, ranked as the world's worst environment for Internet freedom, with Myanmar the world's second most repressive for online freedom.



Highlights of the Report :

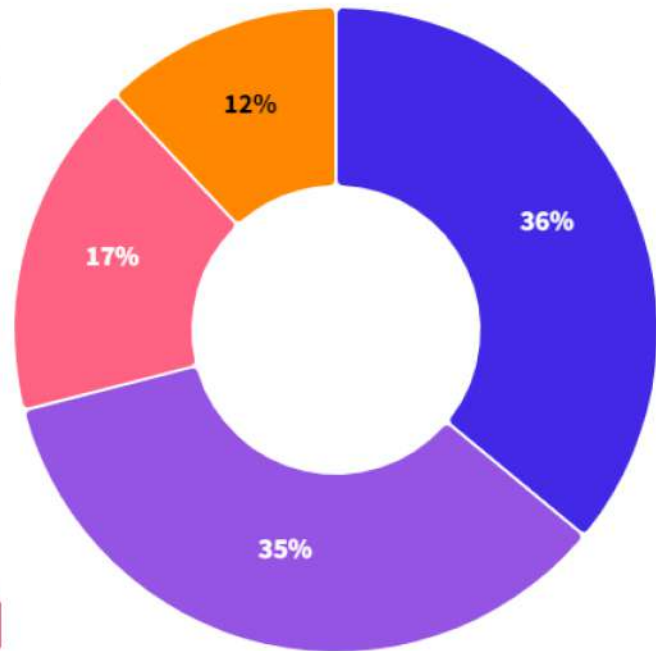
- Artificial intelligence (AI) plays a critical role in digital repression. AI-based tools are increasingly sophisticated and accessible, being utilized to spread disinformation in at least 16 countries.
- Additionally, AI enhances content censorship efficiency in 22 countries by automating the removal of content deemed unacceptable for political, social, or religious reasons.
- A record high of 55 out of the 70 assessed countries witnessed legal repercussions for online expression.
- Moreover, in 41 countries, individuals were assaulted or killed due to their online statements.
- Iran witnessed a sharp rise in digital repression due to Internet shutdowns, blocking of social media platforms, and increased surveillance to suppress anti-government protests.
- China remained the worst country for Internet freedom for the ninth consecutive

year, followed by Myanmar as the second most repressive country for online freedom.

Freedom on the Net 2023

Freedom on the Net assesses 88% of the world's internet user population

■ Not free ■ Partly free ■ Free ■ Not assessed



- India has incorporated AI-based censorship into its legal framework, impacting freedom of expression and criticism of the ruling party.
- The report warns about adverse repercussions for Indian democracy due to the expanding censorship regime, creating an uneven playing field as the country prepares for general elections in 2024.

Country-Specific Observations:

- Iran experienced increased digital repression, marked by Internet shutdowns, social media platform blocks, and heightened surveillance to suppress anti-government protests.
- China retained its status as the worst country for Internet freedom for the ninth consecutive year.
- Myanmar ranked as the second most repressive country for online freedom.
- India incorporated AI-based censorship into its legal framework, impacting freedom of expression and criticism of the ruling party.
- The report raises concerns about adverse consequences for Indian democracy, particularly as the country prepares for general elections in 2024. This expansion of the censorship regime creates an uneven playing field.

Censorship in India :

- In India, censorship laws encompass a wide array of content that enters the public domain, including advertisements, theatre, films, series, music, speeches, reports, debates, magazines, newspapers, art forms, literature, documentaries, and oral works.

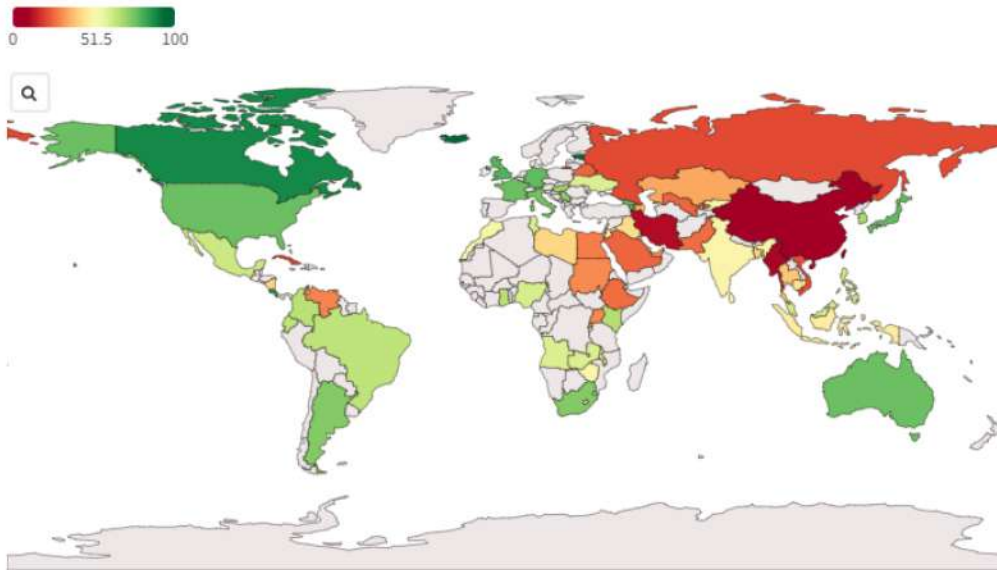
Mechanisms of Censorship in India:

Code of Criminal Procedure (Cr.P.C) :

- Section 95 of the Cr.P.C permits the forfeiture of specific content or publications.
- State Governments can use this section to take legal action if content in newspapers, books, or documents is deemed harmful to the state.

Freedom on the Net 2023

Each country is ranked on a scale of 100 to 0, with 100 representing the most free conditions and 0 the least free.



Source: Freedom on the Net 2023 • The Hindu Graphics

Central Bureau of Film Certification (CBFC):

- CBFC, operating under the Cinematograph Act, 1952, regulates the content of films made available to the public.
- It employs a system of prior certification for films, and broadcasters are required to adhere to the guidelines set forth in the 'Programme Code and Advertisement Code.'

Press Council of India:

- Established under the Press Council Act, 1978, this statutory and quasi-judicial body serves as a self-regulatory authority for the press.
- It monitors media content to ensure adherence to press ethics and the public interest.

The Cable Television Networks Act, 1995:

- This act governs the content that can be broadcasted on cable television.
- Cable operators must register as per the act to ensure oversight.

Social Media Platforms and the New IT Rules, 2021:

- Censorship concerns grew with the rapid expansion of social media in India.
- The Information and Technology Act, 2000, particularly Sections 67A, 67B, 67C, and 69A, include provisions for regulating social media use.

IT (Intermediary Guidelines & Digital Media Ethics Code) Rules, 2021:

- These rules, introduced alongside amendments to the 'Allocation of Business Rules' under the IT Act, 2000, brought digital media, online platforms, and OTT (Over The Top) services under the purview of the Ministry of Information & Broadcasting.

Emergency Procurements

Why in News

- The Army has completed the fourth tranche of Emergency Procurements (EP) with over 70 schemes concluded worth nearly Rs11,000 crore.

Important Points

- Emergency financial powers were granted to the armed forces by the Defence Ministry for the first time after the 2016 Uri terror attack, followed by the 2019 Balakot air strikes and the 2020 standoff with China in Eastern Ladakh.
- Under this, the services could procure weapons systems up to ₹300 crore, on an urgent basis without any further clearance to cut short the procurement cycle.



Emergency Procurement Mechanism

- It is a strategic move that accelerates the acquisition of essential equipment and technology for the defense forces.
- The primary objective of the EP mechanism was to fill critical operational gaps, especially along the Northern Borders.

Efficiency of EP Mechanism

- The EP mechanism has played a crucial role in capital procurement through approximately 140 schemes divided into four tranches (EP I to IV). The initial three tranches saw the Indian Army allocate nearly Rs 7,000 crore for 68 contracts:
- EP-IV, which spanned from September 2022 to September 2023, facilitated more than 70 schemes worth nearly Rs 11,000 crores, breaking down as follows:
 - About Rs 1300 crores were spent on weapon systems through 6-7 schemes.
 - 9 to 10 schemes received almost Rs 1500 crore for intelligence, reconnaissance, and surveillance.
 - Rs 2000 crore was reserved for approximately 10 projects focused on drones and counter-drones.
 - Communication and non-communication equipment comprised around a dozen-plus projects, absorbing approximately Rs 1800 crore.
 - Lastly, a significant amount of Rs 3100 crore was used for about 25 projects related to survivability and training.
- Major upgrades facilitated through the EP mechanism encompassed remote control weapon systems, air defense missiles, anti-tank missiles, satellite downlink

& recording systems, VSAT terminals, portable mobile terminals, secure army mobile systems, all-terrain vehicles, high mobility reconnaissance vehicles, radars, loiter ammunition, drones, counter-drone systems, high endurance UAVs, ballistic helmets, navigation systems and simulation systems.

Significance of EP mechanism

- **Promotion of Indigenous Industries:** The EP mechanism emphasizes 'Atma Nirbharta' or self-reliance. In the first three tranches, 50% of contracts were awarded to domestic industries. EP-IV concluded more than 70 schemes and all contracted with Indian vendors.
- **Economic Prudence:** The first three tranches of EP resulted in savings of approximately Rs 550 Crore. The fourth phase alone saved around Rs 1500 crore.
- In a world marked by evolving security challenges, India's commitment to a robust defense framework is essential, and mechanisms like EP exemplify this resolve.
- Through efficient and strategic procurement, India not only strengthens its defense but also contributes to the growth of its domestic defense industry and economic stability.

Board Exams Twice a Year

Why in News

- The Union Education Minister has said that appearing for Class 10 and 12 board examinations twice a year will not be mandatory and the concept is being introduced as an option to reduce student's stress.



Important Points

- The National Curriculum Framework 2023 (NCF 2023) has proposed major changes to the CBSE & state board exams in India, starting from 2024.
- Holding board exams twice a year instead of once a year,
- Doing away with the traditional science, commerce, and humanities streams, and Specifying how board exams should evolve in the next 10 years, with a focus on making them more competency-based and less focused on rote learning.
- The Ministry of Education in August announced that the board examinations will be held at least twice a year to ensure that students have enough time and opportunity to perform well. They will also get the option to retain the best score.

Reasons

- **Reduce the stress and anxiety:** The NCF's proposal to hold two board exams in a year is a step towards making the assessment process more fair and equitable for all students. It would also reduce the stress and anxiety associated with board exams.

- Choose the subject of interest: By doing away with the traditional streams, students will be free to choose subjects that interest them and that are relevant to their future goals.
- Learning relevant skills: The focus on competency-based assessment will also help to ensure that students are learning the skills and knowledge they need to succeed in life.

PLFS Annual Report 2022-2023

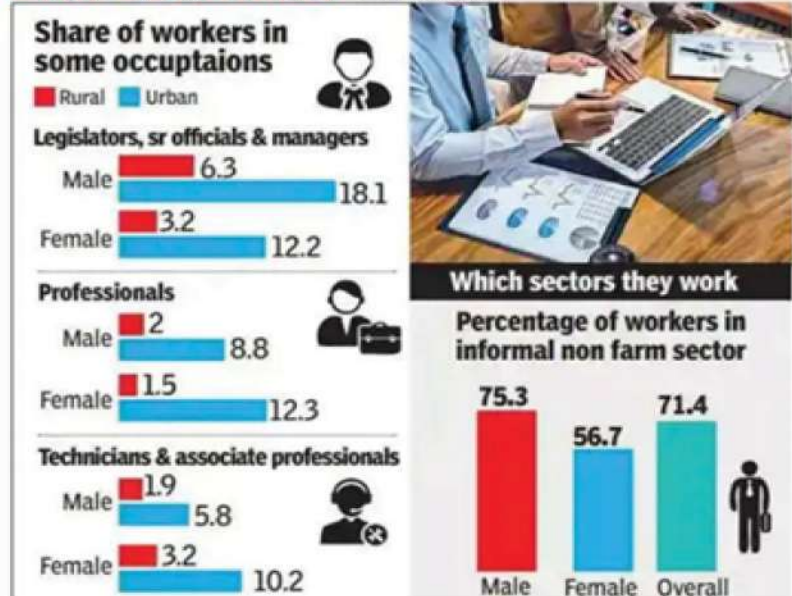
Why in News

- The sixth Annual Report is being brought out by the National Sample Survey Office (NSSO) on the basis of the Periodic Labour Force Survey (PLFS).

Important Points

- Five Annual Reports covering both rural and urban areas giving estimates of all important parameters of employment and unemployment have been released till now.
- These five Annual Reports are brought out on the basis of data collected in PLFS during July 2017- June 2018, July 2018-June 2019, July 2019-June 20

EMPLOYMENT CHART



- The sixth Annual Report is brought on the basis of data collected during July 2022- June 2023.

Key Findings of PLFS, Annual Report 2022- 2023 in usual status (ps+ss)

- Increasing Trend in Labour Force Participation Rate (LFPR): In rural areas, LFPR increased from 50.7% in 2017-18 to 60.8% in 2022-23 while for urban areas it increased from 47.6% to 50.4%. LFPR for male in India increased from 75.8% in 2017-18 to 78.5% in 2022-23 and corresponding increase in LFPR for females was from 23.3% to 37.0%.
- Increasing Trend in Worker Population Ratio (WPR): In rural areas, WPR increased from 48.1% in 2017-18 to 59.4% in 2022-23 while for urban areas it increased from 43.9% to 47.7%. WPR for male in India increased from 71.2% in 2017-18 to 76.0% in 2022-23 and corresponding increase in WPR for females was from 22.0% to 35.9%.

- **Decreasing Trend in Unemployment Rate (UR):** In rural areas, UR decreased from 5.3% in 2017-18 to 2.4% in 2022-23 while for urban areas it decreased from 7.7% to 5.4%. UR for male in India decreased from 6.1% in 2017-18 to 3.3% in 2022-23 and corresponding decrease in UR for females was from 5.6% to 2.9%.

Key Findings of PLFS, Annual Report 2022- 2023 in Current Weekly Status (CWS) -

- **Increasing Trend in Labour Force Participation Rate (LFPR):** In rural areas, LFPR increased from 48.9% in 2017-18 to 56.7% in 2022-23 while for urban areas it increased from 47.1% to 49.4%. LFPR for male in India increased from 75.1% in 2017-18 to 77.4% in 2022-23 and corresponding increase in LFPR for females was from 21.1% to 31.6%.
- **Increasing Trend in Worker Population Ratio (WPR):** In rural areas, WPR increased from 44.8% in 2017-18 to 54.2% in 2022-23 while for urban areas it increased from 42.6% to 46.0%. WPR for male in India increased from 68.6% in 2017-18 to 73.5% in 2022-23 and corresponding increase in WPR for females was from 19.2% to 30.0%.
- **Decreasing Trend in Unemployment Rate (UR):** In rural areas, UR decreased from 8.4% in 2017-18 to 4.4% in 2022-23 while for urban areas it decreased 9.5% to 7.0%. UR for male in India decreased from 8.7% in 2017-18 to 5.1% in 2022-23 and corresponding decrease in UR for females was from 9.0% to 5.1%.

India's first Regional Rapid Transit System (RRTS)

Why in News

- PM Modi will inaugurate the first leg of the Regional Rapid Transit System (RRTS), India's first mass rapid system dedicated to regional connectivity.

Important Points

- Trains on the first section will eventually cut the journey time between Delhi and Meerut to less than an hour.
- With semi high-speed rail connectivity at its core, the RRTS is an integrated, mass transit network.
- It aims to ensure balanced and sustainable urban development through better connectivity and access across the NCR.

Origin

- The idea of such a network lies in a study which the Indian Railways was commissioned to carry out in the year 1998-99.
- The study identified the possibility of an RRTS network to connect various locations in the NCR through fast commuter trains.

FASTER THAN METROS, MORE FREQUENT THAN TRAINS

180 km/hr
DESIGN SPEED160 km/hr
OPERATION SPEED100 km/hr
AVERAGE SPEED

Praveen Khanna

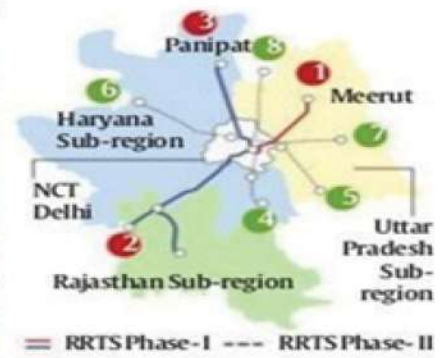


60 Min

TIME TO TRAVEL 100KM

CORRIDORS- UNDER RRTS PHASE 1

- ① Delhi – Ghaziabad – Meerut Corridor
- ② Delhi – Gurugram – SNB – Alwar Corridor
- ③ Delhi – Panipat Corridor



OTHER CORRIDORS

- ④ Delhi – Faridabad – Ballabhgarh – Palwal
- ⑤ Ghaziabad – Khurja
- ⑥ Delhi – Bahadurgarh – Rohtak
- ⑦ Ghaziabad – Hapur
- ⑧ Delhi – Shahadra – Baraut

- The proposal was re-examined in the year 2006 with the extension of the Delhi Metro lines to some NCR towns such as Gurgaon, Noida and Ghaziabad.
- It was soon taken up by the National Capital Region Planning Board (NCRPB) while developing its Functional Plan on Transport for NCR-2032.
- NCRPB identified and recommended eight RRTS corridors to connect NCR towns with high speed rail-based commuter transit services.

Objective

- It seeks to unlock the entire potential of the NCR in various ways in addition to enhancing multi-modal connectivity at the existing transportation hubs.
- One of the most significant aims of the project is to nudge commuters towards public transportation.
- Hence, it will have a positive impact on relieving the congestion both on its road/highways as well as existing metro and railway networks.
- The project aims to give a push to employment generation and the opening up of newer commercial hubs along the current contours of the NCR.
- Shorter travel times are expected to increase the overall economic productivity of the region.

Features

- RRTS trains will travel significantly faster than metro trains.
- These will operate at a speed of 160 km/hour but are designed to be able to run at speeds up to 180 km/hour.
- The RRTS is modelled on systems such as the RER in Paris, Regional-Express trains in Germany and Austria as well as the SEPTA Regional Rail in the United States, among others.

How is the RRTS different from existing metro or railways systems?

- When compared with metros, the RRTS network is faster.
- Compared with the Indian Railways, though the RRTS train will cover relatively smaller distances. It will do so at higher frequency and provide relatively more comfort than the average Railways coach.

Namo Bharat trains

- India's first regional rapid train, between Delhi and Meerut, has been named "Namo Bharat".
- PM is scheduled to inaugurate the priority section of the Delhi-Ghaziabad-Meerut Regional Rapid Transit System (RRTS) corridor and flag off the "RapidX train" connecting Sahibabad and Duhai Depot.

Construction

- The National Capital Region Transport Corporation (NCRTC) has constructed the RRTS also known as Namo Bharat.
- NCRTC is a joint venture company of the Central government and the governments of Delhi, Haryana, Rajasthan and Uttar Pradesh.
- NCRTC, under the Ministry of Housing and Urban Affairs, is mandated with implementing the RRTS project across the National Capital Region.

Chanakya Defence Dialogue

Why in News

- The Indian Army is planning to launch the Chanakya Defence Dialogue, a forum for discussing important security matters.

Important Points

- The Indian Army is all set to start a journey of strategic wisdom with the introduction of the "Chanakya Defence Dialogue."
- This initiative will be a crucial platform for the exchange of insights and discussions on critical security matters, further bolstering the nation's strategic awareness.
- The Chanakya Defence Dialogue is scheduled to be inaugurated on the auspicious dates of either the 25th or 26th of October, 2023 and it will commence with an enlightening keynote address delivered by none other than the distinguished Chief of Indian Army Staff.



- Subsequently, the first edition of this thought-provoking series is planned to take place in the month of November.
- This exciting initiative is all set to mark a significant milestone in India's quest for enhanced strategic awareness.

Chanakya Defence Dialogue

- The Chanakya Defence Dialogue will be a regular forum with the aim of uniting leading experts from the international defense and strategic fraternity.
- Its objective is to cultivate connections and stimulate the free flow of ideas and philosophies amongst these distinguished intellects.
- Although all security challenges will be addressed thoroughly the main focus of the discussions will be South Asia and Indo-Pacific.
- Chanakya Defence Dialogues will have thought-provoking themes consisting of the dynamics of "Neighborhood Forces," scrutinizing the evolving regional influences; "Indo-Pacific Frontier," a strategic focal point of global significance; and, the "Evolving Impact of Emerging Technologies on Defense and Security," exploring how cutting-edge innovations are shaping the landscape of national defense.
 - ✓ Indian Army will be collaborating with the eminent think tank, the Centre for Land and Warfare Studies (CLAWS), for the successful hosting of this remarkable event.
 - ✓ The dialogue will witness the active participation of representatives from various nations, including Australia, France, Japan, and the United States.
 - ✓ Over the span of two insightful days, the Chanakya Defence Dialogue will assemble a congregation of prominent speakers, military tacticians, diplomats, and influential thought leaders specializing in defense and strategic matters.
 - ✓ The conversations will revolve around a spectrum of security challenges and strategies, with a focus on the volatile regions of South Asia and the Indo-Pacific.

(1) Rail Infrastructure

- The first train in India travelled 34 km from Mumbai to Thane in 1853. Since then, in over more than 167 years, Indian Railways (IR) has grown enormously.
- Railway planning has the main objective of developing transport infrastructure to carry the projected quantum of traffic and meet the Indian economy's developmental needs.
- Nine five year plans (FYPs) have been implemented since 1950-51 by Indian Railways apart from some annual plans.



There are 12 Central Public Sector Enterprises (CPSEs) under the administrative control of the Union Ministry of Railways.

- ✓ RITES Limited
- ✓ IRCON International Limited
- ✓ Indian Railway Finance Corporation (IRFC) Limited
- ✓ Container Corporation of India Limited (CONCOR)
- ✓ Konkan Railway Corporation Limited (KRCL)
- ✓ Mumbai Railway Vikas Corporation Limited (MRVC)
- ✓ Indian Railway Catering and Tourism Corporation Limited (IRCTC)
- ✓ Railtel Corporation of India Limited (RCIL)
- ✓ Rail Vikas Nigam Limited (RVNL)
- ✓ Dedicated Freight Corridor Corporation of India Limited (DFCCIL)
- ✓ Kolkata Metro Rail Corporation Limited (KMRCL)
- ✓ Braithwaite and Company Limited (BCL)

Railway Zones of India

- The research and development (R&D) wing of Indian Railways is the Research Design and Standards Organization (RDSO) at Lucknow.

- It acts as a consultant in technical matters to Indian Railways, and other organisations connected with railway manufacturing and design.
- **Railway Finance:** Owing to the Separation Convention of 1924, a separate railway budget was presented from 1924-25, even though it was part of the overall budget of the Government of India.

The Railway Budget has been merged with the general Budget from Budget Year 2017-18:

Zonal Railways	Headquarters
Central	Mumbai
Eastern	Kolkata
East Coast	Bhubaneswar
East Central	Hajipur
Northern	New Delhi
North Central	Allahabad (Prayagraj)
North Eastern	Gorakhpur
Northeast Frontier	Maligaon (Guwahati)
North Western	Jaipur
Southern	Chennai
South Central	Secunderabad
South Eastern	Kolkata
South East Central Railway	Bilaspur
South Western Railway	Huballi
Western	Mumbai
West Central Railway	Jabalpur
Metro Railway	Kolkata

- To present the holistic financial position of the government
- To facilitate multimodal transport planning between highways, railways, and waterways
- Instead of 16 demands for grants, the Union Ministry of Finance has introduced one demand for grants for the Ministry of Railways.
- **Railway Electrification:** Increasing railway electrification under the Ministry of Railways' Mission 100% Electrification policy will not only help reduce the country's crude oil imports but also has environmental benefits.
- It increases average speeds, and loadings for both freight and passengers, thereby, providing the opportunity for modernisation.
- **Rail Tourism:** Indian Railways (IR) has introduced the Bharat Gaurav Trains Policy to showcase cultural heritage and historical places of India to both domestic and foreign audiences with the help of tourism sector professionals and other service providers.
- Specialised tourism products are also introduced from time to time in association with IRCTC and states.

NATIONAL RAIL PLAN



Indian Railways has prepared a National Rail Plan (NRP) for India – 2030. The plan is to create a 'future-ready' railway system by 2030. The NRP is aimed at formulating strategies based on both operational capacities and commercial policy initiatives to increase the modal share of the railways in freight to 45%. The objective of the plan is to create capacity ahead of demand, which in turn would also cater to future growth in demand right up to 2050, increase the modal share of railways to 45% in freight traffic, and continue to sustain it.

Vision: To develop capacity and infrastructure and enhance rail freight share ahead of demand. Develop capacity by 2030 that will cater to growing demand up to 2050. The key objectives of the National Rail Plan are:

- Formulate strategies based on both operational capacities and commercial policy initiatives to increase the modal share of the railways in freight to 45%.
- Reduce transit time of freight substantially by increasing the average speed of freight trains to 50 kmph.
- As part of the National Rail Plan, Vision 2024 has been launched for the accelerated

implementation of certain critical projects by 2024, such as 100% electrification, multi-tracking of congested routes, upgradation of speed to 160 kmph on Delhi-Howrah and Delhi-Mumbai routes, upgradation of speed to 130 kmph on all other Golden Quadrilateral-Golden Diagonal (GQ/GD) routes, and elimination of all Level Crossings on all GQ/GD route.

- Identify new Dedicated Freight Corridors.
- Identify new High Speed Rail Corridors.
- Assess the rolling stock requirement for passenger traffic as well as wagon requirement for freight.
- Assess the locomotive requirement to meet twin objectives of 100% electrification (Green Energy) and increasing freight modal share.
- Assess the total investment in capital that would be required, along with a periodical breakup.
- Sustained involvement of the Private Sector in areas like operations and ownership of rolling stock, development of freight and passenger terminals, development and operations of track infrastructure, etc. □

Source: PIB

UPSC

November 2023

(2) Road Infrastructure

■ The road infrastructure of India is classified into six categories. The road length in kilometres (km) of each of these categories and its compound annual growth rate (CAGR) in percentage over 1991, available most recently as of 31st March 2019, as per the 2022-23 annual report of the Union Ministry of Road Transport and Highways (MoRTH) is shown in the table below.



National Highway (NH)	State Highway (SH)	District Roads	Rural Roads	Urban Roads	Project Roads	Total
1,32,499	1,79,535	6,12,778	45,22,228	5,41,544	3,43,163	63,31,757
5.02	1.24	0.66	4.67	3.87	1.77	3.64

- Pradhan Mantri Gram Sadak Yojana (PMGSY): Initiated in 2001, it aims to provide all-weather road connectivity in rural areas.
- Rural roads constitute 70% of the total road length in India.

PMGSY

Year (as on 31 March)	NH length (kms)	Year (as on 31 March)	NH length (kms)
2011	70,934	2017	1,14,158
2012	76,818	2018	1,26,350
2013	79,116	2019	1,32,500
2014	91,287	2020	1,32,500
2015	97,991	2021	1,38,376
2016	1,01,011	2022	1,41,345
		2023	1,44,955

- Both the quantity and quality of roads are important drivers of economic development and social inclusion. In recent decades, the focus has been more on quality with various enabling factors as discussed below.
- Delinking road development and direct employment generation post-India's economic liberalisation.
- National Highways Authority of India (NHAI) became operational in 1995.

Public Private Partnerships (PPP)

- State Level Road Development Corporations: The first such corporation, the Maharashtra State Road Development Corporation Limited (MSRDCL) was established in 1996. It has developed the Mumbai-Pune Expressway (opened in 2002).
- Many other states have also followed suit since. Uttar Pradesh is a leader in developing expressway-standard roads.
- National Highways Development Project (NHDP): It was started in 1998 by NHAI.
- Phase I: Four laned Golden Quadrilateral (GQ) connecting four metro cities.
- Phase II: Four laned connecting the north-south and east-west corridors, connecting India's extreme points.
- Pradhan Mantri Gram Sadak Yojana (PMGSY)
- Viability Gap Funding (VGF) provision rejuvenated interest among bidders towards projects. Model Concession Agreement (MCA): In the road sector, the first MCA was in 2000.
- New Contracting Models and Asset Monetisation: Along with classical models such as Engineering, Procurement, and Construction (EPC) and PPP through Build, Operate, and Transfer (BOT), other models such as the Hybrid Annuity Model (HAM), and Toll, Operate, and Transfer (TOT) have emerged.
- The Infrastructure Investment Trusts (InVITs) have been operationalised to monetise built road assets.
- Other organisations: Apart from the NHAI other organisations with specific mandates were set up.

- Road Making Technologies: There has been improvement in technology over the years through the easier import of road-making equipment under an open general licence, technology transfers for domestic manufacturing, consortium of Indian bidders with foreign players for improved learning, and more.

Challenges in road infrastructure development:

- There is a need for better road safety.
- Issues with urban roads such as lack of attention due to shift towards rural roads, low speeds leading to loss of time and money, poor last-mile connectivity, poor urban goods movement, parking issues, coordination issues with urban public transport.
- Need to focus on lane kilometres rather than road kilometres which will help to focus on access as well as capacity. Number of lanes needs to be specified in maps for better road choices by users.
- Proper collection of Origin to Destination (OD) data.
- Improvement in coordination with PPP players.

(3) Space Infrastructure

- Indian space activities began in 1962 with the establishment of the Indian National Committee for Space Research (INCOSPAR). In 1969, the Indian Space Research Organisation (ISRO) was formed, superseding INCOSPAR. Subsequently, in 1972, the Department of Space (DOS) was created to oversee the development and application of space technology to meet various national needs.



Indian Space Research Organisation (ISRO)

- Headquarters: Bengaluru
- ISRO's primary objective is the development and application of space technology to meet various national needs. ISRO has established several space systems for communication, television broadcasting, meteorological services, resource monitoring, and more.
- PSLV and GSLV are two trusted launch vehicles developed by ISRO.

Vikram Sarabhai Space Centre:

- Location: Thiruvananthapuram
- Responsible for the design and development of launch vehicle technology.
- Major programs include the development of the Polar Satellite Launch Vehicle (PSLV), Geosynchronous Satellite Launch Vehicle (GSLV), Launch Vehicle

Mark-3 (LVM3), Rohini sounding rocket, Small Satellite Launch Vehicle, and critical technologies for human spaceflight missions.

U R Rao Satellite Centre (URSC)

- Location: Bengaluru
- Involved in the design, development, and realisation of communication, navigation, remote sensing, and scientific satellite missions.
- The ISRO Satellite Integration and Test Establishment is equipped for assembling and testing spacecraft for flightworthiness.

Satish Dhawan Space Centre (SDSC) – SHAR

- Location: Andhra Pradesh
- Provides launch base infrastructure for Indian space programs. Liquid Propulsion System Centre (LPSC)
- Locations: Campus-1: LPSC, Valiyamala, Thiruvananthapuram, and Campus-2 LPSC Bengaluru
- Engaged in the design, development, and realisation of high-performance advanced propulsion systems for launch vehicles and spacecraft.

Space Application Centre (SAC):

- Location: Ahmedabad
- Focuses on the development of space-borne and air-borne instruments and payloads for national development. It designs and develops optical and microwave sensors for satellites, signal and image processing software, and GIS software for Earth observation programs.

Human Space Flight Centre (HSFC)

- Location: Bengaluru
- Established in 2019, it coordinates all developments related to human spaceflight programs.

National Remote Sensing Centre (NRSC)

- Location: Hyderabad
- It has a mandate for the establishment of ground stations for receiving satellite data, generation of data products, dissemination to the users, development of techniques for remote sensing applications including disaster management support, geospatial services for good governance and capacity building.

ISRO Propulsion Complex

- Location: Mahendragiri
- Responsible for the assembly, integration, and testing of liquid propulsion systems for launch vehicles. It provides a platform for simulation trials for interplanetary missions.

ISRO Telemetry Tracking and Command Network (ISTRAC)

- Location: Bengaluru
- Provides telemetry tracking and command and mission control services to major launch vehicles, interplanetary spacecraft missions of ISRO and the ground segment of the NaVIC satellite system.

Master Control Facility (NCF)

- Location: Hassan, Karnataka and Bhopal
- Responsible for On-Orbit Operations (OOP) and Launch and Early Orbit Phase (LEOP) operations of geostationary/geosynchronous and IRNSS class spacecraft of ISRO. It monitors and controls all the geostationary satellites of ISRO.

ISRO Inertial Systems Unit (IISU)

- Location: Thiruvananthapuram
- Engaged in the design and development of inertial systems for launch vehicles and satellites.

Laboratory for Electro-Optics Systems (LEOS)

- Location: Bengaluru
- Involved in the design, development, and production of attitude sensors, high-resolution image optics, and special-purpose science instruments.

Indian Institute of Remote Sensing (IIRS)

- Location: Dehradun
- Focuses on building capacity in remote sensing and geoinformatics through education and training programs at the postgraduate level.

Development and Educational Communication Unit (DEUC)

- Location: Ahmedabad
- Implementation of satellite communication-based societal applications in the country. It works with user agencies and facilitates the spread of space applications to reach the unreached.

Physical Research Laboratory (PRL)

- Location: Ahmedabad
- A premier research institute engaged in basic research in the areas of Astronomy and Astrophysics, Solar Physics, Planetary Science, and Exploration.
- PRL has an infrared observatory at Mt. Abu, a solar observatory in Udaipur and a planetary exploration (PLANEX) programme at Ahmedabad.

National Atmospheric Research Laboratory (NARL)

- Location: Gandaki, Tirupati

- Engaged in atmospheric and space science with the vision of developing the capability to predict the behaviour of Earth's atmosphere.

North Eastern Space Application Centre (NE-SAC)

- Location: Shillong, Meghalaya
- An autonomous organisation under the Department of Science, with the aim of supporting the development process in the North Eastern region through advanced space technology.

Indian Institute of Space Science and Technology (IIST)

- First established in Thiruvananthapuram in 2007.
- Offers high-quality education in space science and technology to meet the demands of the Indian Space Program.

Antrix Corporation Limited (ACL)

- Corporate Office: Bengaluru
- Engaged in providing space sector products and services to customers globally. New Space India Limited (NSIL)
- Headquarters: Bengaluru
- A wholly-owned government of India undertaking to provide space-related products and services from the Indian Space Program to global customers and promote the growth of the Indian space sector.

Indian National Space Promotion and Authorisation Centre (IN-SPACe)

- Headquarters: Ahmedabad
- An autonomous agency under the Department of Space (DOS), responsible for promoting, enabling, authorising, and supervising various space activities of non-governmental entities, including the building of launch vehicles and satellites and providing space-based services.

(4) Unity Mall

- Unity Mall, an initiative of the Government of India, is poised to play a pivotal role in fostering economic development, providing recreational spaces, enhancing tourism, and celebrating the rich cultural heritage of India.
- It will serve as a comprehensive marketplace within the states for the promotion and sale of One District One Products, GI Products, Handicraft Products, and other local items.
- Unity Malls will be established in each state, preferably in the respective state capital or any other location chosen by the state.
- The purpose of Unity Mall is to foster national unity and make progress in the Make in India and Atma Nirbhar Bharat initiatives by offering local artisans opportunities to sell their products, create employment opportunities, facilitate skill development, and contribute to overall economic growth.

- Each Unity Mall will have one shop allocated for each state to showcase their GI-tagged products and One District One Product offerings.

Scheme for special assistance to states for capital expenditure:

- Unity Malls are funded under the scheme for special assistance to states for capital expenditure.
- The scheme aims to stimulate capital expenditure and harness the significant multiplier effect of such expenditure to foster higher economic growth.
- Under the scheme, States are given interest-free loans for 50 years, which do not count towards the annual borrowing limit of the state.
- Rs 5,000 crore under the scheme has been earmarked for the construction of Unity Malls.
- The state government needs to provide land for free and also allocate additional funds for the project.

Design and Amenities of Unity Mall

- **Standardised design:** According to the guidelines of the Department of Expenditure, Ministry of Finance, the design and amenities of Unity Mall should symbolise the unity and grandeur of the country.
- To ensure uniformity, all Unity Malls across India are required to adhere to a standardised design prescribed by the Department for Promotion of Industry and Internal Trade (DPIIT).
- Multilingual languages and logos of One District One Product and Make in India must be integrated into the mall design.

Proposed Unity Malls

- **Layout and commercial spaces:** Each Unity Mall should incorporate a minimum of 36 commercial spaces with uniform floor space and common rent allocated to each state and Union Territories.
- **Amenities:** Each Unity Mall should include a state-of-the-art food court, parking facilities, and spaces for recreational and cultural activities. Additionally, the mall should offer technology-driven experiences such as

S. No.	Name of State	Allocation (Rs. in crores)
1	Andhra Pradesh	172
2	Arunachal Pradesh	188
3	Assam	226
4	Bihar	223
5	Chhattisgarh	202
6	Goa	100
7	Gujarat	202
8	Haryana	155
9	Himachal Pradesh	132
10	Jarkhand	13
11	Karnataka	193
12	Kerala	120
13	Madhya Pradesh	284
14	Maharashtra	215
15	Manipur	149
16	Meghalaya	132
17	Mizoram	127
18	Nagaland	145
19	Odisha	189
20	Punjab	159
21	Rajasthan	202
22	Sikkim	106
23	Tamil Nadu	223
24	Telangana	202
25	Tripura	114
26	Uttar Pradesh	382
27	Uttarakhand	136
28	West Bengal	159
	Total	5000

S.No.	State	Estimated Cost	Financial Support by Government of India	
			Amount allocated	Amount Approved
1.	Assam	226.99	226.00	226.00
2.	Chhattisgarh	200.77	202.00	200.77
3.	Gujarat	339.30	202.00	202.00
4.	Madhya Pradesh	285.67	284.00	284.00
5.	Maharashtra	227.08	215.00	
6.	Meghalaya	431.18	132.00	132.00
7.	Nagaland	145.75	145.00	145.00
8.	Sikkim	110.56	106.00	Proposal under examination
9.	Tripura	140.00	114.00	114.00
Total		2106.25	1626.00	1303.77

virtual reality, augmented reality digital displays, and interactive kiosks.

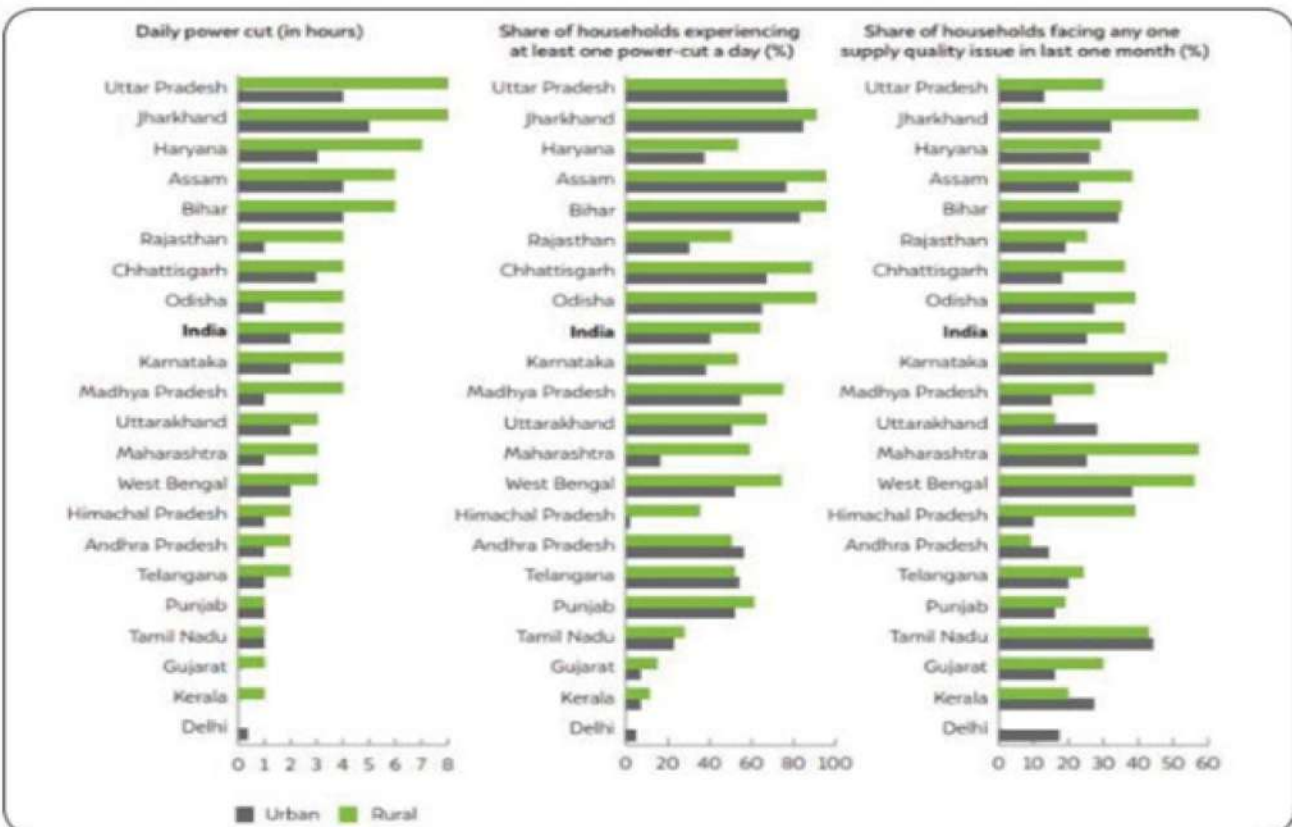
- **Public-Private Partnership:** The operations and maintenance of Unity Mall will be structured under a public-private partnership. The ownership of the mall remains with the state government while operational and maintenance responsibility will be entrusted to a private party.
- **Proposal and Approval Process:** State governments must submit proposals for Unity Mall to DPIIT, which further recommends them to the Department of Expenditure, Ministry of Finance for approval.
- The Ministry of Finance has approved the construction of Unity Malls in eight states, Assam, Gujarat, Chhattisgarh, Madhya Pradesh, Meghalaya, Nagaland, Maharashtra, and Tripura.

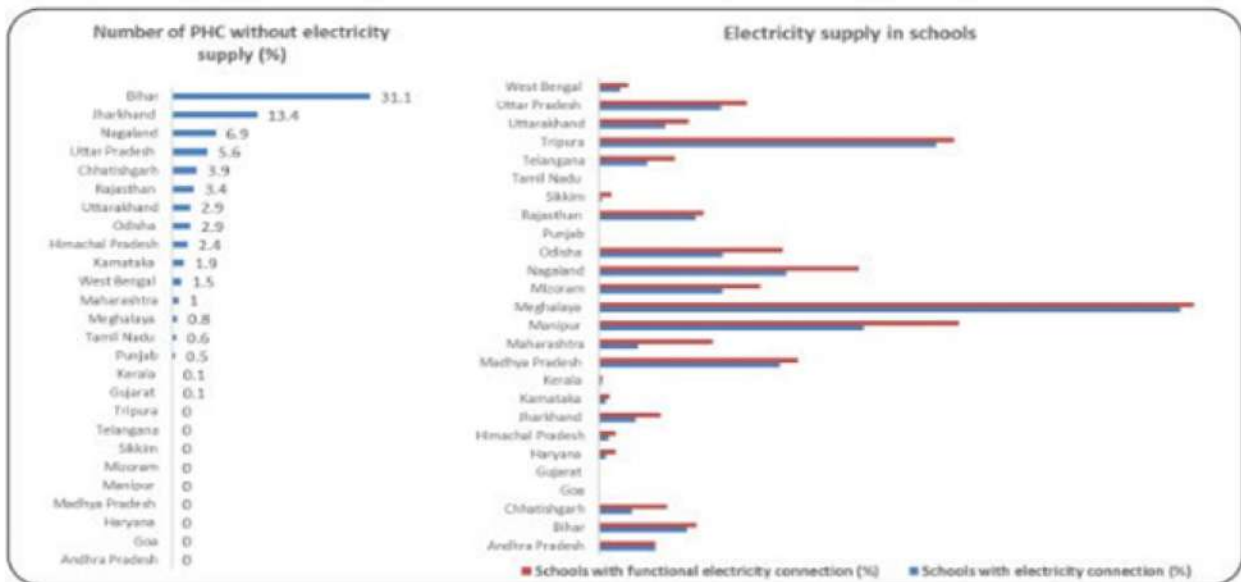
Key features of approved Unity Malls

- **Assam:** Planned in Guwahati, it incorporates a library, art gallery, museum dedicated to ethnic products, diverse food courts and yoga and meditation hall.
- **Chhattisgarh:** Planned in Raipur, the mall has been designed in an oval shape resembling a rice seed symbolising the state's agricultural abundance.
- **Nagaland:** Planned in Chumukedima, the mall features theme restaurants, conference rooms, commercial space, and gaming zones.
- **Madhya Pradesh:** Planned in Ujjain, the mall features an iconic Mahakal-Lok elevation design. The mall's architecture encompasses various distinct zones like Millet Lok reserved for food courts and restaurants, Ekam Lok designed for cultural activities, and Utsav Lok designed for open workshops and performances.
- **Meghalaya:** Planned in New Shillong, the mall serves as a cultural hub showcasing the cultural diversity of Meghalaya.
- **Gujarat:** Planned in Jevadia, the mall's design is centred around the Ashoka Chakra shape. The mall will have the design of Haveli architecture inside, which was prominent in the historic cities of Gujarat.
- **Tripura:** Planned in Agartala, the mall's roof will be adorned with the colours of the National flag.
- **Maharashtra:** Established in Navi Mumbai, the mall will include a variety of amenities like children's play areas, multipurpose halls, mini theatres, etc.

(1) Integrated Solar Village Scheme for Inclusive Development

- India has targeted to achieve the goal of net zero by 2070. It aims to achieve it by taking a citizen-centric approach while also achieving the sustainable development goals (SDGs).
- Rural India offers tremendous opportunities with regard to the production and use of renewable energy, both through rooftop solar panels and distributed renewable energy applications.
- Solar villages: The concept of solar villages needs to be defined in a manner which incorporates comprehensive economic development of rural areas by bringing in the elements of livelihoods and strengthening social service infrastructure.
 - It is also viable for DISCOMs because it can reduce the subsidy burden as it reduces the cost of servicing rural HHs.
 - It is also viable for DISCOMs because it can reduce the subsidy burden as it reduces the cost of servicing rural HHs.





✓ The concept has been attempted by some states in areas such as Modhera in Gujarat, Dharnai in Bihar, and Barapitha in Odisha.

- Distributed Renewable Energy (DRE): In rural areas, DRE enables access to an improved quality power supply, and involves communities in the energy transition by transforming them into 'prosumers' ('pro'ducer and 'con'sumer both) of renewable energy such as biomass and solar.
- In rural areas, DRE can help improve education and healthcare facilities, internet access, livelihood opportunities, and grid resilience against extreme climate events.
- Installation of DRE can create livelihood opportunities also as it is a labour-intensive exercise compared to utility-scale solar projects.
- Rooftop solar and decentralised livelihood applications have been actively promoted by both the Centre and the states.
- Under phase II of the Grid Connected Solar Rooftop Programme (launched in 2019), capital subsidies have been provided by the Union Ministry of New & Renewable Energy (MNRE) for rooftop solar installations.
- The process for applying and securing subsidies for rooftop solar has been simplified by MNRE through the SPIN portal.
- Framework to promote the integration of DRE livelihood applications.
- Initiatives by states such as Jharkhand and Uttarakhand in promotion of renewable or solar energy.
- Quantity as well as quality: As per the 'Energy Plus' framework of the United Nations Development Programme (UNDP), access to electricity is a necessary but not sufficient condition for rural livelihood development.
- In this regard, India has achieved near 100% electrification of HHs, it needs to ensure the availability of reliable power.

(2) Crop Residue Management : Challenges and Opportunities

- Crop residues refer to the non-economic parts of plants that remain in the field after harvest, including straws, stalks, stover, husk, bran, bagasse, and molasses.
- These crop residues have numerous practical applications, such as serving as bedding material for livestock, providing animal feed, aiding in soil mulching, and facilitating biogas generation. Additionally, they can be used to produce various value-added products, including papers and boards.

Challenges associated with crop residue burning

- ✓ Greenhouse Gas Emissions: The burning of crop residues is a major contributor to greenhouse gas emissions, releasing carbon dioxide, carbon monoxide, methane, sulphur oxides, and nitrogen oxides. These emissions have adverse environmental consequences.
- ✓ Air Pollution: The emission of Particulate Matter from crop residue burning is approximately 17 times higher than emissions from other sources, such as motor vehicles, waste incineration, and industrial waste. These emissions pose severe health risks to both humans and animals.
- ✓ Soil Fertility: Crop residue burning results in the deterioration of organic matter and essential soil nutrients like nitrogen, phosphorus, and potassium. The high temperatures generated during burning also lead to the loss of beneficial soil microorganisms. This, in turn, reduces farm productivity and hinders agricultural sustainability.

Why are crop residues burned?

- ✓ Farmers often resort to stubble burning mainly due to three factors.
- ✓ Shortage of farm labour.
- ✓ Farmers have a very short span, usually 10-20 days, to prepare their fields for the subsequent wheat crop following the harvest of rice.
- ✓ Large-scale use of combine harvester which leaves behind substantial amounts of crop residue, typically 20-30 cm of stubble on the ground.

Regulations and solutions for crop residue management

- National Green Tribunal order: In 2015, the National Green Tribunal issued an order that prohibited agricultural residue burning in the National Capital Territory of Delhi, Punjab, Rajasthan, Uttar Pradesh, and Haryana,
- Promotion of Agricultural Mechanisation for In-Situ Crop Residue Management Scheme: This central scheme provides financial assistance of up to 50% to farmers, and in the case of cooperative societies, farmer producer organisations, and Panchayats, up to 80%, for the purchase of crop residue management machinery such as Super Straw Management System, Happy Seeds, and Crop Reapers.

- Custom Hiring Centres (CHC): These are centres which supply farm implements to small and marginal farmers at nominal rates on hire.
- Updated guidelines for off-site paddy straw management: The central government has recently revised guidelines to facilitate efficient ex-situ management of paddy straw in Punjab, Haryana, Uttar Pradesh and Delhi.
- Under these new guidelines, techno-commercial pilot projects for the Paddy Straw Supply Chain will be established through bilateral agreements between beneficiaries (farmers, rural entrepreneurs, cooperative societies, Farmer Producer Organizations, and Panchayats) and industries that utilise paddy straw.
- The centre and state government will provide 65% financial support for the project cost, while the industry will contribute 25% and serve as the primary consumer of the collected feedstock.
- Pusa Decomposer: The Indian Council of Agricultural Research has developed the “Pusa Decomposer” technology, which is designed to biologically decompose paddy stubble in agricultural fields.

Pusa Decomposer
A microbial consortium for management of paddy straw

- Pusa Decomposer (both in liquid and capsule form) is microbial solution for accelerating decomposition of paddy straw.
- Four capsules can be scaled up to 25L of liquid formulation. 25L can be applied to 1ha of field (@10L/acre having 4-5 tonne of straw per acre). Pouch of 4 capsules cost Rs 20/-
- The acceleration process makes the field ready for wheat sowing in 25 days. This has been demonstrated in farmers fields in Punjab, Haryana, UP and in NCR
- Its use enriches the soil with OC, nutrients and soil biological & physical properties were also improved. Pusa Decomposer is a long term sustainable solution for management of paddy straw

Alternative applications of paddy straw

- Mushroom Cultivation Substrate: Paddy straw serves as an excellent substrate for mushroom cultivation. It can yield between 50 to 100 kilograms of mushrooms for every tonne of dry rice straw used.
- Biochar Production: Paddy straw can be utilised to create biochar, a carbon-rich material employed as a soil amendment. It helps to improve soil fertility, increase carbon storage, and enhance water filtration capabilities.
- Crop diversification: Shifting to millet cultivation can significantly reduce the generation of crop residues and thereby promote sustainable farming practices and minimise environmental impacts.

- Education and awareness campaign: In addition to the technical and financial support, intensive education- al and awareness campaigns are needed to improve scientific management of crop residue in India.

(3) Harnessing the Power of Digital Technology for Greener Villages

- India is utilising digital technologies to empower rural communities and promote green villages. In the wake of this, government departments, agencies, and nonprofits are disseminating sustainable practices, paving the way for a greener future.

Environmental Challenges Faced by Rural India

- Inadequate waste disposal systems contribute to water and air pollution, despite various governmental ef- forts to improve sanitation.
- Increased food demand fueling deforestation as more land is required for farming, depleting forest cover. Growing populations lead to over-cultivation.
- Air pollution with crop residue burning and agricultural activities as major contributors.
- Water pollution arising from poor sanitation and limitations in sewerage planning. Soil degradation due to the excessive use of chemical fertilisers.

Role of Digital Technology

- Technology can be a key component in helping to address these concerns in the face of increasingly pressing challenges since it provides opportunities to improve environmental law enforcement and implementation as well as raise public knowledge of related issues.
 - ✓ Digital platforms can be used for insights on sustainable farming methods and timely weather forecasts.
 - ✓ Technology can be used to remotely monitor air and water quality, track de-forestation, and pinpoint ecological red flags.
 - ✓ Social media and communication technology can be used to disseminate and deliver the message and know-how to make our villages green.
 - ✓ Swachh Bharat Mission makes use of digital tools like geotagging and mobile apps to track progress and engage communities in sanitation efforts.
 - ✓ Digital India initiative has connected lakhs of villages with broadband in-



ternet, bridging the digital divide and providing rural communities with access to information and opportunities.

The Government's Approach and Initiatives

- The government uses social media platforms like Facebook, Twitter, and Instagram to promote environmental policies and initiatives.
- The government uses digital technologies to engage citizens in environmental protection efforts, fostering an informed, sustainable society.
- Considering the fabric of the rural society, there exists certain challenges in the usage of digital technologies:
- Lack of Awareness: There is still a lack of awareness about environmental issues among many people in India making it difficult to engage people in environmental protection and awareness efforts.
- The Digital Divide: Lack of access to digital devices, limitations to connectivity, and power supply, and a lack of digital literacy pose challenges to the success of digital initiatives.
- Lack of Resources: Limitations to the resources (human resources, and others) that can be deployed to implement all of the government's environmental protection and awareness initiatives.
- Lack of Coordination: There can be a lack of coordination between different stakeholders involved in the processes, including the Central and State government agencies, non-profits, rural bodies, communities, and the private sector.

(4) Strengthening Rural Economy with Clean and Green Initiatives

- India's natural environment is a precious inheritance, and long-term clean and green initiatives are needed to protect it for future generations. The World Bank's 2019 'Beyond the Gap' report highlights the need for green development initiatives, as over a quarter of the planet's population relies on forests and nature for basic needs.

Need for Green and Clean Technologies

- Clean and green initiatives are needed to improve the overall human development index and ensure sustainable development.
- Poor sanitation, hygiene, and clean drinking water are crucial for human development, but nearly half of the global population, up to 3.6 billion people, lacks safe sanitation (WHO/UNICEF 2021).
- WHO estimates that safe drinking water management could prevent 400,000 diarrheal deaths and 14 million Disability Adjusted Life Years (DALYs), resulting in cost savings of up to \$100 billion.

- For instance, the WHO has highlighted the substantial benefits of the Har Ghar Jal programme in India. There has been an increase in rural tap water connections from 16.64% in 2019 to 62.84% in 2023, which resulted in averting 13.8 million DALYs.

Potential of Renewable Energy Generation – Vision and Mission

- The National Institute of Solar Energy has assessed the country's solar potential at about 748 GW.
- The National Solar Mission is one of the key missions in India's National Action Plan on Climate Change, which was launched in 2010.
- The mission's objective is to establish India as a global leader in solar energy, and India's cumulative installed renewable capacity reached 179.322 GW as of July 2023. Among renewable sources, while solar energy maintained its dominance contributing 67.07 GW, wind energy contributed 42.8 GW.
- India aims for 500 GW of installed renewable energy capacity and five million tonnes of green hydrogen by 2030.

Government Policies and Initiatives

- The Government of India is implementing the National Action Plan on Climate Change, which includes eight missions focusing on various sectors such as solar power, energy efficiency, sustainable habitats, and more.
- India is poised to achieve its energy independence target through clean technology by 2047, with a major emphasis on the 'Make in India' initiative.
- The Government has also taken a policy decision by permitting foreign direct investment (FDI) up to 100 percent under the automatic route in the renewable energy sector.
- PM PRANAM (Prime Minister Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) programme aims to promote the use of bio-fertilisers and simultaneously reduce the use of chemical fertilisers.

Emerging Opportunities with Green Devel Initiatives

- India's rural economy presents a significant market opportunity for mechanisation through clean energy innovations in the farm sector, with potential uses of pesticide spraying, rice transplanting, and grain crop harvesting.
- The government has incentivised 20 rural livelihood appliances to run on decentralised renewable energy, aiming to reduce production costs and overall gains.
- Challenges and Way Forward for the Shift to Green Technologies
- Technology change and adoption require significant financial resources; until 2030, at least \$4 trillion must be invested annually worldwide in renewable energy, including infrastructure and technology purchases that will enable us to achieve net-zero emissions by 2050.
- For transition along a low-carbon path, support from industrialised nations and international organisations like the World Bank is crucial.

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C.J. Joshi Complex,
Opp. Railway
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9769229977

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