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of monthly
Current Affairs

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BHARATI SCRIPT

History, Art & Culture

Why is it in news?

Bharati script is designed to be a **common script** that can express all the major Indian languages. It is developed by Srinivasa Chakravathy's team at IIT Madras.

What is Bharati Script?

Bharati is a **unified script for nine Indian languages**. It has been designed to be a common script that can express all the major Indian languages. Bharati Script can express: **Hindi/Marathi (Devanagari), Tamil, Telugu, Gujarati, Punjabi (Gurmukhi), Bengali, Oriya, Kannada and Malayalam**. The script has been designed using simplest shapes, often borrowing simple characters from various **Indian languages/scripts including English**.



Need for a common script

- The Roman script is used as a common script for many European languages like English, French, German, Italian etc.
- This facilitates communication across nations that speak and write different languages.
- In India however, most major languages are written in their own unique scripts.
- This poses barriers to communication in a multilingual society like India.
- Thus, a common script for the entire country is hoped to bring down many communication barriers in India.

Significance of Bharati script

- can help the next generation of Indians to easily read in Indian languages
- is an ideal script for languages like Konkani or Tulu that don't have their own script
- can serve as a writing system for the innumerable tribal languages of India, and languages of the Northeast
- can act as a link script for migrant Indians who move out of their native state for work
- can connect the millions of NRI children back to Indian literature
- can lead to a new system of Braille for Indian languages and even a finger-spelling system for the hearing impaired
- can shorten the duration of adult literacy programs from 6 months to a few weeks

Evidence of dairy production in the Indus Valley Civilisation

History, Art & Culture

Why is it in news?

2020 marks 100 years of the discovery of Indus Valley Civilization (IVC). And a new study has shown **that dairy products were being produced by the Harappans** as far back as 2500 BCE.

Key findings from a latest study

- Dairy production in India began as far back as in the 3rd millennium BCE and may have been a factor behind sustaining the Indus Valley Civilisation.
- Through a process called stable isotope analysis, the researchers were also able to identify the type of ruminant used for dairy, and concluded that these were cattle, like cows and buffalo, rather than goats and sheep.
- Industrial level of dairy exploitation: The Harappans did not just use dairy for their household. The large herd indicates that milk was produced in surplus so that it could be exchanged and there could have been. Some kind of trade between settlements. This could have given rise to an industrial level of dairy exploitation.

The current chronology is:

Dates	Phase	Era
7000 – 5500 BCE	Mehrgarh I (aceramic Neolithic)	Early Food Producing Era
5500-3300	Mehrgarh II-VI (ceramic Neolithic)	
3300-2600	Early Harappan	Regionalisation Era 5500-2600
3300-2800	Harappan 1 (Ravi Phase)	
2800-2600	Harappan 2 (Kot Diji Phase, Nausharo I, Mehrgarh VII)	
2600-1900	Mature Harappan (Indus Valley Civilization)	
2600-2450	Harappan 3A (Nausharo II)	Integration Era
2450-2200	Harappan 3B	
2200-1900	Harappan 3C	
1900-1300	Late Harappan	
1900-1700	Harappan 4	Localisation Era
1700-1300	Harappan 5	
1300-300	Northern Black Polished Ware (Iron Age)	Indo-Gangetic Tradition

City	River Bank	Province	Year of Discovery	Archaeologist(s)
Harappa	Ravi	Pakistani Punjab	1921	Daya Ram Sahni
Mohenjodaro	Indus	Sind	1922	RD Banerjee
Ropar	Sutlej	Indian Punjab	1953	YD Sharma
Lothal	Bhogava	Gujarat	1957	SR Rao
Kalibangan	Ghaggar	Rajasthan	1959	BB Lal
Chanudaro	Indus	Sind	1931	MG Majumdar
Alamgirpur	Hindon	Uttar Pradesh	1974	YD Sharma
Sutkagendor	Dasht	Baluchistan	1931	Aurel Stein
Banawali	Haggar	Haryana	1974	RS Bist
Rangpur	Bhadur	Gujarat	1931	MS Vats

AZAD HIND GOVERNMENT

History, Art & Culture

Why is it in news?

October 21 marked the 77th anniversary of Azad Hind Government

About Azad Hind Government

- The Azad Hind Government, founded on 21st October, 1943 in occupied Singapore, was inspired by Netaji Subhash Chandra Bose who was the leader of Azad Hind Government and also the Head of State of this Provisional Indian Government-in-exile. Revolutionary leader Rash Behari Bose was designated as the supreme advisor.
- It supported by the Empire of Japan, Nazi Germany, Italian Social Republic, and their allies.
- The government proclaimed authority over Indian civilian and military personnel in Southeast Asian British colonial territory and prospective authority over Indian territory to fall to the Japanese forces and the Indian National Army during the Japanese thrust towards India during the Second World War.
- However, while it possessed all the nominal requisites of a legitimate government, it lacked large and definite areas of sovereign territory until Japan gave it nominal authority of the Andaman and Nicobar Islands in 1943 and the occupation of parts of Manipur and Nagaland.
- Japanese officials made all the decisions, and throughout its existence it was entirely dependent on Japanese support. The islands were re-occupied by the British in 1945.
- Immediately after the formation of the government-in-exile, Azad Hind declared war against the Anglo-American allied forces on the Indo-Burma Front. Its army, the "Azad Hind Fauj" (Indian National Army or the INA), fought against the British Indian Army and the allied forces as part of the Imperial Japanese Army in the Imphal-Kohima sector.
- Bose's death was seen as the end to the Azad Hind movement. The Second World War also ended in 1945 with the defeat of the Axis powers.



Significance

- Netaji Subhas Chandra Bose was convinced that armed struggle was the only way to achieve independence for India. The role of Azad Hind Fauj or the Indian National Army (INA) had been crucial in leaving behind a much needed impetus to India's struggle for Independence.
- Azad Hind government was actively involved in nation building and had even started its own bank, currency, civil code and stamps.
- According to experts, Netaji laid down the foundation for equal opportunity for women in armed forces, through the formation of Rani Jhansi Regiment. Prime Minister in his address said that the government is carrying forward this legacy in true means and reiterated that women will be given equal opportunity for permanent commission in armed forces.
- The existence of the Azad Hind Government gave a greater legitimacy to the independence struggle against the British.

Life in Miniature" Project

History, Art & Culture

Why is it in news?

Union Minister of State for Culture and Tourism (I/C) Shri Prahlaad Singh Patel virtually launches "Life in Miniature" project.

About the project

Several hundred **miniature paintings from the National Museum**, New Delhi can be viewed online on Google Arts & Culture by people around the world in a new project titled "Life in Miniature."

Aim of the project

- Several hundred miniature paintings from the National Museum, New Delhi can be viewed online by people around the world through "Life in Miniature" project.
- The aim is to showcase Paintings that tell stories of nature, love, celebration, faith, and power.
- This will let people explore over 1,000 high resolution miniatures using Machine Learning and Augmented Reality
- Users will be able to see famous miniature collections of the National Museum in never before seen ways.



- This will be in extraordinary detail in just a few clicks – Check the links in Suggested section.
- "Life in Miniature" project is collaboration between the National Museum, New Delhi and Google Arts & Culture

SIGNIFICANCE

- The importance of 'Digital India' initiative and the role of technology in the preservation of India's heritage has grown in recent years.
- Google is well known for its leadership in the technology sector and its focus on product innovation. Google's commitment to driving social empowerment and inclusion is a true asset to India.
- The artworks showcased are presented along five universal themes of the human relationship with nature, love, celebration, faith and power.
- Users can explore these miniature marvels guided by Artificial Intelligence.

Special features

- Key highlight of the launch is the application of Machine Learning-based algorithms to the corpus of paintings being brought online.
- A single miniature painting is a rare joy to behold, this experience is named – "Magnify Miniatures" .(Links below)
- This will enable online users to explore multiple artworks simultaneously is a stunning new experience.
- With "Life in Miniature", users will be able to see famous miniature collections of the National Museum.

ABOUT GOOGLE ARTS & CULTURE

- Google Arts & Culture puts the collections of more than 2,000 museums at one's fingertips.
- It's an immersive way to explore art, history and the wonders of the world .
- The virtual collection includes 1,200 high resolution images from 25 collections all around the world.
- More than 75 stories, depicting scenes that include legendary marriage processions, the joy of being among nature, or epic battles.
- The Google Arts & Culture app is free and available online for iOS and Android.

Miniature Paintings

Miniatures are the small sized, handmade, very colourful paintings and main feature of these Miniature paintings include complex and gentle brush work which provides them unique identity. In the eastern and western India miniature Paintings developed in the 9th to the 11th century as a reaction to large scale wall painting. The colours used in Miniature were handmade from vegetables, minerals, stones, indigo etc.

Miniature Schools in India

1. THE PALA SCHOOL (11th to 12th centuries)

- The earliest examples of miniature painting in India exist **in the form of illustrations to the religious texts on Buddhism executed under the Palas of the eastern India and the Jain texts executed in western India during the 11th-12th centuries A.D.**
- The Pala period (750 A.D. to the middle of the 12th century) witnessed the last great phase of Buddhism and of the Buddhist art in India.
- The Buddhist monasteries (mahaviharas) of **Nalanda, Odantapuri, Vikramsila and Somarupa were great centres of Buddhist learning and art.**
- A large number of **manuscripts on palm-leaf relating to the Buddhist themes were written and illustrated with the images of Buddhist deities** at these centres which also had **workshops for the casting of bronze images.**
- Students and pilgrims from **all over South-East Asia** gathered there for education and religious instruction. They took back to their countries examples of Pala Buddhist art, **in the form of bronzes and manuscripts which helped to carry the Pala style to Nepal, Tibet, Burma, Sri Lanka and Java etc.**
- The surviving examples of the Pala illustrated manuscripts mostly belong to the **Vajrayana School of Buddhism.**
- The Pala painting is characterised by **sinuous line and subdued tones of colour.** It is a naturalistic style which resembles the ideal forms of contemporary bronze and stone sculpture, and reflects some feeling of the classical art of Ajanta.
- A fine example of the typical Buddhist palm-leaf manuscript illustrated in the Pala style exists in the **Bodleian Library, Oxford, England.** It is a manuscript of the **Astasahasrika Prajnaparamita, or the perfection of Wisdom written in eight thousand lines.** It was executed at the monastery of Nalanda in the fifteenth year of the reign of the **Pala King, Ramapala,** in the last quarter of the eleventh century. **The manuscript has illustrations of six pages and also on the insides of both wooden covers.**
- **The Pala art came to a sudden end after the destruction of the Buddhist monasteries at the hands of Muslim invaders** in the first half of the 13th century. Some of the monks and artists escaped and fled to Nepal, which helped in reinforcing the existing art traditions there.



The Western Indian School (12th – 16th Centuries)

- The Western Indian style of painting prevailed in the region comprising **Gujarat, Rajasthan and Malwa**. The motivating force for the artistic activity in Western India was **Jainism just as it was Buddhism in case of the Ajanta and the Pala arts**.
- **Jainism was patronised by the Kings of the Chalukya Dynasty who ruled Gujarat and parts of Rajasthan and Malwa from 961 A.D. to the end of the 13th century.**
- **An enormous number of Jain religious manuscripts were commissioned from 12th to 16th centuries** by the princes, their ministers and the rich Jain merchants for earning religious merit. Many such manuscripts are available in the Jain libraries (bhandaras) which are found at many places in Western India.
- The illustrations on these manuscripts are in a style of vigorous distortion. **One finds in this style an exaggeration of certain physical traits, eyes, breasts and hips are enlarged. Figures are flat with angularity of features and the further eye protruding into space.** This is an art of primitive vitality vigorous line and forceful colours.
- **From about 1100 to 1400 A.D., palm-leaf was used for the manuscripts and later on paper was introduced for the purpose.**
- **The Kalpasutra and the Kalakacharya-Katha**, the two very popular Jain texts were repeatedly written and illustrated with paintings.
- Some notable examples are the **manuscripts of the Kalpasutra in the Devasano pado Bhandar at Ahmedabad, the Kalpasutra and Kalakacharya-Katha of about 1400 A.D.** in the Prince of Wales Museum, Bombay and the Kalpasutra dated 1439 A.D. executed in Mandu, now in the National Museum, New Delhi and **the Kalpasutra written and painted in Jaunpur in 1465 A.D.**



Other Isolated Styles (1500-1550 A.D.)

- **During the 15th century the Persian style of painting started influencing the Western Indian style of painting** as is evident from the Persian facial types and hunting scenes appearing on the border's of some of the illustrated manuscripts of the Kalpasutra.
- Introduction of the use of **ultramarine blue and gold colour in the Western Indian manuscripts is also believed to be due to the influence of the Persian painting.**
- These Persian paintings, which came to India, were in the form of **illustrated manuscripts**. A number of such manuscripts were copied in India.
- Some colours used in these types of copies can be seen in the Freer Gallery of Art, Washington and an illustrated manuscript of Bustan of Sadi in the National Museum, New Delhi. The Bustan was executed for **Sultan Nadir Shah Khilji of Malwa (1500-1510 A.D.), by one Hajji Mahmud (painter) Shahsuwar (scribe).**
- An illustrated manuscript of the **Nimat Nama (Cookery Book) which exists in the Indian Office Library, London is marked by a new trend of painting at Malwa.**
- **The manuscript was started in the time of Ghiyasaldin Khilji of Malwa (1469-1500 A.D.).** A left of this manuscript is illustrated here. In the Nimat Nama style the Persian influence is visible in the scroll like clouds, flowering trees, grassy tufts and flowering plants in the background, female figures and costumes.
- Indian elements are noticeable in some female types and their costumes



Property of Special Collections, University of Washington Libraries

and ornaments and colours. In this manuscript one can notice **the first attempt towards the evolution of new styles of painting by the fusion of the Persian style of Shiraz with the indigenous Indian style.**

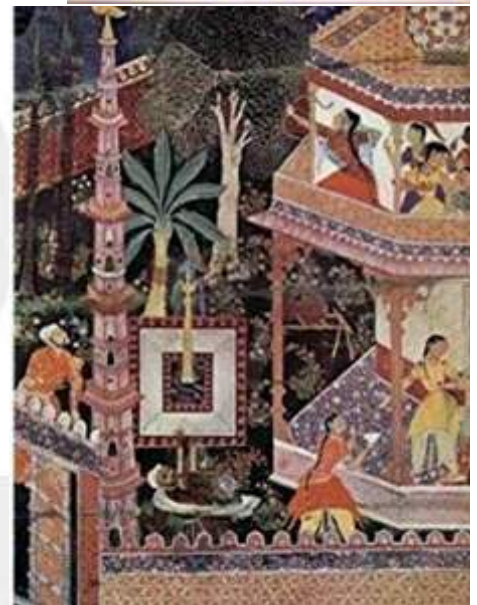
- The finest examples of painting belonging to the first half of the 16th century are, however, represented by a group of miniatures generally designated as the **"Kulhadar Group"**. This group includes illustrations of the **'Chaurapanchasika' – "Fifty Verses of the Thief by Bilhan, the Gita Govinda, the Bhagavata Purana and Ragamala.**
- The style of these miniatures is marked by the use of **brilliant contrasting colours, vigorous and angular drawing, transparent drapery and the appearance of conical caps 'Kulha' on which turbans are worn by the male figures.**
- An example of the **Chaurapanchasika miniature shows Champavati standing near a lotus pond.**

- This miniature belongs to the N.C. Mehta collection, Bombay. **It was executed in the first quarter of the 6th century, probably in Mewar.** The style of the painting is purely indigenous derived from the earlier tradition of the Western Indian art and **does not show any influence of either the Persian or the Mughal style of painting.**
- Two manuscripts of the **Laur Chanda, an Avadhi romance by Mulla Daud,** one in the Prince of Wales Museum, Bombay and the other in John Rylands Library, Manchester seem to have been painted at Muslim courts between 1530 to 1540 A.D. **They show a mixture of Persian and Indian styles like the Nimat Nama of Malwa.** The other two important manuscripts of this period are the **Mrigavati and the Mahapurana, a Jain text.** They are executed in a style related to **Chaurapanchasika style.**



The Mughal School (1560-1800 A.D.)

- The origin of the Mughal School of Painting is considered to be a landmark in the history of painting in India.
- With the establishment of the Mughal empire, **the Mughal School of painting originated in the reign of Akbar in 1560 A.D.**
- Emperor Akbar was keenly interested in the **art of painting and architecture.** In the beginning of his rule an atelier of painting was established under the supervision of two Persian masters, **Mir Sayyed Ali and Abdul Samad Khan,** who were originally employed by his father Humayun. A large number of Indian artists from all over India were recruited to work under the Persian masters.
- The Mughal style evolved as a result of a **happy synthesis of the indigenous Indian style of painting and the Safavid school of Persian painting.**
- The Mughal style is marked by **supple naturalism based on close observation of nature and fine and delicate drawing.** It is of an high aesthetic merit. It is primarily aristocratic and secular.
- An illustrated manuscript of the **Tuti-nama** in the Cleveland Museum of Art (USA) appears to be the first work of the Mughal School.
- The style of painting in this manuscript shows the Mughal style in its formative stage. Shortly after that, between 1564-69 A.D. was completed a very ambitious project in the form of **Hamza-nama illustrations on cloth, originally consisting of 1400 leaves in seventeen volumes.** The style of Hamza-nama is more developed and refined than that of the Tuti-nama.
- **The Hamza-nama illustrations** are in a private collection in Switzerland. It shows Mihrdukht shooting arrows at the bird on a multi-staged minaret, from the upper storey of a pavilion. In this miniature one can observe that the **architecture is Indo-Persian, the tree types are mainly derived from the Deccani painting and female types are adapted from the earlier Rajasthani paintings, Women are wearing four cornered pointed skirts and transparent muslim veils. Turbans worn by men are small and tight, typical of the Akbar period.**
- **The Mughal style was further influenced by the European paintings** which came in the Mughal court, and absorbed some of the Western techniques like shading and perspective.
- The other important manuscripts illustrated during the period of Akbar are the **Gulistan of Sadi dated 1567** in the British Museum, London, **the Anwari-Suhavli (a book of fables) dated 1570** in the School of Oriental and African Studies, University of London, another **Gulistan of Sadi** in the Royal Asiatic Society Library copied at Fatehpur Sikri in 1581 by Muhammad Hussain al-Kashmiri, a Diwan of the poet Amir Shahi in the Bibliotheque Nationale, of the **Diwan of Hafiz, the Razm-nama (Persian translation of the Mahabharata)** in the Maharaja of Jaipur Museum, Jaipur, the Baharistan of Jami dated 1595 in the Bodleian Library, the Darab-nama in the British Museum, **the Akbar-nama (circa 1600)** in the Victoria and Albert Museum, London, the Tarikh-i-Alfi dated 1596 A.D. in the Gulistan Library in Tehran, a number of the Babar-nama, a manuscript executed in the last decade of the 16th century, **the Twarikh-e-Khandane Taimuria** in the Khuda Baksh Library, Patna, **the Jog Vashisht** dated 1602 in the Chester Beatty Library, Dublin etc. Moreover, a number of paintings of court and hunting scenes and portraits were also executed during the period of Akbar.

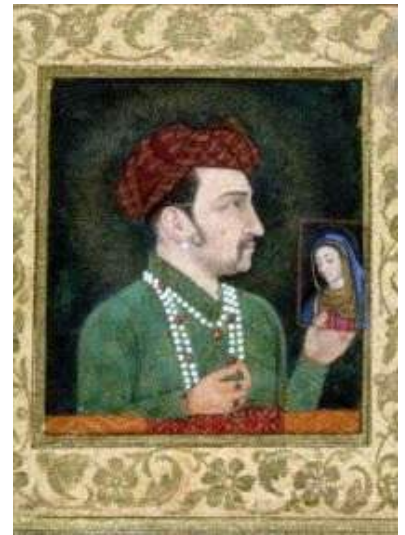


Akbar's court painters

- The list of Akbar's court painters includes a large number of names. Some of the famous painters other than the two Persian masters already mentioned are **Dasvanth, Miskina, Nanha, Knha, Basawan, Manohar, Doulat, Mansur, Kesu, Bhim Gujarati, Dharam Das, Madhu, Surdas, Lal, Shankar Goverdhan and Inayat.**

Evolution of Mughal paintings under Jahangir

- **Under Jahangir, painting acquired greater charm, refinement and dignity.** He had great fascination for nature and took delight in the portraiture of birds, animals and flowers.
- Some important manuscripts illustrated during his period are, an **animal fable book called Ayar-i-Danish**, some miniatures in the **Gulistan and a Diwan of Hafiz**. **Besides a number of durbar scenes, portraits, bird, animal and flower studies were also executed during his period.** The famous painters of Jahangir are **Aqa Riza, Abul Hasan, Mansur, Bishan Das, Manohar, Goverdhan, Balchand, Daulat, Mukhlis, Bhim and Inayat.**
- **The portrait of Jahangir illustrated is a typical example of miniature executed during the period of Jahangir.**
- It shows **Jahangir holding a picture of the Virgin Mary in his right hand.** The portrait is remarkable for its superb drawing and fine modelling and realism. There is liberal use of gold colour on the borders which are decorated with floral designs. Text in Persian appears along the border. The portrait is assigned to 1615-20 A.D.
- Following the example of the Mughal Emperor the courtiers and the **provincial officers also patronised painting.** **They engaged artists trained in the Mughal technique of painting.** But the



artists available to them were of inferior merit, those who could not seek employment in the Imperial Atelier which required only first-rate artists.



- Some notable examples of the Popular Mughal painting are a **series of the Razm-nama dated 1616 A.D., a series of the Rasikapriya (1610-1615) and a series of the Ramayana of circa 1610 A.D.,** in several Indian and foreign museums.
- An example from **a series of the Ramayana of the early 17th century in the typical popular Mughal style,** from the collection of the National Museum, New Delhi. **It shows a fight between the armies of Rama and Ravana in Lanka.**
- **Rama with his brother Lakshmana** is seen in the foreground to the left while Ravana is seen in his court conversing with the demon chiefs inside the golden fort. The drawing is fine but not as refined as observed in the Imperial Mughal painting.

Shah Jahan

- Under Shah Jahan **the Mughal painting maintained its fine quality.** But the style, however, became over-ripe during the later period of his rule. **Portraiture was given considerable attention by his painters.**
- The well-known artists of his period are **Bichiter, Chaitaraman, Anup Chattar, Mohammed Nadir of Samarguand, Inayat and Makr.**
- Apart from portraiture, other paintings showing groups of ascetics and mystics and a number of illustrated manuscripts were also executed during his period.
- Some noteworthy examples of such manuscripts are the **Gulistan and the Bustan of Sadi,** copied for the emperor in the first and second years of his reign and the **Shah Jahan Nama 1657,** at Windsor Castle.
- A miniature in the collection of the National Museum depicts a **gathering of Sufis (Muslim divines) who are seen seated in an open space and engaged in discussion.** It displays supple naturalism of the Mughal style of the Shah Jahan period. The drawing is refined and the colours have subdued tones. The background is green and the sky is in golden colour. The borders show floral designs in golden colour. The miniature is assigned to circa 1650 A.D.



Aurangzeb and later era

- **Aurangzeb was a puritan and therefore did not encourage art.** Painting declined during his period and lost much of its earlier quality. A large number of court painters migrated to the provincial courts.
- During the period of **Bahadur Shah, there was a revival** of the Mughal painting after the neglect shown by Aurangzeb. The style shows an improvement in quality.
- **After 1712 A.D. the Mughal painting again started deteriorating** under the later Mughals. Though retaining the outer form it became lifeless and lost inherent quality of the earlier Mughal art.

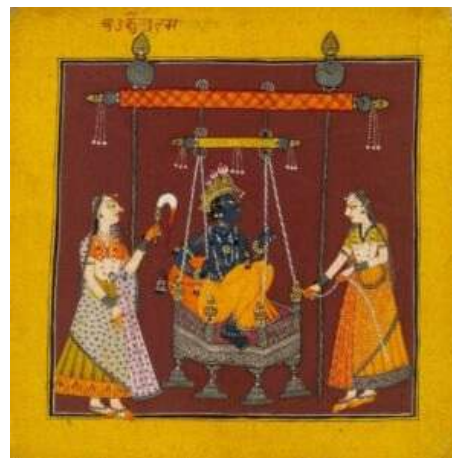
The Deccani Schools (Circa 1560-1800 A.D.)

- Though no pre-Mughal painting from the Deccan are so far known to exist, yet it can safely be presumed that **sophisticated schools of painting flourished there,** making a significant contribution to the development of the Mughal style in North India.

- Early centres of painting in the Deccan, during the 16th and 17th centuries were **Ahmednagar, Bijapur and Golconda**. In the Deccan, painting continued to develop independently of the Mughal style in the beginning. However, later in the 17th and 18th centuries it was increasingly influenced by the Mughal style.

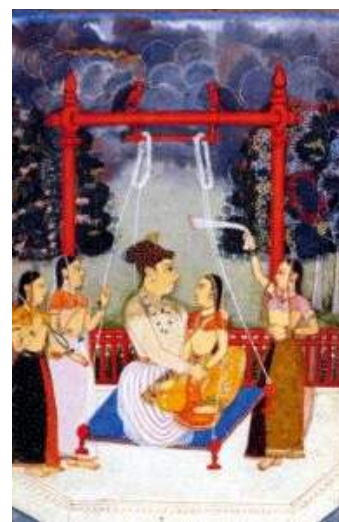
Ahmednagar

- The earliest examples of the Ahmednagar painting are contained in a volume of poems written in **praise of Hussain Nizam Shah I of Ahmednagar (1553-1565) and his queen**. This manuscript known as the **'Tarif-in-Hussain Shahi'** and assigned to a period 1565-69 is preserved in the Bharat Itihas Samshodaka Mandala, Poona.
- One of the illustrations depicts **the king sitting on the throne and attended by a number of women**. The female type appearing in the painting belongs to the northern tradition of Malwa. The Choli (bodice) and long pigtails braided and ending in a tassel are the northern costume. But the long scarf passing round the body is in the southern fashion. **The colours used in the painting being rich and brilliant are different from those used in the northern paintings. The Persian influence can be seen in the high horizon, gold sky and the landscape.**
- Some other fine examples of the Ahmednagar painting are the **"Hindola Raga" of about 1590 A.D. and portraits of Burhan Nizam Shah II of Ahmednagar (1591-96 A.D.) and of Malik Ambar of about 1605 A.D.** existing in the National Museum, New Delhi and other museums.



Bijapur

- **In Bijapur, painting was patronised by Ali Adil Shah I (1558-80 A.D.) and his successor Ibrahim II (1580-1627 A.D.)**. An encyclopaedia known as the **Najum-ul-ulum (Stars of Sciences)**, was illustrated in 1570 A.D. in the reign of **Ali Adil Shah I**.
- **This manuscript contains 876 miniatures**. The ladies appearing in the illustrations are tall and slender and are wearing the South Indian dress. One of the miniatures illustrated here shows the **"Throne of Prosperity"**. There is influence of the **Lepakshi mural painting** on the female types. **The rich colour scheme, the palm trees, animals and men and women all belong to the Deccani tradition. The profuse use of gold colour, some flowering plants and arabesques on the top of the throne are derived from the Persian tradition.**
- **Ibrahim II (1580-1627 A.D.) was a musician and author of a book, the Naurasnama**, on the subject. It is believed that a number of the **Ragamala paintings** were commissioned in various museums and private collections. A few contemporary portraits of Ibrahim II are also available in several museums.



Golconda

- The earliest paintings identified as Golconda work are a **group of five charming paintings of about 1590 A.D.** painted in the period of **Muhammad Quli Quta Shah (1580-1611)**
- They show dancing girls. One of the miniatures illustrated shows **the king in his court watching a dance performance**. He wears the white muslim coat with embroidered vertical band, a typical costume associated with the Golconda court. Gold colour has been lavishly used in painting the architecture, costume, jewellery and vessels etc.
- Other outstanding examples of the Golconda painting are **"Lady with the Myna bird"**, about 1605 A.D., an illustrated manuscript of a **Sufi poem (1605-15 A.D.)** and a couple of portraits showing a **poet in a garden and an elegantly dressed young man seated on a golden stool and reading a book**, both signed by a certain **artist Muhammad Ali** in the Museum of Fine Arts, Boston.
- **Early Deccani painting absorbed influences of the northern tradition of the pre-Mughal painting which was flourishing in Malwa, and of the southern tradition of the Vijayanagar murals** as evident in the treatment of female types and costumes.
- **Influence of the Persian painting is also observed** in the treatment of the horizon gold sky and landscape. The colours are rich and brilliant and are different from those of the northern painting. **Tradition of the early Deccani painting continued long after the extinction of the Deccan Sultanates of Ahmednagar, Bijapur and Golconda.**

Hyderabad

- Painting in Hyderabad started with the foundation of the **Asafji dynasty by Mir Qamruddin Khan (Chin Qulick Khan) Nizam-ul-Mulk** in 1724 A.D.
- Influence of the **Mughal style of painting on the already existing early styles of**



Deccani paintings, introduced by several Mughal painters who migrated to the Deccan during the period of Aurangzeb and sought patronage there, was responsible for the development of various styles of painting in the Deccan at Hyderabad and other centres.

- Distinctive features of the Deccani paintings of the 18th and 19th centuries are observed in the treatment of the ethnic types, costumes, jewellery, flora, fauna, landscape and colours.
- A miniature showing a **princess in the company of maids is a typical example of the Hyderabad school of painting**. Typical characteristics of the Hyderabad painting like **the rich colours, the Deccani facial types and costumes can be observed in the miniature. It belongs to the third quarter of the 18th century.**



Tanjore

- **A style of painting characterised by bold drawing, techniques of shading and the use of pure and brilliant colours** flourished at Tanjore in South India during the late 18th and 19th centuries.
- A typical example of the Tanjore painting, in the collection of the National Museum, is an illustrated wooden panel of early 19th century showing the **coronation of Rama. The scene is laid under elaborately decorated arches.**
- **In the middle Rama and Sita are seated on the throne**, attended by his brothers and a lady; In the left and right panels are seen rishis, courtiers and princes. **In the foreground are Hanuman, Sugriva who is being honoured and two other vanaras opening a box probably containing gifts.** The style is decorative and is marked by the use of bright colours and ornamental details. The conical crown appearing in the miniature is a typical feature of the Tanjore painting.

JAYANTI OF BABA BANDA SING BAHADUR

History, Art & Culture

Why is it in news?

The Prime Minister recently paid tribute to Baba Banda Singh Bahadur Ji on his 350th Jayanti.

Rise of Banda Bahadur :

Guru Gobind Singh ji, before his death, had ordered his Sikhs to accept Guru Granth Sahib as their religious Guru. During the last days of his life, Guruji visited the south. At Nanded Sahib, he met Bairagi Madho Das. Guru Gobind Singh Ji baptised him as a Sikh and renamed him Gurbax Singh. But Madho Das became popular by the name of 'Banda Bahadur'.



When Banda Bahadur heard from Guruji about the atrocities committed on the Sikhs by the Mughal Government, he was greatly distressed. He was enraged when he came to know about the martyrdom of Guru Tegh Bahadur Ji, Mata Gujari and the Sahibzadas. He requested Guruji to visit Punjab. He wanted to punish the treacherous Mughal officials for their crimes. Guruji accepted the request of Banda Bahadur. Guru Sahib gave him five arrows from his bow, a khanda and Niagara as a symbol of his power. He ordered Bhai Vinod Singh, Bhai Kahan Singh, Bhai Baz Singh, Bhai Daya Singh and Bhai Ran Singh to accompany and assist Banda Bahadur in Punjab. At the time of departure, Guru Sahib gave the Hukamnamas to Banda Bahadur for the Sikhs of Punjab. In these Hukamnamas, Guruji wrote to the Sikhs that Banda Bahadur would be their political leader. They should assist Banda Bahadur in the religious wars against the Mughals. After organising the army, Banda Bahadur and his followers advanced towards Punjab with great zeal to take military action against the cruel Mughals.

- **Attack on Sonapat :** While advancing from Delhi to Punjab, Banda Bahadur attacked Sonapat though at that time, he had only five hundred Sikhs in his army yet fauzdar of that place could not dare to resist them on hearing the bravery of Sikhs. The fauzdar and his army fled from the city.
- **Seizure of Royal Treasury of Bhoona :** When Banda Bahadur reached near Kaithal from Sonapat, he came to know that some Mughal soldiers were camping in village Bhoona with a large amount of collected land revenue in their custody. Banda Bahadur attacked Bhoona keeping in view the requirements of his soldiers, The fauzdar of Kaithal tried to resist Banda Bahadur but he was defeated. Banda Bahadur snatched the entire amount from the Mughal soldiers.
- **Conquest of Samana :** After conquering Bhoona, Banda Bahadur advanced towards Samana. The executioner (Jalad) Sayyid Jalal-ud-Din of Guru Tegh Bahadur was a resident of that place. Shashal Bag, and Bashal Bag, the executioners of the younger Sahibzadas (Jorawar Singh and Fateh Singh) of Guru Gobind Singh Ji, also belonged to Samana. Banda Bahadur attacked Samana on November 26, 1709. The battle continued in the streets of the city for many hours. The Sikhs destroyed the beautiful palaces of Samana. About 10,000 Muslims were killed. The families of Sayyid Jala-ud-Din, Shashal Bag and Bashal Bag were killed. Banda Bahadur became victorious. He got lots of money. Fateh Singh was appointed as the ruler of Samana.

- **Conquest of Ghuram :** After staying for one week in Samana, Banda Bahadur attacked Ghuram. The Pathans of that place tried to resist the Sikhs but they had to flee from that place to save their lives. Banda Bahadur and his Sikh soldiers also got money from Ghuram.
- **Attack on Kapuri:** After Ghuram, Banda Bahadur reached Kapuri via Thaska, Shahbad and Mustafabad. The ruler of Kapuri, Qadam-ud-Din was very corrupt and committed atrocities on the Hindus. Banda Bahadur defeated and killed him. His haveli was also set on fire.
- **Conquest of Sadhaura :** The ruler of Sadhaura Usman Khan also committed atrocities on the Hindus. He got Pir Budhu Shah killed because he had helped Guruji in the battle of Bhangani. Banda Bahadur attacked Sadhaura. Soon the Sikhs defeated Usman Khan. They looted the city. Many Hindus and Sikhs farmers who were ill-treated by Usman Khan also joined the army of Banda Bahadur. The Muslims who had fled to take shelter in the haveli of Pir Budhu Shah were also not spared by the Sikhs. Now a days this haveli is known as Oatal garhi.
- **Conquest of Mukhlispur :** After Sadhaura, Banda Bahadur attacked Mukhlispur. He conquered and captured it easily. The fort was renamed Lohgarh. Later on Banda Bahadur chose this city as capital.
- **Battle of Chappar-Chiri and Conquest of Sirhind :** The real target of Banda Bahadur was to conquer Sirhind. The subedar of Sirhind, Wazir Khan had troubled greatly Guru Gobind Singh Ji. He sent forces against Guruji during the battles of Anandpur Sahib and Chamkaur Sahib. The two younger Sahibzadas of Guruji were bricked up alive in a wall. Wazir Khan killed thousands of innocent Sikhs and Hindus. These incidents made Banda Bahadur and the Sikhs very angry with Wazir Khan. As the news of advancement of Banda Bahadur towards Sirhind reached Punjab, thousands of people gathered to fight under the command of Banda Bahadur. The nephew of Such Nand, an official of Sirhind also joined the army of Banda Bahadur. On the other side, there were 20,000 soldiers in Wazir Khan's army. The regiment consisted of gunmen and soldiers from Infantry, artillery and cavalry.
- A fierce battle took place between the two armies on May 22, 1710 A.D. at Chappar Chiri, 16 kms, to the east of Sirhind. To demoralise the Sikh soldiers, the nephew of Sucha Nand along with his soldiers also fled from the battlefield. Banda Bahadur himself came forward to encourage his soldiers. The Sikhs attacked the enemy with great courage. Fateh Singh killed Wazir Khan. Confusion prevailed amongst the soldiers of the enemy. A large number of soldiers of the enemy were killed by the Sikh soldiers.
- After the victory of Chappar-Chiri on May 24, 1710 A.D. Banda Bahadur attacked the fort of Sirhind. As a result, 500 Sikhs were killed in the war. But the Sikhs became successful in capturing Sirhind. The Sikhs got about 2 crore rupees from the treasury of Wazir Khan. Banda Bahadur acquired lots of money from Such Nand and the houses of other officials. The dead body of Wazir Khan was hung on a tree. Sucha Nand who had committed atrocities on the Sikhs was arrested and taken in a procession. The Sikh soldiers looted and plundered the city.

BUNDI

History, Art & Culture

Why is it in news?

A recent episode of the Ministry of Tourism's Dekho Apna Desh Webinar series has focused on the architectural heritage of Bundi, Rajasthan.

About Bundi

- Bundi erstwhile capital of Hada Rajput province known as Hadauti located in south-eastern Rajasthan is one such place.
- Bundi is also known as City of step walls, blue city and also as Chhotti Kashi.
- In ancient times, the area around Bundi was apparently inhabited by various local tribes, of which the Parihar Tribes, Meena was prominent.
- Later the region was governed by Rao Deva, who took over Bundi from Jaita Meena in 1242, renaming the surrounding area as Haravati or Haroti.
- For the next two centuries, the Hadas of Bundi were the vassals of the Sisodias of Mewar and ruled by the title of Rao until 1569, after Emperor Akbar.

Phases of Temple Architecture in Bundi

- Early phase – Classical Nagara style.
- Later phase- Amalgamation of traditional haveli with the classical Nagara style.
- Third Phase- Jain temples.
- Fourth Phase- A fourth temple type emerged in the form of raised or elevated temple.

Architectural heritage of Bundi can be classified as:

1) Garh (Fort): Taragarh

- Taragarh Fort was constructed by Rao Raja Bair Singh in 1354.
- The palace is a tribute to Rajput style.
- The fort includes Hazari Darwaza, Ratan Daulatkhana, Ratan Niawas, Chatra mahal, Badal Mahal & Moti Mahal.



2) Garh Mahal (Royal Palace)

- Bhoj Mahal
- Chattar Mahal
- Ummed Mahal

3) Baori (Step well)

- Khoj Darwaja ki Baori
- Bhawal di Baori

4) Kund (Stepped tank)

- Dhabhai ji ka Kund
- Nagar Kund & Sagar Kund
- Rani Kund

5) Sagar mahal (Lake Palace)

- Moti Mahal
- Sukh Mahal
- Shikar Burj



SIR SYED AHMED KHAN

History, Art & Culture

Why is it in news?

Sir Syed Day is observed every year on **17th October** to mark the **birth anniversary and commemorate the contributions** of Sir Syed Ahmed Khan.

About

- Sir Syed Ahmed Khan was an educationist, a politician, philosopher, social reformer and a historian.
- He is considered as the pioneer of Muslim nationalism in India.

Educationist

- Believing that the future of Muslims was threatened by the rigidity of their orthodox outlook, Sir Ahmad began promoting Western-style scientific education.
- He founded modern schools and journals and organized Islamic entrepreneurs.
- Established -
 - o Gulshan School at Muradabad
 - o Victoria School at Ghazipur in 1863, and a scientific society for Muslims in 1864.
 - o In 1875, founded the **Muhammadian Anglo-Oriental College, the first Muslim university in Southern Asia.**
 - o It was the predecessor of Aligarh Muslim University.

1857 Revolt

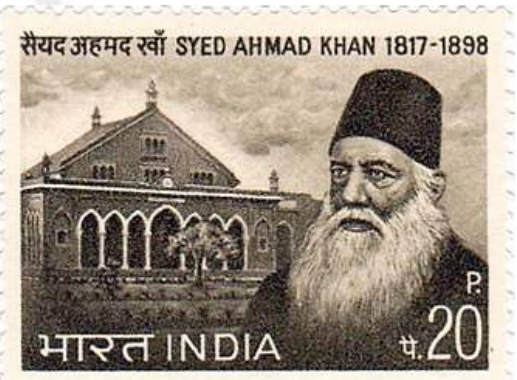
- Sir Syed supported the British during the 1857 uprising.
- In 1859, he published the booklet Asbab-e-Baghawat-e-Hind (The Causes of the Indian Revolt) in which he studied the causes of the Indian revolt.
- It critiqued British policies that he blamed for causing the revolt.
- At first he believed in Hindu-Muslim unity but later resolved to the two-nation theory.

Social Reformer

- He pushed for social reforms and was a champion of democratic ideals and freedom of speech. In one of his essays he wrote, —Freedom of expression is the right of everyone

Works

- He founded the Scientific Society in 1863 to translate major works in the sciences and modern arts into Urdu.
- He released two journals to this end —



1. The **Aligarh Institute Gazette**, which was an organ of the Scientific Society, and
2. The **Tehzib-ul Akhlaq**, known as the Mohammedan Social Reformer in English.

Avid Historian

- He was the first person to publish an archaeological study in an Indian language.
- As a result, he was also named as an honorary member of the Royal Asiatic Society.
- He also collected sculptures and rare arte facts, including those of Hindu deities.

The Aligarh Movement:

- **Sir Syed Ahmad Khan** is best known for the **Aligarh Movement a systemic movement** aimed at reforming the social, political and educational aspects of the Muslim community.
- In 1886, he set up the **Mohammedan Anglo-Oriental Education Congress** which was later renamed the **Mohammedan Anglo-Oriental Educational Conference**. It aimed to bring together education and culture.
- He also emphasised the **need for an autonomous Muslim institution** free of any government funding.
- It undertook to **modernise Muslim's education** by adapting English as a medium of learning and western education rather than just focusing on traditional teachings.
- The movement helped the Muslims revival and gave them a common language Urdu.

Political Ideology of Sir Syed:

- His idea of being a Muslim was not against the idea of being an Indian. He famously said, "Hindu and Muslim are two eyes of India".
- Followers of Sir Syed have argued that his political ideology and visualization gave an independent political expression to the Muslim community, which helped its goal to secure political power in India. His viewpoint was the guiding force behind the creation of the All India Muslim League in 1906, as a political party separate from the Congress.

Critical of the Indian National Congress:

- In 1888, three years after the Indian National Congress was founded, he delivered a lecture in Meerut on the invitation of the Muslims residing in the area. He was critical of the Congress and talked about how it was essentially a party of Bengali Hindus who could not best represent the viewpoint of a Muslim population. He called for greater representation of Muslims.
- It is believed that Sir Syed had known about the intention of the Hindus and advised the Muslims not to join it. He thought that Congress was mainly a Hindu body which worked for the protection of the rights of the Hindus.
- He requested the Muslims to get modern education first then come in the field of politics in order to protect their rights. He believed that the political activity would divert the attention of the Muslims from the constructive task and revive British mistrust.

Political Controversy:

- He was **condemned for inspiring communal divisions between Hindus and Muslims** and is recognized as one of the earliest supporters of the Two-Nation Theory.
- Historians have debated that Sir Syed was **emotionally incapable to accept the prospect that an independent India's Hindu-majority** would come to rule Muslims, who had been the former colonial rulers.
- He supported the thought that **Hindu culture would weaken the Perso-Arabic nature of Muslim culture**, which had enjoyed a dominant status under Muslim rulers for centuries.
- He disapproved of Indian nationalists and **professed the incompatibility of Muslims and Hindus**. This thought expanded the socio-political gulf between the communities that had emerged with the Urdu-Hindi controversy.
- He was also strongly disparaged by religious Muslims who regarded his liberal reinterpretation of Islamic scripture as irreverence.
- He was wary of the **rise of Indian nationalism** as he thought power would pass into the hands of the Hindus alone and advocated Muslims to have loyalty to the British. In his own words, "we do not want to become subjects of the Hindus instead of the subjects of the people of the Book."

NOBEL PRIZE IN LITERATURE 2020

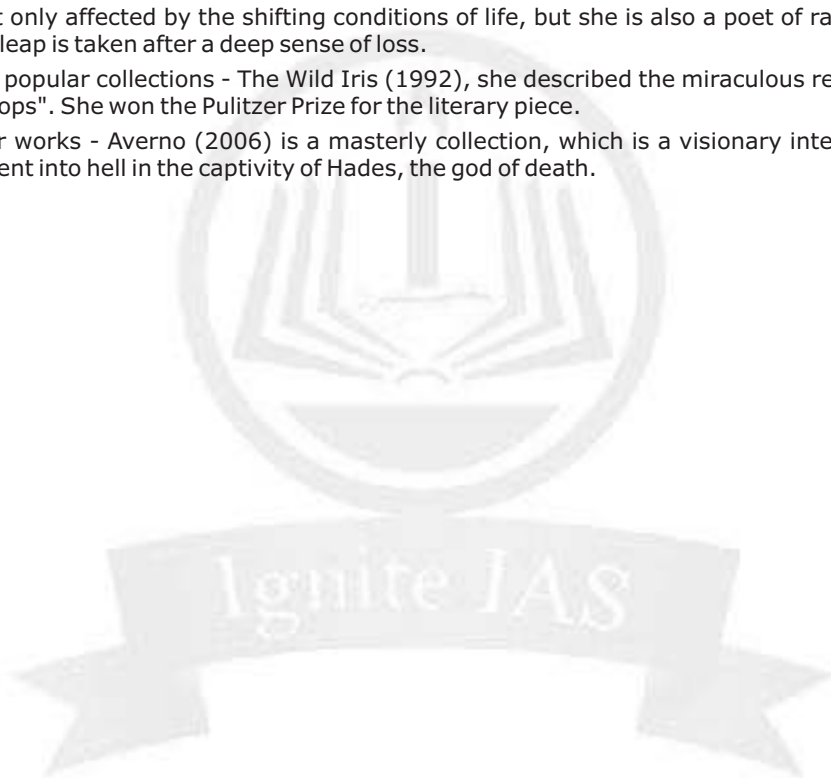
History, Art & Culture

Why is it in news?

The Nobel Prize in Literature 2020 has been awarded to American poet Louise Glück for her unmistakable poetic voice that with austere beauty makes individual existence universal.

Louise Glück

- Louise Glück has published twelve poetry collections and some volumes of essays on poetry. All her written pieces are characterized by a striving for clarity.
- The main theme of her written work has revolved around childhood and family life and a close relationship with parents and siblings.
- In most of her works, Glück seeks the universal and in this, she takes inspiration from myths and classical motifs.
- Some of her works including *The Triumph of Achilles* (1985) and *Ararat* (1990) found a growing audience in the US and abroad.
- Louise Glück is not only affected by the shifting conditions of life, but she is also a poet of radical change and rebirth, where the forward leap is taken after a deep sense of loss.
- In one of her most popular collections - *The Wild Iris* (1992), she described the miraculous return of life after winter in the poem "Snowdrops". She won the Pulitzer Prize for the literary piece.
- Another one of her works - *Averno* (2006) is a masterly collection, which is a visionary interpretation of the myth of Persephone's descent into hell in the captivity of Hades, the god of death.



COAL SECTOR

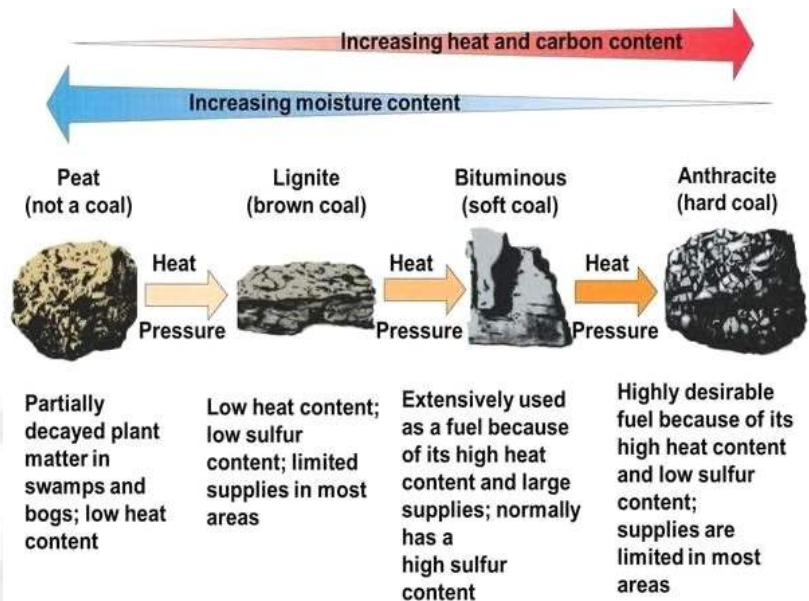
Geography

Why is it in news?

A special court sentenced former Union Minister Dilip Ray and three others to three years of jail term for irregularities in the allocation of the Brahmadaha coal block in Jharkhand in 1999.

Coal

- Coal is a combustible black sedimentary rock, formed as rock strata called coal seams.
- Coal is mostly carbon with variable amounts of other elements; chiefly hydrogen, sulfur, oxygen, and nitrogen.
- Coal supplies about a quarter of the world's primary energy and two-fifths of its electricity.



Coal in India

- Coal in India was first mined in 1774 by East India Company in Raniganj Coalfield along the Western bank of Damodar River.
- Today, India has the fifth largest coal reserves in the world.
- India is the second largest producer of coal in the world, after China.

Types of coal on the basis of Time period:

Gondwana coal: Around 98 per cent of India's total coal reserves are from Gondwana times. This coal was formed about 250 million years ago.

Tertiary coal/Lignite is of younger age. It was formed from 15 to 60 million years ago.

Distribution & Key Statistics

IMPORTANT COAL FIELDS OF TERTIARY

STATE	COAL FIELDS
Assam	Umasor, Charagaon, Jarain, Karabari, Jura, Sogring
Jammu & Kashmir	Ladda, Kalkoth, Methkha
Rajasthan	Palana (in Bikanir)
Tamil Nadu	Neyvalley, Cuddalore
Kerala	Varkala, Quilon
Gujarat	Umarsar (in kutch)

IMPORTANT COAL FIELDS OF GONDWANA

STATE	COAL FIELDS
West Bengal	Raniganj, Bankura
Bihar	Jharia, Giridih, Bokaro, Daltonganj, Karanpur, Ramgarh
Odisha	Talchir, Rampur-Hingir (Sambalpur District)
Andhra Pradesh	Singareni, Kamavaram
M.P	Umaria, Singrauli, Korba, Chirmiri, Sohagpur, Bistrampur, Mohapani
Maharashtra	Kota, Chikiyala, Rajur, Bandar
Gujarat	Ghunker

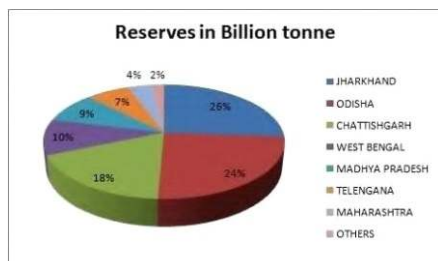
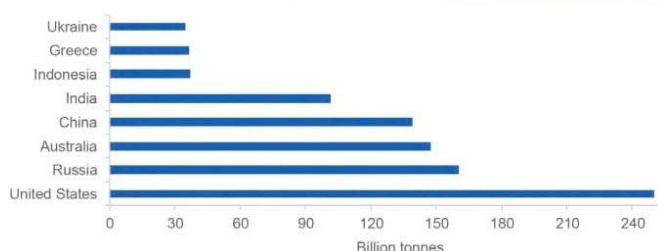


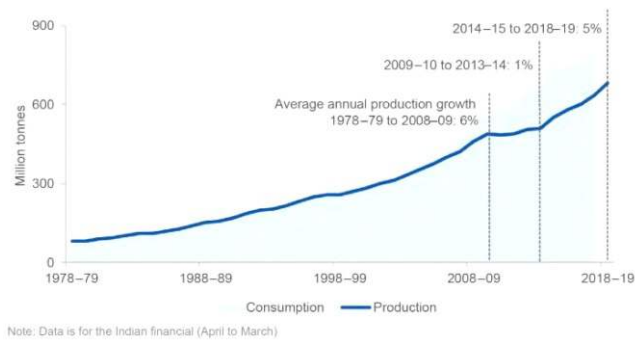
Figure 1.7: Proved reserves of coal at end 2018



Fuel type	June 2019 (actual)
Unit	GW
Coal	201
Renewable	79
Hydro	45
Gas	25
Nuclear	7
Total	358



Figure 1.8: India's thermal coal production and consumption



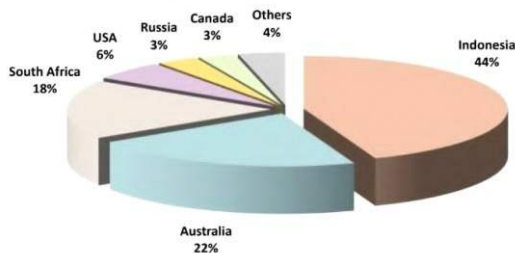
India's Grade - wise Coal Imports

Grades	FY15	FY16	FY17	FY18	FY19
Non Coking Coal	183.77	167.65	147.59	153.03	182.8
Coking Coal	45.4	47.85	47.37	53.1	53.21
Pet Coke	5.83	9.92	14.93	11.65	8.16
Met Coke	3.33	3.06	4.16	4.5	4.87
Anthracite	0.73	0.63	0.93	1.21	1.31
Grand Total	239.08	229.1	214.99	223.5	250.35

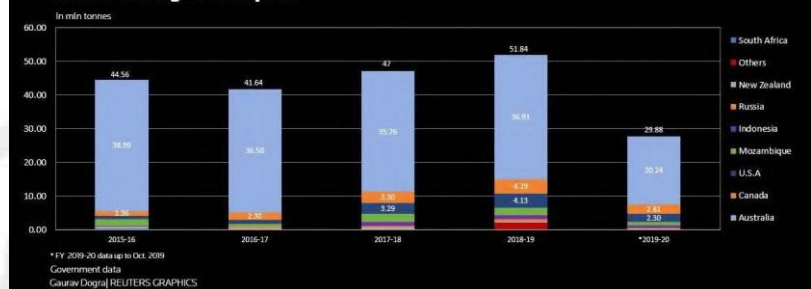
Quantity in MnT
Source: CoalMint

India - Coal Imports by Source in Jan-Dec 2019

(Jan 2020 ; source: refinitiv ; % of import volume)



India's coking coal imports



- * **Coking coal, is a grade of coal that can be used to produce good-quality coke.** Coke is one of the key irreplaceable inputs for the production of steel. There are many varieties of coal in the world, ranging from brown coal or lignite to anthracite. Coke is produced by heating coking coals in a coke oven in a reducing atmosphere.
- * Petroleum coke is a byproduct of the oil refining process.

Key government agencies include:

The Ministry of Coal:

Responsible for the formulation of policies and strategies for coal exploration, project approvals and other issues relating to the production, supply, distribution and pricing of coal in India.⁵³ The Ministry of Coal also sets production targets and other performance indicators for Coal India through a Memorandum of Understanding (MoU).

The Coal Controller:

A subordinate office of the Ministry of Coal which sets standards and procedures for assessing coal quality, inspects coal quality, performs an arbitrator role in the event of quality disputes, issues project approvals, collects excise duties and manages coal-related statistics.⁵⁴

State governments:

Approve mining licences and leases — which are required before the Ministry of Coal grants final project approval — and sets royalty rates.

Why does India import coal when it has enough?

- India does not have enough reserves of good quality coal especially coking coal that is used as a raw material in steel making and allied industries.
- Most of it is imported from Indonesia, South Africa, Russia and Australia.
- Thus, the imports are mainly to compensate the lack of good quality coal, especially coking coal.
- Plus, there is a gap between demand and domestic production capacity.
- In FY19, the country produced around 730 mt of coal, while the consumption was close to 965-970 mt.

Way ahead

- For Coking coal India would have to depend upon imports only.
- However, rest of the imports can be substituted by ramping up coal production.
- For these, bottlenecks in domestic coal production need to be removed. Eg- issues in acquiring land and strict rules and regulations; mismatch of demand and supply of railway wagons for transportation & coal off take; issues in clearances etc.
- The government has been progressively liberalizing the coal sector in recent times.

Examples

- National Mineral Policy (NMP) approved in 2019, to ensure transparency in the allotment of mining blocks.
- 100% FDI under the automatic approval route allowed for the sale of coal and coal mining activities.
- Amendment of Mines and Minerals (Development and Regulation) Act (MMDRA) 1957, for seamless transfer of clearances.
- Removal of end user restrictions. Permitting commercial coal mining for local and global firms. Now, private players can participate in the auctions.

TYPHOON MOLAVE

Geography

Why is it in news?

Recently, Typhoon Molave affected more than a million people in Vietnam.

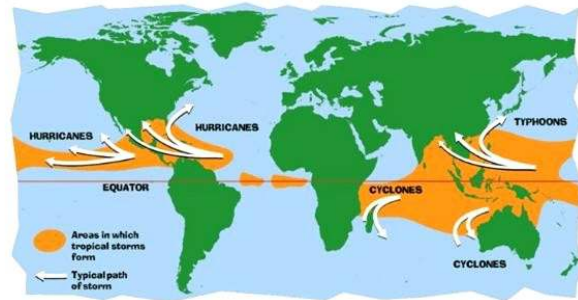
About

- Typhoon Molave It is known in the Philippines as Typhoon Quinta, was a strong tropical cyclone that caused widespread damage in the Philippines and Vietnam.

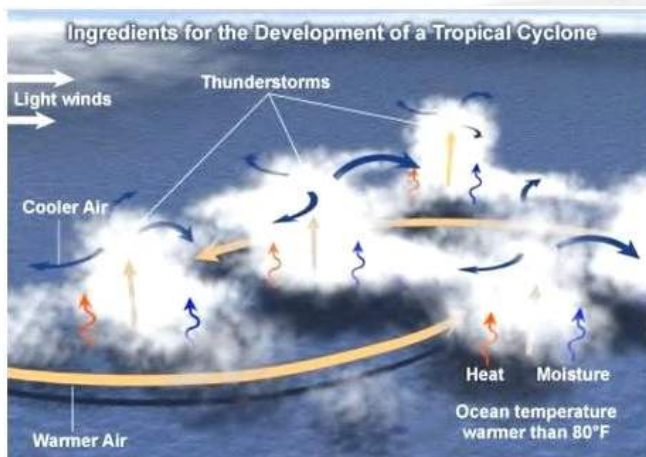
Tropical Cyclones

- A tropical cyclone is a rapid rotating storm originating over tropical oceans from where it draws the energy to develop.
- It has a low pressure centre and clouds spiraling towards the eyewall surrounding the "eye", the central part of the system where the weather is normally calm and free of clouds. It forms in Troposphere.
- Tropical cyclones rotate anti-clockwise in the northern hemisphere.
- Tropical cyclones are referred to by different names depending on where they originate in the world.
 - ◊ Hurricanes occur in the Atlantic Ocean and the eastern north Pacific Ocean.
 - ◊ Typhoons occur in the western Pacific Ocean.
 - ◊ Tropical cyclones occur in the south Pacific Ocean and Indian Ocean.

Where do Tropical Storms form?



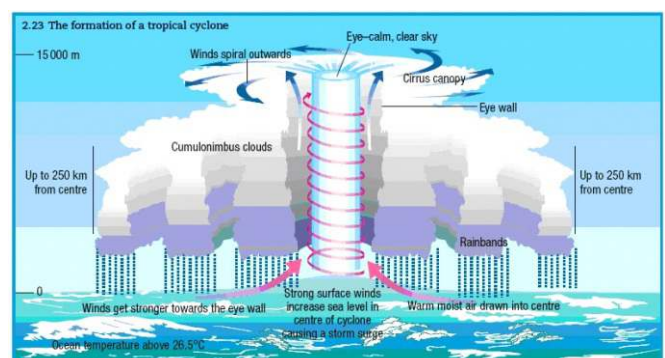
Tropical storms form between approximately 5° and 30° latitude North or South of the equator.



Category 1	Category 2	Category 3	Category 4	Category 5
Minimal damage	Moderate damage	Extensive damage	Extreme damage	Catastrophic
Winds 119-153 kph	Winds 154-177 kph	Winds 178-208 kph	Winds 209-251 kph	Winds 252 kph and more

Cyclone Category	Wind Speed in Km/h	Damage Capacity	Type of Disturbances	Wind Speed in Km/h
01	120-150	Minimal	Low Pressure	Less than 31
02	150-180	Moderate	Depression	31-49
03	180-210	Extensive	Deep Depression	49-61
04	210-250	Extreme	Cyclonic Storm	61-88
05	250 +	Catastrophic	Severe Cyclonic Storm	88-117
			Very Severe Cyclone	118-221
			Super Cyclone	More than 221

Category	Australian name	US*	NW Pacific	Arabian Sea / Bay of Bengal
-	Tropical low	Tropical depression	Tropical depression	Depression or severe depression
1	Tropical cyclone	Tropical storm	Tropical storm	Cyclonic storm
2	Tropical cyclone	Tropical storm	Severe tropical storm	Severe cyclonic storm
3	Severe tropical Cyclone	Hurricane	Typhoon	Very severe cyclonic storm
4	Severe tropical cyclone	Hurricane	Typhoon	Very severe cyclonic storm
5	Severe tropical cyclone	Hurricane	Typhoon	Super cyclonic storm



Typhoon

- A typhoon is a mature tropical cyclone that develops between 180° and 100°E in the Northern Hemisphere.
- This region is referred to as the Northwestern Pacific Basin.
- It is the most active tropical cyclone basin on Earth, accounting for almost one-third of the world's annual tropical cyclones.
- **Saffir–Simpson Hurricane Scale** is used to measure Typhoons.

Hurricane

- Hurricanes originate in the Atlantic basin, which includes the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico, the eastern North Pacific Ocean, and the central North Pacific Ocean.
- A six-year rotating list of names, updated and maintained by the World Meteorological Organization, is used to identify these storms.
- When a storm's maximum sustained winds reach 74 mph, it is called a hurricane.

Conditions for Formation of Tropical Cyclones

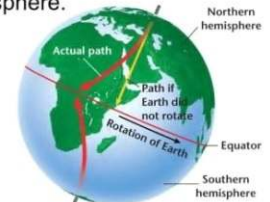
There are six main requirements for tropical cyclogenesis:

- sufficiently warm sea surface temperatures,
- atmospheric instability,
- high humidity in the lower to middle levels of the troposphere,
- enough Coriolis force to sustain a low pressure center,
- a preexisting low level focus or disturbance, and low vertical wind shear.

While these conditions are necessary for tropical cyclone formation, they do not guarantee that a tropical cyclone will form.

Coriolis effect

- The **Coriolis effect**, which is a result of Earth's rotation, causes moving particles such as air to be deflected to the right in the northern hemisphere and to the left in the southern hemisphere.



FENI BRIDGE

Geography

Why is it in news?

Feni bridge connecting Sabroom in India with Ramgarh in Bangladesh will be completed by December this year.

Sabroom

Sabroom is a town in South Tripura located on the banks of the **Feni River**, which **separates India and Bangladesh**.

The Bridge

- The double laned bridge is being built in Tripura to access Chittagong port to carry goods and heavy machineries for the northeast region and the rest of India via Bangladesh through the Chittagong international Port.
- The Bangladesh government earlier agreed to allow India to use the Chittagong port, about 72 km from Tripura's southern border town of Sabroom.

NH-8

- The National Highway—8, which connects Tripura with rest of India, has been extended up to Sabroom border town.

Construction

- National Highways Infrastructure Development Corporation Ltd of Ministry of Road and Transport highways (GOI) is constructing the Bridge.
- Tripura as a gateway of India's "Act East Policy".
- When completed, the bridge would provide the only land link between India's eastern states and its western states other than through Assam.
- The bridge will also boost the trade across the borders especially with Bangladesh by leaps and bounds.



River Feni

- Feni is a trans-boundary river with an ongoing dispute about water rights.
- It originates in South Tripura, flows through Sabroom town and then enters Bangladesh.
- Muhuri River, also called Little Feni, from Noakhali District (Bangladesh) joins it near its mouth.

SOUTH ASIAN FLOOD GUIDANCE SYSTEM

Geography

Why is it in news?

Recently, India launched first-of-its kind Flash Flood Guidance services (FFGS) for South Asian countries.

Aim of the system

- To issue impact-based forecasting of flash floods, which are very sudden and of short duration.
- It forecasts at watershed and also city level forecasts to South Asian Countries: India, Bangladesh, Bhutan, Nepal and Sri Lanka.

Watershed is defined as any surface area from which runoff resulting from rainfall is collected and drained through a common point. It is synonymous with a drainage basin or catchment area. A watershed may be only a few hectares as in small ponds or hundreds of square kilometres as in rivers.

What are Flash Floods?

- A flash flood is a rapid flooding of low-lying areas: washes, rivers, dry lakes and depressions.
- Flash flooding happens when rain falls so fast that the underlying ground cannot cope, or drain it away fast enough.
- Roads can become like rivers and if there is a lot of water, it can flood buildings and carry cars away.
- So, if the rain is falling too fast for the ground or drains to cope, there is a risk of flash flooding.

HOW FLASH FLOODS OCCUR



What causes flash floods?

- It may be caused by heavy rain associated with a severe thunderstorm, hurricane, tropical storm, or melt water from ice or snow flowing over ice sheets or snowfields.
- Flash floods are also caused due to Cloud Burst. eg- 2010 Leh Flash Flood.
- Flash floods may also occur after the collapse of a natural ice or debris dam, or a human structure such as a man-made dam.
- Flash floods are generally a surprise.
- Flash floods are distinguished from regular floods by having a timescale of fewer than six hours between rainfall and the onset of flooding.

Sl No.	CAUSES	PREVENTIVE MEASURES
1	Breaching of river banks	Proper maintenance of river banks, and making retaining walls
2	Inadequate drainage facility	Drainage facility improvement
3	Improper damming	Geo-engineering consideration
4	Sediment pollution, siltation, shallowing of river beds and lakes	Minimizing sediment pollution, siltation and deepening of river banks & lakes
5	Heavy precipitation in catchment area	?
6	Urbanization	?
7	Changing land-use pattern	Controlling land-use pattern
8	Vanishing of traditional recharging structures and water bodies	Restoring traditional recharging structures and water bodies like ponds, tanks and removing phumdis as far as possible
9	No regulation of flow	Check dams to regulate the flow
10	Deforestation and soil erosion	Aforestation
11	Lack of early warning system	Activation of early warning system
12	Lack of long term action plans for prevention	Making long term plans for prevention

Effects of Flash Flood

Primary Effect:

- **Physical damage-** Can range anywhere from bridges, cars, buildings, sewer systems, roadways, canals and any other type of structure
- **Casualties-** People and livestock die due to drowning. It can also lead to epidemics and diseases.

Secondary Effect:

- **Water supplies-** Contamination of water. Clean drinking water becomes scarce
- **Diseases-** Unhygienic conditions. Spread of water-borne diseases
- **Crops and food supplies-** Shortage of food crops can be caused due to loss of entire harvest

Territory/Long term Effects

- **Economic-** Economic hardship, due to temporary decline in tourism,
- Rebuilding costs
- Food shortage leading to inflation, etc.

Ways To Prevent and Control Flash Flood

- Flood-control dams are constructed throughout across rivers.
- Dikes and levees are built alongside rivers to keep them from overflowing during periods of high water
- Canals are also used to help drain off extra water. Streams and rivers can be diverted to avoid highly populated areas.
- Regulation of floodplain development and urbanization would reduce flood losses.
- Prevention of soil erosion.
- Plant lots of trees, treat slopes and grades, and create reservoirs to catch sediment and debris.

Delving deeper

- Most rivers flow fairly gently as they slope slowly towards the sea. Therefore, when a river floods it does so quite slowly as it takes time for the rain to percolate through the ground and into the rivers and out to sea, allowing time for some warning.
- With flash flooding, there is often very little time between the rain falling and flash flooding occurring.
- Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly.
- It can also occur from small rivers in built-up urban areas, where hard surfaces such as roads and concrete don't let the water drain away into the ground.
- This leads to surface overflow and can often overwhelm local drainage systems, leading to flash flooding.

About FFGS

- The Flash Flood Guidance is a robust system designed by the India Meteorological Department (IMD) to provide the necessary products in real-time.
- It gives flash flood warnings about 6-12 hours in advance at the watershed level with resolution of 4km x 4km for the flash flood prone South Asian countries.
- IMD acts as the regional centre covering the countries, providing forecast products, data and training.
- An automated mode of dissemination is to be established with the stakeholders along with the use of social media, so that the information reaches disaster management authorities in a timely manner.

Agencies involved

- The South Asia FFGS is funded by the United States Agency for International Development/Bureau for Humanitarian Assistance (USAID/BHA).
- It is being implemented by the World Meteorological Organization and the Hydrologic Research Center (HRC). National Oceanic and Atmospheric Administration (NOAA) is a satellite data provider into the System.

Significance OF FFGS

- Flash floods and riverine floods cause major loss of life and property in South Asia during the monsoon season.
- Due to the frequency of extreme precipitation, urbanization, land-use changes, the need for early warning systems becomes more important.

USAID

The United States Agency for International Development (USAID) is an independent agency of the United States federal government that is primarily responsible for administering civilian foreign aid and development assistance.

WMO

The World Meteorological Organization (WMO) is a specialized agency of the United Nations responsible for promoting international cooperation on atmospheric science, climatology, hydrology and geophysics. Headquarters: Geneva, Switzerland

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration is an American scientific agency within the United States Department of Commerce that focuses on the conditions of the oceans, major waterways, and the atmosphere.

NOAA warns of dangerous weather, charts seas, guides the use and protection of ocean and coastal resources and conducts research to provide the understanding and improve stewardship of the environment.

IMD

The India Meteorological Department (IMD) is an agency of the Ministry of Earth Sciences of the Government of India. It is the principal agency responsible for meteorological observations, weather forecasting and seismology. IMD is headquartered in Delhi and operates hundreds of observation stations across India and Antarctica. IMD is also one of the six Regional Specialised Meteorological Centres of the World Meteorological Organisation. It has the responsibility for forecasting, naming and distribution of warnings for tropical cyclones in the Northern Indian Ocean region, including the Malacca Straits, the Bay of Bengal, the Arabian Sea and the Persian Gulf.

SITTWE PORT & KALADAN PROJECT

Geography

Why is it in news?

India and Myanmar have agreed to work towards the operationalization of the Sittwe port in the Rakhine state in the first quarter of 2021.

Sittwe Port

- Sittwe Port is a deepwater port constructed by India at on Lakadan river mouth Sittwe, the capital of Rakhine State in Myanmar, on the Bay of Bengal.
- Situated at the mouth of the Kaladan River, the port is being financed by India as a part of the Kaladan Multi-Modal Transit Transport Project.
- The project is aimed at developing transport infrastructure in southwestern Myanmar and northeastern India.



Kaladan Multi Modal Project

- It is a Multimodal Transit project connecting Kolkata Port with Mizoram via the Sittwe port of Myanmar.

Sea-river-road route

- The project has several sections combining multi- modes of transport.
 - 539 km shipping route from seaport of Kolkata
 - in India to Sittwe seaport in Myanmar via Bay of Bengal.
 - 158 km River boat route from Sittwe seaport to Paletwa Inland Water Terminal in Chin State via Kaladan river in Myanmar.
 - Four-lane road route from Paletwa (IWT) to Zochawchhuah (India)-Zorinpui (Myanmar) at Indo-Myanmar border.
 - Road route from Indo-Myanmar border at Zochawchhuah-Zorinpui to Aizawl, Mizoram.



Note: On the Indian side, work is on to extend the Aizawl-Saiha National Highway (NH-54) by further 90 km to the international border at Zorinpui. This highway from Myanmar border to Aizawl and further to Dabaka, Assam will ensure the faster movement of goods in the entire NE. NH-54 is a part of the larger East-West Corridor connecting North East India with the rest of India.

*Refer Map for better understanding.

Importance of developing alternative routes

- As of now, the only access to NE India is through the Siliguri Corridor in West Bengal.
- Siliguri Corridor is a narrow strip of Indian Territory wedged between Nepal and Bangladesh.
- Routing all cargo destined for the northeast through this corridor causes significant transportation delays and cost overheads.
- Siliguri Corridor, also known as the Chicken's Neck, is a perennial threat to our security.
- It has borders with Nepal, Bhutan, Bangladesh & hence one of the most sensitive strategic vulnerabilities of India. The corridor is prone to criminal activities.
- Strategically, it is the Achilles heel in the defence of almost 2,000 km of borders in the NE states with China and Myanmar.
- Also, the new route through Sittwe would significantly lower the cost and distance of movement from Kolkata to Mizoram and beyond.



Significance of Kaladan Project

- The Kaladan multi-modal transit transport project is cornerstone of India-Myanmar economic, commercial and strategic ties.
- Apart from boosting the economy of Myanmar, the project will also make for an alternative route for goods from India's North-East to rest of the country and world.

- It will give sea connectivity and promote economic development in the North-eastern states.
- The Project is also a part of India's 'Act East policy' connecting north eastern States and the ASEAN region. Furthermore, the project will help India counterbalance China's growing influence in Myanmar.

Kaladan River

- Kaladan is a river in eastern Mizoram and in Chin State and Rakhine State of western Myanmar.
- The Kaladan River is called the Chhimtuipui River in India.
- It forms the international border between India and Burma.
- **Source:** Mount Zinghmuh, Chin State, Myanmar
- **Tributary** – Tiau River
- **Mouth**–Sittwe, Bay of Bengal
- Kaladan is the fifth largest river in the world to remain completely unfragmented by dams anywhere in its catchment.
- The first four are Fly, Mamberamo and Sepik in New Guinea and the Pechora in Russia.

Rakhine State

- Formerly known as Arakan, Rakhine is a state in Myanmar.
- Capital: Sittwe
- The Arakan Mountains or RakhineYoma separates Rakhine State from central Burma from North to South.
- Part of Delhi Sultanate and Mughal Empire (under Aurangzeb) in the medieval times. It was followed by Mrauk Kingdom period.
- In the Treaty of Yandabo (1826), Burma was forced to cede Arakan to British India.
- In 1948, Arakan became part of the newly independent Union of Burma (later renamed as Myanmar).
- The Rohingya conflict is an ongoing conflict in the northern part of Rakhine State (formerly known as Arakan), characterized by sectarian violence between the Rohingya Muslim and Rakhine Buddhist communities.
- Group active: Arakan Rohingya Salvation Army (formerly Harakah al-Yaqin).

INDUS SUTURE ZONE

Geography

Why is it in news?

The suture zone of the Himalayas or the Indus Suture Zone (ISZ) has been found to be tectonically active.

What is Suture?

In structural geology, a suture is a joining of separate tectonic units along a major fault zone. These units have different plate tectonic, metamorphic and paleogeographic histories. The suture is often represented on the surface by a mountain range.

Where is Indus Suture Zone?

This zone is a tectonic suture in Ladakh across the north margin of the Himalayas which resulted from the collision between the Indian plate and the Eurasian plate around 52 Ma ago. Conventionally, it was thought that Indus Suture Zone is a locked zone. But now, it has been found to be tectonically active.

Current Findings

- Sedimentary beds are tilted and thrust broken.
- The rivers are associated with uplifted terraces.
- Bedrock shows brittle deformation that occurred at much shallower depths.
- These deformed geological features were then dated in the laboratory using a technique called Optically Stimulated Luminescence (OSL).
- **Inference:** Indus Suture Zone (ISZ) has been neo-tectonically active since the last 78000 -- 58000 years and a recent earthquake in 2010 of low magnitude in village Upshi occurred due to a thrust rupture.

What next?

- The new findings could have major implications in terms of earthquake study, prediction, understanding the seismic structure of the mountain chains well as its evolution.
- It could actually alter the previous earthquake study & predictions.

Optically Stimulated Luminescence (OSL)

- Optically stimulated luminescence is a method of determining the age of burial of quartz or feldspar bearing sediments.
- Principle used:** Crystal lattices of sediments have the ability to store ionizing energy(X,Y). This energy is released as radiation when excited with light. Amount of radiation released helps in determining the age of sediment.

DAM REHABILITATION & IMPROVEMENT PROJECT

Geography

Why is it in news ?

- The Cabinet Committee on Economic Affairs (CCEA) chaired by Prime Minister Narendra Modi has approved the Dam Rehabilitation and Improvement Project (DRIP) Phase-II & Phase-III.

Aim of Project

- The scheme envisages comprehensive rehabilitation of 736 existing dams located across the country.
- The objective of the Project is to improve the safety and operational performance of selected existing dams in the territory of the participating states.

Focus

- To mitigate the risks of dam failure and ensure safety of people, riverine ecology and property located downstream of these selected dams.
- This will be through structural as well as non- structural measures.
- It includes: physical rehabilitation, preparation of operation and maintenance manuals, emergency action plans, early warning system, among others.

Highest Dam	Tehri Dam(Uttarakhand)	Height: 260.5 meters River: Bhagirathi
Longest Dam	Hirakud Dam (Odisha)	Length: 25.79 km River: Mahanadi
Oldest Dam	Kallanai Dam(Tamil Nadu)	River: Kaveri 100 BC –100 AD King Karikala Chola

Financial Aid

- By World Bank and AIIB for phase II & III.

Some developments in DRIP Phase- I

- Dam Health and Rehabilitation Monitoring (DHARMA): A system to monitor the health of dams, has been developed and being used by 18 states.
- A seismic hazard analysis information system (SHAISYS) has also been developed.

Significance

- The programme complements provisions in the Dam Safety Bill 2019, by ensuring capacity building of the dam owners as well as the proposed regulators, and also creates necessary protocols for dam safety.
- The development of capacity will ensure better management, operation, and maintenance of all the dams.
- The project is likely to generate employment opportunities for lakhs.

India and Dams

- India ranks third globally after China and US, with 5,334 large dams in operation.
- In addition, about 411 dams are under construction. There are also several thousand smaller dams.
- The dams and reservoirs store approximately 300 billion cu mtr of water annually.

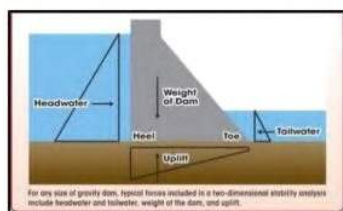
List Of Major Dams in India	State	River
Bhavani Sagar dam	Tamil Nadu	Bhavani
Tungabhadra Dam	Karnataka	Tungabhadra
Rihand Dam	Uttar Pradesh	Rihand
Maithon Dam	Jharkhand	Barakar
Koyna Dam	Maharashtra	Koyna
Bisalpur Dam	Rajasthan	Banas
Mettur Dam	Tamil Nadu	Kaveri
Krishnarajasagar Dam	Karnataka	Kaveri
Indira Sagar Dam	Madhya Pradesh	Narmada
Cheruthoni Dam	Kerala	Cheruthoni
Sardar Sarovar Dam	Gujarat	Narmada
NagarjunaSagar Dam	Andhra Pradesh	Krishna
Hirakud dam	Odisha	Mahanadi
Bhakra Nangal Dam	Punjab	Sutlej
Tehri Dam	Uttarakhand	Bhagirathi

CHALLENGES TO DAM SAFETY

Ageing of Dams	Huge siltation --- Poor water holding capacity design problem
Overtopping	Pipe failure
Gate/ Valve Failure	Foundation deficiency
Insufficient Spillway	capacityErosion
Cracking	Seepage
Flooding	Structural instability
Erstwhile poor regulation of dams depended on individual dam managers only.	



Types of dams

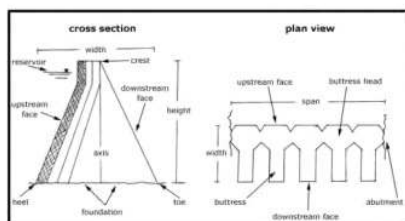


• Gravity dams

- A gravity dam is a solid concrete structure, generally having a triangular profile, which is so designed that it can safely stand against the precalculated volume of water by virtue of its weight.
- Forces in the dam : thrust of impounded water in x-axis and weight of the dam in y-axis.



Butress dam



- Butress dams are derived from gravity dams. This type of dams are supported using thin concrete slab which is supported from downstream side by buttresses.
- It uses multiple reinforced columns to support the dams. Since it has relatively thin structure so there is considerable amount of saving of concrete material.



Some examples

- Bhakra Dam is a concrete gravity dam across the Sutlej River, and is in Bilsapur, Himachal Pradesh in northern India.
- India's second tallest at 225.55 m (740 ft) high next to the 261m Tehri Dam.
- The 90 km long reservoir created by the Bhakra Dam is spread over an area of 168.35 km². In terms of storage of water, it withholds the second largest reservoir in India, the first being Indira Sagar Dam in Madhya Pradesh with capacity of 12.22 billion cm³.



- The extraordinary Mir Alam multi-arch dam was completed in 1804 for the water supply of Hyderabad.
- This dam was the work of Henry Russel, a member of the British Royal Engineers. The structure, reaching a height of 12 m, consisted of 21 semicircular, vertical arches that were of constant thicknesses and variable spans.

Arch dams

It is an arch – shaped solid structure made up of concrete which is designed in such a way that a major part of the thrust forces acting on the dam are transmitted to arch.

There are mainly two types of arch dams :

- **Constant radius arch dams** : radius of curvature throughout the structure is constant and upstream face is vertical.
- **Variable radius dams** : curvatures are different on upstream and downstream sides.

➤ These types of dams are best suited for narrow valleys.

➤ An arch dam having a curvature both in horizontal and vertical alignment is often called a CUPOLA dam.



Embankment dams



- These are non rigid structures which are built over wide valleys with varying foundations. These are trapezoidal in shape and are built of single type of material (such as earth fill or rock fill) or combination of more than one material.
- The main advantage of these dams is that it can be constructed on weak foundation.
- Impervious core is placed in the middle of the embankment body.
- Generally riprap is used to control erosion.



COMPOSITE DAMS



- Composite dams are combinations of one or more dam types.
- Most often a large section of a dam will be either an embankment or gravity dam, with the section responsible for power generation being a buttress or arch.

Cabinet Decision
July 17, 2019

Enactment of the Dam Safety Bill, 2019(1/2)



The Union Cabinet has approved the proposal for introduction of Dam Safety Bill, 2019 in the Parliament. The decision will go a long way in meeting the requirements of having uniform dam safety procedures for specified dams in the country. It will impact more than 5600 dams which will now be under the ambit of uniform Dam Safety Regulations.

Benefits:

- The Dam Safety Bill, 2019 addresses all issues concerning dam safety including regular inspection of dams, Emergency Action Plan, comprehensive dam safety review, adequate repair and maintenance funds for dam safety, Instrumentation and Safety Manuals.
- It lays onus of dam safety on the dam owner and provides for penal provisions for commission and omission of certain acts.
- It will help the States and Union Territories of India to adopt uniform dam safety procedures which shall ensure safety of specified dams and safeguard benefits from such dams.
- This shall also help in safeguarding human life, livestock and property.

Cabinet Decision
July 17, 2019

Enactment of the Dam Safety Bill, 2019(2/2)



Salient features:

- The Dam Safety Bill, 2019 provides for proper surveillance, inspection, operation and maintenance of all specified dams in the country to ensure their safe functioning.
- A National Committee on Dam Safety will be set up to evolve dam safety policies and recommend necessary regulations as may be required for the purpose.
- The Bill provides for establishment of National Dam Safety Authority as a regulatory body which shall discharge functions to implement the policy, guidelines and standards for dam safety in the country.
- State Committee on Dam Safety will be set up by the State Governments to ensure proper surveillance, inspection, operation and maintenance of all specified dams in that State and ensure their safe functioning.
- It further provides that every State shall establish a "State Dam Safety Organization", which will be manned by officers from the field dam safety preferably from the areas of dam-designs, hydro-mechanical engineering, hydrology, geo-technical investigation, instrumentation and dam-rehabilitation.

CHAR DHAM NATIONAL HIGHWAY

Geography

- Char Dham National Highway, is an under construction two-lane express Highway with a minimum width of 10 metres in Uttarakhand.
- The highway will connect the four holy places in Uttarakhand states namely Badrinath, Kedarnath, Gangotri and Yamunotri.
- Originating from Rishikesh, Char Dham highway network will have four distinct routes: Rishikesh-Yamunotri; Rishikesh- Gangotri; Rishikesh-Kedarnath & Rishikesh-Badrinath.

Border Roads Organisation

- The BRO develops and maintains road networks in India's border areas and friendly neighbouring countries and functions under the Ministry of Defence.
- It is entrusted for construction of Roads, Bridges, Tunnels, Causeways, Helipads and Airfields along the borders.
- Officers from the Border Roads Engineering Service (BRES) and personnel from the General Reserve Engineer Force (GREF) form the parent cadre of the.
- It is also staffed by officers and troops drawn from the Indian Army's Corps of Engineers on extra regimental employment.
- The BRO operates and maintains over 32,885 kilometres of roads and about 12,200 meters of permanent bridges in the country.

MALDHARI TRIBE

Geography

Why they are in news?

The proposal seeks to relocate 2,500 families of the community from the Gir protected area within 10 years

About tribe

- Maldharis are a tribal herdsman community in Gujarat. Originally nomads, they came to be known as Maldharis after settling in Junagadh district (mainly Gir Forest, Banni Grassland Area).
- "Maldharis" are notable as the traditional dairymen of the region, and once supplied milk and cheese to the palaces of rajas.
- They have been living in the Gir Forest Area since the past thousand years now.

NEW CALEDONIA

Geography

Why is it in news?

- People in the French overseas territory of New Caledonia have narrowly rejected independence from France in a referendum

Geography

- New Caledonia lies in the southwest Pacific Ocean, south of Vanuatu.
- It is a part of French-administered territories outside Europe, mostly remains of the French colonial empire.
- Capital- Noumea.
- The archipelago, part of the Melanesia subregion, includes the main island of Grande Terre, the Loyalty Islands, the Chesterfield Islands, the Belep archipelago, the Isle of Pines, and a few remote islets.
- Official Language: French
- New Caledonia is part of Zealandia, a fragment of the ancient Gondwana super- continent.

SAMBHAR LAKE

Geography

Why is it in news?

The Rajasthan government has planned to build temporary shelters for migratory birds near the famous Sambhar Lake before this year's winter season.

The lake

- The Sambhar Salt Lake is India's largest inland salt lake. It is located southwest of the city of Jaipur, Rajasthan.
- And it is the source of most of Rajasthan's salt production. (around 9% of India's salt production)
- The lake receives water from five rivers: Medtha, Samaod, Mantha, Rupangarh, Khari, and Khandela.

- It is surrounded by the Aravali Hills on all sides.
- Sambhar has been designated as a Ramsar site because the wetland is a key wintering area for thousands of pink flamingos and other birds that migrate from northern Asia and Siberia.
- The specialized algae and bacteria growing in the lake provide striking water colours and support the lake ecology that, in turn, sustains the migrating waterfowl.

KYRGYZSTAN

Geography

- Kyrgyzstan is a landlocked country in Central Asia.
- It is bordered by Kazakhstan, Uzbekistan, Tajikistan and China.
- **Capital and largest city:** Bishkek.
- Kyrgyzstan attained sovereignty as a nation state after the breakup of the Soviet Union in 1991.
- 90% of the population is Muslims with the majority being Sunni.
- The mountainous region of the Tian Shan covers over 80% of the country (Kyrgyzstan is occasionally referred to as "the Switzerland of Central Asia", as a result)
- Kyrgyzstan is a member of the Organization for Security and Cooperation in Europe (OSCE), a league of 56 participating states committed to peace, transparency, and the protection of human rights in Eurasia.



MOUNT KILIMAJARO

Geography

Why is it in news?

Recently, a fire broke out on Mount Kilimanjaro.

About Mount Kilimanjaro

- Mount Kilimanjaro is a dormant strato-volcano in Tanzania.
- It has three volcanic cones: Kibo, Mawenzi and Shira.
- Mawenzi and Shira are extinct, while Kibo is dormant and could erupt again.
- Uhuru Peak is the highest summit on Kibo's crater rim.
- Kilimanjaro is the highest mountain in Africa and the highest single free-standing mountain in the world: 5,895 metres (19,341 ft) above sea level.
- Because of its shrinking glaciers and disappearing ice fields, it has been the subject of many scientific studies.



Tanzania

- Tanzania is a country in East Africa within the African Great Lakes region.
- It borders Uganda to the north; Kenya to the northeast; Comoro Islands and the Indian Ocean to the east; Mozambique and Malawi to the south; Zambia to the southwest; and Rwanda, Burundi, and the Democratic Republic of the Congo to the west.
- Olduvai Lake- home to oldest hominid fossils is in Tanzania.



Strato Volcanoes comprise ~60% of the Earth's individual volcanoes and most are characterized by eruptions of andesite and dacite - lavas that are cooler and more viscous than basalt.

Strato volcanoes are usually about half-half lava and pyroclastic material, & suffer explosive eruptions.

ZOJI LA TUNNEL

Geography

Why is it in news?

Fifteen years after it was first conceived, work on the strategically crucial 14.5-km Zojila tunnel, connecting Srinagar to Leh with an all-weather road, has finally taken off.

About the tunnel

- Zoji La Tunnel is a 14.2 km long road tunnel under Zoji La pass in the Himalayas between Sonmarg and Drass town in Kargil district of the Union Territory of Ladakh. It is currently under construction.
- The tunnel along with 6.5 km long Z-Morh Tunnel, will ensure year-long road connectivity between Srinagar and Kargil which currently remains closed for about seven months due to heavy snowfall.
- The Tunnel is on the Zoji La pass which is situated at an altitude of 3,528 m on Srinagar-Kargil-Leh highway.
- Z – Mohr Tunnel is 22 km before Zoji La tunnel towards Srinagar.



Zoji La Pass

- Zoji La pass is in Ladakh. Located in the Drass, the pass connects the Kashmir Valley to its west with the Drass and Suru valleys to its northeast and the Indus valley further east.
- The National Highway 1 that runs between the union territories of Jammu & Kashmir and Ladakh traverses the pass.

DEMCHOK SECTOR

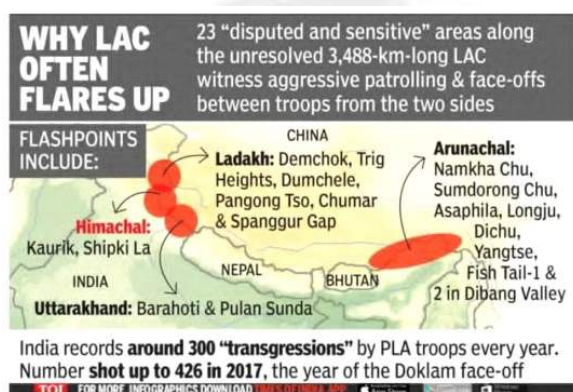
Geography

Why is it news?

- The Chinese soldier, who was apprehended by the Indian Army in the Demchok sector of Eastern Ladakh, has been handed over to China.

Demchok Sector

- The Demchok sector is a disputed region between China and India.
- It is centered on the villages of Demchok, Ladakh & Dêmqog, Ngari Prefecture (Tibet).
- It is situated near the confluence of the Charding Nullah and Indus River.
- Line of Actual Control lies between the two nations situated along the Charding Nullah/Demchok River.
- The Demchok sector with China's claim line in the west and India's claim line in the east. The Line of Actual Control, runs along the Charding Nullah and the Indus River.



LIBYA

- Libya is a country in the Maghreb region in North Africa.
- It is bordered by the Mediterranean Sea to the north, Egypt to the east, Sudan to the southeast, Chad to the south, Niger to the southwest, Algeria to the west, and Tunisia to the northwest.
- Capital – Tripoli
- It is a member of the United Nations (since 1955), the Non-Aligned Movement, the Arab League, the OIC and OPEC.



MOUNT GIRNAR

Geography

Why is it news?

Recently, Narendra Modi digitally inaugurated the newly-built passenger ropeway service at Girnar in Junagadh district, Gujarat. The ropeway project is being touted as the longest temple ropeway in Asia.

About Girnar

- Girinar is one of the most ancient Hindu and Jain pilgrimage sites in India.
- Lord Dattatreya performed penance at the top of the hill.
- Also, 22nd Tirthankar Lord Neminath attained Nirvana here.
- Girnar is also known as Girinagar ('city-on-the-hill') or Revatak Parvata.
- Mount Girnar is a major igneous plutonic complex which intruded into the basalts towards the close of the Deccan Trap period.



TAIWAN STRAIT

Geography

Why is it in news?

A U.S. warship sailed through the Taiwan enraging China, which claims sovereignty over the island and surrounding seas.

About Taiwan Strait

- The Taiwan Strait, also known as the Formosa Strait, is a 180-kilometer wide strait separating Taiwan and mainland China.
- The strait is currently part of the South China Sea and connects to the East China Sea to the north.
- The Taiwan Strait is the body of water separating China's Fujian Province from Taiwan Island.
- Current international agreement does not define the Taiwan Strait but places its waters within the South China Sea.
- The entire strait is on Asia's continental shelf.



KHARDUNGLA PASS

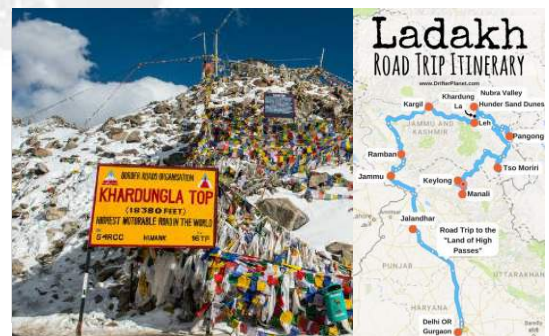
Geography

Why is it in news?

The Indian Air Force (IAF) has achieved a new record of the highest skydive landing at Khardungla Pass in Leh at an altitude of 17,982 ft breaking its own earlier record. The IAF celebrated its 88th Anniversary on October 8 and to commemorate this event the skydive landing was carried out.

About the pass

- It is a mountain pass (5,359 m) in the Leh district of the union territory of Ladakh.
- It is the gateway to the Shyok and Nubra valleys.
- Maintained by the Border Roads Organisation, the pass is strategically important to India as it is used to carry supplies to the Siachen Glacier.
- Khardong La is historically important as it lies on the major caravan route from Leh to Kashgar in Central Asia. To pass through it an Inner Line Permit (ILP), is required for tourists (not needed for Ladakh citizens).



PEARL RIVER ESTUARY

Geography

Why is it in news?

Chinese pink dolphins are making a comeback in the Pearl River Estuary (PRE).

About

- Pearl or Canton River is an extensive river system in southern China.
- The Pearl River estuary includes Hong Kong, Macau as well as the mainland Chinese cities of Shenzhen, Guangzhou and Dongguan.
- The estuary is one of the busiest shipping lanes in the world.

Pink Dolphin

- The Amazon river dolphin also known as pink river dolphin, is a species of toothed whale.
- Pink dolphins have seen a decline in their numbers in the past 15 years by 70-80 per cent. Dolphins use echolocation to find their way in water.
- **IUCN Status: Endangered.**



ASSAM-MIZORAM BORDER

Geography

Why is it in news?

Assam-Mizoram border witnessed clashes over a territory dispute.

Status of the dispute

- The two States have deployed security personnel, including those of the Indian Reserve Battalion, in the violence-hit areas near the Vairengte village in Mizoram and Assam's Lailapur.
- The incident could be the fallout of the demolition of a makeshift hut used by local volunteers who guard the inter-State border near the Saihaipui 'V' village.
- The Mizoram's MNF MLA has claimed that more than 80% of people living along the Assam-Mizoram border are illegal Bangladeshi immigrants.



Reason behind this clash

- The boundary issue between present-day Assam and Mizoram dates back to the colonial era when inner lines were demarcated according to the administrative needs of British Raj.
 - The issue could not be settled once and for all when the state was created in independent India. The result is both states continue to have a differing perception of the border.
 - The 164.6 km-long border between the States runs along with Cachar, Hailakandi and Karimganj districts in Assam and Kolasib, Mamit and Aizawl districts in Mizoram.
- There are several border areas where violence have been reported.

Complex nature of the dispute

- In the Northeast's complex boundary equations, showdowns between Assam and Mizoram residents are less frequent than they are.
- The boundary between present-day Assam and Mizoram, 165 km long today, dates back to the colonial era when Mizoram was known as Lushai Hills, a district of Assam.
- The dispute stems from a notification of 1875 that differentiated Lushai Hills from the plains of Cachar, and another of 1933 that demarcates a boundary between Lushai Hills and Manipur.
- Mizoram believes the boundary should be demarcated on the basis of the 1875 notification, which is derived from the Bengal Eastern Frontier Regulation (BEFR) Act, 1873.
- Mizo leaders have argued in the past against the demarcation notified in 1933 because Mizo society was not consulted.

Other boundary disputes in North-East

- During British rule, Assam included present-day Nagaland, Arunachal Pradesh and Meghalaya besides Mizoram, which became separate state one by one. Today, Assam has boundary problems with each of them.
- Nagaland shares a 500-km boundary with Assam.
- In two major incidents of violence in 1979 and 1985, at least 100 persons were killed. The boundary dispute is now in the Supreme Court
- On the Assam-Arunachal Pradesh boundary (over 800 km), clashes were first reported in 1992, according to the same research paper.
- Since then, there have been several accusations of illegal encroachment from both sides, and intermittent clashes. This boundary issue is being heard by the Supreme Court.
- The 884-km Assam-Meghalaya boundary, too, witnesses flare-ups frequently. As per Meghalaya government statements, today there are 12 areas of dispute between the two states.

SADHNA PASS

Geography

Why is it in news?

Recently, Riflemen of the para-military force Assam Rifles were deployed at the Sadhna Pass.

About

- Sadhna Pass, previously called as Nastachun pass, is a mountain pass in Jammu and Kashmir.
- It is located in the Himalayas and connects Karnah tehsil of Kupwara district with the rest of the Indian administrated Kashmir valley.
- It is located in the vast Shams Bri mountainous range. It is about 3000 m above sea level. The pass is best known for its generation-old mythological legend of Blind and Deaf Fairies.

CHUSHUL

Geography

Why is it in news?

It is one of the five border meeting points between Indian and China. The two sides hold Border Personnel Meetings at five points --Daulat Beg Oldie in northern Ladakh, Kibithu in Arunachal Pradesh, Chushul in Ladakh, Bum-La near Tawang in Arunachal Pradesh and Nathu-La in Sikkim.

About Chushul

- Chushul is a village in the Leh district of Ladakh.
- It is located in the Durbuk tehsil, south of the Pangong Lake and west of the Spanggur Lake.
- The Line of Actual Control with China runs about 5 miles east of Chushul, across the Chushul Valley.
- This place is famous for the Indian Army who fought to the 'last man, last round' at Rezang La (Chushul) on 18 November 1962.



ANAKKAMPOYIL-MEPPADI TUNNEL

Geography

Why is it in news?

Chief Minister Pinarayi Vijayan announced the project launch of the proposed Anakkampoyil-Meppadi tunnel road through videoconferencing.

About

- One of the most ambitious projects of the state government, the 6.8km bypass for the Thamarassery Ghat Road will be the third longest underpass in the country and is expected to be commissioned within four years. By constructing the tunnel road, the Public Works Department (PWD) aims to find a lasting solution to people's longpending demand for an alternative route connecting Anakkampoyil in Kozhikode and Meppadi in Wayanad and ease traffic movement between the two districts.
- The proposal is to construct a two-lane tunnel road on the Anakkampoyil- Kalladi-Meppadi stretch and a two-lane, 70m bridge across the Iruvanjippuzha.



State's longest underpass
The 6.8km-long tunnel road will be the longest underpass in the state and third longest in India.
The work is expected to be wrapped up in four years
₹658 crore sanctioned for the project

DHAULASIDH HYDRO ELECTRIC PROJECT

Geography

Why is it in news?

The Union Government has approved an investment proposal 66-Megawatt Dhaulasidh Hydro Electric Project.

About

- It will be built on River Beas, Himachal Pradesh.
- Dams in Himachal:** Asan Barrage, Bhakra Nangal Dam, Chamera Dam, Chamera II Hydroelectric Plant, Karcham Wangtoo Hydroelectric Plant, Kishau Dam, Koldam Dam, Maharana Pratap Sagar, Nathpa Jhakri Dam, Pandoh Dam, Pong Dam.
- Bhakra Dam is a concrete gravity dam on the Sutlej River in Bilaspur. The dam forms the Gobind Sagar reservoir.

Zombie Fires

Geography

Why is it in news?

The fire regimes in the Arctic are changing rapidly as 'zombie fires' become more frequent in addition to fires occurring in the once-frozen tundra according to a new study.

About Zombie fires

- **"Zombie fires" burn underground** and get their name because **they continue to burn even after surface fires are put out**
- It is a **fire from a previous growing season** that can smoulder under the ground which is made up of **carbon-rich peat**.
- When the weather warms, the fire can reignite. These are also known as **holdover fires**.
- In 2019 and 2020, burning occurred well above the Arctic Circle, a region not normally known to support large wildfires. Wildfires on permafrost in Siberia south of the Arctic are not uncommon.

Causes of the fire

- The reason for this anomaly is that **temperatures** in winter and spring were **warmer** than usual during 2019-20.
- The temperature in Siberia in 2020 had gone through the roof, with the region recording a severe heatwave.
- Nearly all of this year's fires inside the Arctic Circle occurred on continuous permafrost, with over half of these burning on ancient carbon-rich peat soils.
- The tundra is drying up and vegetation there like moss, grass, dwarf shrubs, etc are starting to catch fire.

Impact of the fires on the environment

The fires and record temperatures had the potential of turning the **carbon sink into a carbon source** and **increasing global warming**.

The Arctic region has a cold body of water and permafrost, it naturally acts as a carbon sink. On average it absorbs 58 megatons of CO₂ a year in its cold water.

Soils in areas of permafrost contain twice as much carbon as there is currently in the atmosphere.

As the climate and permafrost soils have warmed, microbes have started to break down this organic carbon, which has been frozen and fixed in the permafrost. That has led to a rise in land emissions of CO₂ and methane.

As peatlands release more carbon, global warming increases, which thaws more peat and causes more wildfires.



NARCO AND POLYGRAPH TESTS

Polity & Governance

Why in News?

Uttar Pradesh government is planning to subject the Hathras rape and murder victim's family members to narco tests.

Various Lie detector tests

- **Polygraph Test:** A polygraph test is based on the assumption that physiological responses that are triggered when a person is lying are different from what they would be otherwise. Instruments like cardio-cuffs or sensitive electrodes are attached to the person, and variables such as blood pressure, pulse, respiration, change in sweat gland activity, blood flow, etc., are measured as questions are put to them. A numerical value is assigned to each response to conclude whether the person is telling the truth, is deceiving, or is uncertain.
- **Narcoanalysis:** Narcoanalysis, by contrast, involves the injection of a drug, sodium pentothal, which induces a hypnotic or sedated state. In such a state, the subject's imagination is neutralized, and they are expected to divulge information that is true. The drug, referred to as "truth serum" in this context, was used in larger doses as anaesthesia during surgery and is said to have been used during World War II for intelligence operations.
- **Brain Mapping Test or P-300 test:** In this test, the activity of the brain of a suspect is measured during interrogation to find out whether he is concealing any information.

Legal status in India

- In 'Selvi & Ors vs State of Karnataka & Anr' (2010), a Supreme Court Bench comprising CJI ruled that no lie detector tests should be administered "except on the basis of the consent of the accused". Those who volunteer must have access to a lawyer, and have the physical, emotional, and legal implications of the test explained to them by police and the lawyer, the Bench said. The SC cited Article 20 (3) or Right against self-incrimination which states that no accused can be compelled to be a witness against himself.
- In the D.K. Basu vs. State of West Bengal case, 1997, the SC ruled that involuntary administration of the polygraph and narco test will amount to cruel, inhuman, and degrading treatment in the context of Article 21 or the Right to Life and Liberty.
- It may also be violative of the Right to Privacy which is a part of the Right to Life.
- The Indian Evidence Act, 1871 does not admit the results of these tests as evidence.

Issues with such tests

Criticism of Narco-analysis test: Narco-analysis has been criticized on the ground that it is not 100% accurate. It has been found that certain subjects made totally false statements. It is often unsuccessful in eliciting truth as such it should not be used to compare the statement already given to the police before use of drug. It has been found that a person who has given false information even after administration of drug. It is not much help in case of malingerers or evasive, untruthful person. It is very difficult to suggest a correct dose of drug for a particular person. The dose of drug will differ according to will power, mental attitude and physique of the subject. Successful Narco-analysis test is not dependent on injection.

For its success a competent and skilled interviewer is required who is trained in putting recent and successful questions. Narco-analysis test is a restoration of memory which the suspect had forgotten. This test result may be doubtful if the test is used for the purposes of confession of crimes. Suspects of crimes may, under the influence of drugs, deliberately withhold information or may give untrue account of incident persistently. Narco-analysis is not recommended as an aid to criminal investigation. In medical uses like in treatment of psychiatric disorder the Narco-analysis may be useful. Unless the test is conducted with the consent of the suspect it should not be used in criminal investigation.

Right to self-incrimination: Is it against public interest

The other view regarding the legal validity of Narco-analysis test is that it is used as an aid for collecting evidence and helps in investigation and thus does not amount to testimonial compulsion. Thus it does not violate the constitutional provision regarding protection against self-incrimination. Supporters of Narco-analysis test are of view that Narco-analysis is particularly useful when there is a requirement to elicit required information for preventing any offences by terrorist. However its application must be assessed objectively so that it can be replaced by existing conventional method of interrogation which brought shame, ignominy and disrepute to police leading to erosion of credibility of criminal justice system. Narco-analysis can evolve as viable effective alternate to barbaric third degree methods. Care however must be taken that this procedure is not misused or abused by investigating officer and should be correlated with corroborative.

NHRC guidelines

The National Human Rights Commission, after bestowing its careful consideration on this matter of great importance, has laid down the following guidelines relating to the administration of Lie Detector Tests:

- No Lie Detector Tests should be administered except on the basis of consent of the accused. An option should be given to the accused whether he wishes to avail such test.
- If the accused volunteers for a Lie Detector Test, he should be given access to a lawyer and the physical, emotional and legal implication of such a test should be explained to him by the police and his lawyer.
- The consent should be recorded before a Judicial Magistrate.

- (iv) During the hearing before the Magistrate, the person alleged to have agreed should be duly represented by a lawyer.
- (v) At the hearing, the person in question should also be told in clear terms that the statement that is made shall not be a 'confessional' statement to the Magistrate but will have the status of a statement made to the police.
- (vi) The Magistrate shall consider all factors relating to the detention including the length of detention and the nature of the interrogation.
- (vii) The actual recording of the Lie Detector Test shall be done in an independent agency (such as a hospital) and conducted in the presence of a lawyer.
- (viii) A full medical and factual narration of manner of the information received must be taken on record.

In which criminal cases in recent years have these tests been used?

- In most cases, investigating agencies seek permission for such tests to be done on accused or suspects, but rarely on victims or witnesses.
- Legal experts say that investigating agencies can submit to a court that the tests are being sought to help in their probe but consent or refusal to undergo the tests by an individual do not reflect innocence or guilt.
- Most recently, the CBI has sought to conduct these tests on the driver and helper of the truck that hit the Unnao rape victim in Uttar Pradesh in July last year. It also sought to conduct the tests on one accused in the Punjab National Bank alleged fraud case, but the court rejected the plea after the accused did not give consent.
- The polygraph test was also conducted on Dr Rajesh Talwar and Dr Nupur Talwar, who were accused of killing their daughter Aayushi in Noida.

Conclusion

The present criminal justice system is possessed with individual liberty and freedom and in this context a safe passage is unavoidable to criminals due to weakness in the criminal justice system leading to dilution of evidence. Since the validity of the test and admissibility of Narco-analysis has been quashed by the Apex court taking into consideration the circumstances under which it is obtained, the possibility of justice has weakened. It is submitted that if the provision of administering Narco-analysis test is made compulsory for the accused /witness in grave offences, it may pave the way for improving the quality of criminal justice through strengthening of evidence system. This move will bring about a qualitative change in the criminal justice. But a big question mark on the validity of the Narco-analysis test when the demanding for justice by accused person. The Narco test can be said to be unethical, when everything in investigating fails. Every person is innocent until proven guilty, and the same aspect should be maintained while carrying out any criminal investigation

TELEVISION RATING POINTS AND ISSUES SURROUNDING IT

Polity & Governance

Why is it in news?

Recently, the Mumbai Police said that they are looking into a scam about the manipulation of TRPs by rigging the devices used by the Broadcast Audience Research Council (BARC) India, which has the mandate to measure television audience in India.

What is TRP?

- TRP stands for **Television Rating Points**. It represents how many people, from which socio-economic categories, watched which channels for how much time during a particular period.
- This could be for an hour, a day, or even a week; India follows the international standard of one minute. The data is usually made public every week.
- According to the **Telecom Regulatory Authority of India (TRAI)** TRPS is defined as: "On the basis of audience measurement data, ratings are assigned to various programmes on television. Television ratings in turn influence programmes produced for the viewers.
- Better ratings would promote a programme while poor ratings will discourage a programme. Incorrect ratings will lead to the production of programmes which may not be really popular while good programmes may be left out."



How does TRP matter?

- **Financial fraud:** Distribution of Ads worth Rs. 27000 crores received by News industry is decided based on TRP.
- **Spreading hate narrative:** Programs spreading hate have been shown getting high TRP, affects public perception and promoted by channels, whereas a program spreading harmony and receiving low TRP will be demoted by channels. This system works against the national interest of any country.
- **Investment:** Channels receiving high TRP, even though it is rigged, have a high probability of receiving investment.
- **Right to know:** The manipulation does not involve just financial fraud, but a bigger crime of fraud on the people's

right to know the truth, which the media is morally and legally bound to provide, instead of fake news and manufactured hate narratives.

Methodology of calculating TRP

- BARC has installed "**BAR-O-meters**" in over 45,000 empanelled households. These households are classified into 12 categories under the New Consumer Classification System (NCCS), the so-called "new SEC" adopted by BARC in 2015, based on the education level of the main wage earner and the ownership of consumer durables from a list of 11 items ranging from an electrical connection to a car.
- While watching a show, members of the household register their presence by pressing their viewer ID button — every person in household has a separate ID — thus capturing the duration for which the channel was watched and by whom, and providing data on viewership habits across age and socio-economic groups. The panel chosen to capture TRPs must be representative of the country's population, and the methodology must be economically viable for the industry.

How can TRP data be rigged?

- If broadcasters can find the households where devices are installed, they can either bribe them to watch their channels, or ask cable operators or multi-system operators to ensure their channel is available as the "landing page" when the TV is switched on.
- For TRPs, it does not matter what the entire country is watching, but essentially what the 45,000-odd households supposed to represent TV viewership of the country have watched. Broadcasters can target these households to fudge actual viewership data.
- In the 2018 consultation paper, TRAI has mentioned "One of the biggest challenges has been the absence of any specific law through which the agents/ suspects involved in panel tampering/infiltration could be penalised". It noted that BARC "has filed FIRs in various police stations against the agents/ suspects involved in panel tampering/infiltration" but its efforts "to mitigate panel tampering/ infiltration have been hampered due to absence of any legal framework".

Panel Tampering and TRP:

- TRAI mentioned "panel infiltration has a significant impact when the panel size is smaller" and "with the increase in panel size, infiltration of panel homes becomes challenging".
- Each channel tries to project itself as a market leader in a particular segment, it slices the data into socio-economic brackets on the basis of NCCS, age, gender, time slots (primetime) etc to find the perfect data slice. This too increases relative error in the data, because of the small sample size.
- In the example of English TV news, which has a small share of the national viewership pie at around 1.5%, which means that for around 45,000 panel households, around 700 households will contribute to the viewership. "What actually happens is that while your sample is around 700, not all of them are watching English TV news every day. Actual watching will be around 350 homes". In such a scenario, if one manages to rig 10 among the heavy viewing homes, then you can swing the needle big time.

Allegations so far:

- For over a decade, questions have been raised by people from within the industry. In a letter to the BARC chairman in July, News Broadcasters Association president complained against the **ratings of TV9 Bharatvarsh**, and said "several news broadcasters have written to BARC drawing their attention that every week's ratings are not in correlation to the basics of television" and "the manipulated data is being released week after week without taking any remedial action". Sharma had said that "these are corrupt practices, which are being done with complete connivance with BARC and the broadcaster".
- Two years ago, the I&B Ministry had raised concerns that BARC was **under-reporting viewership of Doordarshan**, and floated the idea of chip-based activity logs through all set-top boxes. The idea was finally rejected.
- In 2017, the editor of one of the top five English news channels had written to BARC about how a few households from Gujarat were contributing heavily to a rival channel's overall viewership.

What is BARC?

- It is an industry body jointly owned by advertisers, ad agencies, and broadcasting companies, represented by The Indian Society of Advertisers, the Indian Broadcasting Foundation and the Advertising Agencies Association of India.
- It was created in 2010 but the I&B Ministry notified the Policy Guidelines for Television Rating Agencies in India on January 10, 2014 and registered BARC in July 2015 under these guidelines, to carry out television ratings in India.

CHAPTER PROCEEDINGS

Polity & Governance

Why is it in news?

Recently, **Chapter proceedings** have been initiated against **Republic Editor-in-Chief Arnab Goswami**.

What is Chapter Proceeding?

- It is a provision in the **Code of Criminal Procedure (CrPC)** under which police can **obtain a bond** from a **citizen, seeking good behaviour** for a period extending up to **three years**.
- It is a **preventive action** taken by the **police** if they **fear** that a particular person is likely to **create trouble** and **disrupt the peace** in society.
- The police can issue notices under sections of the **Code of Criminal Procedure** to ensure that the person is aware that **creating nuisance** could result in action against him, which includes **paying a fine**, in the absence of which, he could be put behind bars.

Relevant sections

- Generally, a notice is issued to a person under **section 111 of the CrPC** whereby he is asked to present himself before the **Executive Magistrate** which is an **ACP-rank officer** in a commissionerate of a deputy collector in rural areas.
- There is no need for even an FIR against a person for issuing a notice **under section 107** of the CrPC (security of keeping peace in other cases).
- In this case, the bond is signed for one year. **Under section 110**, a notice is served to a **habitual offender** who has a record of FIRs registered against him.

Legal options to appeal against the notice:

- On receiving the notice under **section 111**, a person can appeal the notice before the courts.
- In fact, in the past, courts have come down strongly against chapter proceedings in some cases.

RIGHT TO PROTEST

Polity & Governance

Why is it in news?

Recently, The Supreme Court found unacceptable to the **indefinite "occupation"** of a public road by the **Shaheen Bagh protestors**.

Case Verdict

- The 13-page judgment upheld the **right to peaceful protest against the law** but made it unequivocally clear that public ways and public spaces cannot be occupied, and that too indefinitely.
- The ruling came after a petition was filed in the **SC highlighting problems caused by the protests** which led to the roadblock and traffic problems. Earlier, the petition was filed in Delhi HC, which heard and disposed of the plea the same day without any specific direction.
- **Democracy and dissent go hand in hand**, but then the demonstrations expressing dissent have to be in **designated places alone**.
- The seeds of protest and dissent were sown deep during the Freedom struggle but dissent against the colonial rule cannot be equated with dissent in a self-ruled democracy.

Right to Protest

- The right to protest is the manifestation of the right to freedom of assembly, the right to freedom of association, and the right to freedom of speech.
- The Constitution of India provides the right of freedom, given in Article 19 with the view of guaranteeing individual rights that were considered vital by the framers of the constitution.
- The Right to protest peacefully is enshrined in Article 19(1) (a) guarantees the freedom of speech and expression; Article 19(1) (b) assures citizens the right to assemble peaceably and without arms.
- Article 19(2) imposes reasonable restrictions on the right to assemble peaceably and without arms.

Reasonable Restrictions:

- **Article 19(2)** imposes reasonable restrictions on the right to **assemble peaceably** and without arms.
- These reasonable restrictions are imposed in the interests of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality or about contempt of court, defamation or incitement to an offence.

PUBLIC SAFETY ACT

Polity & Governance

Why is it news?

The Supreme Court asked the **Jammu and Kashmir administration** for clarification on the detaining of former Chief Minister **Mehbooba Mufti under the Public Safety Act (PSA)**.

Details of the case

The court was hearing a **habeas corpus petition** filed by Ms Mufti's daughter. Ms Mufti was detained on August 5 last year amid the scrapping of provisions of Article 370, which accorded special status to the erstwhile State, and bifurcation of the State into Union Territories of Jammu and Kashmir and Ladakh.

The Srinagar District Magistrate reasoned that the detention was ordered on the basis of "**past conduct**" of Ms Mufti for "**glorifying militants, brazenly inciting religion to divide the people, demoralising the security forces** and the proclivity to indulge in such behaviour in future which would be highly prejudicial to the maintenance of public order".

About Jammu & Kashmir Public Safety Act (PSA):

- Jammu and Kashmir Public Safety Act 1978, was enacted "in the interest of the security of the State and public order".
- It contains provisions for designating protected and prohibited areas, prevention of circulation of documents in the interests of communal harmony, etc.
- The Government can order the detention of a person:
 - o To prevent him from acting in any manner prejudicial to security of the State of maintenance of the public order.
 - o If he is a foreigner within the meaning of Foreigners Act
 - o If he is a person residing in the area of the State under the occupation of Pakistan and it is necessary to regulate his presence or to expel him.
- As per the definition given in the Act, "acting in any manner prejudicial to the maintenance of public order" means:
 1. Promoting, Propagating, or attempting to create, feelings of enmity or hatred or disharmony on grounds of religion, race, caste, community, or region;
 2. Making preparations for using, or attempting its use, or using, or instigating, inciting, or otherwise abetting the use of force where such preparation, using, attempting, instigating, inciting, provoking or abetting, disturbs or is likely to disturb public order;
 3. Attempting to commit, or committing, or instigating, inciting, provoking or otherwise abetting the commission of mischief within the meaning of section 425 of the Ranbir Penal Code where the commission of such mischief disturbs, or is likely to disturb public order.
- Detention orders under PSA can be issued by **Divisional Commissioners or District Magistrates**.
- The detaining authority need not disclose any facts about the detention "which it considers to be against the public interest to disclose".
- As per section 13(1), the authority making the detention should communicate to the detenu the reasons of detention. This is to enable the detenu to make a representation against the order of detention in exercise of the Fundamental Right guaranteed under Article 22(5) of the Constitution of India.
- However, the authority need not disclose such facts to the detenu which it considers to be against public interest to disclose (Section 13(2)). Therefore, the right under Section 13(1) can be effectively defeated if the authority chooses not to disclose whole facts in public interest.

Period of Detention:

- The Maximum period of detention in the case of persons acting in any manner prejudicial to the security of the state is two years.
- In Case of a person acting prejudicial to the maintenance of public order, the maximum period of detention is 12 months.
- Within four weeks of passing a detention order, the Government has to refer the case to an Advisory Board, which consists of a chairperson, who is or has been a judge of the High Court, and two other members who are, or have been, or are qualified to be appointed as Judges of the High Court.
- The Advisory Board has to give its opinion within 8 weeks of detention order.
- If the Advisory Board opines that there are sufficient causes for preventive detention, the Government can keep the person under detention for such period as it thinks fit, subject to the maximum limit.

Can the Detention be Challenged?

- The Advisory Board is supposed to examine if there are sufficient reasons for preventive detention.
- It is pertinent to note that the detenu has no right to engage a legal practitioner before the Advisory Board. The Advisory Board can also decide if the disclosure of grounds of detention to the detenu will affect public interest.
- The detenu is not entitled to the report of the Advisory Board, if the Board decides that it should remain confidential.

- **The detention can be challenged in habeas corpus petitions filed before High Court under Article 226.** However, the scope of challenge is limited to grounds of procedural violations.
- If there is non-application of mind by the detaining authority, or non-communication of the grounds of detention to the detenu, the High Court can quash the detention order as illegal.
- It is important that the District Magistrate forms independent opinion regarding the necessity of ordering preventive detention. If the Magistrate merely copies the report of the police, it will be a case of non-application of mind.
- Non-supply of relevant material documents to the detenu is also a ground for setting aside detention order (Bilal Ahmed Dar v State of J&K).
- The grounds of detention are not to be formulated in shorthand, or in a language of abbreviations or acronyms only known to the detaining authority. (Tanveer Ahmed v State of J&K)

Concerns/Criticisms of the Act:

- **Human rights violations:** Global human rights organisations such as Commonwealth Human Rights Initiative (CHRI) and Amnesty International have noted in their reports that responses by various government authorities to applications filed under the Right to Information (RTI) Act, 2005 suggest that no Rules have so far been framed to lay down procedures for the implementation of the provisions of the PSA.
- **Global reports:** An Amnesty report published earlier this year, which analysed over 2000 case studies of PSA detainees between 2007 and 2016, over 2,400 PSA detention orders were passed, of which about 58% were quashed by the courts.
- **Violation of rights of prisoners:** The PSA allows for the detention of a person without a formal charge and without trial. Moreover it can be slapped on a person already in police custody; on someone immediately after being granted bail by a court; or even on a person acquitted by the court. Detention can be up to two years.
- **Violation of natural justice:** Unlike in police custody, a person who is detained under the PSA need not be produced before a magistrate within 24 hours of the detention. The detained person does not have the right to move a bail application before a criminal court, and cannot engage any lawyer to represent him or her before the detaining authority.
- **Courts role:** The only way this administrative preventive detention order can be challenged is through a habeas corpus petition filed by relatives of the detained person. The High Court and the Supreme Court have the jurisdiction to hear such petitions and pass a final order seeking quashing of the PSA. However, if the order is quashed, there is no bar on the government passing another detention order under the PSA and detaining the person again.
- **Role of Administration :** The District Magistrate who has passed the detention order has protection under the Act, which states that the order is considered "done in good faith". Therefore, there can be no prosecution or any legal proceeding against the official who has passed the order. Also, after an amendment, last year by the Governor, persons detained under the PSA in Jammu & Kashmir can now be detained in jails outside the state.

What constitutional safeguards are guaranteed to a detained person?

- Article 22(a) of the Constitution states that no person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest, nor shall he be denied the right to consult and to be defended by, a legal practitioner of his choice.
- Article 22(b) states that every person arrested and detained shall be produced before the nearest magistrate within a period of 24 hours (excluding the time necessary for the journey from the place of arrest to the court) and no such person shall be detained beyond this period without the authority of a magistrate.
- However, Article 22(3) (b) allows for preventive detention and restriction on personal liberty for reasons of state security and public order.
- The Supreme Court has held that in order to prevent "misuse of this potentially dangerous power, the law of preventive detention has to be strictly construed and meticulous compliance with the procedural safeguards... is mandatory and vital".

Habeas Corpus

- It is a Latin term which means '**to have the body of**'. Under this the court issues an order to a person who has detained another person, to produce the body of the latter before it.
- The court then **examines the cause and legality of the detention**.
- This writ is a **bulwark of individual liberty against arbitrary detention**.
- The writ of habeas corpus can be **issued against both public authorities as well as private individuals**.

NCRB REPORT ON CRIMES AGAINST SCHEDULED TRIBES

Polity & Governance

Why is it in news?

The **National Crime Record Bureau** have recently released a report titled "**Crime in India**", 2019.

Findings of the report

- **Crimes against SCs and STs-** Crimes against members of the Scheduled Castes (SCs) and the Scheduled Tribes

(STs) saw an **increase of over 7% and 26%** in 2019 compared with the 2018 figures.

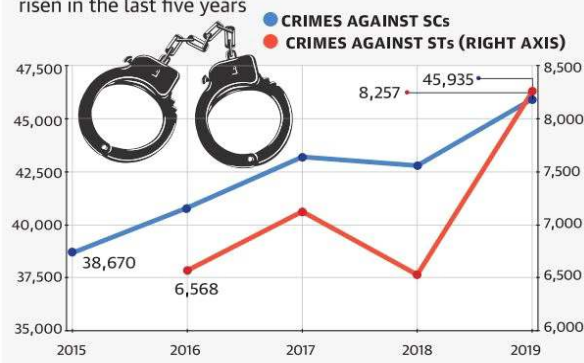


- It showed **an increase of 1.6% in the registration of cases over 2018.**
- **Uttar Pradesh recorded the highest number of crimes** against the SCs in 2019, followed by Rajasthan and Bihar.
- In the number of cases of rape of women belonging to the SCs, Rajasthan topped the list followed by Uttar Pradesh and Madhya Pradesh.
- **Madhya Pradesh recorded the highest number of cases against the STs**, followed by Rajasthan and Odisha.
- The highest number of incidents of rape of tribal women was registered in Madhya Pradesh.
- **Crime against women-** From 2018, the rate of crime against women has risen by 7.3%.
 - India recorded an average of 87 rape cases every day in 2019.
 - Assam reported the highest rate of crimes against women.
 - Uttar Pradesh also had the highest number of crimes against girl children under the POCSO Act, followed by Maharashtra and Madhya Pradesh.
- **Murder and kidnapping cases-** Murder cases across India in 2019 reported a slight dip – 0.3% – from the previous year.
 - Kidnapping cases also reported a decline of 0.7% in 2019.

About National Crime Record Bureau (NCRB):

- It was **set-up in 1986 to function** as a repository of information on **crime and criminals.**
- It was established on the recommendations of the **Tandon Committee** to the National Police Commission (1977-1981) and the MHA's Taskforce (1985).
- NCRB was entrusted with the responsibility for **monitoring, coordinating and implementing the Crime and Criminal Tracking Network & Systems (CCTNS) project** in the year 2009.
- This project connects 15000+ police stations and 6000 higher offices of police in the country.
- In August 2017, NCRB launched the **National Digital Police Portal**, which allows search for a criminal/suspect on the CCTNS database.
- The Bureau has also been entrusted to maintain the **National Database of Sexual Offenders (NDSO)** and share it with the States/UTs on a regular basis.
- NCRB has also designated as the Central Nodal Agency to manage technical and operational functions of the **'Online Cyber-Crime Reporting Portal.**

Rising hate | Crimes against persons belonging to the Scheduled Castes and the Scheduled Tribes have sharply risen in the last five years



MAHARASHTRA GOVERNMENT VS CBI

Polity & Governance

Why is in news?

The Maharashtra government has withdrawn general consent given to the Central Bureau of Investigation (CBI) to probe cases in the state.

About general consent:

- Delhi Special Police Establishment Act: The act, which governs the CBI makes consent of a state government mandatory for conducting investigation in that state.
- Types of consent: There are two kinds of consent - case-specific consent and general consent.
- Central government through notification can ask CBI to investigate against central government employees against Income tax violations, conspiracy against nation, spying etc.,
- As law and order belongs to the states, all states normally give a general consent to CBI for these investigations.
- Purpose of giving General consent: It is normally given to help the CBI seamlessly conduct its investigation into cases of corruption against central government employees in the concerned state.

Modality of CBI investigation into state government matters:

The state governments have to request CBI with permission for a particular case. This will be followed by a central notification to the CBI for that case. Only if High courts or the Supreme court rules that there is a need for CBI investigation, then it is deemed that the consent of the state government is there and thus the central government notifies.

Under what provision has general consent been withdrawn?

- Section 6 of the Act says, nothing contained in Section 5 shall be deemed to enable any member of the Delhi Special Police Establishment to exercise powers and jurisdiction in any area in a State, not being a Union Territory or Railway, area, without the consent of the Government of that State.
- In exercise of power conferred by Section 6 of the Delhi Special Police Establishment Act, 1946 (Central Act No 25 of 1946), the government can withdraw the general consent to exercise the powers and jurisdiction.

Withdrawal by various states

Over the years, several states have done so, including Sikkim, Nagaland, Chhattisgarh and Karnataka — which stands out as an example. In 1998, the Janata Dal-led government had withdrawn general consent. In 1999, the S M Krishna-led government took over and did not revoke earlier order.

Impact of withdrawal of 'general consent':

- The decision will increase work for both the CBI and the state government. Every time the CBI traps some central government employee taking a bribe, it will need to seek approval from the Maharashtra government before registering a case.
- Similarly, the Maharashtra government department too will be burdened with approval requests on a case-by-case basis.
- The CBI has, however, recently started taking recourse in a Calcutta High Court judgment. The HC, in its order in the Ramesh Chandra Singh and another vs CBI, observed that "the court is of the view that the central government/CBI's power to investigate and prosecute its own officials cannot be in any way impeded or interfered by the state even if the offences were committed within the territory of the state."

CBI's jurisdiction at the state level:

- The CBI is divided into three categories when it comes to investigation.
- Anti-Corruption Division: That investigates cases against public servants under the control of the central government, public servants in public sector undertakings, cases against public servants working under state governments, which have been entrusted to the CBI by the state.
- The Economic Offences Division: It investigates financial crimes, bank frauds, money laundering, illegal money market operations, graft in PSUs and banks.
- The Special Crimes Division: It handles cases of conventional nature such as offences relating to internal security, espionage, sabotage, narcotics and psychotropic substances, antiquities, murders, dacoities/robberies, and cheating among others.

DISTRICT DEVELOPMENT COUNCILS (DDC)

Polity & Governance

Why is it in news?

Recently, the Central Government amended the **Jammu and Kashmir Panchayati Raj Act, 1989**, to facilitate the setting up of **District Development Councils (DDC)**, the members of which will be directly elected by voters in the Union Territory. Legislation to this effect was brought in by the **Ministry of Home Affairs**. DDCs are set to become a **new unit of governance in Jammu and Kashmir**.

What are District Development Councils (DDC)?

- The new system effectively **replaces the District Planning and Development Boards** in all districts and will prepare and approve district plans and capital expenditure.
- **Number and Composition-** The number of DDCs has been specified at 14 elected members per district representing its rural areas, alongside the Members of Legislative Assembly chairpersons of all Block Development Councils within the district.
- The **term of the DDCs will be five years**, and the electoral process will allow for reservations for Scheduled Castes, Scheduled Tribes and women.
- The **DDCs will form five standing committees**, for Finance, Development, Public Works, Health and Education and Welfare.
- The scope of the functions of the DDCs has been amplified by the addition of the planning process being handed over directly to the elected representatives.
- The Act mentions that the Council will hold at **least four "general meetings" in a year**, one in each quarter.

DDCs replace the District Planning and Development Boards (DDBs)

- The DDCs replace the District Planning and Development Boards (DDBs) that were headed by a cabinet minister of the erstwhile state of Jammu and Kashmir.
- The Councils will oversee the functions of the Halqa Panchayats and the Block Development Councils in tandem with the line departments of the Union Territory.

Reasons for this new structure

- The J&K administration in a statement said that the move to have an elected third tier of the Panchayati Raj institution marks the implementation of the entire 73rd Amendment Act in J&K.
- The focus of the new idea is that systems that had been made defunct by earlier J&K governments such as the Panchayati raj system are being revived under the Centre's rule in the state through the Lieutenant Governor's administration.
- These new amendments are evidently intended to kick start the political process in the Union Territory. The DDCs will be the first test and the Centre may be calculating that getting enough people to contest the DDC elections would help weaken the Gupkar narrative, which in its third reiteration last week resulted in the coming together of a People's Alliance of regional parties.

DOMINANCE OF BIG TECH COMPANIES

Polity & Governance

Why is it in news?

Recently, a **US House of Representatives panel** submitted the report of a **bipartisan investigation** into the working of Amazon, Apple, Google and Facebook.

- The report called for the **big technology companies to be broken up** and for a **presumptive prohibition against future mergers and acquisitions by the dominant platform**.

Why was the House of Representatives probing big tech companies?

- The big companies have been on the government radar in many countries for being **big spenders and trying to steamroll competition** by either buying out their rivals or pushing vendors to avoid working with their competitors.
- The US Congress wanted to know from Apple if it had, in order to promote an app that allows parents to limit screen time for children, thrown out a **rival app on the pretence that it was not safe**.

Key findings of the Panel

- The panel observed that the **answers by CEOs of the big tech companies** were often **"evasive and non-responsive"**.
- The panel **raised fresh questions on the powers assumed by these big tech companies** and whether they considered themselves beyond the reach of democratic oversight.
- The panel observed that each of the **big tech companies was now acting as a "gatekeeper" over a key channel of distribution**, which meant that they had full control over what went on in their respective domains.
- The big tech companies **not only wield tremendous power**, but they also **abuse it by charging exorbitant fees, imposing oppressive contract terms and extracting valuable data** from the people and businesses that rely on them.

Recommendation of the Panel

- The panel recommended to push for **"structural separations"** of the big tech companies.
- It implies that the panel wants these **companies to be broken into smaller companies** to ensure that they would not be able to have as much influence as they have currently over the digital marketplace.
- The panel also recommended that these **companies should be prohibited** from operating in an **"adjacent line of business"**.
- The panel recommended that there should be a **"presumptive prohibition"** against big tech companies going for mergers and acquisitions.

Influence of big tech in India

- The role of the of big tech companies in **stifling competition in India** finds mention in the US panel's report.
- The panel refers to the various **antitrust probes going on against Google in India** and also Google has had run-ins with regulators, especially the Competition Commission of India (CCI).
 - The CCI has raised issues with **Google's commercial flight search option**, its dominant position in the search marketplace and the abuse of its dominant position in the Android phone and smart television market.
- In 2019, India's antitrust body had held **Google guilty of misuse of its dominant position in the mobile Android market** and said the company had imposed "unfair conditions" on device manufacturers to prevent them from using other operating systems.
 - The CCI had held that requiring mobile phone makers to **pre-install the entire Google mobile services pack was unfair**.
- As India plans to **regulate the use of personal and non-personal data**, these tech companies could face scrutiny over how they manage and use the data they collect from users in India.

SC QUESTIONS TO NCPCR ON CHILDREN 'REPATRIATION'

Polity & Governance

Why is it in news?

The Supreme Court has sought a response from the country's apex child rights body, the National Commission for Protection of Child Rights (NCPCR), to its request to eight States to "produce" children living in care homes before the local child welfare committees for their "immediate repatriation" with their families.

Details

- The NCPCR reportedly wrote to **Tamil Nadu, Andhra Pradesh, Telangana, Mizoram, Karnataka, Kerala, Maharashtra and Meghalaya in this regard.**
- These States together **have 1.84 lakh children in care homes. This accounts for over 70% of the children in care homes.**

About NCPCR

- The NCPCR is a body that works towards achieving a child rights-centric approach in all the laws, programmes, policies and administrative mechanisms in India. It functions under the Ministry of Women & Child Development of the central government.
- It strives to ensure that all laws and policies in the country **are in consonance with the rights of children as emphasised by the Indian Constitution as well as with the UN Convention on the Rights of the Child.**
- A child is defined as any person between the ages of 0 and 18 years.
- The Commission acknowledges the universality and inviolability of child rights.
- It focuses on children that form a part of the most vulnerable sections of society.
- The Commission sees every right of the child as equally important and hence, does not grade the rights according to importance.
- The Commission is also mandated with responsibilities **under two other acts, namely – Protection of Children from Sexual Offences (POCSO) Act, 2012, and Right to Education Act, 2009.**

The NCPCR has been constituted by the Government as an act of Parliament as mentioned above. **Hence, it is a statutory organisation. It consists of the following members:**

- **Chairperson:** Person of eminence and who has an exemplary record of work in child welfare.
- **Six members:** A minimum of two women members, Should have experience in the following fields – Education, Child health, care, welfare or child development, Juvenile justice or care of neglected or marginalised children or children with disabilities, Elimination of child labour or children in distress, Child psychology or sociology, and Laws relating to children.

ELECTORAL BONDS

Polity & Governance

Why is it in news?

The government of India approved the **14th tranche of electoral bonds** which will be open for sale between 19 to 28th of October. The sale of electoral bonds will be carried out from **selected branches of State Bank of India (SBI).**

What are Electoral Bonds?

- The electoral bonds were introduced with the **Finance Bill (2017)** and government notified the **Electoral Bond Scheme 2018** to boost transparency in political funding.
- It is a **financial instrument for making donations** to political parties.
- It is like a promissory note that can be bought by any Indian citizen or company incorporated in India and the citizen or corporate can then donate the same to any eligible political party of his/her choice.
- These bonds are issued in **multiples** of Rs. 1,000, Rs. 10,000, Rs. 1 lakh, Rs. 10 lakh and Rs. 1 crore without any maximum limit.

How the Bonds are sold?

- The bonds are available for **purchase for 10 days at the beginning of every quarter.** The first 10 days of January, April, July and October have been specified by the government for the purchase of electoral bonds. An additional period of 30 days shall be specified by the government in the year of Lok Sabha elections.
- These bonds are issued by the **authorised branches of the State Bank of India (SBI)** and are valid for 15 days from the date of the purchase.

Conditions to accept and redeem Electoral bonds

- Any party that is registered under **section 29A of the Representation of the Peoples Act, 1951** (43 of 1951) and has secured at least one per cent of the votes polled in the most recent General elections or Assembly elections is

eligible to receive electoral bonds. The party will be allotted a verified account by the Election Commission of India (ECI) and the electoral bond transactions can be made only through this account.

- The electoral bonds will **not bear the name of the donor**. Thus, the political party might not be aware of the donor's identity.

Reasons for introducing bonds in India?

- According to the central Government, the electoral bonds were being introduced to ensure that all the donations made to a party would be **accounted for in the balance sheets without exposing the donor details** to the public.
- According to an **ADR (Association of Democratic Reforms)** analysis, 69% of the total income of national and regional parties between 2004-05 and 2014-15 was contributed through funding from unknown sources.
- The **255th Law Commission Report on Electoral Reforms** observed that opacity in political funding results in "lobbying and capture" of the government by big donors.
- The government said that electoral bonds would keep a tab on the use of black money for funding elections. In the absence of electoral bonds, donors would have no option but to donate by cash after siphoning off money from their businesses.

Issues associated with the bond

- Experts have an opinion that if the electoral bonds scheme had been introduced to bring about greater transparency, the **government must not restrain from allowing details of such donations to be made public**.
- **SBI being a government-owned bank** will hold all the information of the donors which can be favourable to the party in power and also deter certain entities from donating to the opposition **due to fear of penalisation**.
- Experts and several politicians believe that since neither the purchaser of the bond nor the political party receiving the donation is required to disclose the donor's identity, the shareholders of a corporation will remain unaware of the company's contribution. Voters, too, will have no idea of how, and through whom, a political party has been funded.
- Opponents of the electoral bond scheme argue that since the identity of the donor has been kept anonymous, it **could lead to an influx of black money**. Some others allege that the **scheme was designed to help big corporate houses donate money without their identity** being revealed. According to civil rights societies, the concept of donor "anonymity" threatens the very spirit of democracy.
- Neither the donor nor the political party (receiver) is obligated to reveal whom the donation comes from. In 2019, the Supreme Court held that all political parties who had received donations through electoral bonds must submit details to the Election Commission of India. This undercuts a fundamental constitutional principle, the freedom of political information, which is an integral element of Article 19(1) (a) of the Constitution.
- The **removal of the limit cap of 7.5% on corporate donations**, elimination of the requirement to reveal political contributions in profit and loss statements and also the elimination of the provision that a corporation must be three years in existence, undercuts the intent of the scheme.

Election Commission and electoral bonds

- The Election Commission on April 10, 2019, told the Supreme Court of India that while it was not against the Electoral Bonds Scheme, it did **not approve of anonymous donations** made to political parties.
- The ECI stated that We are not opposed to electoral bonds...but want **full disclosure and transparency**. We are opposed to anonymity," Senior Advocate Rakesh Dwivedi, appearing for the poll panel, told the apex court. The poll panel's submissions came during a hearing on a bunch of pleas challenging the validity of electoral bonds in the apex court.

CORPORATISATION OF THE ORDNANCE FACTORY BOARD (OFB)

Polity & Governance

Why is it in news?

Recently, the Centre's move to corporatise the **Ordnance Factory Board (OFB)** has been strongly opposed by the federations of the workers from 41 ordnance factories and allied units across the country.

About Ordnance Factory Board (OFB)

- The OFB is an **umbrella body for the ordnance factories** and related institutions and is currently a **subordinate office** of the **Ministry of Defence**.
- The organisation **dates back over 200 years** and is **headquartered in Kolkata**.
- It is a **conglomerate of 41 factories, nine training Institutes, three regional marketing centres and five regional controllers of safety**.
- It provides a major chunk of the **weapon, ammunition and supplies** for **Indian armed forces, paramilitary forces and police forces**.
- The products of OFB include **civilian and military-grade arms and ammunition, explosives, propellants and chemicals for missiles systems**, military vehicles, armoured vehicles, optical devices, parachutes, support equipment, troop clothing and general store items.

Need for Corporatisation of the Ordnance Factory Board (OFB)

The **committees on Defence reforms** set by the governments between 2000 and 2015 have **recommended the corporatisation of OFB**. Earlier **T.K.A. Nair Committee, Dr. Vijay Kelkar Committee, Raman Puri Committee** and the **Shekatkar Committee** have recommended corporatisation of the OFB. The **lack of addressing the quality issues with serious delays** of OFB affects the preparedness or forcing the Army to look elsewhere. The present structure showcase several issues such as **monopoly supply, quality issues, high cost of incidentals** and **overheads, lack of innovation** and **low productivity**.

Significance of Corporatisation of the Ordnance Factory Board (OFB)

- The corporatisation will result in the **conversion of the OFB into one or more 100 per cent government-owned entities** under the Companies Act, 2013 like other public sector undertakings.
- The proposed transformation of **OFB from a government department to a public sector corporate entity** will have such as:
 - o **improvement of efficiency,**
 - o **reducing import dependency** for arms and ammunition,
 - o **enhanced combat efficiency** of the armed forces,
 - o **ensuring customer satisfaction** and
 - o **greater penetration in defence export market**
- The corporatised ordnance factories can form **strategic alliances with Indian and overseas companies** to develop new products and carve out a niche in the international armament industry.

Argument against Corporatisation

- **Corporatisation leading to privatisation:** The main apprehension of the employees is that corporatisation would eventually lead to privatisation.
- **Unable to survive market environment for defence:** The corporate entities would not be able to survive the unique market environment of defence products that has very unstable demand and supply dynamics.
- **National security risk:** It poses a **risk to national security** in case of the **growth of private players** in the event of possible **failure of the proposed OFB corporatisation**, resulting in disinvestment and even closure.
- **Not in sync with business models:** The ordnance factories **cannot be run on a commercial basis** since a **'war reserve'** has to be kept at par with the armed forces to maintain capacity to take care of surge in demands in a war-like situation.

Arguments for Corporatisation of the Ordnance Factory Board (OFB)

- The notion of corporatisation was listed as one of the **167 'transformative ideas'** to be implemented in the **first 100 days of the Narendra Modi government's second term**.
- The Union Finance has announced the decision of Corporatisation of OFB for **'improving autonomy, accountability and efficiency in ordnance suppliers'**.

JUDICIARY AND EXECUTIVE SEPARATION OF POWER

Polity & Governance

Why is it news ?

Recently in a letter to CJI S.A. Bobde, Y. Jagan Mohan Reddy accused Justice N.V. Ramana of corruption and of conspiring against his government on behalf of TDP leader Chandra Babu Naidu. The letter is dated October 6, the same day Jagan met Prime Minister Modi in Delhi.

Letter details

In that letter, he complained about the allegedly hostile attitude of the A.P. High Court (HC) against him and his government. The letter also alleged that Justice Ramana was influencing the state's judicial process to protect TDP, citing an alleged "proximity" to Naidu.

By making public the details of the letter that contains allegations against a serving Supreme Court judge, the conflict is out in the open.

Judges accountability

The extraordinary developments at the country's highest seat of justice offer an opportunity to revisit some larger questions around its accountability.

What are the constitutional provisions?

There is no specifically any provision in the Constitution that deals with the impeachment of the CJI.

"Proved misbehaviour or incapacity" is mentioned in Article 124(4) of the Constitution.

It is the ground for impeachment of a Supreme Court judge.

The CJI is only the first among equals.

Hence, the CJI too, like other judges of the SC and HCs, can be impeached on this ground.

The question of 'good behaviour'

- Constitution protects judges against the will of the masses, of Parliament, and of the all-powerful executive.
- A judge of the SC cannot be removed except by an order of the President passed after an address by each House of Parliament supported by a majority of the total membership of that House and by a majority of not less than two-thirds of the members of that House present and voting has been presented to the President in the same session.
- Such removal can be initiated on the ground of proved misbehaviour or incapacity.

The question of 'good behaviour'

- The Constitution does not define 'misbehavior' and 'incapacity'.
- The Judges (Inquiry) Bill, 2006 sought to establish a National Judicial Council to inquire into allegations of incapacity or misbehavior of judges of the HC and SC.
- It defined misbehavior as willful or persistent conduct which brings dishonour or disrepute to the judiciary; or willful or persistent failure to perform the duties of a judge; or wilful abuse of judicial office, corruption, lack of integrity; or committing an offence involving moral turpitude.
- The Judicial Standards and Accountability Bill, 2010, tried to lay down enforceable standards of conduct for judges.
- It proposed to widen the definition of 'misbehaviour' by adding "corruption or lack of integrity which includes delivering judgments for collateral or extraneous reasons, making demands for consideration in cash or kind", or "any other action... which has the effect of subverting the administration of justice".
- Failure to declare assets and liabilities, or wilfully giving false information was also included within the definition of 'misbehaviour'.

No single definition yet on 'misbehaviour'

- In *C Ravichandran Iyer vs Justice A M Bhattacharjee & Ors* (1995), the Supreme Court said 'misbehaviour' could not have a straitjacketed definition.
- But if the conduct of a judge leads to the credibility of the judiciary being called into question, it should be considered misbehaviour.
- Misconduct prior to assuming office is not exempt — in 2009, Rajya Sabha passed an impeachment motion against Justice Soumitra Sen of Calcutta High Court for allegedly misappropriating funds several years before he became a judge.

What is the In-House procedure?

- In 1997, under CJI J.S.Verma, the Full Court passed a resolution that an 'in-house procedure' would be adopted for action against judges for acts of commission or omission that go against accepted values of judicial life. Report of the 5 judge committee was adopted in 1999 and the procedure has been adhered to since then.
- According to the In-House procedure, **complaints of misconduct may be filed by any person to CJI or President of India.**
- The CJI is required to determine whether the complaint is either frivolous or serious. If the complaint is frivolous or relates to a pending case, no further action will be taken. If the CJI finds that the complaint involves serious misconduct or impropriety, he will seek the response of the concerned Judge. Based on the response and supporting materials, if the CJI finds that the complaint needs a deeper probe, he will constitute an inquiry committee.
- The **Committee will comprise three judges including a Judge of the Supreme Court and two Chief Justices of other High Courts.** It may report to CJI that
 1. there is no substance in the allegation made, or,
 2. there is substance in the allegations but the misconduct is not of such serious nature as to warrant removal, or,
 3. the misconduct is serious enough to initiate removal proceedings against the judge.
- If the finding is under category (2) above, the CJI may call and advise the Judge accordingly and direct that the report be placed on record. If the finding is under category (3) above, the CJI may ask the judge to resign or seek voluntary retirement. If the judge refuses to resign, the CJI may decide to not allocate any judicial work to the judge concerned. Further, the CJI may inform the President of India and the Prime Minister of his reasons for the action taken and forward a copy of the inquiry report to them.
- If the charge is against a Supreme Court judge, the committee would **comprise three Supreme Court judges.** There is **no separate provision** in the in-house procedure **to deal with complaints against the CJI.**
- The nature of inquiry is fact-finding, where the judge would have his say. It is settled law that the inquiry would not be a formal judicial inquiry. It would not involve the lawyers or examination and cross-examination of witnesses. The committee can devise its own procedure consistent with the principles of natural justice.

Why the letter sets a dangerous precedent

- The only inference to be drawn from the act of putting the letter in the public domain is that the Chief Minister wanted to publicly humiliate the senior-most judge of the country.
- The letter appears to be a very irresponsible and amateurish misuse of the Chief Minister's authority as a senior constitutional functionary.

- The letter goes on to make aspersions of external influence on the stay order that was recently passed by the Andhra Pradesh High Court. The letter then makes assumptions on the proximity with the former Chief Minister of Andhra Pradesh by placing heavy reliance on interviews and letters of a former judge of the Supreme Court of India.
- This is an attempt at overreaching the judges and intentionally interfering with the administration of justice, which is nothing short of serious contempt of court. Moreover publicizing the letter amounts to a serious attempt to interfere with the process of administration of justice by attempting to overreach the judges for a matter which is yet to come up on the board for hearing.

Consequences of this controversy

- **Impacts Democratic Functioning:** Such type of confrontation and mistrust between two organs of State is not conducive for smooth working of Democracy. The ultimate victim will be the common man who will be bereft of better governance
- **Politicization of Judiciary:** The serious accusation by a sitting Chief Minister brings out to the foreground the weakness of Judiciary. Similar kind of charges might be levelled by opposition parties when it comes to power. All these leads to politicization of the Institution of Judiciary.
- **Integrity of SC Judges is doubted:** Every judgement delivered the judges involved in this controversy will be questioned which is not good even from Institutional perspective
- **Legitimacy of the institution at stake:** Such type of allegations and counter allegation will create doubts in minds of Public about the ability to get justice from Formal system. As a result, people will tend to fall back on undemocratic informal judicial systems like **Khap Panchayats**.
- **Judiciary's Grievance Redressal Mechanism tested:** How the CJI & SC is going to handle this case will set a precedent to deal with misconduct of Judges in future. If the process is not robust, fair & transparent then the calls for greater executive control on Judiciary will increase (Judicial Standards and Accountability Bill)

DELHI ASSEMBLY VS FACEBOOK

Polity & Governance

Why is it in news?

Recently, when the Peace and Harmony Committee of the Delhi assembly (P&H Committee) summoned Facebook's Indian vice-president (VP) in connection with an inquiry into occurrences during the Delhi riots of 2020, Facebook refused to appear and instead challenged the authority of the P&H Committee to issue summons before the Supreme Court of India. This issue brought into focus privileges of legislature.

Provisions to protect the privileges of the legislature

- The powers, privileges and immunities of either House of the Indian Parliament and of its Members and committees are laid down in Article 105 of the Constitution.
- Article 194 deals with the powers, privileges and immunities of the State Legislatures, their Members and their committees.
- Parliamentary privilege refers to the right and immunity enjoyed by legislatures, in which legislators are granted protection against civil or criminal liability for actions done or statements made in the course of their legislative duties.

Are these parliamentary privileges defined under law?

According to the Constitution, the powers, privileges and immunities of Parliament and MP's are to be defined by Parliament. No law has so far been enacted in this respect. In the absence of any such law, it continues to be governed by British Parliamentary conventions.

What constitutes a breach of this privilege?

- While the **Constitution has accorded special privileges** and powers to parliamentarians and legislators to maintain the dignity and authority of the Houses, **these powers and privileges are not codified**.
- Thus, **there are no clear, notified rules** to decide what constitutes a breach of privilege, and the punishment it attracts.
- Any act that obstructs or impedes either House of the state legislature in performing its functions, or which obstructs or impedes any Member or Officer of such House in the discharge of his duty, or has a tendency, directly or indirectly, to produce such results is treated as a breach of privilege.
- It is a breach of privilege and contempt to print or publish libel reflecting on the character or proceedings of the House or its Committees or on any member of the House for or relating to his character or conduct as a legislator.

Procedure followed in cases of an alleged breach

- The Legislative Assembly Speaker or Legislative Council Chairman constitutes a Privileges Committee consisting of 15 members in the Assembly and 11 members in the Council.
- The members to the committee which has quasi-judicial powers are nominated based on the party strength in the Houses.
- The Speaker or Chairman first decides on the motions.

- If the privilege and contempt are found prima facie, then the Speaker or Chairman will forward it to the Privileges Committee by following the due procedure.
- The Committee will seek an explanation from all the concerned, will conduct an inquiry and will make a recommendation based on the findings to the state legislature for its consideration.

What is the punishment for this?

- If the Committee finds the offender guilty of breach of privilege and contempt, it can recommend the punishment.
- The punishment can include communicating the displeasure of the state legislature to the offender, summoning the offender before the House and giving a warning, and even sending the offender to jail.
- In the case of the media, press facilities of the state legislature may be withdrawn, and a public apology may be sought.

NATIONAL AUTHORITY OF SHIP RECYCLING (NASR)

Polity & Governance

Why is it news?

Recently, the government notified the **Director-General of Shipping** as **National Authority for Recycling of Ships**.

Background

- In 2019, the Government had passed **The Recycling of Ships Bill, 2019** which talked about **setting up of a national authority** that will monitor all activities related to ship recycling.
- Under the Ship Recycling Act, 2019, India has acceded to the **Hong Kong Convention for Ship Recycling** under **International Maritime Organization (IMO)**. DG Shipping is a representative of India in the IMO and enforces the conventions.

Details

- DG Shipping will look after the **sustainable development of the ship recycling industry, monitor the compliance with environmental norms**, safety and health for the stakeholders in the industry.
- DG Shipping will be the **final authority for various approvals**, required by the ship recycling yard owners and the state governments and as an apex body, DG shipping is authorised to administer, supervise and monitor all activities related to shipping recycling.
- **DG Shipping will be the final authority** for the various approvals required by the recycling yard owners and State governments.
- The **National Authority of Ship Recycling** will be set up in Gandhinagar, Gujarat, which is the home of Asia's largest ship breaking and recycling industry in the world.

India and Ship Recycling:

- India is the leader in the global ship recycling industry, with a share of over 30% of the market and it remains the leading market for ship-wrecking globally, with the Alang-Sosiya ship-breaking yard in Gujarat handling around 450 ships every year.
- As per data available for 2018, India handles around five million gross tonnage (MnGT) annually, which is around 25% share of the world's ship recycling industry. The government plans to nearly double this by 2024, at around nine MnGT.

About Hong Kong Convention for Ship Recycling:

- The **International Maritime Organisation (IMO)** adopted the Hong Kong International Convention for the **Safe and Environmentally Sound Recycling of Ships in 2009**.
- It aims at ensuring that ships being recycled after reaching the end of their operational lives do not pose any unnecessary risks to human health, safety and to the environment.
- Its **broad objectives** are to address all the issues around ship recycling, including the probable presence of environmentally hazardous substances such as asbestos, heavy metals, hydrocarbons, ozone-depleting substances and others.
- IT covers the design, construction, operation and preparation of ships so as to facilitate safe and environmentally sound recycling, without compromising the safety and operational efficiency of ships and the operation of ship recycling facilities in a safe and environmentally sound manner.

About the International Maritime Organization(IMO):

- It is the **United Nations specialized agency** with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.
- It is the **global standard-setting authority** for the safety, security and environmental performance of international shipping. Its main role is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented.
- Its broad role is to **create a level playing-field** so that ship operators cannot address their financial issues by simply cutting corners and compromising on safety, security and environmental performance. This approach also encourages innovation and efficiency.

- IMO measures **cover all aspects of international shipping** including ship design, construction, equipment, manning, operation and disposal to ensure that this vital sector remains safe, environmentally sound, energy-efficient and secure.

Amazon executives depose before parliamentary panel

Polity & Governance

Why is it in news?

Days after Amazon refused to appear before the parliamentary panel on data protection bill, its top executives in India on Wednesday deposed before the committee and were questioned about the company's revenue model and how much tax it pays in the country. The Joint Committee on Data Protection Bill, 2019 chaired by BJP MP Meenakshi Lekhi questioned Amazon India and Amazon Web Services representatives.

Draft Protection Data Protection Bill, 2019

Private Companies and State agencies has vast amount of data. There is no legal framework for data protection. Even the individuals don't know that their data is being used. Thus, there was a need for legislation which was also said by K S Puttaswamy case, 2018 that held Right to Privacy (Art 21) to be a Fundamental Right.

Against this backdrop B N Srikrishna Committee (on Data Protection) prepared Personal Data Protection Bill, 2018 to MEITY. It deals with the guidelines for collection, storage, and processing of personal data, consent of individuals, penalties & compensation and a code of conduct.

Terms

- Data is the large collection of info about Data Principal (individuals) stored in a computer.
- Data is collected and handled by Data Fiduciaries (like FB). Fiduciary controls how and why the data is processed.
- Data Processing is analysis of data to collect patterns, turn raw data into useful. This is done by a 3rd party Data Processor (like Cambridge Analytica).
- The physical attributes of data, where data is stored, where it is sent and where it is turned into something useful are Data Flows. It determines who has the access to data, who profits off it, who taxes and who owns it.
- Data Localisation is the act of storing data on any device physically present within the borders of the country.

Provisions of the Bill

Key features of the bill

- **Applicability of the bill:** The Bill governs the processing of personal data by:
 1. Government
 2. Companies incorporated in India, and
 3. Foreign companies dealing with personal data of individuals in India.
- **The Bill categorises certain personal data as sensitive personal data. This includes** financial data, biometric data, caste, religious or political beliefs, or any other category of data specified by the government, in consultation with the Authority and the concerned sectoral regulator.
- **Data fiduciary:** A data fiduciary is an entity or individual who decides the means and purpose of processing personal data. Such processing will be subject to certain purpose, collection and storage limitations. For instance, personal data can be processed only for specific, clear and lawful purpose.
- **Additionally, all data fiduciaries must undertake certain transparency and accountability measures such as:**
 1. **Implementing security safeguards** (such as data encryption and preventing misuse of data), and
 2. **Instituting grievance redressal mechanisms** to address complaints of individuals.
 3. They must also institute mechanisms for age verification and parental consent when processing sensitive personal data of children.
- **Rights of the individual under the bill:** The Bill sets out certain rights of the individual (or data principal). These include the right to:
 1. Obtain confirmation from the fiduciary on whether their personal data has been processed
 2. Seek correction of inaccurate, incomplete, or out-of-date personal data
 3. Have personal data transferred to any other data fiduciary in certain circumstances, and
 4. Restrict continuing disclosure of their personal data by a fiduciary, if it is no longer necessary or consent is withdrawn.
- **Grounds for processing personal data by fiduciaries:** The Bill allows processing of data by fiduciaries **only if consent is provided by the individual**. However, in certain circumstances, personal data can be processed without consent. These include:
 1. If required by the State for providing benefits to the individual
 2. Legal proceedings
 3. To respond to a medical emergency.

- **Social media intermediaries:** The Bill defines these to include **intermediaries which enable online interaction between users and allow for sharing of information**. All such intermediaries which have users above a notified threshold, and whose actions can impact electoral democracy or public order, have certain obligations, which include providing a voluntary user verification mechanism for users in India.
- **Data Protection Authority:** The Bill sets up a Data Protection Authority which may:
 1. Take steps to protect the interests of individuals
 2. Prevent misuse of personal data, and
 3. Ensure compliance with the Bill.
- **Composition of Data Protection Authority:** It will consist of **a chairperson and six members, with at least 10 years' expertise in the field of data protection** and information technology. Orders of the Authority can be appealed to an **Appellate Tribunal**. Appeals from the Tribunal will go to the Supreme Court.
- **Transfer of data outside India:** Sensitive personal data may be transferred outside India for processing **if explicitly consented to by the individual**, and subject to certain additional conditions. However, such sensitive personal data should continue to be stored in India. Certain personal data notified as critical personal data by the government can only be processed in India.
- **Exemptions from the provisions of the Act:** The **central government can exempt** any of its agencies from the provisions of the Act:
 1. **In the interest of security of state, public order, sovereignty and integrity of India** and friendly relations with foreign states, and
 2. For preventing incitement to the commission of any cognizable offence (i.e. arrest without warrant) relating to the above matters.
- **Processing of personal data is also exempted from the provisions of the Bill for certain other purposes such as:**
 1. revention, investigation, or prosecution of any offence, or
 2. Personal, domestic, or
 3. Journalistic purposes. However, such processing must be for a specific, clear and lawful purpose, with certain security safeguards.
- **Offences under the bill:**
 1. Processing or transferring personal data in violation of the Bill, punishable with a fine of Rs 15 crore or 4% of the annual turnover of the fiduciary, whichever is higher, and
 2. Failure to conduct a data audit, punishable with a fine of five crore rupees or 2% of the annual turnover of the fiduciary, whichever is higher.
 3. Re-identification and processing of de-identified personal data without consent is punishable with imprisonment of up to three years, or fine, or both.
- **Sharing of non-personal data with government:** The central government may direct data fiduciaries to provide it with any non-personal data and anonymised personal data (where it is not possible to identify data principal) for better targeting of services
- **Amendments to other laws:** The **Bill amends the Information Technology Act, 2000** to delete the provisions related to compensation payable by companies for failure to protect personal data.

Advantages of data localization

- Data localization ensures security of citizen's data and provides data privacy and sovereignty from foreign surveillance. It is necessary to prevent data braches like when Facebook shared its user data with Cambridge Analytica.
- Data Localization will provide Indian Law enforcement easy supervisory access. This will help the law enforcement agencies to effectively investigate crimes and threats to national security.
- In case of dispute or misappropriation, it will give local governments and regulators the jurisdiction to call for the data when required.
- Data warehousing is a huge business and will help boost data centre industry in India and provide employment.
- Data localization will ensure greater accountability from tech giants like Google and Facebook, especially about the end use of the data collected.
- It will minimize the conflict of jurisdiction due to cross border data sharing and ensure delivery of justice in the cases arising out of data breach and privacy suits.

Concerns:

- This law flows out of a Supreme Court judgement which upheld **privacy as a fundamental right**. These clauses allow the state instruments to **remove safeguards provided to an individual**, thus completely diluting the essence of the law.
- Since the law only mentions any government agency, the exemptions could practically be extended to any government body,
- Among others opposed the provisions, saying that these are in violation of civil liberties of an individual.
- The government can at **any time access private data or government agency data on grounds of sovereignty or public order**. This has dangerous implications.

Meeting of the Apex Council for Krishna and Godavari River

Polity & Governance

Why is it in news?

The Centre will determine the jurisdictions of the **Krishna and Godavari river management boards (KRMB and GRMB)**, **Union Jal Shakti Ministry (MoJS)** announced at the **Apex Council Meeting**.

The key takeaways from the current apex council meeting

- The Centre will determine the jurisdictions of the Krishna and Godavari river management boards (KRMB and GRMB).
- The two states would submit Detailed Project Reports (DPR) of new irrigation projects for appraisal and sanction by the apex council.
- The apex council would work towards establishing a mechanism to determine the share of Andhra Pradesh and Telangana in the Krishna and Godavari waters. The centre is expected to refer water sharing issues to the Krishna Godavari tribunal.
- The headquarters of the KRMB would be located in Andhra Pradesh

Interstate river water disputes in India:

- **Entry 17 of State List** deals with water i.e. water supply, irrigation, canal, drainage, embankments, water storage and water power.
- **Entry 56 of Union List** gives power to the Union Government for the regulation and development of inter-state rivers and river valleys.
- **Article 262** of the Indian Constitution provides that –
- Parliament may by law **provide for the adjudication of any dispute or complaint** with respect to the use, distribution or control of the waters of or in any inter-State river or river valley.
- Parliament may, by law provide that **neither the Supreme Court nor any other court shall exercise jurisdiction** in respect of any such dispute or complaint.

Parliament has enacted **two laws under Article 262** –

- 1) **River Board Act, 1956** : The purpose of this Act was to enable the Union Government to create Boards for Interstate Rivers and river valleys in consultation with State Governments to advise on the inter-state basin to prepare development scheme and to prevent the emergence of conflicts. (Till date, no river board as per above Act has been created).
- 2) **Inter-State River Water Dispute Act (ISRWD), 1956** : If a State Government makes a request regarding any water dispute and the Central Government is of opinion that the water dispute cannot be settled by negotiations, then a **Water Disputes Tribunal is constituted for the adjudication of the water dispute**.

The act was **amended in 2002**, according to which a **one year time frame is given to setup the water disputes tribunal** and also a **3 year time frame to make a decision**.

STAR CAMPAIGNER

Polity & Governance

Why is it in news?

The Election Commission (EC) revoked the status of a Congress leader as a star campaigner for the party in the ongoing State Assembly by-polls citing repeated violation of Model Code of Conduct while campaigning.

Who is a Star campaigner?

- A recognised political party can have 40 star campaigners and an unrecognised (but registered) political party can have 20. The list of star campaigners has to be communicated to the Chief Electoral Officer and Election Commission within a week from the date of notification of an election.
- The expenditure incurred on campaigning by such notified star campaigners is exempt from being added to the election expenditure of a candidate.
- However, this only applies when a star campaigner limits herself to a general campaign for the political party she represents.
- If a candidate or her election agent shares the stage with a star campaigner at a rally, then the entire expenditure on that rally other than the travel expenses of the star campaigner is added to the candidate's expenses.
- Even if the candidate is not present at the star campaigner's rally, but there are posters with her photographs or her name on display, then too the entire expenditure will be added to candidate's account.
- The same applies when the star campaigner even mentions the candidate's name during the event.
- When more than one candidate shares the stage, or there are posters with their photographs, then the expenses on such rally/meeting is equally be divided among the expenditure account of all such candidates.

What is the utility?

- Actors, celebrities and senior political party members are the ones who are nominated to be star campaigners.

- This is based on the premise that a popular face, someone that the common voter can immediately identify and side with, can rake in more votes for that political party.

How much does a star campaigner cost?

- Section 77 (b) of The Representation of People's Act, 1951 says that most of the expenses incurred by the campaigner "shall not be deemed to be an expenditure in connection with the election". In other words, all expenses will be borne by the respective political party.
- For example, expenses borne by star campaigners on account of travel by air or by any other means of transport shall not be deemed as expenditure in connection with the election.
- The manual to the Model Code of Conduct states that for the benefit of availing Section 77 (1) of The RP Act, a permit for the mode of transport for every star campaigner will be issued centrally and against their name.
- It is also mandatory for this permit to be stuck on a prominent and visible place on the vehicle.

OUTSIDERS CAN NOW BUY LAND IN JAMMU AND KASHMIR

Polity & Governance

Why is it in news?

People, as well as investors outside Jammu and Kashmir, can now purchase land in the Union Territory (UT) as the Centre has notified new land laws for the region.

Amendments in Land Laws of Jammu & Kashmir

- The amendments were made to **four major state laws** that governed ownership, sale, and purchase of land in the erstwhile state i.e. **The J&K Development Act, 1970, The J&K Land Revenue Act, 1996, The Agrarian Reforms Act, 1976 and The J&K Land Grants Act, 1960.**
- The amendments to The J&K Development Act has removed the phrase **"permanent resident of the State"** without specifying any substitute such as domicile, or any other clause to regulate land ownership.
 - The people as well as investors **outside Jammu and Kashmir** can now **purchase land** in the Union Territory (UT) of J&K.
- The changes defined the **'strategic areas in J&K'** under Section 3 of the Act which states that the government may on the written request of an **Army officer not below the rank of Corps Commander**, declare an area as Strategic Area within a local area, only for direct operational and training requirements of armed forces.
- The **Jammu and Kashmir Alienation of Land Act, 1938**, and **The Big Landed Estates Abolition Act, 1950** were **repealed** by the Union which provided protections on land holdings for permanent residents or "permanent resident certificate holders" as defined by laws of the erstwhile state of J&K.
 - The Section 4 of The J&K Alienation of Land Act stated that **transfer of land in favour of any person who is not a State Subject, is prohibited.**
 - The State subjects were **permanent resident certificate holders** as defined in the now abrogated Article 35A of the Constitution.



Provisions regarding sale of agricultural land

- The Section 133-A of The J&K Land Revenue Act, 1996, states, **"no land used for agriculture purposes shall be used for any non-agricultural purposes except with the permission of the District Collector"**.
- The sub-section 2 of Section 113-A adds that an owner or occupant who wishes to put his **agricultural land to non-agricultural uses** as provided in the regional plan, development plan or master plan as the case may be, "shall do so it after **payment of conversion charges** as prescribed by the Board from time to time".

Arguments given by governments for changes in land laws of Jammu & Kashmir

- The government has stated that the recent changes in land laws issued by it comes with objective of **integrating the UT with the rest of the country.**
- The J&K administration led by L-G Manoj Sinha has argued that the **old laws were a product of an old order** and were made to serve the old agrarian based economy.
- The UT administration has termed the laws **"regressive"** and said that the 12 laws that have been repealed were **"either redundant or obsolete"**.
- The administration has also argued that the move is aimed at **providing the people of J&K a "modernised" land management system** that is people-friendly, and brings greater transparency in land management.

Provisions for J&K Industrial Development Corporation

- The J&K Development Act has provided provisions for setting up an **Industrial Development Corporation (IDC)** to ease the setting up of industries in the region.

- The purpose of the corporation will be "**securing and assisting in the rapid and orderly establishment, and organisation of industries in industrial areas and industrial estates**" in the UT.
- The IDC is aimed to **establish commercial centres** in connection with the establishment and organisation of such industries.
- The IDC will also have the power to "**acquire and hold**" such property, both movable and immovable, as it may deem necessary for the performance of any of its activities.

Concerns in J&K with regard to the changes in the land laws

- The People's Alliance for Gupkar Declaration has termed the **government's reassurances on the land laws** as a "**bizarre attempt to distort facts, weave lies and mislead people**".
- The alliance has said that the real objective of repealing the basic land laws and carrying out massive amendments to the other laws was to push through and implement the **agenda of effecting demographic change**, and **disempower the people of Jammu and Kashmir**.



Annual State of Education Report (ASER) 2020

Welfare and Schemes

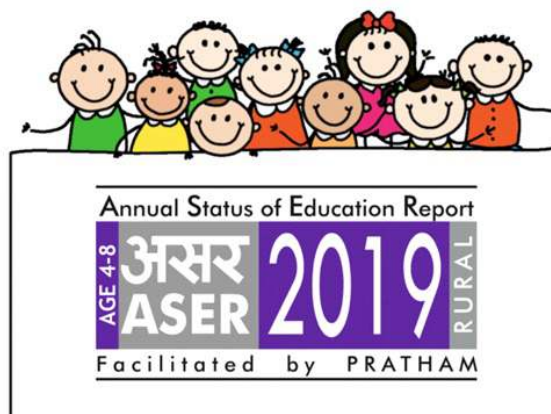
Recently, the Annual Status of Education Report (ASER) 2020 has been published with the key findings for the year 2020. Although the Centre has now permitted States to start reopening schools if they can follow COVID-19 safety protocols, the majority of the states have decided to keep the status quo and to not take any risk on this part. ASER (Annual State of Education Report) survey, 2020 was conducted in the month of September.

About ASER Survey

- This is an annual survey (published by education non-profit Pratham) that aims to provide reliable estimates of children's enrolment and basic learning levels for each district and state in India.
- ASER has been conducted every year since 2005 in all rural districts of India. It is the largest citizen-led survey in India.
- It is also the only annual source of information on children's learning outcomes available in India.

How is the survey conducted?

- ASER tools and procedures are designed by ASER Centre, the research and assessment arm of Pratham.
- The survey itself is coordinated by ASER Centre and facilitated by the Pratham network. It is conducted by close to 30,000 volunteers from partner organisations in each district.
- All kinds of institutions partner with ASER: colleges, universities, NGOs, youth groups, women's organisations, self-help groups and others.
- The ASER model has been adapted for use in several countries around the world: Kenya, Uganda, Tanzania, Pakistan, Mali and Senegal.



Findings of the ASER, 2020

1. Access to textbooks

- According to ASER (Annual State of Education Report) survey conducted in September, 20% of rural children have no textbooks at home (also means 80% students have textbooks).
- This proportion students having textbooks is higher among students enrolled in government schools (84.1%) than in private schools (72.2%)
- In Andhra Pradesh, less than 35% of children had textbooks, and only 60% had textbooks in Rajasthan. More than 98% had textbooks in West Bengal, Nagaland and Assam.

2. Enrolment

- It found that 5.3% of rural children aged 6-10 years had not yet enrolled in school this year, in comparison to just 1.8% in 2018.
- Non-enrolment is visible mostly among the youngest children (age 6 and 7), may be due to delay in admission owing to pandemic.
- Among 15-16-year-olds, however, enrolment levels are actually slightly higher than in 2018.

3. Enrolment in Government schools

- Enrolment patterns also show a slight shift toward government schools, with private schools seeing a drop in enrolment in all age groups.
- 55 per cent children in the 6-14 age groups are enrolled in government schools, up from 66.42 per cent in 2018.
- Proportion of boys enrolled in government schools rose from 62.8% in 2018 to 66.4% in 2020.
- Proportion of girls enrolled in government schools rose from 70% to 73%.

4. Smartphones related

- As many as 24.3 percent of the children said they had not received any learning material from the school in the week the survey was held because they had no Smartphone.
- 6% of students in government schools without access to a smartphone
- Regardless of school type, WhatsApp was the most common medium through which activities and materials were received. However, this proportion was much higher among children in private schools (87.2%) than those in government schools (67.3%).

5. Family education

- Almost 40% in low education households got no materials and did no learning, compared to 17% of high education families.

6. Learning activities

- In the week of the survey, one in three rural children had done no learning activity at all.

- About two in three had no learning materials or activity given by their school that week, and only one in ten had access to live online classes.

7. Proliferation of smart phones

A surge in the use of smartphones (as compared to 2018) has not been accompanied by greater access. Smartphone ownership has almost doubled from 2018 thus It is not only about technology, a third of children with Smartphone access still did not receive any learning materials.

- 8. Inherited disadvantages** continue to affect the quality of learning, low education of families affecting their children's education.
- 9. Lack of structured learning:** Students in rural areas have received very marginal assistance in the form of structured learning from teachers. They mostly had to rely on parents and siblings to study at home.

ELDERLY WELFARE

Welfare and Schemes

Every year 1st October is celebrated as the International Day of Older Persons, as declared by United Nations.

CELEBRATION

- The year 2020 marks the 75th Anniversary of the United Nations .
- This is also 30th Anniversary of the International Day of Older Persons.
- This year has also seen an emergence of COVID-19, that has caused an upheaval across the world.
- The higher risks confronted by older persons during the outbreak of pandemics such as COVID-19 is worrying.

Recognizing older persons contributions to their own health and the multiple roles they play in the preparedness is important.

This year has also been recognised as the "Year of the Nurse and Midwife".

International Day of Older Persons 2020 will highlight the role of the health care workforce in contributing to the health of older persons.

DECADE OF HEALTHY AGEING (2020-2030)

LAUNCH: 1st October, 2020 is also the launch year of Decade of Healthy Ageing (2020-2030).

AIM: Many activities will be undertaken throughout the year, aimed at mainstreaming issues related to elderly.

MECHANISM: This will deliberate upon ways to ensure better and effective delivery of services, making full use of convergence mechanisms.

- **OPPORTUNITY** : This initiative is an opportunity to bring together governments, civil society and all the stakeholders to **improve the lives of older people**, their families, and the communities in which they live.
- **INTER SECTORAL CO-ORDINATION** : The programs will also be promoted at an **inter-sectoral coordination** with other line Departments/Ministries.
- **ENGAGEMENT** : Community based organisations,NGOs etc. will also be involved in building a framework for **multi-sectoral engagement on healthy aging**.
- **DELIBERATION** : **Discussions/workshops/webinars** with experts/academic bodies/professionals will be organised to bring out a policy.

LASI

- A programmatic responses to **Longitudinal Aging Study in India (LASI)**, highlighting the **best practices for elder care** will be followed .
- Longitudinal Aging Study of India, the first nationwide study and world's largest **study on older adults** .
- This will provide evidence base for **national and state level programs** and policies for elderly population.

Various Problems Faced by Elderly People:

- **Social:** Alienation, isolation, loss of social and inter – personal connect in the changing times has marginalized the Old persons.
- **Economic:** Financial dependency for food and medicine on others often result in unmet needs. According to ILO report, **Care work and care jobs for the future of decent work**, there were 200 million older persons in need of care in 2015. If not addressed properly, current deficits in care work and its quality will create a severe and unsustainable global care crisis and further increase gender inequalities in the world of work.
- **Healthcare:** Senility, dementia and age related health issues trouble them. Further, expensive medicines, lack of proper Public healthcare, low hospital availability in rural areas makes life harder.
- **Psychological:** Nuclear family system and trend of migration from native places – create psychological insecurity and emotional pain of living away from family.
- **Technological:** The fast changing technologies and inability to cope with the ways of the modern world pose difficulty in integration with new generation.
- **Security:** Presently, the community culture has changed and it has made them vulnerable to crimes.

Government Initiatives for Elderly People:

The Maintenance and Welfare of Parents and Senior Citizens Act 2007

Maintenance of Parents/senior citizens by children/ relatives made obligatory and justiciable through Tribunals Revocation of transfer of property by senior citizens in case of negligence by relatives Penal provisions for abandonment of senior citizens

- Establishment of Old Age Homes for Indigent Senior Citizens
- Protection of life and property of senior citizens
- Adequate medical facilities for them.

Integrated Program for Older People (IPOP): To improve the quality of life of the older people by providing basic needs like food, shelter, medical care etc., and assistance to NGOs in providing care services.

National Council of Senior Citizens (NCSrC): Ensure provisions for elderly people in government schemes and activities.

Pension schemes: Various schemes like National Old Age Pension Scheme, Varishth Pension Yojana, Atal Pension Scheme (APS) and many other by state governments exist to provide financial aid.

Rashtriya Vayoshri Yojana: It provides senior citizens belonging to BPL category with Assisted Living Devices to aid in low vision/hearing impairment or locomotors and other disabilities.

Vayoshreshtha Sammans: This National Award for Senior Citizens is provided for rendering distinguished services for the cause of elderly persons.

Reverse mortgage scheme by National Housing Bank allows a house owner elderly to avail a monthly stream of income against mortgage of the house while remaining the owner and occupant throughout his/her lifetime. Concessions like in Income Tax and on railways travels prices are provided.

Ambedkar Social Innovation and Incubation Mission

Welfare and Schemes

Why is it in the news?

Union Social Justice Minister launched the **Ambedkar Social Innovation and Incubation Mission (ASIIM)** under **Venture Capital Fund for SCs**, with a view to promoting innovation and enterprise among SC students studying in higher educational institutions.

What is ASIIM ?

- Under Ambedkar Social Innovation Incubation Mission initiative, one thousand SC youth will be identified in the next four years with start-up ideas through the Technology Business Incubators in various higher educational institutions.
- They will be funded 30 lakh rupees in three years as equity funding to translate their start-up ideas into commercial ventures.
- Successful ventures would further qualify for venture funding of up to five Crore rupees from the Venture Capital Fund for SCs.

Venture Capital Fund for SCs:

- The Social Justice Ministry had launched the Venture Capital Fund for SCs in 2014-15 with a view to developing entrepreneurship amongst the SC and Divyang youth and to enable them to become job-givers.
- The objective of this fund is to provide concessional finance to the entities of the SC entrepreneurs. Under this fund, 117 companies promoted by SC entrepreneurs have been sanctioned financial assistance to set up business ventures.

AYUSH GRID Project

Welfare and Schemes

Why is it in news?

Recently, the **Ministry of AYUSH** has endorsed the **operational integration** of **AYUSH GRID Project** with the **National Digital Health Mission**.

About AYUSH GRID Project

- The project was initiated by the **Ministry of AYUSH in 2018** for creating a **comprehensive IT backbone** for the entire sector.
- It is conceptualized for **digitalization of the entire AYUSH Sector**.
- It is aimed at **connecting all hospitals and laboratories** so that case histories and observations can be collated to generate evidence about the efficacy of the traditional systems of medicine, including Ayurveda.

STARS PROJECT

Welfare and Schemes

Why is it in news?

The Union Cabinet has approved the sum of Rs. 5718 crore for the World Bank aided project STARS.

STARS Project

- 'STARS' is an acronym for Strengthening Teaching-Learning and Results for States (STARS).
- The STARS project will be implemented through the Samagra Shiksha Abhiyan, the flagship central scheme.
- The six states include- Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Odisha and Rajasthan.
- It will help improve learning assessment systems, strengthen classroom instruction and remediation, facilitate school-to-work transition, and strengthen governance and decentralized management,
- Some 250 million students (between the age of 6 and 17) in 1.5 million schools and over 10 million teachers will benefit from the STARS program.
- STARS will support India's renewed focus on addressing the 'learning outcome' challenge and help students better prepare for the jobs of the future – through a series of reform initiatives.

Major components of the STARS

At the national level, the project envisages the following interventions which will benefit all states and UTs

To strengthen MOE's national data systems to capture robust and authentic data on retention, transition and completion rates of students. To support MOE in improving states PGI scores by incentivizing states governance reform agenda through SIG (State Incentive Grants). To support the strengthening of learning assessment systems. To support MOE's efforts to establish a National Assessment Center (PARAKH).

At the State level, the project envisages:

Strengthening Early Childhood Education and Foundational Learning. Improving Learning Assessment Systems. Strengthening classroom instruction and remediation through teacher development and school leadership. Governance and Decentralized Management for Improved Service Delivery. Strengthening Vocational education in schools through mainstreaming, career guidance and counselling, internships and coverage of out of school children.

Reform initiatives under STARS

- Focusing more directly on the delivery of education services at the state, district and sub-district levels by providing customized local-level solutions towards school improvement.
- Addressing demands from stakeholders, especially parents, for greater accountability and inclusion by producing better data to assess the quality of learning.
- Equipping teachers to manage this transformation by recognizing that teachers are central to achieving better learning outcomes. The program will support individualized, needs-based training for teachers that will give them an opportunity to have a say in shaping training programs and making them relevant to their teaching needs.
- Investing more in developing India's human capital needs by strengthening foundational learning for children in classes 1 to 3 and preparing them with the cognitive, socio-behavioural and language skills to meet future labour market needs.

Ayushman Sahakar Scheme

Welfare and Schemes

The Agriculture Ministry has rolled out the Ayushman Sahakar Scheme to assist cooperatives in the creation of healthcare infrastructure in the country.

About the Ayushman Sahakar Scheme

- The scheme is formulated by the National Cooperative Development Corporation (NCDC), the apex autonomous development finance institution under the **Ministry of Agriculture and Farmers Welfare**.
- The scheme would give a boost to the provision of healthcare services by cooperatives.
- It specifically covers establishment, modernization, expansion, repairs, renovation of hospital and healthcare and education infrastructure.

Significance of the scheme

- There is a huge need for medical and nursing education in rural areas. But the problem is a lack of infrastructure.
- Co-ops find it difficult to access credit for such projects as banks may not give them loans for non-agricultural purposes.

Financing the scheme

- NCDC would extend term loans to prospective cooperatives to the tune of Rs 10000 Crore in the coming years.
- Any Cooperative Society with a suitable provision in its byelaws to undertake healthcare-related activities would be able to access the NCDC fund.
- NCDC assistance will flow either through the State Governments/ UT Administrations or directly to the eligible cooperatives.

- Apart from working capital and margin money to meet operational requirements, the scheme will also provide interest subvention of 1% to women majority cooperatives.

Digital Seva Setu

Welfare and Schemes

Why is it in news?

The Gujarat government recently launched phase 1 of the 'Digital Seva Setu' programme for the rural areas.

About the scheme

- Under the Gujarat government launched 'Digital Seva Setu' Programme, gram panchayats will be connected to the data centre at Gandhinagar.
- Under the programme, as the public welfare services will be available for the citizens at the gram offices in each panchayat, the villagers will not be required to go all the way to Taluka or district level offices.
- With this service, the villagers will be able to get various documents like duplicate ration cards, senior citizen certificate, income certificate, caste certificate at their doorstep.

Digital Seva Setu under Bharat Net Project

- The Digital Seva Setu in Gujarat has been initiated under the Central government's Bharat Net Project.
- It is an initiative to connect the village panchayats through fibre network and is meant to ensure the optimum utilization of technology for public welfare.
- As per the government official, Gujarat is the project leader as it has laid around 83% of the Optical Fibre Network.

PM SVANidhi scheme

Welfare and Schemes

Why is it in news?

The Pradhan Mantri Street Vendors Atmanirbhar Nidhi (PM SVANidhi) scheme was launched by the Ministry of Housing and Urban Affairs.

What is the scheme about?

Through the PM SVANidhi scheme, the central government would extend Rs 10,000 loan as working capital to street vendors. This amount will help the street vendors to restart their businesses which have been hit by the Covid-19 pandemic. The Small Industries Development Bank of India (SIDBI) is the scheme's implementation agency.

What is the significance of the scheme?

This scheme will help in mainstreaming and legitimising genuine street vendors who have not got valid identity cards. The scheme brings in financial mainstreaming of street vendors through loans and digital payments.

Modalities of the scheme

- The vendors can avail a working capital loan of up to Rs. 10,000, which is repayable in monthly instalments in the tenure of one year.
- On timely/early repayment of the loan, an interest subsidy of 7% per annum will be credited to the bank accounts of beneficiaries through Direct Benefit Transfer on a quarterly basis.
- There will be no penalty on early repayment of the loan. The vendors can avail the facility of the enhanced credit limit on timely/early repayment of the loan.

Jal Jeevan Mission

Welfare and Schemes

Why is it in news?

The Union Minister of Jal Shakti launched a special mission mode campaign to provide potable piped water supply in all schools and anganwadi centres across the nation within 100 days.

About Jal Jeevan Mission

- This mission was envisaged by the Prime Minister on 29th September, 2020 while releasing the '**Margdarshika**' for Gram Panchayats and **Paani Samitis** for implementation of Jal Jeevan Mission (JJM).
- Provisions have been made under Jal Jeevan Mission for ensuring safe water through tap water connection in schools, anganwadi centres, health care centres, etc.
- National Jal Jeevan Mission has reached out to States/ UTs to ensure that during this campaign, Gram Sabhas are convened at the earliest to pass a resolution for providing safe water in all schools, anganwadi centres and other public institutions in the village in the next 100 days.

- These facilities will be operated and maintained by the Gram Panchayat and/ or its sub-committee i.e. Village Water & Sanitation Committee or Paani Samiti.
- Jal Jeevan Mission (JJM) aims at the universal coverage of provision of **tap water connection to every rural home by 2024**. Under the mission, special focus is on women and children.

DAY-NRLM Special Package for J&K and Ladakh

Welfare and Schemes

Recently, the Union Cabinet has approved a **special package worth Rs. 520 crore** in the Union Territories (UTs) of Jammu and Kashmir (J&K) and Ladakh for a period of five years under the **Deendayal Antyodaya Yojana-National Rural Livelihood Mission (DAY-NRLM)**.

Details of the package

The Centre aims to universalise all centrally sponsored beneficiary-oriented schemes in J&K and Ladakh in a time-bound manner.

The package has been approved for a period of five years till 2023-24.

It has been decided to ensure funding on a demand-driven basis without linking allocation with poverty ratio during the extended period.

Around two-third rural women from the UTs will be covered and 10.58 lakh women will get the benefit from the special package.

About NRLM

- Deen Dayal Antyodaya Yojana - National Livelihoods Mission (NRLM) was launched by the Ministry of Rural Development (MoRD), Government of India in June 2011. The Mission aims at creating efficient and effective institutional platforms of the rural poor enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services.
- Under the scheme the rural poor will be targeted through self-managed Self Help Groups (SHGs) and federated institutions will support them for livelihoods collectives in a period of 8-10 years.
- In addition, the poor would be facilitated to achieve increased access to their rights, entitlements and public services, diversified risk and better social indicators of empowerment. NRLM believes in harnessing the innate capabilities of the poor and complements them with capacities (information, knowledge, skills, tools, finance and collectivization) to participate in the growing economy of the country.

Key Features

- **Universal Social Mobilisation** - At least one woman member from each identified rural poor household, is to be brought under the Self Help Group (SHG) network in a time bound manner. Special emphasis is particularly on vulnerable communities such as manual scavengers, victims of human trafficking, Particularly Vulnerable Tribal Groups (PVTGs), Persons with Disabilities (PwDs) and bonded labour.
- **Participatory Identification of Poor (PIP)** - The inclusion of the target group under NRLM is determined by a well-defined, transparent and equitable process of participatory identification of poor, at the level of the community.
- **Community Funds as Resources in Perpetuity** - NRLM provides Revolving Fund (RF) and Community Investment Fund (CIF) as resources in perpetuity to the institutions of the poor, to strengthen their institutional and financial management capacity and build their track record to attract mainstream bank finance.
- **Financial Inclusion** - NRLM works on both demand and supply sides of financial inclusion. On the demand side, it promotes financial literacy among the poor and provides catalytic capital to the SHGs and their federations. On the supply side, the Mission coordinates with the financial sector and encourages use of Information, Communication & Technology (ICT) based financial technologies, business correspondents and community facilitators like 'Bank Mitras'. It also works towards universal coverage of rural poor against risk of loss of life, health and assets. Further, it works on remittances, especially in areas where migration is endemic.
- **Livelihoods** - NRLM focuses on stabilizing and promoting existing livelihood portfolio of the poor through its three pillars - 'vulnerability reduction' and 'livelihoods enhancement' through deepening/enhancing and expanding existing livelihoods options and tapping new opportunities in farm and non-farm sectors; 'employment' - building skills for the job market outside; and 'enterprises' - nurturing self-employed and entrepreneurs (for micro-enterprises).

Rashtriya Kamdhenu Aayog

Welfare and Schemes

Why is it in news?

Rashtriya Kamdhenu Aayog (RKA) has started a nationwide campaign to celebrate "Kamdhenu Deepawali Abhiyan" this year on the occasion of Deepawali festival.

About Rashtriya Kamdhenu Aayog (RKA)

- RKA has been constituted by PM for the conservation, protection and development of cows and their progeny and for giving direction to the cattle development programmes.

- It is a high powered permanent body to formulate policy and to provide direction to the implementation of schemes related to cattle so as to give more emphasis on livelihood generation.

Ayushman Sahakar Scheme

Welfare and Schemes

Why is it in news?

The Agriculture Ministry has rolled out the Ayushman Sahakar Scheme to assist cooperatives in the creation of healthcare infrastructure in the country.

About the Scheme

- **Launched by the** Ministry of Agriculture and Farmers Welfare to assist cooperatives in the creation of healthcare infrastructure. Cooperatives at the present run around 52 hospitals across the country having cumulative bed strength of more than 5,000.
- The scheme has been formulated by the National Cooperative Development Corporation (NCDC).
- **The schemes aims** to extend term loans to prospective cooperatives to the tune of Rs. 10,000 Crore for the setting up of healthcare-related infrastructure, education and services.
- Any Cooperative Society with a suitable provision in its bylaws to undertake healthcare-related activities would be able to access the NCDC fund.
- The scheme provides interest subvention of 1% to women majority cooperatives.

National Cooperative Development Corporation (NCDC)

NCDC: It is an apex level statutory autonomous institution set up by the Government of India under an Act of the Parliament in 1963. It is under the administrative control of the Ministry of Agriculture and Farmers Welfare.

Policy and Promotion (DIPP) is the nodal department to oversee the development of intellectual property rights in India. The Cell for IPR Promotion and Management (CIPAM) was set up under DIPP to implement the objectives of national IPR policy. The policy is in compliance with the WTO agreement on Trade Related aspects of Intellectual Property Rights (TRIPS).

KAPILA Campaign

Welfare and Schemes

Why is it in news?

The Union Education Minister Ramesh pokhriyal nishank recently launched KAPILA campaign.

About the campaign

- It is Kalam Programme for Intellectual Property Literacy and Awareness campaign. The campaign was launched to celebrate the 89 birth anniversary of former President Dr APJ Abdul Kalam.
- Under the campaign, the Government of India will spread awareness about the importance of patenting and invention. This will help to lead India towards self-Reliance.
- The ministry of education will also celebrate intellectual property literacy week between October 15 and October 23 to promote awareness in patenting. Also, the ministry will conduct awareness programmes about the system and the process involved in applying for a patent.
- The campaign will provide information to students pursuing higher education in the country through their respective institutions.
- The Institution Innovation Council report was published during the event. Also, the Institution Innovation Council website was launched.

National Intellectual Property Rights policy 2016

The Policy was adopted in 2016 to guide the future development of Intellectual Property Rights in the country. It aims to bring all the Intellectual Property Rights under single platform. The policy is to set an institutional mechanism to implement, monitor and review the Intellectual Property Rights in the country. The Department of Industrial Policy and Promotion (DIPP) is the nodal department to oversee the development of intellectual property rights in India. The Cell for IPR Promotion and Management (CIPAM) was set up under DIPP to implement the objectives of national IPR policy. The policy is in compliance with the WTO agreement on Trade Related aspects of Intellectual Property Rights (TRIPS).

Thalassemia Bal Sewa Yojna

Welfare and Schemes

Why is it in news?

Recently, the **Union Minister for Health and Family Welfare** launched the second phase of "**Thalassemia Bal Sewa Yojna**" for the underprivileged Thalassemic patients. It will be extended for the **next two years from 2020**.

About the Scheme:

- It is a **Coal India CSR funded Hematopoietic Stem Cell Transplantation (HSCT) program** which was launched in 2017 and aims to provide a **one-time cure opportunity** for Haemoglobinopathies like **Thalassaemia and Sickle Cell Disease** for patients who have a matched family donor.
- The initiative was targeted to provide financial assistance to a total of 200 patients by providing a package cost not exceeding Rs. 10 lakhs per HSCT.
- HSCT** refers to the transplantation of stem cells from various sources (bone marrow, growth factor-stimulated peripheral blood, and umbilical cord blood) for the treatment of various diseases like autoimmune, and genetic diseases.

What is Thalassaemia?

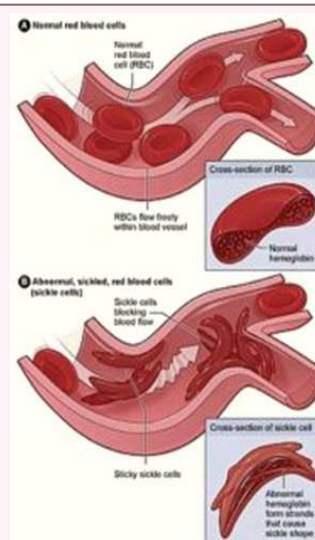
- It is a **genetic (inherited) blood disorder**. In this disorder, there is less oxygen-carrying protein i.e. haemoglobin and fewer red blood cells in the body than normal.
- When there is a lack of haemoglobin, the red blood cells don't function properly and they last for a shorter period of time which results in fewer healthy red blood cells in the body.
- Its symptoms include fatigue, weakness, paleness and slow growth.
- Its mild forms may not need treatment but in severe cases, blood transfusions or a donor stem-cell transplant is required for treatment.
- There are **two major types of thalassemia alpha and beta**. They have been named after the genetic effects in the (alpha and beta) protein chains.

Burden of Thalassemia in India:

- It is estimated 10,000 to 12,000 children are born with thalassemia every year in India.
- Data on the prevalence of silent carriers for various Haemoglobinopathies show that silent carriers are 2.9-4.6% for Thalassemia, while it can be as high as 40% for sickle cell anaemia especially among the tribal population.

Sickle Cell Disease:

- It is an inherited disease caused by defects, called mutations, in the beta-globin gene that helps make haemoglobin. The red blood cells become hard and sticky and look like a **C-shaped farm tool called a "sickle"**. The sickle cells die early, which causes a constant shortage of red blood cells.
- World Sickle Cell Day 2020** was observed to increase awareness about the Sickle Cell Disease (SCD) at the national level.
- The day is recognised by the United Nations and celebrated **every year on 19th June**.



Kisan Suryoday Yojana

Welfare and Schemes

Why is it in news?

Prime Minister Narendra Modi launched Kisan Suryoday Yojana in Gujarat. The scheme aims to provide day time power supply for irrigation.

About the scheme

Under the scheme, the farmers are to be availed with power supply between 5 AM and 9 PM. In order to implement the scheme, the State Government of Gujarat has allocated budget of Rs 3,500 crores. These funds will install transmission infrastructure by 2023. Around 234 transmission lines are to be installed under the scheme. Each line is to carry power of 66 KW. They are to be erected to a total length of 3,490 km. Also, additional 220 KV substations are to be installed.

Vivad se Vishwas scheme

Welfare and Schemes

The Government of India extended the deadline for making payment under the Vivad se Vishwas scheme

Why need such a scheme?

- At present, there are as many as 4,83,000 direct tax cases pending in various appellate forums i.e. Commissioner (Appeals), ITAT, High Court and Supreme Court.
- The idea behind the scheme is to reduce litigation in the direct tax arena.

About the scheme

- This is a direct tax scheme announced in Budget 2020, for settling tax disputes between individuals and the income tax department.
- The objective to reduce pending income tax litigation, generate timely revenue for the Government and to benefit taxpayers by providing them peace of mind, certainty and savings on account of time and resources that would otherwise be spent on the long-drawn and vexatious litigation process.
- Earlier, the scheme offered complete waiver on interest and penalty to the taxpayers with a full and final settlement of the dispute if the scheme was availed by March 31, 2020. An individual opting for settlement after March 31, 2020 was required to pay additional 10 per cent penalty on the disputed tax amount.
- As per the scheme income tax disputes settled under it cannot be reopened in any other proceeding by the income tax department or any other designated authority.
- At present, there are as many as 4,83,000 direct tax cases pending in various appellate forums i.e. Commissioner (Appeals), ITAT, High Court and Supreme Court.

SVAMITVA Scheme

Welfare and Schemes

Why is it in news?

PM has launched the physical distribution of Property Cards under the SVAMITVA Scheme.

About SVAMITVA

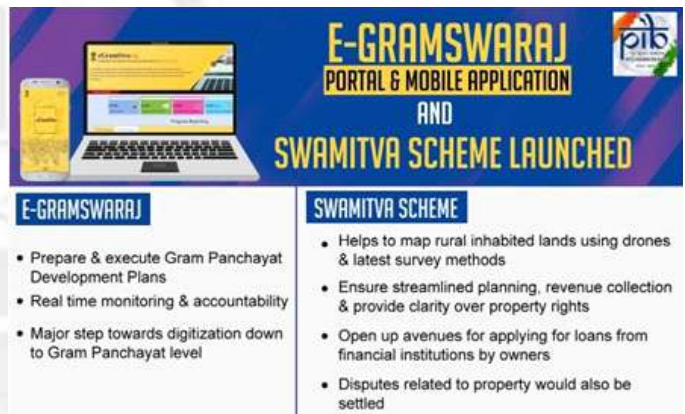
- SVAMITVA stands for Survey of Villages and Mapping with Improved Technology in Village Areas.
- Under the scheme, the latest surveying technology such as drones will be used for measuring the inhabited land in villages and rural areas.
- The mapping and survey will be conducted in collaboration with the Survey of India, State Revenue Department and State Panchayati Raj Department under the Ministry of Panchayati Raj.
- The drones will draw the digital map of every property falling in the geographical limit of each Indian village.
- Property Cards will be prepared and given to the respective owners.

Significance of the scheme

- The scheme paves the way for using the property as a financial asset by villagers for taking loans and other financial benefits.
- Also, this is the first time ever that such a large-scale exercise involving the most modern means of technology is being carried out to benefit millions of rural property owners.

Various benefits

- The scheme will create records of land ownership in villages and these records will further facilitate tax collection, new building plan and issuance of permits.
- It will enable the government to effectively plan for the infrastructural programs in villages.
- It would help in reducing the disputes over property.



Ranking of States on Support to Startup Ecosystems

ECONOMY

Why is it in news?

The Results of the second edition of Ranking of States on Support to Startup Ecosystems were recently released by Minister of Commerce & Industry.

About the Ranking

- The Department for Promotion of Industry and Internal Trade (DPIIT) has conducted the second edition of the States Startup Ranking Exercise.
- The key objective is to foster competitiveness and propel States and Union Territories to work proactively towards uplifting the startup ecosystem.
- It has been implemented as a capacity development exercise to encourage mutual learning among all states and to provide support in policy formulation and implementation.

7 Focus areas

1. Institutional Leaders
2. Regulatory Change Champions
3. Procurement Leaders
4. Incubation Hubs
5. Seeding Innovation Leaders
6. Scaling Innovations Leaders
7. Awareness and Outreach Champions

2 Categories: To establish uniformity and ensure standardization in the ranking process, States and UTs have been divided into two groups.

- **Category Y:** All UTs except Delhi and all States in North East India except Assam.
- **Category X:** All other States and UT of Delhi.

Objective:

To foster competitiveness and propel States and Union Territories to work proactively towards uplifting the startup ecosystem.

States Startup Ranking 2019:

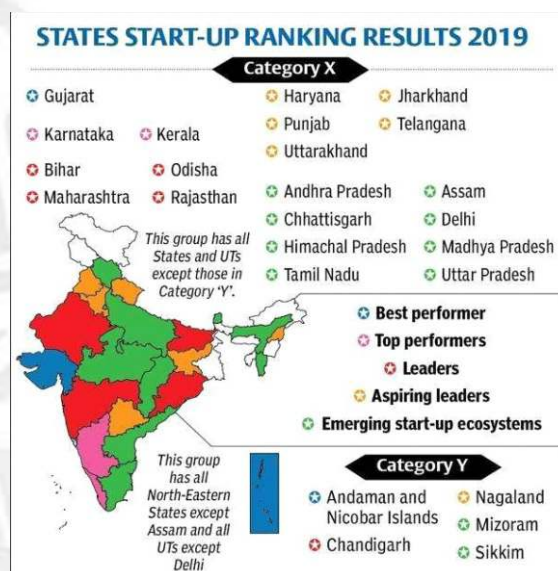
- Gujarat 'best performer' in 2nd edition of Ranking of States on Support to Startup Ecosystems.
- Karnataka and Kerala were recognised as 'top performers'.
- States among the "leader states" category include Bihar, Maharashtra, Odisha and Rajasthan.

Category Y:

Andaman and Nicobar Islands – Best Performer

Chandigarh – Leader States

The Department of Industrial Policy & Promotion (DIPP) was renamed as the Department for Promotion of Industry and Internal Trade (DPIIT) in 2019. The idea behind the rechristening of the DIPP is to include internal trade in its ambit.



Department for Promotion of Industry and Internal Trade (DPIIT)

The Department of Industrial Policy & Promotion (DIPP) was renamed as the Department for Promotion of Industry and Internal Trade (DPIIT) in 2019. The idea behind the rechristening of the DIPP is to include internal trade in its ambit. Administered by the Ministry of Commerce and Industry, it is a nodal Government agency with a responsibility to formulate and implement growth strategies for the Industrial Sector along with other Socio-Economic objectives and national priorities.

Role and Functions of DPIIT

Established in 1995, DIPP was mandated with the overall industrial policy formulation and execution, whereas the individual ministries take care of the specific industries' production, distribution, development, and planning aspects.

From the regulation and administration of the industrial sector, the role of the Department has been transformed into facilitating investment and technology flows and monitoring industrial development in the liberalized environment.

Industrial Policies

Formulating and implementing [Industrial Policy in India](#) introduced by the Government. Formulating and implementing strategies necessary for developing industries in compliance with development and National objectives. Monitoring the industrial growth, in general, and performance of industries specifically assigned to it, in particular, including advice on all industrial and technical matters.

Foreign Direct Investment (FDI)

Formulating, promoting, and facilitating policies of [Foreign Direct Investment \(FDI\)](#). Encouraging collaborators at an enterprise level and formulating policy parameters for Foreign Technology.

Intellectual Property Rights

Formulating policies related to [Intellectual Property Rights](#).

These policies are related to the following fields:

- Industrial Designs
- Patents and Trademarks
- Geographical Indications of Goods

Administering the rules and regulations made under the Administration of Industries Act of 1951. Promoting industrial development of industrially backward areas and the North Eastern Region including International Co-operation for industrial partnerships and Promotion of productivity, quality, and technical cooperation.

Programmes and Schemes of DPIIT

1. Transport Subsidy Scheme (1971) – It was initiated to develop industrialization in the remote, hilly, and inaccessible areas. It has been discontinued since 2016.
2. North East Industrial and Investment Promotion Policy (NEIIPP), 2007
3. North East Industrial Development Scheme
4. Industrial Development Scheme 2017
5. For infrastructure development, the Delhi Mumbai Industrial Corridor (DMIC) project was approved in 2007. Similarly, other industrial corridors are taken up.
6. The DPIIT takes up GI promotion activities. The department has notified 370 GI applications as of August 2020.

Ease of doing Business Rankings of the States

ECONOMY

Why is it in news?

Andhra Pradesh has bagged the first rank among all the states in the country in the state business reforms action plan-2019 (BRAP-2019), representing ease of doing business for Atmanirbhar Bharat.

Ease of Doing Business (EODB)

It is a joint initiative by the Department for Promotion of Industry and Internal Trade (DPIIT) and the World Bank to improve the overall business environment in the States. Ranking of all the States and Union Territories is done, based on the implementation of BRAP by them.

Business Reform Action Plan (BRAP):

- It was launched in 2015.
- BRAP 2019 contains a list of 80 reforms (187 reform action points) to be implemented by 19 State departments.
- These reforms cover 12 business regulatory areas such as Access to Information, Single Window System, Labour, Environment, etc.

Objective

It was introduced to encourage a healthy competition between states. This would help in attracting investments and increasing Ease of Doing Business in each State.

S. No.	State/UT	Rank 2019
1	Andhra Pradesh	1
2	Uttar Pradesh	2
3	Telangana	3
4	Madhya Pradesh	4
5	Jharkhand	5
6	Chhattisgarh	6
7	Himachal Pradesh	7
8	Rajasthan	8
9	West Bengal	9
10	Gujarat	10
11	Uttarakhand	11
12	Delhi	12
13	Maharashtra	13
14	Tamil Nadu	14
15	Lakshadweep	15
16	Haryana	16
17	Karnataka	17
18	Daman and Diu	18
19	Punjab	19

S. No.	State/UT	Rank 2019
18	Daman and Diu	18
19	Punjab	19
20	Assam	20
21	Jammu and Kashmir	21
22	Andaman & Nicobar	22
23	Dadra & N. Haveli	23
24	Goa	24
25	Mizoram	25
26	Bihar	26
27	Puducherry	27
28	Kerala	28
29	Arunachal Pradesh	29
30	Chandigarh	29
31	Manipur	29
32	Meghalaya	29
33	Nagaland	29
34	Odisha	29
35	Sikkim	29
36	Tripura	29

Pandemic may force the government to borrow more

ECONOMY

Why is it in news?

Revenue shortfalls in India, the major economy hardest hit by the COVID-19 pandemic, are likely to force the Centre to borrow more, but it will only consider monetising its deficit as a last resort.

Details

- This rate of fall has not been seen since the 1950s.
- If the pandemic were to peak out in September-October, GDP growth could move into mildly positive territory towards the end of the current FY.
- Borrowing plans for the second half of the financial year, will be reviewed by government and Reserve Bank of India (RBI) officials.
- RBI could ease liquidity through open market operations to keep yields in check while helping the government to raise borrowing, already targeted at a record ₹12 lakh crore.
- RBI has pumped in over ₹11 lakh crore of liquidity into the market, helping to keep 10-year bond yields below 6% even as the government decided to borrow 70% more than last year as a result of the pandemic.

Current State of Indian Economy:

As per the official data, the Centre's fiscal deficit for the first three months of fiscal 2020-21 (April-June) was Rs. 6.62 lakh crore, which is 83% of the budgeted target for the whole year. As per the economists, the fiscal deficit may end up as high as 8% of the Gross Domestic Product (GDP), far exceeding the budget's goal of 3.5%. The GDP contracted by 23.9% in the first (April-June) quarter of 2020 compared to the same period (April-June) in 2019. The manufacturing sector is also contracting, as per the recent IHS Markit India Manufacturing Purchasing Managers' Index (PMI). The output of eight core industries contracted for the fourth consecutive month -shrinking by 15% in June'20. The Financial Stability Report from RBI also shows an increase in bad loans and Non-Performing Assets (NPA).

Monetisation of the Deficit:

- In simple terms, monetising the deficit is equal to the central bank creating money to help the government meet its expenditure.
- In layman's language, this means printing more money ('monetisation'), which is direct monetisation.
- In other way, deficit monetisation happens when the RBI buys government securities directly from the primary market to fund government's expenses.
- This is a kind of implicit monetisation.

How have the modes evolved?

Monetisation of deficit was in practice in India till 1997. Back then, the central bank automatically monetised government deficit. It does it through the issuance of ad-hoc treasury bills. However, two agreements were signed between the government and RBI in 1994 and 1997. This was to completely phase-out funding through ad-hoc treasury bills. Later on, with the enactment of FRBM Act, 2003, RBI was completely barred from subscribing to the primary issuances of the government from April 1, 2006.

It was agreed that henceforth, the RBI would operate only in the secondary market through the OMO (open market operations) route. [OMOs involve the sale and purchase of government securities to and from the market by the RBI to adjust the rupee liquidity conditions.] The implied understanding was that the RBI would use the OMO route not so much to support government borrowing.

Instead, it would be used as a liquidity instrument. This was to manage the balance between the policy objectives of supporting growth, checking inflation and preserving financial stability.

What are the disadvantages of Direct Monetisation which lead to its discontinuation?

- **High Inflation:** Monetisation involve expansion of money supply that can potentially result in inflation
- **Reduces incentive for efficient Spending:** Availability of direct monetization route means reduced incentive for government to be fiscally disciplined.
- **Promotes Populism:** Governments would usually spend on populist measures rather than long-term structural measures knowing fully well that they have a way out for increased fiscal deficit.
- **Past Lessons:** The usage of direct monetisation route recklessly caused fiscal indiscipline that ultimately led to the balance of payments crisis in 1991.
- **Rupee Depreciation:** When there is excess supply of the currency due to printing of new currency, it could lead to a fall in rupee value, leading to its depreciation.
- **Lowers Investor Confidence:** Markets/Investors will fear that the constraints on fiscal policy are being abandoned, when direct monetisation path is adopted. They may see the government as planning to solve its fiscal problems by inflating away its debt.

OMO vs Direct Monetisation

Both monetisation and OMOs involve expansion of money supply that can potentially result in inflation. However, the inflation risk that both carry is different.

- OMOs are a monetary policy tool with the RBI deciding on the amount of liquidity to be injected in and when to. In contrast, in monetisation, the quantum and timing of money supply is determined by the government's borrowing rather than the RBI's monetary policy, to fund the fiscal deficit.
- If RBI is seen as losing control over monetary policy, it will raise concerns about inflation. That can be a more serious problem than it seems. More importantly, India is inflation prone unlike many other economies.
- Notably, after the global financial crisis when inflation "died" everywhere, India was hit with a high and stubborn inflation period. As is said by some, the RBI back then failed to tighten policy at the right time. But since then, India has embraced a monetary policy framework.
- The RBI has indeed earned credibility for delivering on inflation within the target in this period. Now, forsaking that credibility can be costly, with wider implications for the economy both in the short- and long-terms. If, despite these, the government decides to go ahead, markets will fear that the constraints on fiscal policy are being abandoned. They may see the government as planning to solve its fiscal problems by inflating away its debt.
- If that occurs, yields on government bonds will shoot up, which is the opposite of what is sought to be achieved. If in fact bond yields shoot up in real terms, there might be a case for monetisation, strictly as a one-time measure. India has not reached that point yet. **In sum, monetisation has few advantages but it carries a large cost in credibility.**

GDP Contracted by 23.9% in First Quarter

ECONOMY

Why is it in news?

According to the recent National Statistical Office (NSO) data, India's Gross Domestic Product (GDP) growth contracted by 23.9% in the first (April-June) quarter of 2020 compared to the same period (April-June) in 2019.

- It is the sharpest contraction since India started reporting quarterly data in 1996.
- Gross Value Added (GVA) growth rate also declined by 22.8% in the first quarter of this financial year.

More Details:

- According to data released by the National Statistical Office, the Gross Domestic Product (GDP) of India has shrunk by a record 23.9% in the April to June 2020 quarter in comparison to the same period in 2019.
- GDP at Constant (2011-12) Prices in Q1 of 2020-21 is estimated at Rs 26.90 lakh crore, as against Rs 35.35 lakh crore in Q1 of 2019-20, showing a contraction of 23.9 percent as compared to 5.2 percent growth in Q1 2019-20.

Economic situation before the pandemic

CHART 1 GDP GROWTH HAD BEEN FALLING SINCE 2017-18

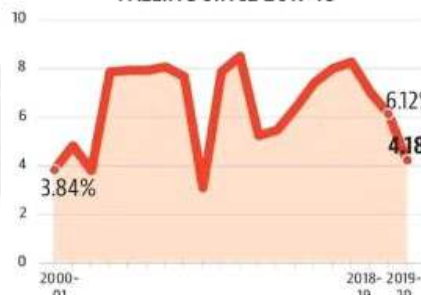


CHART 2 CONSUMPTION & INVESTMENT GROWTH PLUMMETED



Factors of GDP Contraction:

- The GDP decline in the April-June quarter (Q1) is primarily due to the pandemic. India had the most intense lockdown starting from March 25.
- The services sector — the dominant engine of growth in India — has been most affected by the need for social distancing and the lockdown.
- Poor condition of the banking sector: Total NPA of the Indian banks is approximately Rs 7.9 lac crore, that is blocking the way of the new loan to the other borrowers.
- Agricultural crisis: Farmers are not receiving a fair price for their crops.
- Decline in investment: There is a 79.5% reduction in the value of new projects declared during April to June 2019.
- Sharp decline in overall demand: The Indian economy is suffering the difficulty of lower demand that ultimately caught the whole economy.

Implications

- Worst affected areas are the sectors that create the maximum new jobs in the country. Contraction in these areas would lead to more and more people either losing jobs (decline in employment) or failing to get one (rise in unemployment).

CHART 3: WITH REFORM, INDIA COULD RELEASE UP TO 3.6% OF GDP ON AVERAGE PER YEAR, TO FINANCE ADDITIONAL SPENDING

Potential average annual improvement in deficit by FY 30 over FY 20 (% of GDP)		Increase in savings (blue) / Decrease in savings (red)	
Efficient subsidy and social spend	1.0	Higher subsidy efficiency and savings in admin expenses	
SOE privatisation	0.7	Monetisation of capital owned in state-owned enterprises	
Asset monetisation	0.7	Recycling of infrastructure and public-sector assets	
Tax buoyancy	0.6	Higher tax collection driven by high-growth scenario, simplified GST	
Power-sector reforms	0.3	Cost-reflective tariffs, with targeted subsidies to agri, household segment	
Market-linked small savings rates	0.3	Market-linked interest rates for small savings schemes and PPF	
Total annual average savings	3.6		
Incremental net spend	2.0	Higher interest expenses due to increased short-term borrowing, payment of government dues, Covid-19 fiscal package, etc	
Financing growth-oriented spend	1.7	Increased public infrastructure spend (including on healthcare)	

Source: McKinsey

- When it does not grow, say because of insufficient consumer demand, it reduces the average income of the businesses.
- Reduction of the Per Capita Income
- A fall in GDP affects the poor more. Inequality may become more noticeable.
- A fall in per capita income reduces the tax revenues for the Government. This reduces the amount spent on public services including investment in infrastructure.
- To enhance the expenditure government raises the debt which increases fiscal deficit.
- It also has the crowding out effect on the Private Sector.

Essential Commodities (Amendment) Bill, 2020

ECONOMY

Why is it in news?

The Essential Commodities (Amendment) Bill, 2020 that seeks to amend the Essential Commodities (EC) Act, 1955, was passed by Rajya Sabha.

About Essential Commodity Act-1955

- It empowers the central government to designate certain commodities (such as food items, fertilizers, and petroleum products) as essential commodities.
- The central government may regulate or prohibit the production, supply, distribution, trade, and commerce of such essential commodities.



How ECA works?

- If the Centre finds that a certain commodity is in short supply and its price is spiking, it can notify stock-holding limits on it for a specified period.
- The States act on this notification to specify limits and take steps to ensure that these are adhered to.
- Anybody trading or dealing in the commodity, be it wholesalers, retailers or even importers are prevented from stockpiling it beyond a certain quantity.
- A State can, however, choose not to impose any restrictions. But once it does, traders have to immediately sell into the market any stocks held beyond the mandated quantity.
- This improves supplies and brings down prices. As not all shopkeepers and traders comply, State agencies conduct raids to get everyone to toe the line and the errant are punished. The excess stocks are auctioned or sold through fair price shops.

Provisions of the amendment

- Regulation of food items: Bill provides that the central government may regulate the supply of certain food items including cereals, pulses, potatoes, onions, edible oilseeds, and oils, only under extraordinary circumstances. These include: (i) war, (ii) famine, (iii) extraordinary price rise and (iv) natural calamity of grave nature.
Stock limit: The Bill requires that imposition of any stock limit on agricultural produce must be based on price rise.
- A stock limit may be imposed only if there is: (i) a 100% increase in retail price of horticultural produce; and (ii) a 50% increase in the retail price of non-perishable agricultural food items.
- The increase will be calculated over the price prevailing immediately preceding twelve months, or the average retail price of the last five years, whichever is lower.

Objective

- Remove fears of private investors of excessive regulatory interference in their business operations.
- The freedom to produce, hold, move, distribute and supply will lead to harnessing of economies of scale
- It will attract private sector/foreign direct investment into agriculture sector. It will help drive up investment in cold storages and modernization of food supply chain.

Why these amendments are needed?

- The 1955 Act was legislated when India was facing a scarcity of foodstuffs due to persistent low levels of foodgrains production.
- India was dependent on imports and assistance to feed the population.
- To prevent hoarding and black marketing of foodstuffs, the EC Act was enacted in 1955.
- But now the situation has changed.
- The production of wheat, rice and pulses has increased 10 times, 4 times and 2.5 times respectively between 1955-56 and 2018-19.

- In fact, India has become an exporter of several agricultural products.

How the new amendments going to benefit?

- The key changes seek to free agricultural markets from the limitations imposed by permits and mandis that were designed for an era of scarcity.
- The move is expected to attract private investment in the value chain of commodities removed from the list of essentials.
- The Act has become a hurdle for investment in the agriculture sector in general, and in post-harvesting activities in particular.
- The private sector had so far hesitated about investing in cold chains and storage facilities for perishable items.
- This hesitation is due to the fact that most of these commodities were under the ambit of the EC Act, and could attract sudden stock limits.

Concerns

- **Excessive centralization :** As new amendments to the EC Act erodes the Constitutional rights of the states since it is a highly centralising Act.
- **Inflation:** it may also have two major adverse impacts if prices of essential produce jump at the farm level due to bulk procurement by large players or hoarders, say experts. Moreover as identified by Forum of Traders Organisations, a body of traders, the Act will allow big businessmen to hoard essential commodities such as cereals, pulses, edible oil, onion and potato leading to rise in prices.

Capping of MEIS Scheme Benefits

ECONOMY

Why is it in news?

The Central government has taken a decision to cap export incentives under Merchandise Exports from India Scheme (MEIS) at Rs. 2 crore per exporter on outbound shipments made during September-December, 2020.

Details of the changes

The ceiling would be subject to a downward revision to ensure that the total claim doesn't exceed the allocated Rs. 5,000 crore for the period. The new Import Export Code (IEC) obtained on or after 1st September will be ineligible to submit any MEIS claim for exports.

Import Export Code: It is issued by the DGFT (Director General of Foreign Trade - Ministry of Commerce and Industry). IEC is a 10-digit code which has a lifetime validity. Predominantly importers cannot import goods without the Import Export Code and similarly, the exporter merchant cannot avail benefits from DGFT for the export scheme, etc. without IEC.

Merchandise Exports from India Scheme (MEIS)

- MEIS was introduced in the Foreign Trade Policy (FTP) for the period 2015-2020.
- The MEIS was launched as an incentive scheme for the export of goods. The rewards are given by way of duty credit scrips to exporters.
- The MEIS is notified by the DGFT (Directorate General of Foreign Trade) and implemented by the Ministry of Commerce and Industry.
- Exports from India Scheme (MEIS) is to offset infrastructural inefficiencies and associated costs involved in export of goods/products, which are produced/manufactured in India, especially those having high export intensity, employment potential and thereby enhancing India's export competitiveness.
- MEIS intends to incentivise exports of goods manufactured in India or produced in India.
- The incentives under the schemes are calculated as a percentage, which is 2%, 3% or 5% of the realised FOB (free-on-board) value exports in free foreign exchange or FOB value of exports as per shipping bills in free foreign exchange

Reasons for Government Decision

- MEIS is not World Trade Organisation (WTO) compliant and rolling back of the MEIS scheme will pave the way for a new scheme in place.
- The Indian government has announced a new WTO-compliant scheme called Remission of Duties or Taxes On Export Product (RoDTEP) which will replace MEIS starting 1st January 2021.

Remission of Duties or Taxes on Export Product (RoDTEP)

- The new scheme will be implemented from 1st January 2020 and create a fully automated route for Input Tax Credit (ITC) in the GST to help increase exports in India.
- It will reimburse all the taxes/duties/levies being charged at the Central/State/Local level which are not currently

refunded under any of the existing schemes but are incurred at the manufacturing and distribution process.

- The Ministry of Finance has set up a committee under the chairmanship of former commerce and home secretary GK Pillai to finalise the rates under RoDTEP that will allow reimbursement of all embedded taxes including local levies paid on inputs by exporters.

Concerns expressed

- **Lack of data** : RoDTEP committee has started the work, but the industry is facing challenges in providing the data due to frequent local lockdowns, non-availability of transport and non-functioning of auditors.
- **The Federation of Indian Export Organisations (FIEO) criticism** : Exports that will be made during September-December are based on orders that had been negotiated earlier, factoring in the existing Merchant Export from India Scheme (MEIS) benefit. These benefits are part of the export competitiveness and therefore the sudden change will affect exporters' financially as buyers were not going to revise their prices upwards. However, the sudden imposition of a cap on IEC (Import Export Code), on MEIS benefit of exports made during September to December in 2020, is going to seriously affect exporters, whose numbers may not be very large, but their contribution to exports warrant a revisit to the imposition of the cap.
- **Unpredictable policy**: These benefits are part of the export competitiveness and therefore the sudden change will affect exporters' financially as buyers are not going to revise their prices upwards.

Development Bank as a source of Infrastructure Funding

ECONOMY

Why is it in news?

The government has proposed to set up a Development Financial Institution (DFI) to solve the infrastructure financing needs of the country.

How does it benefit ?

- The establishment of such an institution is considered as a positive step as banks do not have the long-term funds to finance such projects.
- Banks cannot afford to lend for such projects because that would shrink their lending capacity as the funds get locked up in such projects for that time period.

Reasons for DFIs to Funding Infrastructure

1. **Industrial growth**: Without Industrial growth \$5 trillion dollar target can't be achieved. It is the dynamic sector which contributes to the generation of employment and income in the country. Funds are provided by the development banks to start a new business venture, expansion and diversification of the business in new sector etc. These funds are needed to achieve several objectives that leads to accelerate economic growth and \$5 trillion dream.
2. **Encouraging entrepreneurs**: Emerging entrepreneurs are encouraged to give shape to their ideas. Development bank helps those entrepreneurs by providing funds for commencing new business. Government has recognised the importance of entrepreneurs in the economic growth and thus providing number of facilities and incentives to motivate them for undertaking industrial projects.
3. **Balanced regional development**: \$5 trillion economic target by 2022 can only be achieved if all the regions in India grow. Development bank helps in curbing regional disparities by providing funds to the entrepreneurs at low rate of interest if the organisation is planned in the backward areas. This is important for the development of all areas thereby making balanced regional development collectively moving toward \$5 trillion goal.
4. **Filling gaps**: It is not possible for the commercial banks to fulfill all financial needs of all the customers. Issue of Non-performing assets, absence of organised capital market, absence of adequate facilities for financing industries arise the problem of slow development. Such development banks fulfill this credit gap. They provide long-term funds for industries and help in growth.
5. **Helps policies implementation**: Government formulates financial policies with the help of development banks. They also help in implementing these policies. For example, NABARD bank is set up as an apex development bank for extending support to the rural areas. Thus development banks are needed to fulfill government's vision.
6. **Enhance Foreign Trade**: Development banks help to promote foreign trade. Export-Import Bank of India (EXIM Bank) provide medium and long-term loans to exporters and importers from India. Development banks would encourage exports which are must to achieve the target.

Types of DFI

Either it should be promoted by the government

- There are clear advantages if the DFI is fully held by the government, the most important being fund-raising. The securities from the DFI could be made Statutory Liquidity Ratio (SLR) eligible. This will encourage banks to subscribe to the securities issued by DFI and fulfil their SLR obligations.
- The Reserve Bank of India (RBI) requires banks to set aside 18% of their net demand and time liabilities towards SLR.

Development Finance Institution

- These are specialized institutions set up primarily to provide development/ Project finance especially in developing countries.
- These DFIs are usually majority-owned by national governments.
- The source of capital of these banks is national or international development funds.
- It ensures their creditworthiness and their ability to provide project finance in a very competitive rate.
- It strikes a balance between commercial operational norms as followed by commercial banks on the one hand, and developmental responsibilities on the other.
- DFIs are not just plain lenders like commercial banks but they act as companions in the development of significant sectors of the economy.

Classification of development Financial Institutions:

- **Sector specific financial institutions:** These financial Institutions focusses on a particular sector to provide project finance. Ex: NHB is solely related to Housing projects, EXIM bank is oriented towards import export operations.
- **Investment Institutions:** These are specialized in providing services designed to facilitate business operations, such as capital expenditure financing and equity offerings, including initial public offerings (IPOs). Ex: LIC, GIC and UTI.

Issues involved with such type of set up

- The issue involved in this is that the senior management of the DFI may be hounded by investigative agencies such as the Central Bureau of Investigation (CBI), and be subject to the scrutiny of the Comptroller and Auditor General (CAG) and the Central Vigilance Commission (CVC).

Private sector character with the government restricting its holding to 49%

- A DFI with a private sector character will require the government to believe and trust the private sector.
- This will require the government to maintain some distance from the private sector DFI institution and let it implement and execute projects aimed at improving the quality of life of all citizens. The institution can also work without fear of the CBI, CVC or the CAG.

EASING OF LIQUIDITY

ECONOMY

Why is it in news?

Recently, the Reserve Bank of India (RBI) announced a host of steps, including term repo operations totalling Rs. 1 lakh crore in mid-September to ease pressure on the liquidity and maintain congenial financial conditions with a view to ensuring sustainable recovery of economic growth.

Measures Announced by RBI

- **Special Open Market Operations:** The OMOs via auctions involving the simultaneous purchase and sale of government securities for an aggregate amount of Rs.20,000 crores in two tranches of Rs. 10,000 crores each, will be conducted. An open market operation (OMO) is an activity by a central bank to give (or take) liquidity in its currency to (or from) a bank or a group of banks.
- **Statutory liquidity ratio securities:** The RBI also allowed banks to hold fresh acquisitions of statutory liquidity ratio securities acquired from September 1, 2020, under Held-To-Maturity up to an overall limit of 22% of net demand and time liabilities up to March 31, 2021.
- **Term Repo Operations:** RBI said it will conduct term repo operations for an aggregate amount of ₹1 lakh crore at floating rates (i.e., at the prevailing repo rate). Through Term repo auctions of 7-day and 14-day tenors for a combined notified amount equivalent to 0.75 (at present) per cent of net demand and time liabilities (NDTL) of the banking system is conducted by the Reserve Bank through variable- rate auctions on every Friday, since the beginning of October 11, 2013.

Other Liquidity Measures by RBI

- **Standing Liquidity Facilities:** The Reserve Bank provides Standing Liquidity Facilities to the Scheduled commercial banks (excluding RRBs) under the Export Credit Refinance Facility (ECR) and to the stand-alone Primary Dealers.
- **Marginal Standing Facility:** The Reserve Bank, in 2011, introduced the Marginal Standing Facility (MSF) for banks and primary dealers to reduce the volatility in the inter-bank call money market.
- **Repurchase Agreement (Repo):** Repo is a money market instrument combining elements of two different types of transactions viz., lending-borrowing and sale-purchase.
- **Reverse Repo:** This is exactly the opposite of the Repo transaction and is used for absorption of liquidity. The Reverse Repo Rate at present is at 100 basis points below the repo rate.

- **Liquidity Adjustment Facility:** As part of the financial sector reforms in 1998 the Committee on Banking Sector Reforms (Narasimham Committee II), Liquidity Adjustment Facility (LAF) was introduced under which the Reserve Bank would conduct auctions periodically, if not necessarily daily.

FISCAL DEFICIT

ECONOMY

Why is it in news?

India's fiscal deficit in the four months to end July 2020 stood at 103.1% of the budgeted target for FY21. Net tax receipts were ₹2.03 trillion, while total expenditure was ₹10.5 trillion. Budget Targeted: 3.5% of GDP

About Fiscal Deficit

- Difference between the government's expenditure requirements and its receipts.
- occurs when the government's expenditure exceeds its income.
- The government describes fiscal deficit of India as —the excess of total disbursements from the Consolidated Fund of India, excluding repayment of the debt, over total receipts into the Fund (excluding the debt receipts) during a financial year.
- This difference is calculated both in absolute terms and also as a percentage of the Gross Domestic Product (GDP) of the country.
- Fiscal Deficit = Total expenditure of the government (capital and revenue expenditure) – Total income of the government (Revenue receipts + recovery of loans + other receipts)

Government Revenue Receipts	Government Capital Receipts	Government Expenditure
<ul style="list-style-type: none"> • Corporation Tax • Income Tax • Custom Duties • Union Excise Duties • GST and taxes of Union territories 	<ul style="list-style-type: none"> • Interest Receipts • Dividends and Profits • External Grants • Other non-tax revenues • Receipts of union territories 	<ul style="list-style-type: none"> • Revenue Expenditure • Capital Expenditure • Interest Payments • Grants-in-aid for creation of capital assets

Future Challenges

- **Revenue Shortfall due to Pandemic**
- Plans for additional borrowing that amounts to about 5.7% of GDP.
- **Failure to meet the disinvestment target envisaged** in the budget.
- **More Stimulus may be needed** in the latter part of the year.

Implications of Fiscal Deficit

- **Debt Trap:** Borrowings not only involve repayment of principal amount, but also require payment of interest. Interest payments increase the revenue expenditure, which leads to revenue deficit. It creates a vicious circle of fiscal deficit and revenue deficit, wherein government takes more loans to repay the earlier loans. As a result, country is caught in a debt trap.
- **Inflation:** Government mainly borrows from Reserve Bank of India (RBI) to meet its fiscal deficit. RBI prints new currency to meet the deficit requirements. It increases the money supply in the economy and creates inflationary pressure.
- **Foreign dependence:** Government also borrows from rest of the world, which raises its dependence on other countries.

Financing a Deficit

- All deficits need to be financed. This is initially done through the sale of government securities, such as Treasury bonds(T-bonds).
- Individuals, businesses, and other governments purchase Treasury bonds and lend money to the government with the promise of future payment.
- The clear, initial impact of government borrowing is that it reduces the pool of available funds to be lent to or invested in other businesses.

Measures need to be taken to manage fiscal deficit

- Fiscal consolidation is important from the point of view of the credibility of policy-making.
- A drastic reduction in expenditure on major subsidies such as food, fertilisers, exports, electricity to curtail public expenditure. A huge sum of money equal to Rs. 20,000 crores are spent on major subsidies on food, fertilisers, export promotion by the central government.
- Interest payments account for about 40 per cent of expenditure on revenue account of the central government. Funds

raised through disinvestment in the public sector should be used to retire a part of old public debt rather than financing current expenditure.

- To reduce fiscal deficit and thereby check rise in inflation rate, apart from reducing government expenditure, government revenue has to be raised.
- To increase revenue from taxation, tax base should be broadened by taxing agricultural incomes and incomes derived from unorganised industrial and services sectors.
- There should be restructuring of public sector enterprises so that they should make some surpluses at least for their own development so that their dependence on government's budgetary resources should be dispensed with. For this purpose, their pricing policy should be such that it recovers at least user cost.
- Reduction in GST rates would be easier to implement, this measure would put more money into the hands of the people.
- Private firms would bring into use their excess capacities, and ultimately incur the much needed capital for increasing production and generating employment.

DIVERSION OF CESS OF GST

ECONOMY

Why is it in news?

The CAG has found that the Union government in the very first two years of the GST implementation wrongly retained Rs 47,272 crore of GST compensation cess that was meant to be used specifically to compensate states for loss of revenue.

CAG observations

- CAG flagged that the amount was to be credited to the non-lapsable GST Compensation Cess collection fund for payment to states for loss of revenue due to implementation of GST since 2017, but the government did not do so, and thus violated the GST law.
- The GST Compensation Cess Act, 2017 provides for levy of cess to provide compensation to the states for loss of revenue arising due to implementation of GST for a period specified in the Act.
- CAG said out of the Rs 62,612 crore GST Compensation Cess collected in 2017-18, Rs 56,146 crore was transferred to the non-lapsable fund.
- In the following year (2018-19), Rs 54,275 crore out of Rs 95,081 crore collected was transferred to the fund.

Impact of it

- It led to overstatement of revenue receipts and understatement of fiscal deficit for the year.
- The wrongful operation has implications on the reporting of Grants in aid since the GST Compensation Cess is the right of the states and is not a Grant in aid.
- It points out to lack of transparency and disclosures in the financial management of central government.
- Centre's reliance on cesses and surcharges to raise revenue has increased significantly especially after the States' share of the divisible pool of taxes was raised to 42% in line with the 14th Finance Commission's suggestions.

CESS

About CESS

- A cess is an earmarked tax that is collected for a specific purpose and ought to be spent only for that.
- Every cess is collected after Parliament has authorised its creation through an enabling legislation that specifies the purpose for which the funds are being raised.
- Article 270 of the Constitution allows cess to be excluded from the purview of the divisible pool of taxes that the Union government must share with the States.

CESS levied by Government

- A report titled Cess and Surcharges: Concept, Practice and Reforms since 1944, prepared by the Vidhi Centre for Legal Policy in August 2018 pointed to 42 cesses that have been levied at various points in time since 1944.
- Post Independence, the cess taxes were linked initially to the development of a particular industry, including a salt cess and a tea cess in 1953.
- The introduction of the GST in 2017 led to most cesses being done away with and as of August 2018, there were only seven cesses that continued to be levied.

Role of CESS

- As the Vidhi Centre for Legal Policy report observed, the share of revenue to the Centre's annual tax kitty from cess had risen to 11.88% of the estimated gross tax receipts in 2018-19, from 6.88% in 2012-13.

Process of Cess collection and compensation

- The collected compensation cess flows into the CFI, and is then transferred to the Public Account of India, where a GST compensation cess account has been created.
- States are compensated bi-monthly from the accumulated funds in this account.

Legal Requirement

- The introduction of the GST in 2017 led to most cesses being done away with and as of August 2018, there were only seven cesses that continued to be levied.
- The GST (Compensation to States) Act guarantees all states an annual growth rate of 14 per cent in their GST revenue in the first five years of implementation of GST beginning July 2017
- These were Cess on Exports, Cess on Crude Oil, Health and Education Cess, Road and Infrastructure Cess, Building and Other Construction Workers Welfare Cess, National Calamity Contingent Duty on Tobacco and Tobacco Products and the GST Compensation Cess.
- If a state's revenue grows slower than 14 per cent, it is supposed to be compensated by the Centre using the funds specifically collected as compensation cess.
- To provide these grants, a GST compensation cess is levied on certain luxury and sin goods.

FARM BILLS

ECONOMY

1. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020 Main provisions –

- The new legislation will create an ecosystem where the farmers and traders will enjoy freedom of choice of sale and purchase of agri-produce.
- It will also promote barrier-free inter-state and intra-state trade and commerce outside the physical premises of markets notified under State Agricultural Produce Marketing legislations.
- The farmers will not be charged any cess or levy for sale of their produce and will not have to bear transport costs.
- The Bill also proposes an electronic trading in transaction platform for ensuring a seamless trade electronically.
- In addition to mandis, freedom to do trading at farmgate, cold storage, warehouse, processing units etc.
- Farmers will be able to engage in direct marketing thereby eliminating intermediaries resulting in full realization of price.

Questions remain

- Procurement at Minimum Support Price will stop ?
- If farm produce is sold outside APMC mandis, these will stop functioning?
- What will be the future of government electronic trading portal like e-NAM?

Clarification by the government

- Procurement at Minimum Support Price will continue, farmers can sell their produce at MSP rates, the MSP for Rabi season will be announced next week
- Mandis will not stop functioning, trading will continue here as before. Under the new system, farmers will have the option to sell their produce at other places in addition to the mandis
- The e-NAM trading system will also continue in the mandis
- Trading in farm produce will increase on electronic platforms. It will result in greater transparency and time saving

2. The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Bill, 2020 Main provisions –

- The new legislation will empower farmers for engaging with processors, wholesalers, aggregators, wholesalers, large retailers, exporters etc., on a level playing field. Price assurance to farmers even before sowing of crops. In case of higher market price, farmers will be entitled to this price over and above the minimum price.
- It will transfer the risk of market unpredictability from the farmer to the sponsor. Due to prior price determination, farmers will be shielded from the rise and fall of market prices.
- It will also enable the farmer to access modern technology, better seed and other inputs.
- It will reduce cost of marketing and improve income of farmers.
- Effective dispute resolution mechanism has been provided for with clear time lines for redressal.
- Impetus to research and new technology in agriculture sector.

Questions remain

- Under contract farming, farmers will be under pressure and they will not be able to determine prices?
- How will small farmers be able to practice contract farming, sponsors will shy away from them?

- The new system will be a problem for farmers?
- In case of dispute, big companies will be at an advantage?

Clarification from the government

- The farmer will have full power in the contract to fix a sale price of his choice for the produce. They will receive payment within maximum 3 days.
- 10000 Farmer Producer organizations are being formed throughout the country. These FPOs will bring together small farmers and work to ensure remunerative pricing for farm produce
- After signing contract, farmer will not have to seek out traders. The purchasing consumer will pick up the produce directly from the farm
- In case of dispute, there will be no need to go to court repeatedly. There will be local dispute redressal mechanism.

3. The Essential Commodities (Amendment) Bill, 2020 About Essential Commodity Act-1955

- It empowers the central government to designate certain commodities (such as food items, fertilizers, and petroleum products) as essential commodities.
- The central government may regulate or prohibit the production, supply, distribution, trade, and commerce of such essential commodities.

Provisions of the amendment

- **Regulation of food items:** Bill provides that the central government may regulate the supply of certain food items including cereals, pulses, potatoes, onions, edible oilseeds, and oils, only under extraordinary circumstances. These include: (i) war, (ii) famine, (iii) extraordinary price rise and (iv) natural calamity of grave nature.
- **Stock limit:** The Bill requires that imposition of any stock limit on agricultural produce must be based on price rise.
- **A stock limit may be imposed only if there is:** (i) a 100% increase in retail price of horticultural produce; and (ii) a 50% increase in the retail price of non-perishable agricultural food items.
- The increase will be calculated over the price prevailing immediately preceding twelve months, or the average retail price of the last five years, whichever is lower.

Objective

- remove fears of private investors of excessive regulatory interference in their business operations.
- The freedom to produce, hold, move, distribute and supply will lead to harnessing of economies of scale
- It will attract private sector/foreign direct investment into agriculture sector. It will help drive up investment in cold storages and modernization of food supply chain.

Other Criticism

- It is feared by the farmers that encouraging tax-free private trade outside the APMC mandis will make these notified markets unviable, which could lead to a reduction in government procurement itself.
- Farmers are also demanding that MSPs be made universal, within mandis and outside, so that all buyers government or private will have to use these rates as a floor price below which sales cannot be made.
- One of the major concerns raised is that, since agriculture falls in the State list, Centre should not be making legislation on this subject.
- They are concerned about the loss of revenue from mandi taxes and fees.
- Although corporates will bring much-needed investment, they could also distort the playing field, as small farmers might not be able to match them in bargaining power.
- Bihar had abolished the APMC laws back in 2006, but it didn't lead to investment in infrastructure or technology at local mandis. Rather, it made farmers more dependent on the local traders.

BharatNet

ECONOMY

Why is it news?

The timeline for the second phase of BharatNet project has been extended from August 2021.

Objective of BharatNet

- It was launched in 2011 **to provide connectivity to 2.5 lakh Gram Panchayats** (GPs) through optical fibre.
- It is a **highly scalable network infrastructure accessible on a non-discriminatory basis**, to provide on demand, affordable broadband connectivity of 2 Mbps to 20 Mbps for all households.
- It aims to **realize the vision of Digital India, in partnership with States and the private sector.**
- The objective is to facilitate the delivery of e-governance, e-health, e-education, e-banking, Internet and other services to the rural India.

- The entire project is being funded by Universal Service Obligation Fund (USOF).

Implementation of the project

- The project is a Centre-State collaborative project, with the States contributing free Rights of Way for establishing the Optical Fibre Network.
- It involves completion in three phases.
- The first phase envisages providing one lakh gram panchayats with broadband connectivity by laying underground optic fibre cable (OFC) lines by December 2017.
- The second phase will provide connectivity to all 2,50,500 gram panchayats in the country using an optimal mix of underground fibre, fibre over power lines, radio and satellite media.
- Second Phase involves laying of OFC over electricity poles.
- In the third phase from 2019 to 2023, state-of-the-art, future-proof network, including fibre between districts and blocks, with ring topology to provide redundancy would be created.

Benefits

- The BharatNet project would reduce the cost of broadband services in India.
- The project would have advantages like easy maintenance, faster implementation, and utilization of the present power line infrastructure.
- It would provide internet connectivity to citizens especially in rural areas via Wi-Fi Hotspots.
- The BharatNet project would provide a boost to the economy and would generate around 10 crore man-days of employment during the rollout of the project.
- It will help in the expedition of government's initiative such as, Make In India, Start-up India, Stand-up India etc,
- With the success of BharatNet and Digital India initiative, the life of Indian people is going to be changed in a way that has existed never before.

FISHERY SECTOR

ECONOMY

Why is it in news?

- Recently, Government **launched Rs 20,050 crore- Pradhan Mantri Matsya Sampada Yojana (PMMSY) to boost production and exports** in the fisheries sector as part of the government's aim to double farmers' income.

Objective of the Scheme

- It **aims at augmenting fish production and productivity at a sustained average annual growth rate of about 9%** to achieve a target of 22 million tonnes by FY25 through sustainable and responsible fishing practices.
- The **scheme will also help improve the availability of certified quality fish seed and feed, traceability** in fish and including effective aquatic health management.
- **Creation of critical infrastructure including modernisation and strengthening of value chain** will also be a major focus under it.
- The **total investment will comprise of Centre's share of Rs 9,407 crore, states' share of Rs 4,880 crore and beneficiaries' share of Rs 5,763 crore.**
- The scheme, to be **implemented between FY21 to FY25**, targets creating additional **direct employment of 15 lakh** fishers, fish farmers, fish workers, fish vendors in fishing and allied activities and 45 lakh indirect employment.
- Under social security, **accidental insurance of fishers should be enhanced from Rs 2 lakh to Rs 5 lakh.**

Implementation

- The **PMMSY will be implemented with two separate components — Central Sector Scheme** (100% grant by Centre) and **Centrally Sponsored Scheme** (60:40 between Centre and State).
- Any **project approved under the Centrally Sponsored Scheme, the beneficiary will have to invest 60%** while the Centre and the state together will contribute 40% remaining costs.
- In case of **SC/ST/woman beneficiary, the government's grant will be 60%.**
- **Fish markets —both wholesale and retail —**need to be modernised and Safal-type (Mother Dairy's fruits and vegetable stores) retail outlets could be opened up in cities.
- about **42% of the total estimated investment of the PMMSY is earmarked for creation and upgradation** of fisheries infrastructure facilities.
- **Focus areas include Fishing Harbours and Landing Centers, Post-harvest and Cold Chain Infrastructure, Fish Markets and Marketing Infrastructure**, Integrated Modern Coastal Fishing Villages and Development of Deep-sea Fishing.
- The **scheme plans to reduce post-harvest losses from the present high of 25% to about 10% by** modernizing and strengthening value chain.

- Under the **Swath Sagar plan**, activities envisaged with a view to modernize the fisheries sector include **promotion of Bio-toilets**, Insurance coverage for fishing vessels, Fisheries Management Plans, E-Trading/Marketing, Fishers and resources survey and creation of National IT-based databases.

Other Government Steps

- **Creation of a separate Ministry of Fisheries, Animal Husbandry and Dairying in the Union Government**,
- Setting up a **new and dedicated Department of Fisheries with independent administrative structure**,
- **Implementation of the Centrally Sponsored Scheme on Blue Revolution: Integrated Development and Management of Fisheries** during the period 2015-16 to 2019-20 with a central outlay of Rs. 3,000 crore,
- **Creation of Fisheries and Aquaculture Infrastructure Development Fund (FIDF) during 2018-19 with a fund size of Rs. 7,522.48 crore.**
- The **Marine Products Export Development Authority (MPEDA)** also **provides financial assistance** to develop fisheries infrastructure facilities to maintain the quality standards of aquaculture products for export to overseas markets.
- The **introduction of cage culture in reservoirs and other open water bodies** has led to an **increase in output**. This new practice gives freedom to fishermen from the risk of traversing dangerous rivers and restricted reservoirs.
- **Regular stocking of reservoirs and other water bodies has resulted** in a marked increase in catch.

Fisheries Sector in India

- India recorded an **average annual growth of over 14.8 percent** in the production of fish and fish products in the last decade compared to the 5% global average in the same period.
- The fisheries and related product industry are expanding at a rate of 6 percent annually and India has huge potential to meet this ever-increasing demand.
- Fisheries and aquaculture production contribute to 1% of India's GDP and over 5% of the agricultural GDP.
- India has a marine Fisher population of 3.5 million and over 10.5 million people are engaged in inland fishery and fish farming.
- India is the second-largest fish producer country in the world with **exports worth more than 47,000 crore rupees**.
- India is only behind China in aquaculture production, which has an annual production of 60 million tones.
- Fisheries is the single largest agriculture export in India with a growth rate of 6 to 10 percent in the last five years.
- Currently, **USA is the largest market for Indian seafood products** followed by South East Asian Countries and the European Union Nations.

Importance of Fishery Sector

- Indian fisheries and aquaculture is an **important sector** of food production.
- It **provides nutritional security to the food basket, contributing to the agricultural exports** and **engaging** about fourteen million people in different activities.
- With **diverse resources ranging from deep seas to lakes in the mountains and more than 10% of the global biodiversity in terms of fish and shellfish species, the country has shown continuous and** sustained increments in fish production since independence.
- It helps in generating new source of employment in rural area including part time employment of farmer.
- **Arrests migration of people from rural to urban** areas.
- **Produces food near consumer centre in rural area** thus contributing to improvement of human nutrition.
- Earns foreign exchange through export or saving foreign exchange through import substitution.

Challenges

- Major Concern over the stagnation of production of marine fisheries.
- Lack of resources such as availability of spawn, seedlings and fingerlings on time.
- Lack of formal working capital for funding smooth and efficient fisheries.
- Challenges regarding environmental threats, disease risks and trade barriers.
- Technical issues such as availability of necessary feed and medicines for the fisheries sector
- The issue regarding ponds and tanks in most parts of the mainland in India as these are typically multiple-use waterbodies which make them unreliable for fish production unless they are managed well.
- Food and Agriculture Organization (FAO) report that nearly 90% of the global marine fish stocks have either been fully exploited or depleted to an extent that recovery may not be possible biologically.
- Discharge of harmful substances like plastics and other waste into the water bodies cause devastating consequences for aquatic life.
- **Due to the lack of training, the quality of fish feed** is getting poor nowadays.
- **Most important challenge faced by every fisherman is boundary problems. Without latest equipment** like GPRS they don't know about miles or kilometers into the sea

Steps Taken By the Government

- Govt proposes to **raise fishery exports to Rs 1 lakh crore by FY25** in the **recent Budget (2020-21)** and will involve youth in fishery extension **through 3477 Sagar Mitras and 500 Fish Farmer Producer Organisations (Fish FPOs)**
- The Government has **constituted an independent Ministry for Fisheries** to raise seafood output and exports and to promote sustainable aquaculture. In the budget 2019-20, the government allocated approx 3,737 crore rupees for the newly carved out Ministry of Fisheries, Animal Husbandry and Dairying.
- Pradhan Mantri Matsya Sampada Yojana**
 - It **aims to make India a hotspot for fish and aquatic products** through appropriate policy marketing and infrastructure support.
 - It intends to **bring all fishermen under** the ambit of **farmer welfare programs**.
 - It is introduced **under the newly established department of fisheries** announced by the government.
 - Its aim is to increase fish production to achieve its **target of 15 million tonnes by 2020** under the blue revolution and raise it thereafter to about **20 million tonnes by 2020 to 2023**.
- Blue Revolution 2.0/ Neel Kranti Mission**
 - A major focus of the Blue Revolution 2.0 is on the **development and management of the fisheries sector in India**.
 - It will cover inland fisheries, aquaculture and marine fisheries including deep sea fishing, mariculture and all such activities which are undertaken by the National Fisheries Development Board.
- National Fisheries Development Board (NFDB)**
 - It was established in **2006 as an autonomous organization** under the Ministry of Agriculture and Farmers Welfare.
 - Its function is to **enhance fish production and productivity** in the country and to coordinate fishery development in an integrated and holistic manner. Now it works under the **Ministry of Fisheries, Animal Husbandry and Dairying**.
 - Its aim is to **achieve economic prosperity of fishers** and fish farmer by developing fisheries in a sustainable manner keeping in view biosecurity and environmental concerns.
- Initiative Taken under the MGNREGA scheme**
 - The government under MGNREGA has started to **develop the farm ponds** where pisciculture is taking place

MUNDRA PORT

ECONOMY

- Mundra Port is the largest private port of India located on the north shores of the Gulf of Kutch near Mundra, Kutch district, Gujarat.
- Mundra Port is India's first multi-product port-based special economic zone (SEZ).
- The Republic of Kazakhstan is considering building a terminal at the Mundra Port to provide Indian goods direct access to Central Asia via the Iran-Turkmenistan-Kazakhstan railway line.



SELLING OF G-SECS

ECONOMY

Why is it in news?

- The Reserve Bank of India (RBI) has announced the simultaneous purchase and sale of Government of India securities (G-secs) for ₹10,000 crores each under the open market operations (OMO).

About Government of India Securities(G-Sec)

- A Government Security (G-Sec) is a tradable instrument issued by the Central Government or the State Governments. It acknowledges the Government's debt obligation.
- Such securities are short term (usually called treasury bills, with original maturities of less than one year) or long term (usually called Government bonds or dated securities with an original maturity of one year or more).
- In India, the Central Government issues both, treasury bills and bonds or dated securities
- The State Governments issue only bonds or dated securities, which are called the State Development Loans (SDLs).
- G-Secs carry practically no risk of default and, hence, are called risk-free gilt-edged instruments.

Developments in the G-Sec Market

During 2017-18, the 10-year G-sec yield altered significantly. Following factors affected it:

Announcement of new benchmark security index, lower inflation, positive monsoon forecast, dovish stance of monetary policy and rating upgrade reduced yield

Higher CPI inflation, additional supply of securities through OMO sales, rise in oil prices leading to concerns of higher inflation, and higher government borrowings exerted upward pressure on yields

Types of G-Sec

- **Treasury Bills (T-bills):** T-bills are money market short term debt instruments which are issued by the central government in three tenures mainly 91-day, 182-day and 364-day. These instruments are zero coupon bonds which pay no interest but are actually issued at a discount and redeemed at the face value at maturity.
- **Cash Management Bills (CMBs):** CMBs are a new short-term instrument having common characteristic of T-Bills but with a maturity of less than 91-days. These instruments are issued to meet the temporary disparity in the cash flow of the government. CMBs too are issued at a discount and redeemed at face value on maturity.
- **Dated Government Securities:** These instruments are long-term securities which carry a fixed or floating coupon (interest) rate paid on the face value, which is payable at fixed time periods generally half-yearly. The maximum tenure of these securities is 30 years.

Types of dated instruments

- **Fixed Rate Bonds :** These bonds have their coupon rate fixed throughout the maturity. The majority of government bonds are issued as fixed rate bonds.
- **Floating Rate Bonds :** These bonds do not have fixed coupon rate. The coupon rates for these bonds are re-set at the pre-announcement intervals (every six months or 1 year) by adding a spread over a base rate. The base rate is the weighted average cut-off yield on the last three 364-day T-Bills auctions prior the coupon re-set interval while the spread cut-off is decided through the auction.
- **Zero Coupon Bonds :** These bonds are issued at a discount to the face value with no coupon rates.
- **Capital Indexed Bonds :** These are bonds where the principal is linked to an accepted inflation index in order to protect the holder against inflation. The government is planning to issue Inflation Indexed Bonds wherein the final wholesale price index (WPI) will be used for indexation. As per the proposed structure, the principal will be indexed and the coupon will be calculated on the indexed principal.
- **Bonds with Call or Put Options:** These bonds are issued with a feature of buyback option (call option) for the issuer or the sell option (put option) for the investor at par value (equal to face value) after the completion of five years from the date of issuance on any coupon date falling thereafter.
- **Special Securities:** It is a long-term dated security carrying coupon rate with a spread of about 20-25 basis points over the yield of the dated securities of comparable maturity. These bonds are issued by the central government to the oil marketing, fertilizer companies etc as compensation in place of cash subsidies. These companies raise cash by divesting these securities in the secondary market to banks, insurance companies etc.
- **STRIPS (Separate Trading of Registered Interest and Principal of Securities) :** STRIPS are instruments wherein each cash flow of the fixed coupon security is converted into a separate tradable zero coupon bond. For instance, when Rs 100 of the 8% GS2020 is stripped, each cash flow of coupon (Rs 4 each half yearly) will become coupon STRIP and the principal payment (Rs 100 on maturity) will become a principal STRIP. These cash flows are traded separately as independent securities in the secondary market. STRIPS have zero reinvestment risk.
- **State Development Loans (SDLs):** These dated securities are issued by state government to raise loan from the market through an auction wherein the interest is paid half yearly and the principal is repaid on maturity.

How are G-Secs issued?

These securities are issued through auctions conducted by the RBI on the electronic platform called the NDS (Negotiated Dealing System) – Auction platform. The central bank in consultation with the central government issues an indicative half-yearly auction calendar which contains information about the borrowing amount, tenor and the likely period during which auctions will be held. A notification or press release giving exact particulars of the securities and procedure of auction is issued by the government about a week prior to the actual date of auction.

Types of Auctions

- **Yield Based -** A yield based auction is generally conducted when a new government security is issued.
- **Price Based -** A price based auction is conducted when government re-issues securities issued earlier.
- Depending upon the method of allocation to successful bidders, auction could be classified as
- **Uniform Price Based –** Successful bidders are required to pay for the allotted quantity of securities at the auction cut-off rate, irrespective of the rate quoted by them.
- **Multiple Price Based -** Successful bidders are required to pay for the allotted quantity of securities at the respective price/yield at which they have bid.

Investors may bid under following categories:

- **Competitive Bidding:** Under this bidding an investor bids at a specific price/yield and is allotted securities if the price/yield quoted is within the cut-off price/yield.
- **Non-Competitive Bidding:** This bidding is open to individuals, HUFs, RRBs, co-operative banks, firms, companies, corporate bodies, institutions, provident funds and trusts. Under this bidding eligible investors apply for a certain

amount of securities in an auction without mentioning a specific price/yield and are later allotted securities at the weighted average price/yield of the auction.

Major players in the G-Sec market

Commercial banks and primary dealers besides institutional investors like insurance companies are the major players. Other players include co-operative banks, regional rural banks, mutual funds, provident and pension funds. FIIs are allowed to participate within the quantitative limits prescribed from time to time whereas corporates buy or sell these securities to manage their overall portfolio risk.

Role of Clearing Corporation of India Limited (CCIL)

CCIL is the clearing agency for G-Sec and it acts as a central counter party for all transactions between two counterparties.

DOORSTEP BANKING SERVICES

ECONOMY

Doorstep Banking Services by PSBs

- As part of the EASE Reforms, Doorstep Banking Services is envisaged to provide the convenience of banking services to the customers at their doorstep through the universal touchpoints of Call Centre, Web Portal or Mobile App.
- The services shall be rendered by the Doorstep Banking Agents deployed by the selected Service Providers at 100 centres across the country.
- At present only non-financial services are available to customers.
- The services shall benefit all customers, particularly Senior Citizens and Divyangs who would find it at ease to avail these services.

EASE 2.0 INDEX RESULTS

ECONOMY

Performance of PSB on Enhanced Access and Service Excellence 2.0 Index

- EASE Agenda is aimed at institutionalizing clean and smart banking. The overall score of PSBs increased by 37% between March-2019 and March-2020, with the average EASE index score improving from 49.2 to 67.4 out of 100.
- Significant progress is seen across six themes of the Reforms Agenda, with the highest improvement seen in the themes of 'Responsible Banking', 'Governance and HR', 'PSBs as Udyamimitra for MSMEs', and 'Credit off-take'.
- Bank of Baroda, State Bank of India, and erstwhile Oriental Bank of Commerce were felicitated for being the top three in the 'Top Performing Banks' category.
- Bank of Maharashtra, Central Bank of India & erstwhile Corporation Bank were awarded in the 'Top Improvers' category basis EASE 2.0 Index.
- Punjab National Bank, Union Bank of India, and Canara Bank were also recognized for outstanding performance in select themes.
- The Index measures the performance of each PSB on 120+ objective metrics across six themes.
- It provides all PSBs with a comparative evaluation showing where banks stand vis-à-vis benchmarks and peers on the Reforms Agenda.
- The Index follows a fully transparent scoring methodology, which enables banks to identify precisely their strengths as well as areas for improvement.
- The goal is to continue driving change by spurring healthy competition among PSBs and by encouraging them to learn from each other.

MSP FOR FARMERS

ECONOMY

Why is it in news?

The Cabinet Committee on Economic Affairs (CCEA) has approved an increase in the minimum support prices (MSPs) for all mandated kharif crops, including paddy, pulses and cotton, for the 2020-21 marketing season.

BACKGROUND:

- It was in the early 1960s when India was facing an enormous shortage of cereals that new agricultural policies were born marking the start of the Green Revolution.
- In 1964, the government set up the Food Corporation of India (FCI) to procure foodgrains from farmers at remunerative prices, and through the public distribution system distribute them to consumers and also maintain buffer stock for food security.
- In order to buy foodgrains, there had to be a policy on pricing. In 1965, an Agricultural Prices Commission was set up to advise on the pricing policy for agricultural commodities and its impact on the economy.
- It was then that the Price Support Policy of the Government came in, providing a foolproof solution to agricultural

producers against a sharp fall in farm prices.

- The minimum guaranteed prices are fixed to set a floor below which market prices cannot fall. If no one else buys it, the government will buy the stock at this minimum guaranteed prices.
- This is what came to be known as the minimum support price or MSP.
 - > This policy took its final shape around 1974- 76.
 - > The MSP serves as a long-term guarantee for investment decisions of producers. It came with an assurance that prices would not fall below a fixed level, even in case of a bumper crop.
 - > MSP was introduced to provide financial stability to the agricultural system and encourage production.

What is Minimum Support Price (MSP)?

- The Minimum Support Price (MSP) is only a government policy that is part of administrative decision-making. The government declares MSPs for crops, but there's no law mandating their implementation.
- The Centre currently fixes MSPs for 23 farm commodities —
 - > 7 cereals (paddy, wheat, maize, bajra, jowar, ragi and barley)
 - > 5 pulses (chana, arhar/tur, urad, moong and masur)
 - > 7 oilseeds (rapeseed-mustard, groundnut, soyabean, sunflower, sesamum, safflower and nigerseed)
 - > 4 commercial crops (cotton, sugarcane, copra and raw jute) — based on the CACP's recommendations.

Who announces MSP?

- The Cabinet Committee of Economic Affairs announces MSP based on the recommendations of the Commission for Agricultural Costs and Prices (CACP).
- The CACP takes into account demand and supply, the cost of production and price trends in the market among other things when fixing MSPs.
- The price is announced at the beginning of the sowing season.

Commission for Agricultural Costs & Prices (CACP)

- The Commission for Agricultural Costs & Prices (CACP) is an attached office of the Ministry of Agriculture and Farmers Welfare, Government of India.
- It came into existence in January 1965.
- Currently, the Commission comprises a Chairman, Member Secretary, one Member (Official) and two Members (Non-Official).
 - > The non-official members are representatives of the farming community and usually have an active association with the farming community.
- It can recommend MSPs, but the decision on fixing (or even not fixing) and enforcement rests finally with the government.

Determination of Minimum Support Price

- The prices of agricultural commodities are inherently unstable, primarily due to the variation in their supply, lack of market integration and information asymmetry -a very good harvest in any year results in a sharp fall in the price of that commodity during that year which in turn will have an adverse impact on the future supply as farmers withdraw from sowing that crop in the next / following years. This then causes paucity of supply next year and hence, major price increase for consumers.
- To counter this, MSP for major agricultural products is fixed by the government, each year. MSP is a tool which gives guarantee to the farmers, prior to the sowing season, that a fair amount of price is fixed to their upcoming crop to encourage higher investment and production of agricultural commodities. The MSP is in the nature of an assured market at a minimum guaranteed price offered by the government.
- The MSP is fixed on the recommendations of the Commission for Agricultural Costs and Prices (CACP). The CACP is a statutory body and submits separate reports recommending prices for Kharif and Rabi seasons. The Central Government after considering the report and views of the State Governments and also keeping in view the overall demand and supply situation in the country, takes the final decision.

The next step in the process

- The Food Corporation of India and NAFED help the Centre procure select food crops with the help of the States.
- Procured farm products are kept in government warehouses and distributed through the Public Distribution System (PDS) and various food security programmes.

Public Distribution System (PDS)

- Public distribution system is a government-sponsored chain of shops entrusted with the work of distributing basic food and non-food commodities to the needy sections of the society at very cheap prices.
- Food Corporation of India manages the public distribution system.

Why MSP is important?

- Price volatility makes life difficult for farmers. Though prices of agri commodities may soar while in short supply, during years of bumper production, prices of the very same commodities plummet.
- MSPs ensure that farmers get a minimum price for their produce in adverse markets.
- MSPs have also been used as a tool by the Government to incentivise farmers to grow crops that are in short supply.

MSP and implications

- **Short term measure:** Hiking the MSP without investing in infrastructure is just a short-term play. While it does deliver immediate results, long-term developments to back-it up are also important.
- **Complications:** MSP covers numerous costs such as the cost of sowing (A2) and labour (FL). These considerations are controversial with suggestions that it should be based on comprehensive costs (C2), which also include land rent costs.
- **Inflation:** Too much of a hike on MSP either paves way for inflationary effects on the economy, with a rise in prices of food grains and vegetables, or loss to government treasury if it decides to sell at a lower price as compared to the higher MSP it bought at.
- **Non- uniformity :** MSP is a nationwide single price policy. However, the actual costing for production varies from place to place, more severely so in areas lacking irrigation facilities and infrastructure.
- **Price discovery:** Market prices should ideally never be below MSP. If they fall below the MSP, in concept, the farmer can always sell it to the government, which will then resell it or store as buffer. However, practically this does not always happen. The market value in many cases does fall below MSP due to lack of infrastructure and procurement apparatus on the government's end.
- **Unequal access to MSPs:** This problem has been in existence since the creation of this scheme. The benefits of this scheme do not reach all farmers and for all crops. There are many regions of the country like the north-eastern region where the implementation is too weak.
- **Disadvantages of procurement:** Almost 2/3rd of the total cereal production is taken through the route of MSP, leaving only 1/3rd for open market. As a result, a farmer who chooses the MSP route cannot take advantage of beneficial market prices and has to depend solely on the MSP. It prevents earning of profit by producers. This has created shortage of crops in the open market also which has a serious impact on consumption pattern. It has shifted consumption towards non-cereal foods (that are available more in open market relatively), but production has not risen simultaneously, causing a production-demand gap.
- **Excess storage:** This kind of procurement without sufficient storage has resulted in huge piling of stocks in the warehouses. The stock has now become double the requirements under the schemes of PDS, Buffer stock etc. So, many grains have rotten in the storages.
- **Issues in WTO:** India's MSP scheme for many crops has been challenged by many countries in the WTO. For example, Australia has complained of the MSP on wheat, US and EU complained of sugarcane and pulses MSP. They have been claimed to be highly trade-distorting by its method of calculation. If the current process continues, the country will face international criticism for breaching the 10 per cent norm for subsidy on farm production set by the WTO.

Recent Government measures

- In continuation with the abovementioned measures, Government is taking holistic approach towards supporting the farmers and facilitates farming related activities in the lockdown situation due to COVID-19. Efforts are being made to facilitate marketing of agricultural produce by the farmers.
- Besides, the Umbrella Scheme 'Pradhan Mantri Anna data Aay Sanraks Han Abhiyan' (PM-AASHA) announced by the government in 2018 will aid in providing remunerative return to farmers for their produce. The umbrella scheme consists of three sub-schemes i.e. 'Price Support Scheme' (PSS), 'Price Deficiency Payment Scheme' (PDPS) and 'Private Procurement and Stockist Scheme' (PPSS) on a pilot basis.
- In addition, under the 'Pradhan Mantri Kisan Samman Nidhi' (PMKISAN) Scheme during the lockdown period from March 2020 till date, about 8.89 crore farmer families have been benefitted and an amount of Rs. 17,793 crore has been released so far.
- In order to provide food security during the prevailing situation due to COVID-19 pandemic, the government has decided to distribute pulses to the eligible households under 'Pradhan Mantri Garib Kalyan Yojana' (PM-GKY). About 1,07,077.85 MT pulses have so far been issue/d to the States/UTs.

MSP and the new Law

- It is somewhat strange that the concept of minimum support price finds no mention in any law even if it has been around for decades.
- While the government does declare the MSP twice a year, there is no law making MSP mandatory.
- What this technically means is that the government, though it buys at MSP from farmers, is not obliged by law to do so.
- As a matter of fact, there is no law which says that MSP can be imposed on private traders as well.
- The CACP had asked earlier recommended legislation to iron out a concrete MSP law for farmers, but it was not accepted by the Centre. The chief reason being having legal provisions delay the process of declaring MSP as the entire process mandates parliamentary debates.

REFORMS IN NATURAL GAS MARKETING

ECONOMY

Why is it in news?

The Government gave nod to major reforms in the marketing of Natural Gas in the country, taking another significant step to move towards gas based economy.

ABOUT natural gas

- Natural gas is a fossil energy source that formed deep beneath the earth's surface. Natural gas contains many different compounds.
 - The largest component of natural gas is methane, a compound with one carbon atom and four hydrogen atoms (CH₄).
- Natural gas also contains smaller amounts of natural gas liquids (NGL, which are also hydrocarbon gas liquids), and nonhydrocarbon gases, such as carbon dioxide and water vapor.
- Natural gas is used as a fuel and as a feedstock, with demand largely dependent on fertiliser industry (28%), power (23%), city gas distribution entities (16%), refinery (12%) and petrochemicals (8%) industries.
- India currently produces 84 million standard cubic meters (MMSCM) of natural gas and imports around the same amount.
- With the new reforms, 40 MMSCM will come into local production. Country's dependency on import of natural gas will reduce.
- The Ministry of Petroleum & Natural Gas is entrusted with the responsibility of exploration and production of oil and natural gas, their refining, distribution and marketing, import, export and conservation of petroleum products and Liquefied Natural Gas.

पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय
MINISTRY OF PETROLEUM AND NATURAL GAS

#AatmaNirbharBharat

#CabinetDecisions

Reforms in Natural Gas Marketing
A big boost to gas-based economy

- Transparent, standardized and open bidding process for gas marketing.
- E-bidding platform to be suggested by DGH.
- Affiliate companies will be able to participate in the bidding process.
- Producers will have a choice to opt for a platform.
- Will further enhance ease-of-doing-business and create an investment friendly climate.
- Will give a massive push to gas consumption.

Issues with previous policy

- Earlier Government has taken transformative reforms in the upstream sector **with a view to make investment easier focusing on ease of doing business.**
- The Open Acreage Licensing Policy (OALP) which is investor driven acreage auction process, has increased substantial acreages in the country.
- However, no blocks were allocated between 2010 and 2017 which has impacted the long term viability of the domestic production.
- Since 2017 more than 1.6 lakh sq.km area under 105 exploration blocks have been allocated. This will ensure sustainability of the domestic production in long run.
- Although government between 2016 and 2019 gave pricing freedom for all fields except those given to state-owned Oil and Natural Gas Corp (ONGC) and Oil India Ltd (OIL) on a nomination basis. **But, there were restrictions on marketing including a ban on affiliates of producers buying the fuel and in some cases, a state nominee being mandated to offtake the gas.** This restricted competition kept prices artificially low.
- Government brought a series of reforms in Gas sector and as a result investment of more than Rs. 70,000 crore is being made in the East coast.
- Gas production from East coast will contribute to Atmanirbhar Bharat by meeting increasing energy needs of the country.
- In February 2019, Government implemented major reforms in upstream sector and brought paradigm shift by focusing on production maximization. Acreages under OALP rounds are being allocated based on work programme only in Cat II and Cat III basins.
- The domestic gas production has complete marketing and pricing freedom. All discoveries and field development plans approved after 28 Feb, 2019 have complete market and pricing freedom.

Key-highlights of the Policy

- **Standard Procedure:** The objective of the policy is to prescribe standard procedure to discover market price of gas to be sold in the market by gas producers, through a transparent and competitive process, permit Affiliates to participate in bidding process for sale of gas and allow marketing freedom to certain Field Development Plans (FDPs) where Production Sharing Contracts already provide pricing freedom.
- **Transparent Bidding Process:** The policy aims to provide standard procedure for sale of natural gas in a transparent and competitive manner to discover market price by issuing guidelines for sale by contractor through e-bidding.
 - ◇ This will bring uniformity in the bidding process across the various contractual regimes and policies to avoid ambiguity and contribute towards ease of doing business.
 - ◇ The policy has also permitted Affiliate companies to participate in the bidding process in view of the open, transparent and electronic bidding.
 - ◇ This will facilitate and promote more competition in marketing of gas. However, rebidding will have to be done in case only affiliates participate, and there are no other bidders.
 - ◇ **Freedom to FDPs:** The policy will also grant marketing freedom to the Field Development Plans (FDPs) of those Blocks in which Production Sharing Contracts already provide pricing freedom.

Significance of the Reforms

- The whole eco-system of policies relating to production, infrastructure and marketing of natural gas has been made more transparent with a focus on ease of doing business.
- These reforms will prove very significant for Atmanirbhar Bharat **by encouraging investments in the domestic production of natural gas and reducing import dependence.**
- These reforms will prove **to be another milestone** in moving towards a gas based economy by encouraging investments.
- The increased gas production consumption will help in improvement of environment.
- These reforms will also help in **creating employment opportunities** in the gas consuming sectors including MSMEs.
- The domestic production will further help in increasing investment in the **downstream industries such as City Gas Distribution and related industries.**

BHARATMALA PARIYOJANA

ECONOMY

Why is it news ?

A total of 322 projects in a length of 12,413 Km have been awarded under Bharatmala Pariyojana till August, 2020. Further, 2921 Km has been constructed under the Project till the same date.

ABOUT the programme

- **Bharatmala Pariyojana is an umbrella program** for the highways sector that focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions.
- The launch of the scheme has been done for bring a new wave of development in the nation in the form of well-maintained and developed roads. Under this project, the construction of roads, in all parts of the nation will be undertaken.
- **Objectives:** To optimise the efficiency of freight and passenger movement across India by bridging critical infrastructure gaps through effective interventions. To generate a large number of direct and indirect employment opportunities in the construction and infrastructure sector. To connect 550 districts in the country through national highway linkages.
- **Effective measures:** Development of economic corridors, inter corridors and feeder routes, national corridor efficiency improvement, border and international connectivity roads, coastal and port connectivity roads and Greenfield expressways.
- **Features:** Improvement in the efficiency of existing corridors through the development of Multimodal Logistics Parks and elimination of chokepoint. Improving connectivity in North East and increasing harmony with Inland Waterways. Emphasis on the use of scientific and technological planning. Satellite mapping of corridor. Delegation of powers for successful completion of Phase I by 2022.

Present Status

- A total of 322 projects in a length of 12,413 Km have been awarded under Bharatmala Pariyojana till August, 2020. Further, 2921 Km has been constructed under the Project.
- The Ministry of Road Transport and Highways has taken up detailed review of NHs network and has given overall investment approval for Bharatmala Pariyojana Phase I Scheme for development of about 34,800 km (including 10,000 Km residual NHDP stretches) at an estimated outlay of Rs 5,35,000 Crore.

Features of the Scheme

- Total road construction - As per the draft of the scheme, government and the ministry will strive to complete new roads, which will add up to a whopping 34,800 kms.
- Integrated scheme - The Bharatmala is the name that is given to the road development and it will include many other related schemes as well. With the completion of all the schemes, the overall success of the scheme will be guaranteed.
- Total tenure of the program - The central government has the plans of finishing the scheme within a span of five years. Thus, all is set for finishing the first phase before the end of 2022.
- Segmentation in phases - Due to the sheer magnitude and spread of the scheme, it will be divided into seven distinct phases. As of now, the first phase is under construction.
- Construction on a daily basis - To finish the first phase in time, the respective department has made efforts of constructing at least 18 km of path on a daily basis. To beat the clock, continued efforts are being made to raise it to 30 km/day.
- Different categories of road construction - It has been highlighted in the official draft of the scheme that to provide better connectivity, the construction of various categories of roads will be undertaken.
- Multi-source of finding - One source will not be enough for funding a mammoth project. Thus, the government will have to depend on other sources for generating adequate money to meet the expenses.
- A total of around 24,800 kms are being considered in Phase I of Bharatmala. In addition, Bharatmala Pariyojana phase - I also includes 10,000 kms of balance road works under NHDP, taking the total to 34,800 kms at an estimated cost of Rs.5,35,000 crore. Bharatmala Phase I - is to be implemented over a five years period of i.e. 2017-18 to 2021-22.

Bharatmala project category

- **Economic Corridor:** As per the guidelines of the road construction project, the construction of 9000kms of Economic Corridors will be undertaken by the central government.
- **Feeder Route or Inter Corridor:** The total length of the roads, which fall under the Feeder Route or Inter Corridor category, is a whopping 6000kms.
- National Corridor Efficiency Improvement: 5000kms of roads, constructed under the scheme will fall in the category of National Corridor for the better connection between roads.
- **Border Road and International Connectivity:** Connecting the cities and remote areas, which are situated in the border regions, the project has kept provision for constructing 2000kms roads that fall in the Border Road or International Connectivity category.
- **Port Connectivity and Coastal Road:** To connect the areas that are dotted along the shorelines and important ports, the central government has ordered the construction of 2000km of roads.
- Green Field Expressway: The main stress will be given on the construction and development of Green Field Expressway for better management of traffic and freight.
- **Balance NHDP Works:** Under the last segment, the project will see a construction and maintenance of about 10,000kms of new roads.

Significance of the project

- Bharatmala Pariyojana will enhance the efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions.
- It will bring Improvement in efficiency of existing corridors through development of Multimodal Logistics Parks and elimination of choke point.
- It will enhance focus on improving connectivity in North East and leveraging synergies with Inland Waterways.
- It emphasizes on use of technology & scientific planning for Project Preparation and Asset Monitoring.

NITI AAYOG ANNOUNCES GOVERNING STRUCTURE OF INDIA ENERGY MODELLING FORUM

Why is it in news?

- NITI Aayog has announced the governing structure of the India Energy Modelling Forum (IEMF) following its constitution in July.

ABOUT INDIA ENERGY MODELLING FORUM

- The IEM Forum was jointly launched by NITI Aayog and United States Agency for International Development (USAID) under the US-India Strategic Energy Partnership.
- Part of the Sustainable Growth pillar of the US-India Strategic Energy Partnership (SEP), IEMF aims to engage Indian researchers, knowledge partners, think tanks and national and international government agencies and departments for modelling and long-term energy planning.

What are Energy Modelling Forums (EMF)?

- Energy modeling or energy system modeling is the process of building computer models of energy systems in order to analyze them.
- The Energy Modelling Forum (EMF) in USA was established in 1976 at Stanford University to connect leading modelling experts and decision makers from government, industry, universities, and other research organizations.
- The forum provides an unbiased platform to discuss the contemporary issues revolving around energy and environment.

Governing structure of the Forum

- The governing structure of IEMF will consist of an inter-ministerial and a steering committee.
- The inter-ministerial committee will be convened by NITI Aayog and headed by its CEO, and comprise senior officials from the ministries of petroleum and natural gas; power; new and renewable energy; coal; environment, forest and climate change; and department of science and technology. This committee will review the studies/modelling activities and provide directions and new areas of research.
- The steering committee will comprise representatives of the:
 - ◊ Government (ministries of environment, forest and climate change; new and renewable energy; statistics and programme implementation; Technology Information Forecasting and Assessment Council; Coal Controller's Organization; Petroleum Planning and Analysis Cell; Central Electricity Authority; and NITI Aayog)
 - ◊ Industry Associations (FICCI and CII)
 - ◊ Academia (IIT Bombay, Ahmedabad, and Delhi)

THE PRIZE IN ECONOMIC SCIENCE

ECONOMY

Why is it in news?

The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2020 was awarded jointly to Paul R. Milgrom and Robert B. Wilson "for improvements to auction theory and inventions of new auction formats."

About the prize

The prize for economics is officially known as the Sveriges Riksbank Prize in Economic Sciences. It was established by Sweden's central bank and has been awarded since 1969 in memory of industrialist Alfred Nobel.

What is auction theory?

- Essentially, it is about how auctions lead to the discovery of the price of a commodity. Auction theory studies-
 - ◊ how auctions are designed
 - ◊ what rules govern them
 - ◊ how bidders behave
 - ◊ what outcomes are achieved
- Over time, more and more goods and services have been brought under auction.

BANGLADESH'S ECONOMIC RISE & ITS IMPLICATIONS ON INDIA

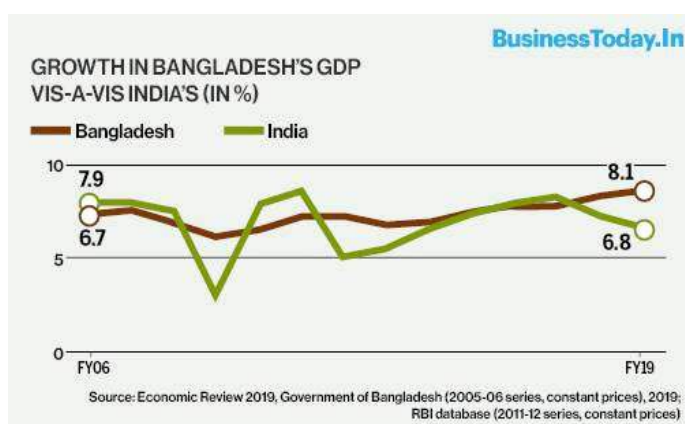
ECONOMY

Why is it in news?

The International Monetary Fund's latest World Economic Outlook has painted rosy picture of Bangladesh. In the IMF's estimation, in 2020, growth of India's gross domestic product (GDP) will witness a contraction of over 10%. But more than the sharp contraction, what has caught everyone's attention is that in 2020, the per capita income of an average Bangladeshi citizen would be more than the per capita income of an average Indian citizen.

What made Bangladesh's economy is growing?

- Women empowerment: Bangladesh has made significant strides towards educating girls and giving women a greater voice, both in the household and the public sphere.
 - ◊ These efforts have translated into improvements in children's health and education, such that Bangladeshis' average life expectancy is now 72 years, compared to 68 for Indians and 66 for Pakistanis.



- Support to grass-roots initiatives: The Bangladesh government has supported grass- roots initiatives in economic inclusion.
- **Digitisation:** Among Bangladeshi adults with bank accounts, 34.1% made digital transactions in 2017, compared to an average rate of 27.8% for South Asia. Moreover, only 10.4% of Bangladeshi bank accounts are “dormant”, compared to 48% of Indian bank accounts.
- **Successful manufacturing industry:** Another partial explanation for Bangladesh’s progress is the success of its garment manufacturing industry. That is itself driven by a number of factors.
 - > One notable point is that the main garment firms in Bangladesh are large—especially compared to those in India, owing largely to different labour laws.
- Other reasons include-
 - > inward remittances
 - > sustained growth in agriculture
 - > growth in microfinance
 - > public investment in big infrastructure projects

Thus, having been born without the law, Bangladesh offered a better environment for manufacturing firms to achieve economies of scale and create a large number of jobs. And though Bangladesh still needs much stronger regulation to protect workers from occupational hazards, the absence of a law that explicitly curtails labour-market flexibility has been a boon for job creation and manufacturing success.

Has this ever happened earlier?

- In 1991, when India was undergoing a severe crisis and grew by just above 1%, Bangladesh’s per capita GDP surged ahead of India’s.
- Since then, India again took the lead.

Is India expected to regain the lead again?

- The IMF’s projections show that India is likely to grow faster next year and in all likelihood again surge ahead.
- But, given Bangladesh’s lower population growth and faster economic growth, India and Bangladesh are likely to be neck and neck for the foreseeable future in terms of per capita income.

What are the regional implications of Bangladesh’s economic success?

- **Altering the south Asian economic prospects:** Rapid and sustained economic growth in Bangladesh has begun to alter the world’s mental maps of the subcontinent. Over the last five decades and more, South Asia, for most purposes, has meant India and Pakistan. The economic rise of Bangladesh is changing some of that. Bangladesh provides a positive narrative about the subcontinent’s prospects.
- **Changing global priorities:** This year, Bangladesh’s GDP is expected to reach about \$320 billion. It’s growing economic muscle will help Dhaka steadily accumulate geopolitical salience in the years ahead. A decade ago, Pakistan’s economy was \$60 billion larger than Bangladesh. Today, Bangladesh’s weight is bigger than Pakistan by the same margin.
- **Economic integration:** Third, Bangladesh’s economic growth can accelerate regional integration in the eastern subcontinent.
- **New geo-politics of the Indo-Pacific:** The economic success of Bangladesh is drawing attention from a range of countries in East Asia, including China, Japan, South Korea, and Singapore. The US, which traditionally focused on India and Pakistan, has woken up to the possibilities in Bangladesh. The great power wooing of Dhaka is bound to intensify in the new geopolitics of the Indo-Pacific.
- **A boost to India’s plans:** The economic rise of Bangladesh could boost India’s national plans to accelerate the development of its eastern and northeastern states. Bangladesh’s economy is now one-and-a-half times as large as that of West Bengal; better integration between the two would provide a huge boost for eastern India. So would connectivity between India’s landlocked Northeast and Bangladesh.
- **Impetus to India’s Act East Policy:** Economic rise of Bangladesh could boost India’s national plans to accelerate the development of its eastern and north-eastern states. Bangladesh’s economy is now one-and-a-half times as large as that of West Bengal; better integration between the two would provide a huge boost for eastern India. So would connectivity between India’s landlocked Northeast and Bangladesh.

POTHOLES ON THE DIGITAL PAYMENT SUPERHIGHWAY

ECONOMY

BACKGROUND

- With such versatility and ease of settling financial transactions, the growth of digital payments is going to be phenomenal, supported by banks and Fin-Tech, or financial technology, companies.
- Digital payments have found strong ground, especially in India, increasingly relegating all other modes of payments to the background.
- Digital payments ensures faster mode of debits and credit transfers from one account to the other.

- A major thrust toward large value payments was effected through the Real Time Gross Settlement System, or RTGS, launched by the RBI in March 2004.
- The large value payments on stock trading, government bond trading and other customer payments were covered under the RTGS, providing finality of settlement, thereby reducing huge risks such as the Harshad Mehta scam; besides this, it substantially reduced the time taken for settlements.
- The RBI introduced National Electronic Funds Transfer, or NEFT, and bulk debits and credits to support retail payments around the same time.
- Now, NEFT is available round the clock and RTGS will follow from December 2020, only a few countries have achieved this.

NPCI

- National Payments Corporation of India (NPCI), an umbrella organisation for operating retail payments and settlement systems in India, is an initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007, for creating a robust Payment & Settlement Infrastructure in India.
- NPCI has been incorporated as a "Not for Profit" Company under the provisions of Section 25 of Companies Act 1956 (now Section 8 of Companies Act 2013), with an intention to provide infrastructure to the entire Banking system in India for physical as well as electronic payment and settlement systems.
- Some of the payment services of NPCI are as follows- NFS, IMPS, AePS, CTS, RuPay, UPI, Bharat BillPay, NETC, BHIM, BharatQR, BHIM Aadhaar Pay

Merchant Discount Rate (MDR)

- MDR is usually 1% to 3% of the overall transaction and is the rate charged to a merchant for payment processing services on debit and credit card transactions.
- MDR is required and necessary because it funds the acquiring system and helps players deploy service QR codes and service the merchants.
- It is the cost which is paid to banks and payment service providers (PSPs), during a transaction.
- It is important for laying down UPI acceptance infrastructure and critical for servicing and spread of the UPI in the country.
- MDR is the only source of revenue for the (UPI) ecosystem.

Revised rates

NPCI had to revise the interchange fee and PSP fee to zero for debit card payments through RuPay and for UPI payments in the country, leaving UPI payment apps and players with no revenue model around the infrastructure.

Benefits

- The business establishments with annual turnover more than Rs 50 crore shall offer such low-cost digital modes of payment to their customers and no charges or Merchant Discount Rate shall be imposed on customers as well as merchants.
- Indigenously developed digital payment medium like RuPay and BHIM UPI will now have edge over the payment gateway promoted by foreign companies.

Criticism of such decision

- This has also caused several large players to move away from expanding the acceptance of UPI in the country, questioning its monetisation model.
- The waiver of the merchant discount rate (MDR) on digital payments will slow down its deployment in the country.
- Major banks and payment companies were expected to transfer a percentage of their proceeds from fees accrued from processing digital payments to grow the payments infrastructure in Tier 3 and 4 parts of the country. But now they will be discouraged to invest in this field.
- Around half a billion dollars is needed in MDR for the UPI ecosystem to sustain servicing cost and compliances around Know-Your-Customer (KYC) norm, which payment companies are expected to comply with. Now the burden will fall on the payment service providers.
- The government left out other providers of digital payment products from this MDR prescription, which is unjustified and had adverse effects.
- Taking advantage of this dualism, many issuing banks switched to mainly Visa and Master cards for monetary gains.
- It resulted in indirect market segmentation and cartel formation.

Government and RBI Role

- Zero MDR can work out very well for the growth of the fintech industry but had additional expectations from the government.
- The government has to offer around INR 2000 Cr for the upcoming fiscal year, to compensate banks for the revenue loss incurred due to MDR charges.

- The Reserve Bank of India earlier this year had set up a Payment Infrastructure Development Fund of Rs 500 crore to support the sector, reeling under the loss of revenue, in deploying devices in rural geographies.
- RBI and banks will absorb these costs from the savings that will accrue to them on account of handling less cash as people move to these digital modes of payment.

What can be done ?

- The ideal pricing for digital payments products should be based on an analysis of producer surplus, consumer surplus (i.e. gain or loss of utility due to pricing) and social welfare for which we need cost-volume-price data.
- A factor which needs to be reckoned is the float funds digital payments allow (cash withdrawal is a drain on the banking system), which is a source of sizeable income for banks.
- The RBI will do well to study and arrive at a rational structure of pricing including MDR (possibly also penalty on default by customer), given that the digital payment system is like a national superhighway, for which the government has a crucial role to play in protecting consumers against exploitation.
- Instead, like the RBI providing free use of the RTGS and other products, the strategy should be to assist the NPCI financially, either by the RBI or the government, to provide retail payment services at reduced price (in certain priority areas). This may also help support expansion of the payment system network and infrastructure in rural and semi-urban areas in partnership with Fin-Tech companies and banks.

IFSCA RELEASES FRAMEWORK FOR REGULATORY SANDBOX

ECONOMY

Recently, the International Financial Services Centres Authority (IFSCA) has introduced a framework for "Regulatory Sandbox".

About "Regulatory Sandbox"

- It is a safe harbour, where businesses can test innovative products under relaxed regulatory conditions.
- Typically, participating companies release new products in a controlled environment to a limited number of customers for a limited period of time.
- These features shall be fortified with necessary safeguards for investor protection and risk.

Its inception

- The concept of a **regulatory sandbox or innovation hub for fintech firms was mooted by a committee headed by then RBI executive director Sudarshan Sen.**
- The panel submitted its report in Nov 2017 has called for a regulatory sandbox to **help firms experiment with fintech solutions, where the consequences of failure can be contained and reasons for failure analysed.**
- If the product appears to have the potential to be successful, **it might be authorised and brought to the broader market more quickly.**

What is the new framework?

- IFSCA has introduced a framework for **"Regulatory Sandbox"**.
- Under this Sandbox framework, entities operating in the capital market, banking, insurance and financial services space shall be granted certain facilities and flexibilities.
- It will experiment with innovative FinTech solutions in a live environment with a limited set of real customers for a limited time frame.
- These features shall be fortified with necessary safeguards for investor protection and risk mitigation. The Regulatory Sandbox shall operate within the IFSC located at GIFT City (Gandhinagar).
- IFSCA shall assess the applications and extend suitable regulatory relaxations to commence limited purpose testing in the Sandbox.

Other propositions

- As additional steps towards creating an innovation-centric ecosystem, the **IFSCA has proposed the creation of an "Innovation Sandbox"**.
- It will be a testing environment where Fin-tech firms can test their solutions in isolation from the live market.
- This would be based on market related data made available by the **Market Infrastructure Institutions (MIIs)** operating in the IFSC.
- The Innovation Sandbox will be managed and facilitated by the **MIIs operating within the IFSC.**

About IFSCA

- The IFSCA was established on April 27 this year with head office in Gandhinagar.
 - > The first IFSC in the country has been set up at the Gujarat International Finance Tec-City (GIFT) in Gandhinagar.
- In December 2019, Parliament passed a Bill to set up a unified authority for regulating all financial activities at the IFSCs in the country.
- IFSCA, with an objective to develop a world-class fintech hub at the IFSC located at GIFT-City in Gandhinagar (Gujarat), endeavours to encourage the promotion of fintech initiatives across the spectrum of banking, insurance, securities and fund management.

About Gujarat International Finance Tec-City (GIFT City)?

- GIFT City is being developed as a global financial and IT Services hub, a first of its kind in India, designed to be at par or above with globally benchmarked financial centres.
- It is a central business hub with state-of-the-art infrastructure and first of its kind operational smart city in India.
- GIFT City is home to domestic and international, financial services and IT/ ITES sectors.
- GIFT's Master Plan facilitates Multi Services Special Economic Zone (SEZ) with International Financial Services Centre (IFSC) status, Domestic Finance Centre and the associated Social infrastructure.
- The purpose of setting up the GIFT City is to develop a world-class smart city that becomes a global financial hub with the development of an IFSC.

INDIA'S FIRST SEAPLANE SERVICE TO BEGIN 31st OCT

ECONOMY

Why it in news ?

India's first seaplane service in Gujarat is set to begin from 31 October, the anniversary of Sardar Vallabhbhai Patel, with the aim of providing air connectivity from the Sabarmati Riverfront in Ahmedabad to the Statue of Unity in Kevadia. The service will be operated by Spicejet Airlines.

ABOUT THE PROJECT

- The first seaplane project of the country is part of a directive of the Union Ministry of Civil Aviation.
- As per the directive, the Airports Authority of India (AAI) requested state governments of Gujarat, Assam, Andhra Pradesh and Telangana and the administration of Andaman & Nicobar to propose potential locations for setting up water aerodromes to boost the tourism sector.
- SpiceJet, which has reportedly signed a contract with a French company that is manufacturing the seaplanes, will be using a 19-seater plane which will be able to carry 14 passengers.
- For India's first project being developed in Gujarat, the Kevadia terminal is likely to be built over 0.51 acres in the Sardar Sarovar Narmada Nigam Ltd premise in the Panchmuli lake area.
- The Kevadia terminal is 200 kilometres away from Ahmedabad.
- The terminal is proposed to have "modern amenities", and a daily footfall of 200 passengers is expected by the government.



Seaplanes operational in other countries

- Seaplanes by multiple airline carriers are operational in countries like the Philippines, Canada, Australia, the United States, Finland, the United Kingdom, Sri Lanka, Fiji, New Zealand, Papua New Guinea, United Arab Emirates, Italy, Maldives and Hongkong.
- In India, Jal Hans, a commercial seaplane service based in the Andaman and Nicobar Islands was launched as a pilot project on 30 December 2010 by the then Indian Civil Aviation Minister, Praful Patel with a capacity of 10 passengers.

PAKISTAN ON FATF GREY LIST

International Relations

Why is it in the news ?

- The Financial Action Task Force (FATF) decided to keep Pakistan in the list of "Jurisdictions under increased monitoring" or grey list till the next review of its compliance to the recommendations in February 2021.
- Pakistan has made progress across all action plan items and has now largely addressed 21 of 27 action items.

Background

- Pakistan was placed on the grey list in June 2018 and was given a plan of action to complete by October 2019 or face the risk of being placed on the black list.
- The points on which Pakistan failed to deliver included its
 - o lack of action against the charitable organisations or non-profit organisations linked to the terror groups banned by the UN Security Council; and
 - o delays in the prosecution of banned individuals and entities like Lashkar-e-Taiba (LeT) chief Hafiz Saeed and LeT operations chief, Zaki Ur Rahman Lakhvi, as well as Jaish-e- Mohammad chief Masood Azhar.
- Only Saeed was sentenced for terror financing and Pakistan government claims the others are 'untraceable'. Queries have been raised on efforts made to trace them.
- Pakistan was found non-compliant in cracking down on terror financing through narcotics and smuggling of mining products including precious stones.
- The FATF process also showed concern about the 4,000 names that were on Pakistan's Schedule-IV list under the Anti-Terrorism Act up to January, but went missing in September 2020.

What is FATF

The FATF is an **inter-governmental body** that is now in its 30th year, working to —set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.

The FATF holds three Plenary meetings in the course of each of its 12-month rotating presidencies.

It currently has 39 members, including two regional organisations — the **European Commission and the Gulf Cooperation Council**.

India is a member of the FATF consultations and its Asia Pacific Group.

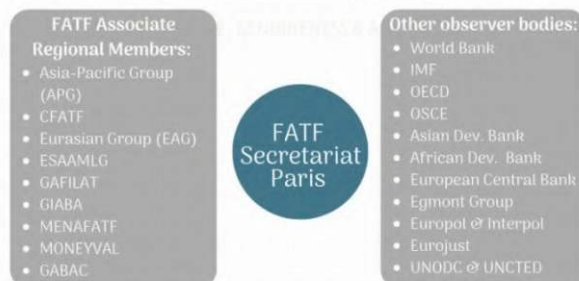
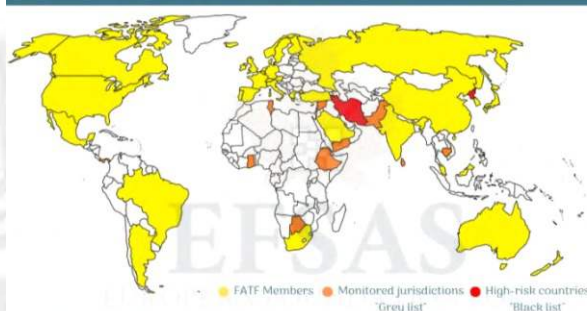
FINANCIAL ACTION TASK FORCE (FATF)

Mechanisms & Structure

WHAT DOES THE FATF DO?

- Sets international standards to combat money laundering and terrorist financing.
- Assesses and monitors compliance with the FATF standards.
- Conducts typologies studies of money laundering and terrorist financing methods, trends and techniques.
- Responds to new and emerging threats.

The FATF currently consists of 37 member States and two regional organisations (European Commission & Gulf Cooperation Council), representing most major financial centres in all parts of the globe.



Other countries stand

- Turkey support: At the FATF Plenary, Turkey proposed that the members should consider Pakistan's good work and instead of waiting for completion of the remaining six of the 27 parameters, an FATF on-site team should visit Pakistan to finalise its assessment.
- On-site teams are permitted only after jurisdictions complete their Action Plans.
- Normally such a visit is a signal for exit from the grey or black list.
- When the proposal was placed before the 38-member Plenary, no other member seconded the move. It was not supported by even China, Malaysia and Saudi Arabia.
- China and Saudi Arabia had joined India, US and European countries, among others, to send Pakistan a stern message to complete the commitments on terrorist financing and money.
- India is a voting member of the FATF and Asia Pacific Group (APG), and co-chair of the Joint Group where it is represented by the Director General of India's Financial Intelligence Unit (FIU).
- Pakistan had asked for India's removal from the group, citing bias and motivated action, but that demand has been rejected.
- India was not part of the group that moved the resolution to greylist Pakistan last year in Paris. The movers were the US, UK, France, and Germany; China did not oppose.

List of High-Risk 'Non-Cooperative Countries or Territories' ('Black list') & other monitored jurisdictions ('Grey list')

- Democratic People's Republic of Korea
- Iran

Bahamas	Botswana	Cambodia	Ethiopia
Ghana	Pakistan	Panama	Sri Lanka
Syria	Trinidad & Tobago	Tunisia	Yemen

What is "Grey List" and "Black list"?

- The FATF "greylist" refers to countries that are under 'monitored jurisdictions'.
- "Blacklist" refers to those facing a 'call to action' or severe banking strictures, sanctions and difficulties in accessing loans.

What are the implications of placing a country under grey list?



Why FATF action matters?

- Pakistan faces an estimated annual loss of \$10 billion if it stays in the greylist; if blacklisted, its already fragile economy will be dealt a powerful blow.
- Pakistan's \$6 billion loan agreement with the International Monetary Fund (IMF) could be threatened.
- The IMF has asked Pakistan to show commitment against money laundering and terror financing.

Basic Exchange and Cooperation Agreement

International Relations

Why is it in news?

- The U.S. is keen that India sign the last foundational agreement, Basic Exchange and Cooperation Agreement for Geo-Spatial cooperation (BECA), at the next India-U.S. 2+2 ministerial dialogue.
- A maritime information agreement is also under active deliberation between India and the U.S.
- Beginning 2016, India has signed three foundational agreements: the Logistics Exchange Memorandum of Agreement (LEMOA), the Communications Compatibility and Security Agreement (COMCASA) while the General Security of Military Information Agreement (GSOMIA) was signed a long time ago.
- An extension to the GSOMIA, the Industrial Security Annex (ISA), was signed at the last 2+2 dialogue.

India-U.S. Foundational Military Agreements

Agreement	Year	Description
General Security of Military Information Agreement (GSOMIA)	2002	Allows the sharing of classified information by the U.S. government and firms with the Indian government and state-owned enterprises.
Logistics Exchange Memorandum of Understanding (LEMOA)*	2016	Gives the two countries' militaries access to each other's facilities for refueling and replenishing.
Communications, Compatibility and Security Agreement (COMCASA)**	2018	Allows the sale and exchange of encrypted communications data and equipment.
Basic Exchange and Cooperation Agreement (BECA)	Pending	Enables the two countries to share advanced satellite data for long-range navigation and missile targeting.

* LEMOA is an India-specific modified version of a Logistics Support Agreement (LSA), also commonly known as an Acquisition and Cross-Servicing Agreement (ACSA).

** COMCASA is an India-specific modified version of a Communications Interoperability and Security Memorandum of Agreement (CISMOA).

Industrial Security Annex (ISA)

- The Industrial Security Annex (ISA), signed between India and the U.S. at the second 2+2 dialogue in Washington.
- ISA will enable smooth transfer of classified technology and information between private entities of the U.S. and India.
- ISA would —facilitate collaboration between our defense industries by supporting the secure transfer of key information and technology.
- The ISA is a part of the General Security of Military Information Agreement (GSOMIA), which India signed with the U.S. long back.

US-India Strategic Partnership Forum (USISPF)

International Relations

Context

- 3rd annual leadership US-India Strategic Partnership Forum (USISPF) summit held.

Summit Highlights


- Attended by top corporate leaders, government officials and leaders.
- Theme of the Summit: —US-India Navigating New Challenges.
- It highlights areas of bilateral cooperation: trade and investment; strategic energy ties; India's position in global supply chains, collaboration in fintech, healthcare, and technology.
- It is a win-win partnership mutually dependent geo-politically, trade, culturally, diplomatically and scientifically.
- Aggressive and assertive China provides further opportunity for both nations to collaborate and ensure international rule of law prevails.

FOUNDATIONAL AGREEMENTS		
Logistics Exchange Memorandum of Agreement (LEMOA) <ul style="list-style-type: none"> Provide logistic support, refueling & berthing facilities for each other's warships & aircraft on barter/equal-value exchange basis Will not involve stationing of US troops on Indian soil. Nor will India extend support if US goes to war with "a friendly country" Good for US forces re-balancing to Asia Pacific. Indian forces rarely operate far away from their shores but access to Djibouti & Diego Garcia could be useful 	Communication Interoperability & Security Memorandum Agreement (CISMOA) <ul style="list-style-type: none"> Technology enabler to help transfer high-tech avionics, encrypted communication & electronic systems to India US says CISMOA will boost 'interoperability' as well as ensure secrecy of its C4ISR (command, control, communications, computer, intelligence, surveillance and reconnaissance) systems But fears that US will be able to track & snoop on Indian warships/aircraft equipped with such systems 	Basic Exchange & Cooperation Agreement for Geo-Spatial Cooperation (BECA) <ul style="list-style-type: none"> US says BECA will help India with advanced satellite & topographical data for long-range navigation & missile-targeting But India, which has its own satellite imaging capabilities, unwilling for American digital sensors to be positioned on its soil

COMCASA

What

Legal framework to allow US to transfer high-end communication security equipment to India.



Why

- Enable Indian and US forces to operate more closely, share information on secure networks
- Improve performance of US-sourced platforms with compatible, secure communication systems
- Establishes platform to share real-time operational information with US & its allies

The Controversy

UPA refused because it feared getting dragged into a US military alliance

The coding and keying systems will be same, allowing US access to Indian tactical information

The agreement may specify US personnel to be given access to US-sourced communication equipment for periodic inspection

Integration with existing Russian weapon system may be a challenge

USISPF

- The US-India Strategic Partnership Forum (USISPF) is a non-profit organization that works for the partnership between India and the U.S.
- Objectives: It is committed to creating the most powerful strategic partnership between the U.S. and India.
- Mission: Promoting bilateral trade is an important part of their work, to create meaningful opportunities that have the power to change the lives of citizens.
- To achieve goals of driving economic growth, job creation, innovation, inclusion, and entrepreneurship.

TAIWAN ISSUE

International Relations

Why is it in news?

China "firmly oppose" any official exchanges between New Delhi and Taipei.

Chinese complaints

- India and Taiwan are considering for going forward with talks on a trade deal.
- India and Taiwan in 2018 already signed a bilateral investment agreement and their trade ties have expanded since.
- Taiwanese firms are prominent investors in India, although India and Taiwan do not maintain formal diplomatic relations.
- India is violating 'One-China principle'.

'One-China principle'

- "One China principle", it insists both Taiwan and mainland China are inalienable parts of a single "China"
- It is also the political basis for China to develop ties with other countries.

India-Taiwan relations Current Status

- The bilateral relations between India and Taiwan have improved since the 1990s despite both nations not maintaining official diplomatic relations.

Recent Development

- In 2020, two members of the Indian Parliament virtually attended the newly elected President Tsai's swearing in ceremony and praised Taiwanese democracy.
- This move have been termed as a warning message to China and signaling a strengthening of relations between the Tsai and Modi administrations.



Area of consensus

- India has sought to gradually develop better commercial, cultural and scientific co-operation with Taiwan, ruling out the possibility of establishing formal diplomatic relations
- Taiwan has also viewed India's rising geopolitical standing as a counterbalance to the People Republic of China's dominance in the region.
- India's Act East Policy (AEP) and Taiwan's New Southbound Policy (NSP) aim to increase regional influence and gain political and economic benefits from their partners in the region.
- The AEP promises to strengthen strategic, economic and diplomatic interactions in Southeast Asia and the Asia-Pacific.
- NSP aims to enhance cooperation and exchange between Taiwan and 18 countries in Southeast Asia, South Asia and Australia.
- Both sides have aimed to develop ties to counteract Chinese rivalry with both nations.

Taiwan interests in the region

- Enhancing Taiwan-India relations is consistent with the Taiwanese government's efforts to decrease economic reliance on China and with President Tsai Ing-wen's New Southbound Policy (NSP), which improves upon the efforts of several of her predecessors.
- Taiwanese businesses are increasingly interested in shifting business ties from China to India and policies that facilitate such cooperation could provide mutual benefits.
- Taiwan's goals are shared with those of successive Indian administrations, including that of current Prime Minister Narendra Modi, which seeks to increase ties with East Asian countries other than China.
- Strengthening Taiwan-India ties within the rubric of the NSP also overlaps with Taiwan's relationships with Australia, United States, and Japan. Because these three countries, along with India, have formed an Indo-Pacific entente cordiale called the "Quad" to maintain a rules-based order in the region, Taiwan-India ties can benefit from the positive synergy of collaboration in areas of trade, research, and even defense.
- Moreover, India and Taiwan may see a convergence of security interests that could be further developed through interactions between the strategic communities on both sides.

Strengthening relations

Cultural relations

- The India-Taipei Association was established in Taipei in 1995 to promote non-governmental interactions between India and Taiwan, and to facilitate business, tourism, scientific, cultural and people-to-people exchanges.
- The Taipei Economic and Cultural Centre in New Delhi is ITA's counterpart organisation in India.

Economic relations

- In 2002, the two sides signed the Bilateral Investment Promotion & Protection Agreement.
- They are discussing the possibility of entering into agreements related to Double Taxation Avoidance and ATA Carnet to facilitate participation in each other's trade fairs.
- Both governments have launched efforts to significantly expand bilateral trade and investment, especially in the fields of information technology (IT), energy, telecommunications and electronics.
- Taiwan, as a leading power in the field of science and technology and semiconductor manufacturing, is considered a reliable substitute to China.
- In 2019, India - Taiwan trade volume was US\$7 billion, growing at a rate of 20% YoY. Major Taiwanese exports to India include integrated circuits, machinery and other electronic products.
- India is also keen to attract Taiwanese investment particularly in hi-tech and labour-intensive industries.
- More than 80 Taiwanese companies and entities currently have a presence in India.

PRO-DEMOCRACY PROTESTS IN THAILAND

International Relations

Why is it in news?

Thailand's government banned gatherings of more than five people on the face of three months of escalating demonstrations that have targeted present King as well as Prime Minister.

Demand of the protestors:

The protestors have earned the support of sections of society.

They now call for the Prime Minister's resignation, free and fair elections, a new Constitution that guarantees democratic rights, and want the powers of the monarchy clipped.

Tough lèse-majesté laws

- Under the new rules, the authorities have banned the gathering of five or more people and restricted the publication of news "that could create fear".

- They can also prohibit people from entering "any area they designate".
- But the students continued their agitation despite government pressure and have started questioning even the monarchy shows their resolve.

Thai monarchy

- The Thai monarchy, which lost absolute powers in the 1932 revolution, continued to maintain its high influence in the government and god-like status in society.
- Now, the protesters are openly challenging the powers of King Vajiralongkorn, who ascended the throne in 2016 after the death of his father, Bhumibol Adulyadej.
- The new King, who is mostly in Europe, and Mr. Prayuth, have become symbols of extravagance and oppression for the protesters, who have dismissed the emergency decree, saying the movement has gone past the point of no-return, and in turn setting the stage for a showdown with the police.
- In the past, authorities had used brutal force to suppress protests.
- In 1976, the police and right-wing thugs massacred protesters in Thammasat University, Bangkok.



India and Thailand relations Background

- Diplomatic relations between India and Thailand were established in 1947, soon after India gained independence.

Geographic location

- India shares a long sea border with Thailand as India's Andaman and Nicobar Islands share a maritime border with Thailand along the Andaman Sea.

Areas of consensus

- Thailand and India are cooperating in various multilateral fora like India's dialogue partnership with ASEAN, and the East Asia Summit, the sub-regional grouping BIMSTEC involving Bangladesh, India, Sri Lanka, Thailand, Myanmar, Nepal and Bhutan, and trilateral transport linkages with Thailand, Myanmar and India.
- India is a member of the Asia Cooperation Dialogue (ACD) initiated by Thailand in 2002 and of the Mekong-Ganga Cooperation (MGC), a group of six countries.

Cultural relations

- Thailand owes its close trade and diplomatic ties with India to historic, cultural and social reasons.
- India and Thailand have been culturally linked for centuries and India has had a deep influence on Thai culture.
- There are a substantial number of words in Thai that are borrowed from Sanskrit, India's classical language.
- Pali, which was the language of Magadha and is medium of Theravada, is another important root of Thai vocabulary.
- Buddhism, the major religion of Thailand, itself originates from India.
- The Hindu story of Ramayana is also well known throughout Thailand in the name Ramakien.

Security and defense relations

- In a major boost to bilateral security cooperation, India and Thailand in 2013 signed an Extradition Treaty.
 - The treaty provides the legal framework for seeking extradition of fugitive offenders, including those involved in terrorism, transnational crimes and economic offences among others.
- Memorandum on Cooperation in anti money laundering was signed to combat terrorism, organised crime, drug trafficking and counterfeiting.
- India has provided assistance to Thais to combat Islamic separatists in Southern Thailand in return for Thai authorities taking action against Indian separatists using Thailand as a supply route for arms originating in Cambodia.

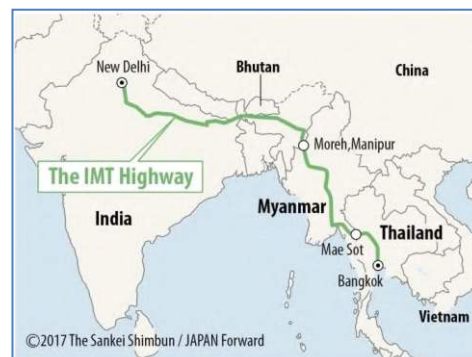
Economic relations

- Trade relations between India and Thailand, the second-largest economy in the Southeast Asian economic group, ASEAN, has grown by leaps and bounds in the last two years.
- Both Thailand and India have been touted as beneficiaries of the protracted trade war between the US and China.
- Major exports from Thailand to India include electronics, machinery, automobile and automobile parts and accessories, jewellery, and rubber products.
- Coming the other way from India are crude oil, chemicals, machinery, jewellery including gold and silver, iron and steel products and food products.

- Latest statistics published by the Indian Embassy in Bangkok, Thailand, shows that trade has been grown some 60 per cent since 2016.
 - In ASEAN, Thailand ranks as India's fifth-largest trading partner after Singapore, Vietnam, Indonesia and Malaysia.
 - Foreign direct investments (FDI) from Thailand into India has also grown significantly from just USD 11.55 million in 2012 to USD 92.22 million in 2018 this is expected to grow strongly.
- These investments have been mostly in infrastructure, real estate, food processing, chemicals and hospitality.

Infrastructure to boost cooperation

- An MOU between the Indian port of Krishnapatnam located in Andhra Pradesh and Ranong Port in Thailand was signed.
- This new maritime route will be promoted in the Andaman Sea, which will reduce travel time between India and Thailand from 10-15 days to seven.
- The India-Myanmar-Thailand Trilateral Highway is a highway under construction under India's Look East policy that will connect Moreh, India with Mae Sot, Thailand via Myanmar.
- The road is expected to boost trade and commerce in the ASEAN-India Free Trade Area, as well as with the rest of Southeast Asia.
- India has also proposed extending the highway to Cambodia, Laos and Vietnam.



Securing mutual interest is the best way ahead

- Given Thailand's geostrategic location, economic interests and apprehensions about China it is time that New Delhi seek to cash in on the goodwill it has in Bangkok.
- It is important to promote Indian soft power by increasing emphasis on promoting India studies in Thai universities.
- Greater role needs to be given to Indian state governments which have historical connections as well as economic interests in Thailand.
- Indian should also work at strengthening the India-Thailand-Myanmar trilateral as this will yield benefits for the intersecting bilateral relationships as well.

Relation between AUSTRALIA and INDIA

International Relations

Why is it in news?

- Phase 1 of the Malabar Naval Exercise has kicked begun with the participation of Australian navy for the first time since 2007.

Malabar Exercise

- Trilateral naval exercise (United States, Japan and India as permanent partners).
- It began as a bilateral naval exercise between India and the USA in 1992, later trilateral after inclusion of Japan in 2015.
- India is prepared to expand the Malabar exercise to also include Australia.
- Past non-permanent participants are Australia and Singapore.
- Objective- Helps in enhancing safety and security in the maritime domain.

Other notable Defence Exercises

- B/W India & Japan- JIMEX, SHINYUU Maitri, and Dharma Guardian.
- India & US- Yudha Abhyas.
- India & Australia- Pitch Black (Multilateral aerial combat b/w air forces)
- AUSINDEX is a bilateral naval exercise
- AUSTRALIND- Bilateral army exercise

Significance of Australia's inclusion

- Earlier, India had concerns that it would give the appearance of a "quadrilateral military alliance" aimed at China.
- Now both look forward to the cooperation in the 'Indo-Pacific' and the strengthening of defence ties.
- This has led to a convergence of mutual interest in many areas for a better understanding of regional and global issues.
- Both are expected to conclude the long-pending Mutual Logistics Support Agreement (MLSA) as part of measures to elevate the strategic partnership.



India-Australia relations Historical background

- Before independence, Australia and India were both part of the British Empire.
- They also share political, economic, security, lingual and sporting ties.
- As a result of British colonisation, cricket has emerged as a strong cultural connection between the two nations, as well as the English language.
- Australia has traditionally supported India's position on Arunachal Pradesh, which is subject to diplomatic disputes between India and the People's Republic of China.
- Principle and pragmatism have been the two pillars on which the two countries have built their partnership.

Areas of cooperation

- Besides both being members of the Commonwealth of Nations, both nations are founding members of the United Nations, and members of regional organisations including the Indian Ocean Rim Association for Regional Cooperation and ASEAN Regional forum.
- India and Australia have a lot in common, as both are Westminster-style secular, multicultural democracies.
- The Australian foreign policy blueprint sees healthy relations with India must for stability
- Both the countries have common interests in upholding international law, especially in relation to freedom of navigation and maritime security.
- Australia's is part of Quadrilateral Security Dialogue (Quad) which is a outcome-oriented cooperation for building capacity and improving interoperability in the Indo-Pacific region.
- India's and Australia's share the same vision "free and open Indo-Pacific" with a rules-based order and open market economies, along with the freedom of navigation in high seas and over flight.
- Both countries share the same concern about China's expansionist behavior, whether in the South China Sea or along China's land border, especially the ongoing India-China border standoff.

Security cooperation

- In June 2020, India and Australia had elevated their relationship to a 'Comprehensive Strategic Partnership'.
- They hold the "Two-Plus-Two" dialogue meets to discuss vital security issues.
- India and Australia signed Mutual Logistics Support Agreement to allows each country to use the other's bases for the refueling and maintenance of aircraft and naval vessels
- Military cooperation between Australia and India includes the regular joint exercise AUSTRA HIND (a Special Forces Army Exercise), AUSINDEX (a bilateral maritime exercise), KAKADU (a multilateral maritime exercise), and Exercise Pitch Black (a multilateral air exercise).
- Recently, Australia joined the Malabar exercise, which also includes the United States and Japan.

Nuclear cooperation

- In 2012, Australian government decided to sell uranium to India despite India not being a signatory to the nuclear Non Proliferation Treaty.

The Treaty on the Non-Proliferation of Nuclear Weapons or Non-Proliferation Treaty

- It is an international treaty whose objective is **to prevent the spread of nuclear weapons and weapons technology**, to promote cooperation in the peaceful uses of nuclear energy, and to further the goal of achieving nuclear disarmament and general and complete disarmament..
- **India, Israel, Pakistan and South Sudan**, has not joined it.
- Canberra's overturning of a ban on uranium sales to India was seen as a removal of a diplomatic thorn between the two nations, potentially opening up a new and growing market for Australian suppliers.

People-to-people ties

- Growing people-to-people ties, including an increasing Indian diaspora in Australia as well as Indian students choosing Australia for higher education, tourism, sports etc,
- There are already more than 100,000 Indian students who are studying in Australia, more than two-thirds of whom are pursuing higher education.

Economic relations

- India was Australia's first major trading partner with imports through the East India Company, exports from Australia to India dates back to the late 18th century, when coal from Sydney and horses from New South Wales were exported to India.
 - Trade is highly skewed towards Australia.
- India is Australia's fifth largest trade partner, with trade in goods and services worth A\$29 billion, representing 3.6 percent of the total Australian trade in 2017-18.

- Australia mainly exports Coal, services (mainly education), vegetables for consumer consumption, gold, copper ores and concentrates, while India's chief exports are refined petroleum, services (professional services such as outsourcing), medicaments, pearls, gems and jewelry.
- India and Australia have established a \$100 million Strategic Research Fund.

Way Forward

- Australia and India should negotiate to revive the Comprehensive Economic Cooperation Agreement (CECA) to improve trade and market access.
- There is need to address the gaps in the educational cooperation between India and Australia and associated issues of attack on Indian students.
- There is also a need to promote and popularize the New Colombo Plan of Australia, which encourages Australian undergraduate students to study in Indo-Pacific countries in general and India in particular.

MALABAR EXERCISE

International Relations

Why is it in news?

Recently, the Ministry of Defence announced that **Australia would join the Malabar 2020 naval exercise**, consisting of India, Japan and the U.S., to be held in the coming month, more than three years after Australia first requested to join.

More on the News:

- India stated that as it seeks to **increase cooperation with other countries in the maritime security domain** and in the light of increased defence cooperation with Australia, Malabar 2020 will see the participation of the Australian Navy.
- India also stated that the **participants of Exercise Malabar 2020 were engaging to enhance safety and security in the maritime domain** and they collectively support free, open and inclusive Indo-Pacific and remain committed to a rules-based international order.
- The exercise is scheduled to be held end November and the planning conference to finalise the modalities of the exercise is scheduled to be held virtually at the end of October.

Australia and Exercise Malabar :

- Australia joined the exercise once in 2007 and this inclusion drew a sharp response from Beijing. In 2017, Australia requested observer status in the exercise.
- Since April 2017, Australia has been making repeated requests to join the exercises. But, India did not include Australia in the exercises in 2018 and 2019.
- Earlier, India had concerns that it would give the appearance of a "**quadrilateral military alliance**" aimed at China.
- Japan and the U.S. have also been advocating for Australia's inclusion for quite some time now and have been pushing India to consider it.

About Exercise Malabar:

- It is a **trilateral naval exercise** involving the **United States, Japan and India** as permanent partners.
- **It began as a bilateral naval exercise between India and the USA in 1992** and was expanded into a trilateral format with the inclusion of Japan in 2015.
- Past non-permanent participants are Australia and Singapore.
- It involves complex maritime operations in the surface, sub-surface and air domains. It also focuses on maritime interdiction operations (MIO), anti-submarine warfare (ASW), anti-air and anti-surface firings. Apart from these it also includes visit board search and seizure (VBSS) and tactical scenario-based exercise at sea.

What is QUAD Grouping?

- It is an informal strategic forum between the United States, Japan, Australia and India. The idea of grouping was first conceptualised by the Japanese Prime Minister Shinzo Abe in 2007.
- It has a shared objective of ensuring a free, open and prosperous Indo-Pacific region.

Concerns of China

- China sees this maritime Quadrilateral as an Asian-NATO that seeks only to contain China's rise.
- China has noted that at a time of strained bilateral ties, India's intention to involve Australia in the Malabar drill could only be construed as a move directed against Beijing.
- In the recent past, China has stepped up its naval presence in the South China Sea.

GREATER MALE CONNECTIVITY PROJECT (GMCP)

International Relations

Why is it in news?

Recently, the Exim Bank of India and the Maldives's Ministry of Finance signed an **agreement for \$400 million** in Male for connectivity projects. This agreement comes after India's announcement of a \$500 million package to the Maldives.

Details of the agreement

The line of credit (LoC) will fund the **Greater Male Connectivity Project (GMCP)** and India has also pledged a grant of \$ 100 million for the initiative.

- The **Line of Credit is not a grant but a 'soft loan'** provided on concessional interest rates to developing countries, which has to be repaid by the borrowing government.
- This recent grant and LoC come in addition to the previous LoC of \$800 million, among India's largest loans extended in the region.

About the project:

- It will be a 6.7-kilometre bridge project **connecting Male with Gulhifalhu Port and Thilafushi industrial zone**, which will help in revitalizing and transforming the Maldivian economy.
- It will be funded through a **400 million dollar Line of Credit** and 100 million dollar grant.
- Once completed, this landmark project will streamline connectivity between the four islands, thereby boosting economic activity, generating employment and promoting holistic urban development in the Male region.
- It will ease much of the pressure of the main capital island of Male for commercial and residential purposes



INDIA-MYANMAR RELATIONSHIP

International Relations

Context

Indian Foreign Secretary and Army chief paid two day visit to Myanmar.

Key Takeaways

- A package of 3,000 vials of the antiviral Remdesivir, symbolic of India's commitment to assist Myanmar in its fight against the (Covid-19) pandemic.
- Support for ensuring safe, sustainable and speedy return of Rohingya refugees
- Operationalisation of the crucial Sittwe port in Myanmar's Rakhine state by March 2021
- A liaison office in Nay Pyi Taw.
- Congratulated Myanmar for successfully holding the fourth meeting of the 21st Century Panglong Peace Conference to strengthen constitutionalism and federalism and democratic transition.
- Bust of BalGangadharTilak in Mandalay Jail, and
- A mutual commitment to not allow activities against each other.

India-Myanmar's Relations

"Myanmar is India's gateway to Southeast Asia, India is Myanmar's gateway to South Asia."

Importance of Myanmar

- Myanmar is only country that sits at the intersection of India's "Neighborhood First" policy and "Act East" policy.
- Myanmar is an essential element in India's practice of regional diplomacy in the Indo-Pacific, and serves as a land bridge to connect South Asia and Southeast Asia.
- Myanmar is an important member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), a multilateral subregional organization that is committed to fostering bilateral or regional cooperation among Bay of Bengal countries.
- To elevate its "Made in India" arms industry, India has identified Myanmar as key to increasing its military exports.
- Myanmar is geopolitically significant to India as it stands at the center of the India-Southeast Asia geography.
- Myanmar is the only Southeast Asian country that shares a land border with northeastern India, stretching some 1,624 kilometers. The neighbors also share a 725-km maritime boundary in the Bay of Bengal.

Measures taken to improve ties

- It was one of only two Southeast Asian countries invited to attend the swearing-in of Indian Prime Minister Narendra Modi after he won re-election in May 2019.
- Facilitating connectivity is central to improving India-Myanmar economic relations. India regards Myanmar as a gateway to link up to the rest of Southeast Asia, and invested in ASEAN-wide infrastructural projects that are able to boost trade in the ASEAN-India Free Trade Area.
- Infrastructure projects:
 - The India-Myanmar-Thailand Trilateral Highway and Kaladan Multi-Modal Transit Transport (KMMTT), to connect the eastern Indian seaport of Kolkata with the Sittwe deep-water port in Myanmar's Rakhine state by sea.
- Sittwe port:
- As part of its policy for the Indian Ocean called Security and Growth for All in the Region (SAGAR), central to which is "port-led development," India developed the Sittwe port in Myanmar's Rakhine state.
- This port, which sits on the Bay of Bengal, serves as a critical node of the KMMTT initiative to connect southwestern Myanmar to northeastern India by creating a multi-modal trinary of sea, river and road transport corridor to boost interconnectivity.
- India's long-term strategic goal is to create a Special Economic Zone surrounding the Sittwe port.
- The Sittwe port is meant to be India's answer to the Chinese-fronted Kyaukpyu port, which is intended to cement China's geostrategic footprint in Rakhine.
- India has been providing humanitarian relief even while deporting Rohingya refugees from India for security reasons, provoking the UN's ire.



Challenges in India-Myanmar relations

- China Factor: Beijing's bidding into Myanmar regional affairs. Myanmar is inevitably a "kingmaker" in Sino-Indian relations.
- Trade deficit: With a total bilateral trade of \$2 billion, India's economic engagement with Myanmar lags behind China. Myanmar is vital to fulfilling India's ambition to become a \$5 trillion economy by 2024. India's withdrawal from Regional Comprehensive Economic Partnership can further increase this trade gap.

Strengths of India-Myanmar relations

- It is the only Southeast Asian country that has a separate bureaucratic division (shared with Bangladesh) in India's External Affairs Ministry, testifying to the continued importance of Myanmar to India's current foreign policy.
- Operation Sunshine 1 and 2: The Indian and Myanmar armies have carried out two joint military operations, Operation Sunshine 1 and 2, to fight militants along the borders of Myanmar's Rakhine state, which borders the northeastern Indian states of Arunachal Pradesh, Nagaland, Manipur, and Mizoram.
- IMBAX-2017 and IMBEX 2018-19: Seeing that Myanmar is critical to its national security interests, India provides military training and conducts joint military exercises with the Myanmar Army like the India-Myanmar Bilateral Military Exercise (IMBAX-2017 and IMBEX 2018-19), by which India had trained the Myanmar Army to be able to participate in UN Peacekeeping Operations.
- Defense Cooperation Agreement: To deepen their defense relations, India and Myanmar signed a landmark defense cooperation agreement in July 2019.
- IMNEX-18: Realizing the growing importance of the Bay of Bengal, the navies of both India and Myanmar conducted a historic bilateral naval exercise, IMNEX-18, in 2018. India also invited the Myanmar Army to participate in the India-led multilateral Milan naval exercise that occurs biennially in the Andaman and Nicobar Islands.
- Military purchases: Myanmar bought India's first locally-produced anti-submarine torpedo, called TAL Shyena, a diesel-electric Kilo-class submarine, INS Sindhuvir.
- Cultural diplomacy: "Buddhist Circuit" initiative, which seeks to double foreign tourist arrivals and revenue by connecting ancient Buddhist heritage sites across different states in India, should resonate with Buddhist-majority Myanmar.

Way forward

- Security Cooperation: For economic relations to improve, India and Myanmar must boost their security cooperation at the border. The more secure the border is, the greater the economic activity will be.
- For example: Part of the reason why the KMMTT has faced delays is that the route of the project traverses a warzone in Rakhine state, where a battle rages on between the Myanmar Army and the Arakan Army rebels on the one hand, and on the other, the Arakan Rohingya Salvation Army. Insurgents from India's Nagaland have also disrupted the completion of the KMMTT project.

- Handling Rohingya issue with care: Myanmar's geostrategic importance to India has meant that Delhi did not take a hardline approach on Naypyidaw vis-à-vis the Rohingya issue, even keeping its distance when Myanmar was hauled into the International Court of Justice over accusations of Rohingya genocide.
- India, which has a Hindu majority, will need to perform a balancing act between Muslim-majority Bangladesh and Buddhist-majority Myanmar as far as the Rohingya issue is concerned. The quicker the Rohingya issue is resolved, the easier it will be for India to manage its relations with Myanmar and Bangladesh, focusing instead more on bilateral and sub regional economic cooperation.

India's Buddhist diplomacy would bolster its tourist industry and could build up India's diplomatic reservoir of goodwill and trust with Buddhist-majority countries such as Myanmar.

CENTRAL ASIAN DIALOGUE

International Relations

Why is it in news?

Recently held, attended by India & 5 Central Asian Countries.

Key Highlights:

- India extended a \$1-billion line of credit to Central Asian countries for projects in connectivity, energy, IT and health care.
- India also offered grant assistance for high impact community development projects to boost socio-economic development in Central Asia.
- Agreement to promote joint initiatives to create regional and international transport corridors.
- Agreed for settling Afghan conflict on "Afghan-led, Afghan-owned and Afghan-controlled peace process" principle.



Connect Central Asia Policy

- It is a broad-based Foreign Policy approach, including political, security, economic, and cultural connections with the region.
- **The policy outlined the following important points:**
- India will continue to build strong political relations through exchange of high level visits.
- India will strengthen its strategic and security cooperation.
- India will step up multilateral engagement with Central Asian partners using the synergy of joint efforts through existing for a like the Shanghai Cooperation Organisation, Eurasian Economic Community (EEC) and the Custom Union.
- India looks to Central Asia as a long term partner in energy and natural resources.
- The medical field is another area that offers huge potential for cooperation. India is ready to extend cooperation by setting up civil hospitals/clinics in Central Asia.
- India would like to assist in the setting up of a **Central Asian University in Bishkek**.
- India is working on setting up a **Central Asian e-network** with its hub in India, to deliver, tele-education and tele-medicine connectivity.
- As for land connectivity, India has reactivated the International North-South Transport Corridor (INSTC).
- India will jointly work to improve air connectivity

Importance of Central Asia for India

- **Strategic Importance:** Central Asia holds great geopolitical importance. Central Asia is the gateway to Europe and Russia. From Chabahar, India will have access to Russia and Europe through Central Asia. With this, the Central Asian nations surround Afghanistan from all sides. After establishing its military base in Farkhor of Tajikistan, India became the fourth country (after America, Russia, and Germany) to establish a military base in Central Asia.
- **Energy security:** Central Asian nations have a rich source of energy. TAPI gas pipeline project is being brought from Turkmenistan to India (Afghanistan and Pakistan also in the project) funded by Asian Development Bank. This project will decentralize energy supply and cooperate in achieving energy security. India and Kazakhstan have an agreement for the supply of uranium.
- **Economic benefits:** Mineral resources are also found in these countries. At the same time, now that India is establishing itself as a manufacturing hub, these nations will prove to be useful as a big market for India. Along with this, India will also get the benefit of resources of the Caspian Sea from here, such as the Satpayev oil block agreement.
- **Cultural importance:** Indian culture has great importance in these countries. The statue of Gurudev Rabindra Nath Tagore had established in Tajikistan and this country also supported India to give international recognition to Yoga Divas.
- **SCO:** It is an organization with India, Russia, China, and Pakistan, along with Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Central Asian countries can play an effective role in the issues of India and China.

Challenges in India and Central Asia Relations

- **Terrorism:** Some elements of these countries were supported to terrorist organizations. But at this time these countries are supporting India against terror.
- **Projects delayed by India:** Many problems arise due to the delay in Indian projects on time after its signing as recently seen in Iran's rail project.
- **Access to China:** China occupies an important place in the foreign policy of these Central Asian countries. Along with this, these countries are more dependent on China in terms of economic cooperation.
- **Russia's side:** Russia has established influence in these countries due to being part of the Soviet Union. In recent times, India's policies seem to be leaning towards the US. In such a situation, the engagement between Russia and China will affect India's relations with these countries.

SUDAN AND ISRAEL TO NORMALISE RELATIONS

International Relations

Why is it in news?

Sudan has become the third Arab country (Two are Bahrain and United Arab Emirates (UAE)) in the past two months to normalize ties with Israel, continuing the trend of Arab states' willingness to advance ties with the Jewish state, even without a peace agreement with the Palestinians.

Steps towards Normalization

- Sudan become the fifth Arab country to normalize relations with Israel. It is known that Egypt, Jordan, UAE, and Bahrain have previously reached a peace agreement with Israel.
- The expansion of the Abraham Accords to include Sudan relations with Israel is a significant step that will further enhance Israel's security and create opportunities for the Arab nation and Israel to deepen their economic ties and improve the lives of their people.
- Less than three months President Donald J. Trump has brokered a peace agreement between Arab-Muslim nation and Israel. Sudan have confirmed will normalize relations with Israel, ending decades of fierce hostility, through mediation by the United States (US).
- The normalization plan was announced after talks between the Prime Minister (PM) of Sudan, Abdalla Hamdok, with US President Donald Trump and Prime Minister of Israel, Benjamin Netanyahu on October 23, 2020.



Rocky Relations

- Since 1948, when the Arab nation start the war that birthed Israel, Israel's relationship with Sudan has been difficult. Sudan had been a foe of Israel since the latter's founding in 1948.
- Famously, it was the site of a declaration against normalisation with Israel in 1967, when the Arab League, meeting in the capital, Khartoum, swore "no peace with Israel, no recognition of Israel, no negotiations with it".
- Moreover, when Omar al-Bashir's regime was hosting Osama bin Laden in Khartoum, The US put Sudan as one of the lists of state sponsors in 1993.
- In 2009, Sudan's ties with Iran were seen by Israel as a means for Hamas, in the Gaza Strip, to receive arms from Iranian militias.
- In 2012, Israel was blamed by Sudan for bombing a weapons factory in Yarmouk.

Changing Times

- The political dynamics changed with the overthrow last year of Sudan's long-time ruler Omar al-Bashir and his replacement by a transitional civilian-military council.
- Sudan's generals, who wield the real power, have supported establishing relations with Israel as a way to help get US sanctions on Sudan lifted and open the door to badly needed economic aid.
- Like the UAE and Bahrain, Sudan has not been in a war with Israel and has over the years enjoyed a degree of secret ties with Israel.
- In 1984, the Sudanese authorities assisted in an airlift of Ethiopian Jews to Israel. Sudan's leader Abdel Fattah al-Burhan in February, 2020, met openly with Israeli Prime Minister Benjamin Netanyahu in Uganda.
- There are also thousands of refugees from Sudan's military conflicts living in Israel.
- U.S. president has announced that he would take Sudan off the terrorism list once it had deposited \$335 million it had pledged to pay in compensation. Khartoum has since placed the funds in a special escrow account for victims of al-Qaeda attacks on US embassies in Kenya and Tanzania in 1998.
- Announcing the normalisation, Mr Trump said "at least five more" Arab states wanted a peace deal with Israel.

CHAIR OF ILO GOVERNING BODY

International Relations

Why is it in news?

Recently, India has assumed the Chairmanship of the Governing Body of the International Labour Organization for the period October 2020- June 2021. India assumed this position after 35 years. **Shri Apurva Chandra**, Secretary (Labour and Employment) has been elected as the **Chairperson of the Governing Body of the ILO**.

Key Points

The Governing Body (GB) is the apex executive body of the ILO which decides policies, programmes, agenda, budget and elects the Director-General. At present, ILO has 187 members.

GB meets thrice a year, in March, June and November. It takes decisions on ILO policy, decides the agenda of the International Labour Conference, adopts the draft programme and budget of the organisation for submission to the conference, and elects the Director-General.

The broad policies of the ILO are set by the International Labour Conference, **which meets once a year in June, in Geneva, Switzerland.**

Importance of this chair for India

- Help appraise participants of the transformational initiatives taken by the Government in **removing the rigidities of the labour market.**
- Highlight efforts towards universalization of **social security to all workers** whether in the organised or unorganised sector.
- The four codes on **wages, industrial relations, social security and occupational safety, health and working conditions are expected to improve ease of doing business and safeguard the interest of workers.**

About ILO

- International Labour Organization (ILO) is a specialized agency of the United Nations (UN).
- Dedicated to improving labour conditions and living standards throughout the world.
- Formed in 1919 by the Treaty of Versailles as an affiliated agency of the League of Nations. In 1946 became the first affiliated specialized agency of the United Nations.
- At present, ILO has 187 members.
- Also, trade unions, workers etc. send delegations to ILO.
- National representatives meet annually at the International Labour Conference.
- ILO's is headquartered in Geneva, Switzerland.
- **Aim:** Bring together governments, employers and workers to set labour standards, develop policies and devise programmes.

The functions of the ILO are:

- The development and promotion of standards for national legislation **to protect and improve working conditions and standards of living.**
- **Provide technical assistance in social policy and administration and workforce training.**
- Fosters cooperative organizations and rural industries.
- Compiles labour statistics and conducts research on the **social problems of international competition, unemployment and underemployment, labour and industrial relations, and technological change (including automation).**
- Protect the rights of international migrants and organized labour.

Three main bodies of ILO

- International Labour Conference sets the International labour standards and the broad policies of the ILO. It meets annually in Geneva. Often called an international parliament of labour.
- The Governing body is the executive council of the ILO. It meets three times a year in Geneva. **It takes decisions on ILO policy, establishes the programme and the budget, which it then submits to the Conference for adoption.**
- International Labour Office is the permanent secretariat of the International Labour Organization.

India has ratified six out of the eight-core/fundamental ILO conventions. These conventions are:

- **Forced Labour Convention (No. 29)**
- **Abolition of Forced Labour Convention (No.105)**
- **Equal Remuneration Convention (No.100)**
- **Discrimination (Employment Occupation) Convention (No.111)**
- **Minimum Age Convention (No.138)**

- **Worst forms of Child Labour Convention (No.182)**

India has **not ratified the two core/fundamental conventions, namely Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) and Right to Organise and Collective Bargaining Convention, 1949 (No. 98).**

REFERENDUM IN NEW CALEDONIA

International Relations

Why is it in news?

Recently, People in the French overseas territory of New Caledonia have narrowly rejected independence from France in a referendum.

Background

- The referendum was part of a series of votes agreed two decades ago, **following bouts of violence in the 1980s over the issue of independence between the islands' indigenous Kanak people and descendants of European settlers.**
- Several agreements were signed including the 1998 Noumea Accord, which set out a roadmap for greater autonomy for the territory.
- Under this agreement, New Caledonia **is allowed up to three referendums on independence. A third referendum can take place by 2022, if requested by a third of the local assembly.**
- **New Caledonia has large deposits of nickel, a vital component in manufacturing electronics, and is seen by France as a strategic political and economic asset in the region.**
- It enjoys a **large degree of autonomy but depends heavily on France for matters like defence and education and still receives large subsidies from Paris.**
- It is one of the **UN's 17 "non-self governing territories"** -where the process of decolonisation has not been completed.
- **France first claimed the islands, home to some 270,000 people, in 1853.**



Ethnicity

- **Kanaks represent around 39% of the population, while Europeans, most of whom were born in the territory, make up about 27%.**
- Most of the remainder come from other Pacific islands, are of **mixed heritage, or prefer simply to identify as "Caledonian".**
- According to Australian Trade and Investment Commission, besides having **one of the region's highest average incomes per capita, New Caledonia is rich in resources** and accounts for around **10% of the world's nickel reserve.**

Key Points

- New Caledonia, a **South-Pacific archipelago**, has its own government but matters of defence, justice and foreign affairs are still managed by Paris.
- The recent independence referendum came in line with the several similar votes cast by the islanders in the past.
- A decade after the **1988 peace deal between the factions**, the **Noumea Agreement** had granted New Caledonia the political authority, broad autonomy and even planned the organisation of up to three successive referendums.
- As per reports, the **latest independence referendum is New Caledonia's second with the first one in 2018.**
- Similar to the results of the **most recent referendum, 56.4 percent of the voters during the 2018 referendum did not wish for independence.**

FOOD AND AGRICULTURE ORGANIZATION (FAO)

International Relations

Why is it in news?

16 October 2020, World Food Day marks the 75th anniversary of the Food and Agriculture Organization (FAO) of the United Nations. FAO's mission to end hunger and nourish the world has been made more relevant because of another global scourge - the COVID-19 pandemic.

Food and Agriculture Organization (FAO)

- It is a **specialized agency of the United Nations** that leads international efforts to defeat hunger.
- **Goal:** To achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives.

- **Budget:** The FAO's Regular Programme budget is funded by its members, through contributions set at the FAO Conference.
- It helps governments and development agencies coordinate their activities to improve and develop agriculture, forestry, fisheries, and land and water resources.
- It conducts research, provides technical assistance to projects, operates educational and training programs, and collects data on agricultural output, production, and development.
- FAO and the World Health Organization created the **Codex Alimentarius Commission** in 1961 to develop food standards, guidelines and texts.
- FAO created the **International Plant Protection Convention** in 1952 to prevent the international spread of pests and plant diseases in both cultivated and wild plants.

United Nations Alliance of Civilizations (UNAOC)

International Relations

Why is it in news?

The United Nations Alliance of Civilizations (UNAOC) has condemned the beheading of a teacher in the north-western suburbs of Paris in France. The French teacher was killed after he taught freedom of speech and showed caricatures depicting the Islamic prophet Muhammad to his students.

UNAOC

- The United Nations Alliance of Civilizations (UNAOC) was established in 2005, as the political initiative of Mr. Kofi Annan, former UN Secretary-General and co-sponsored by the Governments of Spain and Turkey.
- In 2019, H.E. Mr. Miguel Ángel Moratinos assumed the position of High Representative for the United Nations Alliance of Civilizations.
- The United Nations Alliance of Civilizations High Representative and Secretariat are based and operating from New York.
- It is an initiative that seeks to galvanize international action against extremism through the forging of international, intercultural and interreligious dialogue and cooperation.

65th Anniversary of Bandung Conference: NAM

International Relations

Why is it in news?

2020 marked the 65th anniversary of the landmark Bandung Conference that resulted in the adoption of the founding principles of the Non-Aligned Movement.

Non-Aligned Movement (NAM)

- It is a forum of 120 developing world states that are not formally aligned with or against any major power bloc.
- Drawing on the principles agreed at the Bandung Conference in 1955, the Non-Aligned Movement was established in 1961 in Yugoslavia through an initiative of the Indian Prime Minister Jawaharlal Nehru and other leaders.
- Purpose: To ensure "the national independence, sovereignty, territorial integrity and security of non-aligned countries" in their "struggle against imperialism, colonialism, neo-colonialism, racism, and all forms of foreign aggression, occupation, domination, interference or hegemony as well as against great power and bloc politics."
- The countries of the Non-Aligned Movement represent nearly two-thirds of the United Nations' members and contain 55% of the world population.
- Membership is particularly concentrated in countries considered to be developing or part of the Third World, though the Non-Aligned Movement also has a number of developed nations.



Bandung Conference

The first large-scale **Asian-African Conference**—also known as the Bandung Conference was a meeting of Asian and African states, most of which were newly independent.

It took place on 18–24 April 1955 in Bandung, Indonesia.

Aim: To promote Afro-Asian economic and cultural cooperation and to oppose colonialism or neocolonialism by any nation.

The conference was an important step towards the eventual creation of the Non-Aligned Movement.

The ten principles of Bandung conference

- Respect of fundamental human rights and of the objectives and principles of the Charter of the United Nations.
- Respect of the sovereignty and territorial integrity of all nations.

- Recognition of the equality among all races and of the equality among all nations, both large and small.
- Non-intervention or non-interference into the internal affairs of another -country.
- Respect of the right of every nation to defend itself, either individually or collectively, in conformity with the Charter of the United Nations.
 - Non-use of collective defense pacts to benefit the specific interests of any of the great powers.
 - Non-use of pressures by any country against other countries.
- Refraining from carrying out or threatening to carry out aggression, or from using force against the territorial integrity or political independence of any country.
- Peaceful solution of all international conflicts in conformity with the Charter of the United Nations.
- Promotion of mutual interests and of cooperation.
- Respect of justice and of international obligations.

PAKISTAN RE-ELECTED TO THE UNHRC

International Relations

Why is it news?

Pakistan and Nepal have been re-elected to the UN Human Rights Council, while China won a seat by the smallest margin showing a drastic drop in standing.

About United Nations Human Rights Council

- It is a United Nations body whose mission is **to promote and protect human rights around the world**.
- The UNHRC has 47 members elected for staggered **three-year terms** on a regional group basis.
- The headquarters of UNHRC is in Geneva, Switzerland.
- The UNHRC investigates allegations of breaches of human rights in United Nations member states.
- It addresses important thematic human rights issues such as
 - freedom of association and assembly,
 - freedom of expression,
 - freedom of belief and religion,
 - women's rights,
 - LGBT rights, and
 - the rights of racial and ethnic minorities.
- The UNHRC was established by the UN General Assembly on 15 March 2006 to **replace the UN Commission on Human Rights** that had been strongly criticised for allowing countries with poor human rights records to be members.

Membership

- The Council is made up of 47 UN Member States, which are elected by the UNGA through a direct and secret ballot.
- The General Assembly takes into account the contribution of the candidate states to the promotion and protection of human rights, as well as their voluntary pledges and commitments in this regard.
- Members of the Council serve for a period of three years, and are not eligible for immediate re-election after serving two consecutive terms.
- The HRC has a Bureau of one President and four Vice-Presidents, representing the five regional groups.
 - They serve for a year, in accordance with the Council's annual cycle.

PROTESTS TO COUP: KYRGYZSTAN

International Relations

Why is it in news?

- Protesters have captured key government buildings, including the Parliament house and the presidential office.
- The absconding President has accused the opposition of plotting a coup.

The story so far

- Street protests erupted in Kyrgyzstan following parliamentary election.
- The opposition blamed the votes were rigged as protesters captured several government buildings in the capital Bishkek.
- Kyrgyzstan, often referred to as **Central Asia's only democracy**, had seen violent anti-government protests in the past.
- Sharpening political fault lines were behind the protests in Kyrgyzstan.



Why is Kyrgyzstan important?

- This landlocked Central Asian country that shares a long border with China has been key to the strategic plans of both Russia and China.
- Moscow sees the region as its backyard and plays hard politics to retain its influence.
- For China, the country, located at the centre of Eurasia, is a vital link in its Belt and Road Initiative. China has built road and rail networks with Kyrgyzstan and Uzbekistan.
- During the early stages of the Afghan war, the U.S. had used Kyrgyzstan for refuelling and other logistical purposes. The U.S. base was shut down in 2014 by Parliament.

Where do the protests leave Russia?

- Kyrgyzstan is a member of the Russia-led Collective Security Treaty Organisation and hosts a Russian air base.
- While Russia has cultivated strong ties with all political factions in Kyrgyzstan, radical political changes could throw up opportunities for its rivals.
- The crisis poses an immediate foreign policy challenge to Russia's Vladimir Putin

INDIA INVITED TO JOIN THE BLUE DOT NETWORK

International Relations

Why is it in news?

A bipartisan group of Senators had written to India's Ambassador to the United States to join the Blue Dot Network.

What is Blue Dot Network?

- Blue Dot is a US-led collaboration with Australia and Japan that supports private-sector-led infrastructure financing opportunities in response to China's Belt and Road Initiative (BRI).
- It was formally announced on 4 November 2019 at the Indo-Pacific Business Forum in Bangkok, Thailand on the sidelines of the 35th ASEAN Summit.
- It is led by the U.S. International Development Finance Corporation, Japan Bank for International Cooperation, and Department of Foreign Affairs and Trade of Australia.
- It is expected to serve as a global evaluation and certification system for roads, ports and bridges with a focus on the Indo-Pacific region.



Difference between BRI and Blue Dot

- While the former involves direct financing, giving countries in need immediate short-term relief, the latter is not a direct financing initiative and therefore may not be what some developing countries need.
- The question is whether Blue Dot offering first-world solutions to third-world countries.
- Secondly, Blue Dot will require coordination among multiple stakeholders when it comes to grading projects.
- Given the past experience of Quad, the countries involved in it are still struggling to put a viable bloc. Therefore, it remains to be seen how Blue Dot fares in the long run

What is the significance of joining it?

- Blue Dot Network will attract private capital to infrastructure projects in developing and emerging economies.
- **Quality assured:** The infrastructure projects will have to follow the
 - **G-20 principles for Quality Infrastructure Investment**, aimed at sustainable lending and borrowing,
 - **G7 Charlevoix Commitment on Innovative Financing for Development**, and
 - **Equator Principles**, which mandate financial institutions to assess and manage environmental and social risks in a given projects.

Access to private and public financing institutions will help mitigate financing risks, acting as an impetus for developing countries like India to smoothly undertake development projects domestically as well as internationally.

EXTENDING NEW START TREATY

International Relations

Why is it in news?

- Russian President Mr Putin has proposed a one-year extension without conditions of the last major nuclear arms reduction accord, the New START Treaty between Russia and the U.S.

About New Start Treaty:

- The New START accord, signed in 2010, limits the number of strategic nuclear warheads that Russia and the United States can deploy and due to lapse in February 2021.
- It is a bipartisan process of verifiably reducing U.S. and Russian strategic nuclear arsenals.
- Recently, the U.S. and Russia terminated the 1987 Intermediate-Range Nuclear Forces (INF) treaty that had limited the United States and Russia from fielding land-based missiles with a range between 500 and 5,500 kilometers, both conventional and nuclear.
- The INF Treaty was the first pact to include intensive verification measures, including on-site inspections.
- Now only one major bilateral agreement, New START, limits the U.S. and Russian nuclear arsenals.

INDIA-DENMARK GREEN STRATEGIC PARTNERSHIP

International Relations

Why is it in news?

In the virtual Summit, the Prime Ministers of India and Denmark agreed to elevate India-Denmark relations to a **Green Strategic Partnership**.

About:

- India has launched **Green Strategic Partnership for the first time with Denmark** as its partner to be at forefront of the global fight against Climate Change.
- It envisaged **cooperation within the political field**, economic and commercial field, education and culture, Renewable Energy, Urban Development, Environment, Agriculture and Animal Husbandry, Food Processing, Science, Technology and Innovation, Shipping, Labour Mobility and Digitization.

What is the Green Strategic Partnership?

- It is a mutually beneficial arrangement to advance **political cooperation, expand economic relations and green growth, create jobs and strengthen cooperation** on addressing **global challenges** and opportunities with a focus on an ambitious implementation of the **Paris Agreement** and the **UN Sustainable Development Goals**.

Key Highlights:

Energy and Climate Change-

- The two partners agreed on addressing global challenges and solutions on green energy transition and climate change.
- The Strategic Sector Cooperation on offshore wind and renewable energy, the India-Denmark Energy Partnership (INDEP) on capacity building, knowledge-sharing and technology transfer on wind energy, energy modeling and integration of renewable energy are some of the commitments to address the common global challenges on the path towards global energy transition, green growth and sustainable development.
- India and Denmark agree to be at the forefront in the global fight against climate change.

Environment/Water and Circular Economy-

- Both the countries agreed to work towards further expanding and strengthening the existing **Government-to-Government cooperation on environment/water and circular economy**.
- Countries further agreed to cooperate in water efficiency and non-revenue water (water loss) and tasked the Indian **Ministry of Jal Shakti and the Danish Environmental Protection Agency and the Danish Ministry of Environment and Food** to develop a **Work Plan** for an initial period of three years (2021-23).

Sustainable Urban Development including Smart Cities-

- Both sides agreed to strengthen bilateral cooperation in **sustainable urban development, including in smart cities** through the Urban Living Lab in Goa.
- Both sides also agreed to strengthen existing **City-to-City** cooperation between **Udaipur and Aarhus and Tumakuru and Aalborg**.

Business, Trade and Shipping-

- Both sides welcomed the idea of developing partnerships between Governments, institutions and businesses of the two countries with special focus **on green and climate-friendly technologies**.
- They recognized the importance of regulatory framework conditions to support public, private investments in green energy.

- Both leaders appreciated the deep **cooperation on maritime affairs** and noted the **potential for enhancing cooperation in shipbuilding and design**, maritime services and Green shipping, as well as port development.

Science, Technology, Innovation and Digitization-

- India and Denmark recognize the importance of promoting and facilitating **investments in science, technology and innovation (STI)** via strong **public-private partnerships** as an important way to accelerate technology development and the implementation of new solutions.
- The two leaders recognized their shared interest in **digitization** and **digital solutions and business models** in the green transition and decided to collaborate for enhancement of **development, innovation and demonstration** in the field of digital technologies to **support green sustainable growth**.

Food and Agriculture-

- The two Prime Ministers encouraged fostering deeper and closer cooperation between **authorities, businesses and research institutions** in the sectors of food processing and food safety, as well as animal husbandry and dairying.

Health and Life Science-

- Both sides emphasized the potential and their common desire to strengthen dialogue and cooperation in the health sector.
- They confirmed their interest in expanding dialogue and sharing best practices on **health policy issues**, including on **epidemics and vaccines**, especially to combat Covid-19 and future pandemics.
- They agreed to work on expanding commercial opportunities for businesses by creating more favourable environments for the **life science sector, including research collaborations**.

Cultural Cooperation, People-to-People contacts and Labour Mobility-

- The two Prime Ministers acknowledged that the richness of the relationship between India and Denmark is a result of the **long-standing people-to-people** contacts and agreed to further promote greater awareness and mutual understanding between the peoples of the two countries through cultural cooperation.
- Both sides agreed to examine the possibilities for **labour mobility**, as well as to consider **ease of travel between the two countries** to facilitate greater **people-to-people interaction** and strengthen cooperation in the tourism sector.

Multilateral Cooperation-

- The two Prime Ministers agree to join efforts and initiatives to support and promote a rule-based multilateral system. This includes strong multilateral cooperation to face the urgency to step up global efforts to combat the global **challenges on energy and climate change** and a common commitment to the **International Energy Agency, the International Renewable Energy Agency and the International Solar Alliance**.
- Both sides supported the need for cooperation on promotion of an open, inclusive and rule-based **multilateral trading system under the WTO** at its core to promote global growth and sustainable development.
- Both sides expressed their commitment for working towards an ambitious, fair, and **mutually beneficial Trade and Investment Agreement between EU and India** to further strengthen and **deepen the EU-India ties**.
- Both sides expressed their willingness for collaboration within the framework of the **Arctic Council in the area of climate change**.

Significance:

- It will prove useful for **India-Denmark relations** and will also help in building a common **approach towards global challenges**
- This will help expand **economic relations and green growth**, and strengthen cooperation on addressing global challenges; with a focus on the implementation of the Paris Agreement and the climate change goals."
- The summit proved that India and Denmark had overcome one of the biggest hurdles to their bilateral relationship the **future of Kim Davy**, accused in the Purulia arms drop case. That one issue had almost **blacklisted Denmark** for the Indian government for decades.

Coalition for Epidemic Preparedness Innovations (CEPI)

International Relations

Why is it in news?

Translational Health Science And Technology Institute (THSTI), an autonomous institute of the Department of Biotechnology, has now been recognized by the Coalition for Epidemic Preparedness Innovations (CEPI) as one of the Global network of Laboratories for centralized assessment of COVID 19 Vaccines.

The CEPI network will initially involve six labs, one each in Canada, Britain, Italy, the Netherlands, Bangladesh and India.

CEPI Global network

- Under the CEPI Global network the Laboratory will use the same reagents and follow a common set of protocols to measure the immune response of multiple vaccine candidates under development and trial

- This will greatly harmonize the Vaccine trial process and allow different vaccine candidates to be compared and speed up the selection of the most effective candidate.
- The Ind-CEPI mission for establishment of bioassay laboratory at THSTI is to provide validated assays for vaccine development on par with global standards.

IndCEPI mission

- The Department of Biotechnology, Ministry of Science & Technology, and Government of India has been implementing the IndCEPI mission 'India Centric Epidemic Preparedness through Rapid Vaccine Development: Supporting Indian Vaccine Development'.
- The objectives of this mission are aligned with the Global Initiative of Coalition of Epidemic Preparedness for Innovation (CEPI) and aims to strengthen the development of vaccines and associated competencies/technologies for the diseases of epidemic potential in India.

Details about CEPI

- CEPI is an innovative global partnership between public, private, philanthropic, and civil society organisations launched in Davos in 2017 to develop vaccines to stop future epidemics.
- The Coalition for Epidemic Preparedness Innovations' (CEPI's) mission is to stimulate and accelerate the development of vaccines against emerging infectious diseases and enable access to these vaccines for people during outbreaks.
- CEPI is a foundation that takes donations from public, private, philanthropic, and civil society organisations, to finance independent research projects to develop vaccines against emerging infectious diseases
- CEPI was conceived in 2015 and formally launched in 2017 at the World Economic Forum (WEF) in Davos, Switzerland.
- It was co-founded and co-funded with US\$460 million from the Bill and Melinda Gates Foundation, The Wellcome Trust, and a consortium of nations, being Norway, Japan, Germany; to which the European Union (2019) and Britain (2020) subsequently joined.

WORLD FOOD PROGRAMME

International Relations

The **2020 Nobel Peace Prize** has been awarded to the **World Food Programme** (WFP), a **United Nations** (UN) agency, for its efforts to combat hunger, bettering conditions for peace in conflict-affected areas and preventing the use of hunger as a weapon of war and conflict.

WFP was created in 1961 as an experiment to provide food aid through the UN system and in 1965, it was enshrined as a fully-fledged UN programme. It launched its 1st development program in Sudan.

Headquarters: Rome, Italy

Since then, WFP has been forefront at the conflict-ridden countries like for humanitarian assistance to the hungry and needy people. **Globally, WFP functions in more than 83 countries including India, reaching 86.7 million people.**

Aim: To eradicate hunger and malnutrition with the ultimate goal of eliminating the need for food aid itself.

It is a member of the United Nations Development Group and part of its Executive Committee.

Funding: Its operations are funded entirely by voluntary donations from world governments, corporations and private donors. It raised US\$8 billion in 2019

WFP is governed by a 36-member Executive Board and partners with more than 1,000 national and international NGOs to provide food assistance and tackle the underlying causes of hunger.

Kashmir to host the 50th annual Skat International Asia Area

International Relations

Why is it in news?

Kashmir has won the bid to host the 50th annual Skat International Asia Area (SIAA) Congress in 2021.

About SIAA

- **SIAA:** It is an organisation of tourism leaders around the world, promoting global tourism and friendship since 1934.
- **Significance:** It is an Affiliated Member of the World Tourism Organization (UNWTO).
- **Which initiatives it supports?**
The organization supports the Sustainable Tourism-Eliminating Poverty Initiative (ST-EP).
 - ST-EP is a programme of the UNWTO which brings together UN agencies, governments, donor agencies, NGOs and other stakeholders to unite in a concerted effort to use tourism in actively combating poverty throughout the world.

Second Assembly of International Solar Alliance

International Relations

Why is it in news?

The **second assembly of the International Solar Alliance (ISA)** was **hosted by the Ministry of New and Renewable Energy** from 30th-31st October 2019.

International Solar Alliance (ISA):

- The International Solar Alliance (ISA) is a **treaty based inter-governmental organization** working to create a global market system to tap the benefits of solar power and promote clean energy applications.
- The ISA was launched jointly by Prime Minister of India (Narendra Modi) and the then President of France (Francois Hollande) during COP21 in Paris in November **2015**.
- International Solar Alliance (ISA) is a coalition of solar resource rich countries lying fully or partially between the Tropic of Cancer and the Tropic of Capricorn to specifically address energy needs.
- It aims to contribute to the implementation of the Paris Climate Agreement through rapid and massive deployment of solar energy.
- The ISA Headquarters – **Gurgaon, India**.
- The ISA aims to pave the way for future solar generation, storage and technologies for Member countries' needs by mobilising over **USD 1000 billion by 2030**.

ISA's ongoing programmes:

- Scaling Solar Mini Grids,
- Affordable Finance at Scale,
- Scaling Solar Applications for Agricultural Use,
- Scaling Rooftop,
- Scaling Solar E-mobility and Storage,
- ISA Solar Park.

Objective:

- The objective of the ISA is to mobilise member countries, seek commitments from international organisations and mobilise private sector to support rural and decentralised applications, access to affordable finance, island and village solar mini-grids, rooftop installations, and solar e-mobility technologies.

G-20 ANTI-CORRUPTION WORKING GROUP

International Relations

Why is it in news?

Union Minister has addressed the 1st ever Ministerial Meeting of G-20 Anti-Corruption Working Group.

About G-20

- **G-20 Anti-Corruption Working Group:** It was set up in June 2010 at the Toronto Summit of G-20.
- **Objective:** To prepare comprehensive recommendations for consideration by leaders on how the G20 could continue to make practical and valuable contributions to international efforts to combat corruption.
- **G20:** It is an informal group of 19 countries and the European Union with representatives of the International Monetary Fund and the World Bank.
- **Origin:** It was initially founded in 1999 after the Asian financial crisis. However after the 2008 Financial Crisis, the meeting has been held annually since 2010.
- **Members:** Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the UK, the USA and the EU.
- **G20 Summit, 2020:** Saudi Arabia is the first Arab nation to hold the G20 presidency in 2020. **Theme:** "Realising Opportunities of the 21st Century for All".

FLY ASH

Ecology

Why is it in news?

NTPC Ltd. has started to collaborate with cement manufacturers across the country to supply fly ash as part of its endeavour to achieve 100% utilisation of the by-product produced during power generation.



About Fly Ash

- Fly ash is a fine powder that is a byproduct of burning pulverized coal in electric generation power plants.
- Fly ash is a pozzolan, a substance containing aluminous and siliceous material that forms cement in the presence of water.
- When mixed with lime and water, fly ash forms a compound similar to Portland cement. This makes fly ash suitable as a prime material in blended cement, mosaic tiles, and hollow blocks, among other building materials.

Applications for Fly Ash

- Fly ash can be used as prime material in many **cement-based products**, such as poured concrete, concrete block, and brick.
- One of the most common uses of fly ash is in **Portland cement concrete pavement or PCC** pavement.
- Road construction projects** using PCC can use a great deal of concrete, and substituting fly ash provides significant economic benefits.
- Fly ash is used as an agent for acidic soils, as soil conditioner. It improves some important physicochemical properties of the soil such as hydraulic conductivity, bulk density, porosity, water holding capacity, etc
- Fly ash has also been used as **embankment and mine fill**, and it has increasingly gained acceptance by the Federal Highway Administration.

Benefits

- Fly ash can be a **cost-effective substitute** for Portland cement in many markets.
- Fly ash is also recognized as an **environmentally friendly material** because it is a byproduct and has low embodied energy, the measure of how much energy is consumed in producing and shipping a building material.
- Fly ash requires **less water than Portland cement** and is easier to use in cold weather.
- Other benefits include Produces various set times, Cold weather resistance, High strength gains, Considered a non-shrink material, Produces dense concrete with a smooth surface and sharp detail, Great workability, Reduces crack problems, permeability, and bleeding, Reduces heat of hydration.

Issues with fly ash

- Smaller builders and housing contractors **may not be familiar with fly ash products**, which can have different properties depending on where and how it was obtained.
- Additionally, fly ash applications may **face resistance from traditional builders** due to its tendency to effloresce along with concerns about freeze/thaw performance.
- Other concerns about using fly ash in concrete include Slower strength gain, Seasonal limitation
- Increased need for air-entraining admixtures, Increase of salt scaling produced by higher proportions of fly ash.



Environmental Concerns Associated with Fly Ash

- Fly ash is a major source of PM 2.5, fine, pollution particles, in summer it causes air pollution.
- It becomes air borne, and gets transported to a radius of 10 to 20 kms. It can settle on water and other surfaces. It can also contaminate water and soil systems.
- Fly ash contains heavy metals from coal, a large amount of PM 2.5 and black carbon (BC). Proper disposal of fly ash is still not happening in many places.
- The wet disposal of Fly ash results in leaching of toxic heavy metals in ground water system.

Steps taken by the government

- GST rates on fly ash and its products have been reduced to 5%.
- A web portal for monitoring of fly ash generation and utilization data of Thermal Power Plants and a mobile based

application titled "ASHTRACK" has been launched by the Government that will help to establish a link between fly ash users and power plants executives for obtaining fly ash for its use in various areas.

- Ash-park has been developed and awareness programme for utilisation of fly ash and its products have been conducted.
- Maharashtra has become the first state to adopt Fly Ash Utilization Policy, paving way for prosperity by generating "wealth from waste", and environment protection. The policy will create new employment opportunities in the power plant areas and also make available raw material for construction at low cost to help 'Housing for All' projects.
- The policy seeks 100% use of fly ash generated from thermal power plants and biogas plants for construction activities.

CHINA'S CLIMATE COMMITMENT

Ecology

Why is it in news?

Chinese President Xi Jinping has promised China would be **carbon net-zero by 2060**, and apparently advanced the deadline for reaching emissions peak.

What has China announced?

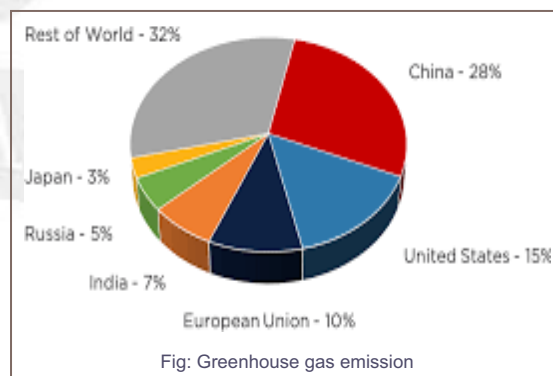
- China would become carbon net-zero by the year 2060.
- China would try to achieve already committed target for letting its emissions "peak", from "by 2030" to "before 2030".
- China would not allow its greenhouse gas emissions to grow beyond that point.

Why is net-zero an important target?

- There has been a concerted campaign to get countries to achieve "climate neutrality" by 2050.
- The state of net-zero emissions would require countries to significantly reduce their emissions, while increasing land or forest sinks that would absorb the emissions.
- If the sinks are not adequate, countries can commit themselves to deploying technologies that physically remove greenhouse gases from the atmosphere.
- Most of such carbon dioxide removal technologies are still unproven and extremely expensive.
- Thus, global carbon neutrality by 2050 is the only way to achieve the **Paris Agreement target of keeping global temperatures from rising beyond 2°C compared to pre-industrial times.**
- At the current rate of emissions, the world is headed for a 3° to 4°C rise in temperatures by 2100.

How significant is China's commitment?

- China is the world's **largest emitter of greenhouse gases.**
- China's decision is a big shot in the arm for the success of Paris Agreement.
- According to Climate Action Tracker, a global group the Chinese goal, if realised, would lower global warming projections for 2100 by about 0.2° to 0.3°C.
- It accounts for almost 30% of global emissions, more than the combined emissions in the United States, the European Union and India, the three next biggest emitters.
- So far, the **European Union** was the only big emitter to have committed itself to a net-zero emission status by 2050.
- The real heavyweights whose climate actions are crucial to achieving the Paris Agreement targets are **the Big Four — China, the US, the European Union and India** — who together account for more than half the global emissions, followed by countries such as Russia, Brazil, South Africa, Japan and Australia.
- **South Africa** too declared its intention to become carbon-neutral by 2050, but other countries have been holding back.
- The **United States**, has walked out of the Paris Agreement, and does not even believe in these targets.



What is India's commitment?

- India has resisted pressure to make a long-term commitment, citing the fact that developed countries had failed in keeping their past promises and never delivered on the commitments they made earlier.
- India has also been arguing that the climate change actions it has been taking are far more robust than those of the developed countries.

What are the implications of China's commitment for India?

- The Chinese announcement is expected to increase pressure on India to follow suit, and agree to some long-term commitment even if it was not exactly 2050 net-zero goal.
- It is an unfair demand, as in the Paris Agreement itself India is the only G20 country whose actions are on track to meet the 2° goal.

- The other developed countries actually have to make efforts towards a 1.5° world, but they are failing even to do enough to meet the 2° target.
- As per the Climate Action Tracker, India's actions as "2°C compatible", while the US, China and even the European Union's current efforts are classified as "insufficient".
- Chinese decision could increase divergence in the positions of India and China at the climate negotiations.
- China might now have fewer grounds to align itself with India as a developing country.

What are net-zero Target and its relevance?

- For the last couple of years, there has been a concerted campaign to get countries, especially the big emitters, to commit themselves to achieve "**climate neutrality**" by 2050.
- This is sometimes referred to as the state of **net-zero emissions** that would require countries to significantly reduce their **emissions** while increasing **land or forest sinks** that **would absorb** the emissions that do take place.
- **Net-zero** is a state in which a **country's emissions** are compensated by **absorptions** and **removal of greenhouse gases** from the atmosphere.
- Absorption can be increased by creating more **carbon sinks** such as **forests**, while removal involves the application of technologies such as **carbon capture** and **storage**.
- Scientists and climate change campaign groups say global carbon neutrality by **2050** is the only way to achieve the **Paris Agreement** target of keeping global temperatures from rising beyond 2°C compared to pre-industrial times.
- At the current rate of emissions, the world is headed for a 3° to 4°C rise in temperatures by 2100.

What is Paris Deal?

- It is an international agreement to **combat climate change and to reduce**, mitigate greenhouse gas emissions.
- The real heavyweights whose climate actions are crucial to achieving the Paris Agreement targets are the Big Four China, the US, the European Union and India who together account for more than half the global emissions, followed by countries such as Russia, Brazil, South Africa, Japan and Australia.
- Paris Agreement replaced earlier agreement to deal with climate change, the Kyoto Protocol.
- In the Paris agreement, there is no difference between developing and developed countries. In the Kyoto Protocol, there was a differentiation between developed and developing countries by clubbing them as Annex 1 countries and non-Annex 1 country.
- **Aims**- Keep the global temperature rise this century well below 2 degrees Celsius above the pre-industrial level.
- Pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.
- Strengthen the ability of countries to deal with the impacts of climate change.

PUSA DECOMPOSER

Ecology

Why is it in news?

Indian Agriculture Research Institute (IARI) has developed 'decomposer' capsules. When mixed in a water solution and sprayed on land, it softens and decomposes paddy stubble to the extent that it can mix with soil and act as compost. Theoretically, it does away with the reason farmers set fire to fields ahead of the rabi sowing.

What is the 'Pusa Decomposer'?

- It is essentially a **fungi-based** liquid solution that can soften hard stubble to the extent that it can be easily mixed with soil in the field to act as compost.
- This would then rule out the need to burn the stubble, and also help in retaining the essential microbes and nutrients in soil that are otherwise damaged when the residue is burned.
- These seven strains of fungi are packed into four capsules, which cost about Rs 20 per pack of four.



What was the need?

- Satellite remote sensing data from the IARI show a **five-fold increase in the number of farm fires** in Punjab, Haryana, and Uttar Pradesh during the first six days of October compared to the corresponding dates in 2019.
- The SAFAR-India short-range forecast mostly rates Air Quality of Delhi as **moderate to the poor category in the Air Quality Index**.
- The burning of paddy stubble has been a cause of concern for the past several years as it contributes to air pollution in the northern Gangetic plains.

How does the decomposer work?

- The window of time required for the solution to work, which is currently the main concern of farmers, is around 20 to 25 days.

- The process for developing the liquid solution from these capsules starts with boiling 25 litres of water mixed with 150 grams of jaggery, 50 grams of gram flour is added to it along with four „Pusa Decomposer“ capsules.
- A 25-litre solution is advisable for use in one hectare of land after being mixed with 500 litres of water.
- It can be sprayed over the field and left to do its work.
- Decomposer will be used on a trial basis this year in Punjab, Haryana, Uttar Pradesh and Delhi.
- This technology is inexpensive, as the whole process — from development, transport and spraying of decomposer — is costing the government only Rs 20 lakh.

Stubble burning

What is the environmental impact?

- Stubble burning releases harmful gases including nitrogen oxide and carbon monoxide into the atmosphere.
- In recent years, this practice has created vast smoke blankets across the Indo-Gangetic Plain and numerous neighbouring States, including Delhi.
- This directly exposes millions of people to air pollution.
- As per TERI report, in 2019 air pollution in New Delhi and other parts of north India was 20 times higher than the safe threshold level prescribed by the World Health Organization.
- [TERI - The Energy and Resources Institute]
- Stubble burning also has a deleterious impact on soil fertility, destroys organic fertilizers and reduces ground water levels.
- Stubble burning during a pandemic could worsen the situation by making lungs weaker and people more susceptible to disease.
- It could also impact those recovering from infection.

What were the previous actions?

- In 2013, stubble burning was banned by the Punjab government.
- In 2015, the National Green Tribunal imposed a ban on stubble burning in Rajasthan, Uttar Pradesh, Haryana and Punjab.
- It also directed government to assist farmers by obtaining equipment like happy seeders and rotavator.
- Stubble burning is an offence under Section 188 of the Indian Penal Code and the Air (Prevention and Control of Pollution) Act of 1981.

TRANSLOCATION OF CORALS IN MUMBAI

Ecology

Why is it in news?

Small colonies of the marine animals who live along Mumbai's coastline will be translocated to make way for the Coastal Road project.

What are corals?

- Corals exhibit characteristics of plants, but are marine animals that are related to jellyfish and anemones.
- Coral polyps are tiny, soft-bodied organisms. At their base is a hard, protective limestone skeleton called a calicle, which forms the structure of coral reefs.
- Reefs begin when a polyp attaches itself to a rock on the seafloor, then divides, or buds, into thousands of clones.
- The polyp calicles connect to one another, creating a colony that acts as a single organism.
- As colonies grow over hundreds and thousands of years, they join with other colonies, and become reefs.
- There are soft corals as well, which are non-reef-building, and resemble bushes, grasses, trees.



Where are these corals in Mumbai?

- The Mumbai coast hosts a tiny population of corals.
- The corals found across rocky patches along the Mumbai coastline are mostly fast-growing and non-reef building corals.

How are corals translocated?

- The translocation of corals is at a nascent stage along the Indian coastline.
- Pilot projects at the Lakshadweep islands, and off the coast of Kutch and Tamil Nadu have been undertaken to study the survival rate, method and site of translocation, and creation of high heat-resistant coral colonies, etc.
- Fragments of corals were taken and attached to concrete frames with the help of nylon threads — and then left on ocean beds at a depth suitable for their growth.

How fast do corals grow?

- The rate at which corals grow depends on the species.
- Some of the branching species can increase in height or length by as much as 10 cm a year (about the same rate at which human hair grows).
- A soft coral colony has the potential to grow at the rate of 2 cm to 4 cm per year.

Factors which determine the survival rate of translocated corals

- For a high survival rate, it is important to translocate corals in a place with similar environmental characteristics such as depth, current flow, amount of light, and pressure.

Why are coral reefs important?

- Coral reefs are like underwater cities that **support marine life**.
- According to the UN Environment programme, they provide at least half a billion people around the world with **food security and livelihoods**.
- Coral reefs also **act as 'wave breaks'** between the sea and the coastline and **minimize the impact of sea erosion**.
- In India, they are protected in the same way as the tiger or elephant, under **Schedule I of the Wildlife Protection Act (WPA), 1972**.

What poses a threat to coral reefs?

- Climate change remains one of the biggest threats to corals.
- This threat has been visible in the "bleaching" of corals.
 - Bleaching is a process during which corals, under stress from warm weather, expel the algae that give corals their brilliant colours and live in their tissues and produce their food.
- The Great Barrier Reef off the coast of Australia, a UNESCO World Heritage site and home to one of the largest collections of coral reefs on the planet, has suffered six mass bleaching events due to warmer than normal ocean temperatures: in 1998, 2002, 2006, 2016, 2017, and now 2020.

11 SPECIES OF CORALS IN MUMBAI

> Corals are invertebrate animals belonging to a group called Cnidaria, that can be found in rocky intertidal regions or on the ocean floor



> Corals are usually classified

as 'hard' and 'soft' corals. Hard corals are reef-building ones. Soft corals, which include sea fans, don't have the rock-like calcareous skeleton; instead they grow wood-like cores for support and fleshy rinds for protection. Soft corals live in colonies that often resemble brightly coloured plants or trees



> The city has 11 species of corals, according to a survey by Marine Life of Mumbai, nine of which are hard corals. The National Institute of Oceanography identified 18 colonies at Haji Ali and Worli, comprising six species



> Coral restoration and translocation has been tried in many parts of the world with varied success. In India, there have been projects in Lakshwadeep, Gujarat, Andaman & Nicobar Islands and Sindhudurg



STATE OF GLOBAL AIR 2020:HEI

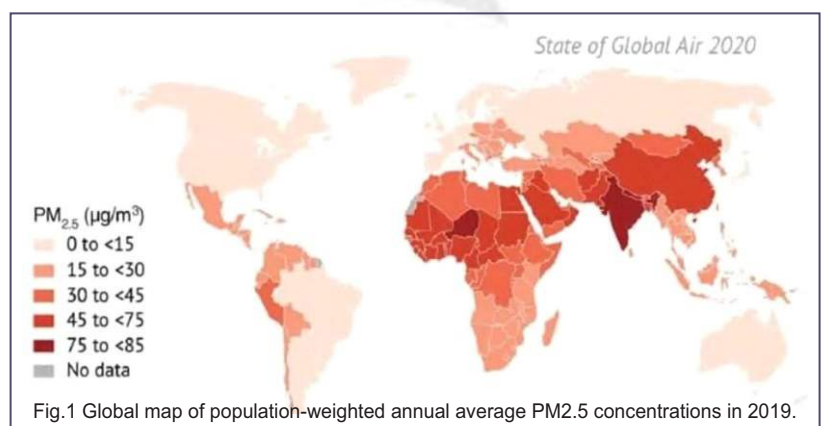
Ecology

Why is it in news?

The State of Global Air 2020, report released. SOGA, released by US-based Health Effects Institute and Global Burden of Disease (GBD).

Key Findings

- India has been recording an increase in PM 2.5 pollution since 2010 contrary to Centre's claims that annual air pollution levels are reducing in the country.
- India was followed by Nepal, Niger, Qatar and Nigeria in high PM 2.5 exposures. T
- It means people in India are exposed to the highest PM 2.5 concentrations globally.
- Out of 87 health risk factors based on total number of deaths caused in 2019 assessed by the team, air pollution has the fourth highest risk globally preceded by high systolic blood pressure, tobacco and dietary risks.
- But in India, air pollution is the highest risk factor because of the huge burden of premature deaths it contributes to.
- India is also among the top ten countries with highest ozone (O₃) exposure in 2019. Qatar recorded the highest O₃ exposure followed by Nepal and India.
- Among the 20 most populous countries, India recorded the highest increase (17%) in O₃ concentrations in the past ten years.



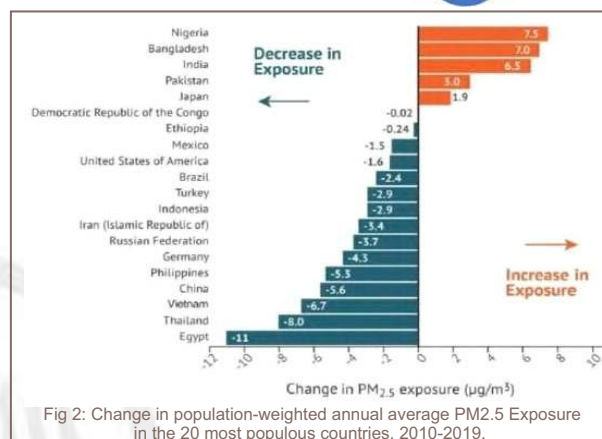
Major Pollutants

- O₃ is a major respiratory irritant, which is not released directly into the air but is formed in a complex chemical interaction between nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight.
- NO_x is emitted from the burning of fossil fuels (oil, gas, and coal) in motor vehicles, power plants, industrial boilers, and home heating systems.
- Volatile organic compounds are also emitted by motor vehicles, as well as by oil and gas extraction and processing and other industrial activities.

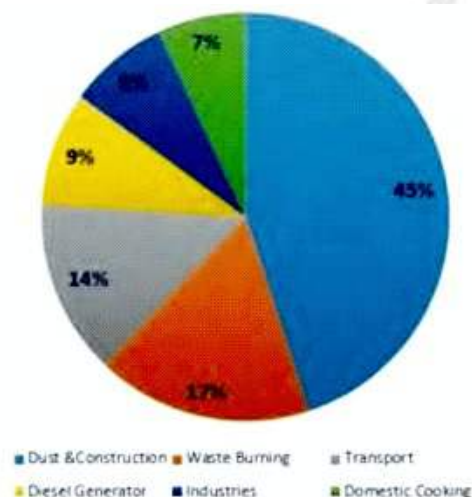


Air pollution in India

- It is a serious health issue.
- Of the most polluted cities in the world, 21 out of 30 were in India in 2019.
- Air pollution contributes to the premature deaths of 2 million Indians every year.
- India has a low per capita emissions of greenhouse gases but the country as a whole is the third largest greenhouse gas producer after China and the United States.
- The Air (Prevention and Control of Pollution) Act regulate air pollution but has failed to reduce pollution because of poor enforcement of the rules.



Sources of Air Pollution in India



Measure taken

- In 2015, Government of India, together with IIT Kanpur launched the National Air Quality Index.
- In 2019, India launched 'The National Clean Air Programme' with tentative national target of 20%-30% reduction in PM_{2.5} and PM₁₀ concentrations by 2024, considering 2017 as the base year for comparison.
- The Pradhan Mantri Ujjwala Yojana Household LPG programme and other schemes have helped to dramatically expand access to clean energy, especially for rural households.
- Introduction of BS-VI emission standards are steps towards improving air quality.
- Construction of 1,600-kilometre-long and 5-kilometre-wide The Great Green Wall of Aravalli green ecological corridor along Aravalli range from Gujarat to Delhi which will also connect to Shivalik hill range with planting of 1.35 billion new native trees over 10 years to combat the pollution.
- Given the high exposure and staggering health burden of air pollution, India must show urgency and recognise air pollution as a regional-scale problem.
- It is critical that the efforts are continued and expanded over the next few years in order to see improvements in air quality. This will require concerted action at both at the national and state and local levels.

What can be done to advocate better air quality?

Provide clean cooking and heating stoves to rural communities	Don't openly burn waste
Use cleaner-burning fuels	Prioritize the use of walking, cycling or rapid urban transit over private vehicles
Switch to clean diesel and improved engines for transport and freight	Ensure industries use clean technologies
Have stricter vehicle emissions and efficiency standards	Establish, adhere to and enforce air quality standards
Switch from kerosene lamps to clean lighting technologies like solar lights	Invest in renewable energy
Stop emissions of climate pollutants such as black carbon, ozone and methane to save lives and help reduce global warming by 0.5C	

ENVIRONMENTAL CLEARANCE

Ecology

Why is it in news?

National Green Tribunal has directed the Telangana government to stop Kaleshwaram lift irrigation project.

What is the issue?

- Environmental clearance (EC) granted to it is declared ex post facto (retroactive, after it is done) and illegal.
- It has directed the state government to obtain forest clearance before moving ahead with the project.

Kaleshwaram Multipurpose Lift Irrigation Project

- It is the world's largest irrigation and drinking water system, is meant to provide water for drinking and irrigation to nearly 45 lakh acres in 20 of 31 districts of Telangana, apart from Hyderabad and Secunderabad.
- The lift irrigation scheme involves submergence of approximately 32,000 hectares of land, 3211.2974 hectares of forest land in Telangana.
- The Tribunal observed that there were two legal issues confronting Telangana.
 - First, the Kaleshwaram Lift Irrigation Project is primarily an irrigation project.
 - Second is about Forest Clearance.



About NGT

- The National Green Tribunal Act, 2010 is an **Act of the Parliament of India which enables creation of a special tribunal to handle the expeditious disposal of the cases pertaining to environmental issues.**
- It draws inspiration from the India's **constitutional provision of (Constitution of India/Part III) Article 21 Protection of life and personal liberty**, which assures the citizens of India the right to a healthy environment. Powers
- **Power:** The NGT has the power to hear **all civil cases** relating to environmental issues and questions that are linked to the implementation of laws listed in Schedule I of the NGT Act. These include the following:
 - The Water (Prevention & Control of Pollution) Act, 1974
 - The Water (Prevention and Control of Pollution) Cess Act, 1977;
 - The Forest (Conservation) Act, 1980;
 - The Air (Prevention and Control of Pollution) Act, 1981;
 - The Environment (Protection) Act, 1986;
 - The Public Liability Insurance Act, 1991;
 - The Biological Diversity Act, 2002.
- Importantly, the NGT has **not been** vested with powers to hear any matter relating to the **Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927** and various laws enacted by States relating to forests, tree preservation etc. Therefore, specific and substantial issues related to these laws cannot be raised before the NGT.
- **Principles of Justice adopted by NGT:** The NGT is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be **guided by principles of natural justice**. Further, NGT is also **not bound by the rules of evidence** as enshrined in the Indian Evidence Act, 1872.
- The Chairperson of the NGT is a retired Judge of the Supreme Court, Head Quartered in Delhi. Other Judicial members are retired Judges of High Courts. Each bench of the NGT will comprise of at least one Judicial Member and one Expert Member.

RIGHT OF PASSAGE OF THE ANIMALS

Ecology

Why is it in new?

The Supreme Court (SC) upheld a 2011 order of the Madras High Court (HC) on the Nilgiris elephant corridor, affirming the right of passage of the animals and the closure of resorts in the area.

Madras High Court (HC) verdict

- The Madras HC in July 2011, declared that the Tamil Nadu government was fully empowered under the 'Project Elephant' of the Union government as well as Article 51 A (g) of the Constitution to notify the elephant corridor in the state's Nilgiris district.

- Article 51-A (g) which deals with Fundamental Duties of the citizens states: "It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures."
- The elephant corridor is situated near the Mudumalai National Park in the Nilgiris district.

Project Elephant

- This centrally sponsored scheme, was launched in February 1992
- Aim:
 - to provide financial and technical support to major elephant bearing States in the country for protection of elephants, their habitats and corridors.
 - to ensure the long-term survival to the populations of elephants in their natural habitats by protecting the elephants, their habitats and migration corridors.
- It also seeks to address the issues of human- elephant conflict and welfare of domesticated elephants.
- The Project is being implemented in 16 States / UTs, viz. Andhra Pradesh, Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Meghalaya, Nagaland, Orissa, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.
- Other goals of Project Elephant are supporting the research of the ecology and management of elephants, creating awareness of conservation among local people, providing improved veterinary care for captive elephants.
- Project Elephant has been formally implementing MIKE (Monitoring of Illegal Killing of Elephants) programme of CITES in 10 ERs (Elephant Reserve) since January 2004. It is mandated by COP resolution of CITES.



Supreme Court order

- The Supreme Court dismissed the special leave petition filed against the 2011 Judgment of the Madras HC.
- The court allowed formation of a committee to hear the individual objections of private landowners within the corridor space.
- It upheld that the area was a fragile ecosystem, the will of men must give way to elephants.
- In August 2018, SC had directed the Tamil Nadu government to seal or close 11 hotels and resorts constructed on the elephant corridor in the Nilgiri Hills in violation of the law, within the next 48 hours.

Mudumalai National Park

- It is also declared as a tiger reserve.
- It lies on the northwestern side of the Nilgiri Hills (Blue Mountains) in Tamil Nadu, India.
- It shares its boundaries with the states of Karnataka and Kerala.
- It is home to several endangered and vulnerable species including Indian elephant, Bengal tiger, gaur and Indian leopard.
- There are at least 266 species of birds in the sanctuary, including critically endangered Indian white-rumped vulture and long-billed vulture.
- It is under consideration by the UNESCO World Heritage Committee for selection as a World Heritage Site.



COMMISSION FOR AIR QUALITY MANAGEMENT

Ecology

Why is it in news?

As the quality of air is deteriorating in the Delhi-NCR, the Central government introduced a new law through an ordinance that puts in place a powerful oversight body. The ordinance may be called the Commission for Air Quality Management In National Capital Region and Adjoining Areas Ordinance 2020.

Issues with EPCA

- The one body with powers similar to the new Commission's was the Environment Pollution (Prevention and Control) Authority (EPCA).
- It was not a statutory body but drew legitimacy from the Supreme Court, which has been looking at cases of air pollution as part of the judgment in M C Mehta vs Union of India (1988).

- The EPCA was not, however, supported by a legal framework in the form of a law. It did have the authority to issue fines or directions and guidelines to the governments in other states
- In tackling air pollution in Delhi and the surrounding region, there has been the inability of agencies such as the CPCB and the EPCA to consistently enforce rules on the ground.
- Stubble burning or prevent pollution from thermal plants do exist, but these are often not strongly enforced always in States due to political considerations.

Ordinance will be applicable

- It shall apply to national capital region and also adjoining areas so far as it relates to matters concerning air pollution in the NCR
- Adjoining areas where it shall be in force include Punjab, Haryana, Rajasthan and Uttar Pradesh, adjoining areas of the NCR and Delhi where any source of pollution is located and is causing adverse impact on air quality in the national capital region.

Duty of the commission

- The commission will take stern action against violators of the ordinance.
- They can be penalised heavily and even suffer a sentence of five years.



Special powers

- It will have the power to lay down parameters of air quality, parameters of discharge of environmental pollutants, to inspect premises violating the law, ordering closure of non-abiding industries/plants etc.
- It can restrict any industry, operations or processes or class of industries that may have implications on air quality in the region.
- Orders of the commission shall prevail in case there is a conflict between the central pollution control board and the state pollution control boards.
- It may take up matter suo motu or on the basis of complaints, any appeal against any direction of the panel shall lie only with the National Green Tribunal.
- Commission would be empowered to constitute special investigative groups for stricter implementation.

Composition of commission

- The members of the commission include a
- chairperson, who is or has been the secretary of Government of India or chief secretary of a state,
- representative of environment secretary and
- five ex-officio members who are either chief secretaries or secretaries in charge of the environment department of Delhi, Punjab, Haryana, Rajasthan and Uttar Pradesh.
- two full-time members who have been joint secretaries to the central government,
- three full-time independent technical members who have specific scientific knowledge regarding air pollution,
- one technical member from Central Pollution Control Board (CPCB),
- one technical member nominated by ISRO and
- three members of NGOs having experience in matters concerning combating of air pollution.
- The commission will have three sub-committees, one each for monitoring and identification, safeguarding and enforcement, and research and development.
- Encompassing Delhi, Punjab, Rajasthan, Haryana and Uttar Pradesh, the all-powerful body assumes several powers to coordinate action among States, levy fines — ranging up to 1 crore or five years of prison — to address air pollution.
- There will be at least six permanent members and it will be headed by a former or incumbent Secretary to the Government of India, or a Chief Secretary to a State government.
- It has members from several Ministries as well as representatives from the States.

New commission and states

- The Central Pollution Control Board (CPCB) and its State branches have the powers to implement provisions of the Environment Protection Act for air, water and land pollution.
- Their powers continue. However, in case of dispute or a clash of jurisdictions, the Commission's writ will prevail specific to matters concerning air pollution.

Criticism

- Commission is considered as a "bureaucratic vessel", as it was created practically overnight, with no discussion and input.
- **Lack of diversity in representation:** Only three members representing NGOs have been included, majority are Ministries which are engaged in actions which contribute towards pollution — the Ministry of Power, Housing and Urban Affairs; Road Transport and Highways; Petroleum and Natural Gas.

Challenges ahead

- The major issue with the ordinance will be when it comes to implementation, as EPCA had almost similar powers but failed miserably in cleaning the air even after being in force for more than 20 years.
- Whether it's a positive move or just a distraction and wasteful exercise will be decided on the fact whether the ordinance changes the status quo when it comes to ground implementation and strict action on polluters or not,"

Way forward

- There is need to ensure that these members have the capability to bind together the States into air quality solutions that can and will solve our air quality problems.

Circular Bioeconomy

Ecology

Recently, European Forest Institute (EFI) published the 10-point Action Plan for a Circular Bioeconomy of Wellbeing

Why we need alternative economic systems?

Our current economic system, which arguably has succeeded in creating unprecedented economic output, wealth and human welfare over the past 70 years, has led to exacerbated social inequalities and loss of nature at an extent that threatens the stability of our economies and societies – and could maybe even lead to a collapse of civilisation as we know it.

To add some numbers: over 70% of us are affected by rising inequalities, a third of the world's land is severely degraded, we are losing forests at an alarming rate (one football field of forests every six seconds in 2019), and up to 1 million species are threatened with extinction. Over half of the world's GDP (\$44 trillion) is threatened by such nature loss. The system is not working.

What is Circular Bioeconomy?

Turning the tide requires deep transformations of socio-economic systems, as highlighted by the World Economic Forum's "New Nature Economy Report II on The Future of Nature and Business. For example, the sustainable management of forests can create \$230 billion in business opportunities and 16 million jobs by 2030.

Shifting the energy and extractives socio-economic system to circular and resource-efficient models can lead to \$2.3tn in business opportunities and 30 million jobs by 2030, and working with nature in the infrastructure and built environment system can generate a total of \$3 trillion business opportunities and 117 million jobs by 2030.

To accelerate the transformation towards a climate- and nature-positive economy, His Royal Highness The Prince of Wales has established The Circular Bioeconomy Alliance. The Alliance activities are guided by a 10-point Action Plan, co-created by a multi-stakeholder coalition with the goal to place nature back at the centre of our economy.

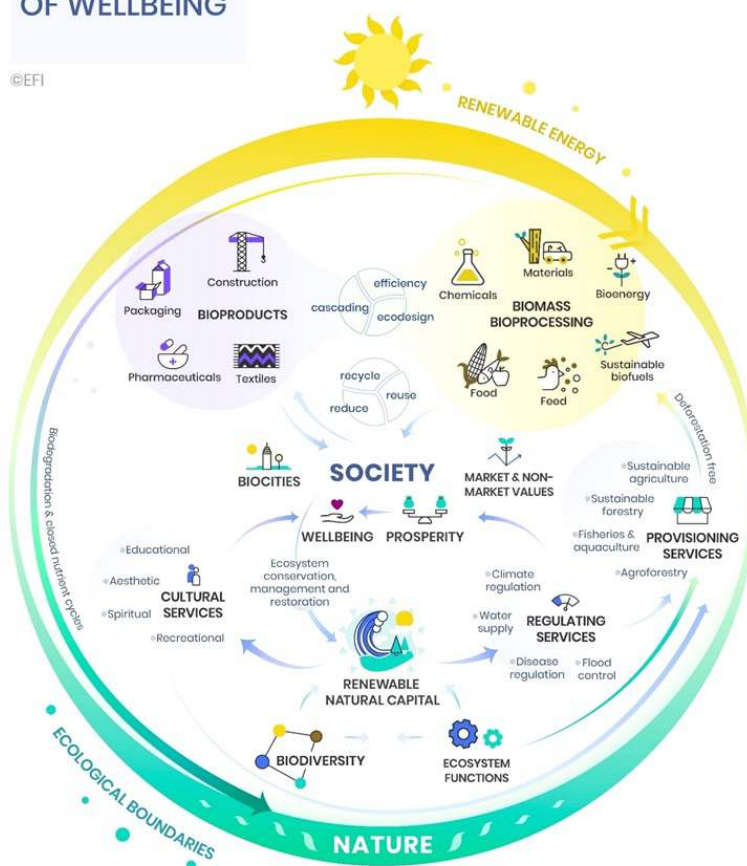
A new framework- Circular Bioeconomy

A circular bioeconomy offers a conceptual framework for using renewable natural capital to transform and manage our land, food, health and industrial systems, with the goal of achieving sustainable wellbeing in harmony with nature.

While the circular bioeconomy needs advanced technology and innovation as well as traditional

CIRCULAR BIOECONOMY OF WELLBEING

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knowledge to succeed, it ultimately relies on biodiversity as its true engine. This is because biodiversity determines the capacity of biological systems to adapt and evolve in a changing environment, and therefore is crucial for ensuring the resilience and sustainability of our biological resources.

Biological resources are central to a circular bioeconomy

Moving towards a climate- and nature-positive economy not only means replacing fossil energy with renewable energy, it also means moving to fossil-free *materials*, substituting carbon-intense products like plastics, concrete, steel and synthetic textiles for lower carbon alternatives. This helps to mitigate climate change and also provides other positive environmental impacts. A climate- and nature-positive economy is simply not possible without using a new range of renewable biobased materials that can replace and outperform carbon-intense materials.

This shift is also an opportunity to modernize and make industries more circular: renewable biological resources like forest resources, are, if managed sustainably, circular by nature and often easier to remanufacture.

Project Snow leopard

Ecology

Why is it in news?

International Snow Leopard Day was observed on 23 October. The day came into being with the adoption of the Bishkek Declaration by 12 countries on the conservation of snow leopards.

About it:

- The snow leopard (**also called ounce**) is found in high mountains in **12 countries of Central Asia**.
- In India, it inhabits the higher Himalayan and trans-Himalayan landscape in the **five states of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh**.
- Snow leopards are **not** known to be **aggressive toward humans**.
- It is the **National Heritage Animal of Pakistan and Afghanistan**.
- IUCN status – **Vulnerable**



Conservation efforts in India and the world:

- **World Wildlife Fund (WWF)** focuses on **reducing human-leopard conflict and rural development**, stopping mining in fragile snow leopard habitat.
- It **supports mobile anti-poaching activities**.
- It works together with **TRAFFIC**, to eliminate the illegal trade of snow leopard fur, bones and other body parts.
- WWF has developed and launched **Third Pole Geo Lab, an interactive web-based tool and database** for snow leopard conservation, climate change, and water security issues in Asia's high mountains.
- The USAID-funded, \$7.3 million **Conservation and Adaptation in Asia's High Mountain Landscapes and Communities project** will conduct field activities in and build alliances among six of the snow leopard's 12 range countries – Bhutan, India, Nepal, Mongolia, Kyrgyzstan, and Pakistan.
- **Snow Leopard Trust** is a non-profit organization in Washington which is working towards Snow Leopard conservation.

India Project Snow Leopard:

- It was **launched in 2009** to safeguard and conserve India's unique natural heritage of high altitude wildlife populations and their habitats by promoting conservation through participatory policies and actions.
- It has been catalyzed by **Nature Conservation Foundation (NCF)** and **involves government and non-governmental stakeholders from the states**.
- The **strategy document** stresses on knowledge based, landscape level and participatory management of wildlife in the region.
- Each of the **five range states** will **identify one landscape** under the project.
- Surveys will be conducted to **identify multiple 'cores' where human use will be minimized**, harmonized or completely stopped in a consultative process with the community.
- The project will include **representation from the village cluster-level up to a steering committee at the central-level**.

Green Crackers

Ecology

Green crackers are seen as viable alternatives to conventional crackers as they cause less pollution.

What are these crackers?

- They are firecrackers which have a **chemical formulation that produces water molecules**, which substantially reduces emission levels and absorbs dust.
- As the air pollution level went up 29 times above the WHO standards in November 2016, the Supreme Court suspended the sale of fireworks in the National Capital Region (NCR).
- Hence now, the green crackers can replace the conventional crackers.

Benefits:

- They have reduced emissions and decibel levels.
- This helps in the reduction of particulate matter and harmful gases, like nitrous oxide and sulphur oxide, by 30- 35 per cent.
- The green crackers will be 25-30 per cent cheaper to manufacture.
- They are less harmful and less dangerous than the conventional ones.
- The manufacturers would not have to make any changes in their facilities.



Components of crackers and their harmful effects

- **A Fuel:** sustains the heat for as long as the firecracker burns — the most widely used fuel is charcoal.
- **An oxidising agent:** produces the oxygen required to keep the mixture inside the cracker burning — like nitrates, chlorates or perchlorates.
- **A reducing agent:** burns oxygen to produce the massive energy required by the explosion — often sulphur or charcoal.
- **Regulating agents:** metals compounds that are added to control how fast the cracker burns — coloured metals like cobalt, copper and magnesium are used in sparklers and glittery variants.
- **Binders:** organic glue or resin used to hold the firecracker together.
- **Colouring agents:** different chemicals and metals used to produce variety of colours — like strontium, lithium, barium, chlorine or copper.

Colours that Hurt Most

- **Red:** Usually contain Strontium and lithium- cancer risk and muscle weakness.
- **Green :** Brium- Poisonous and irritate respiratory tract.
- **Purple:** Strontium and Copper- accumulate in body and increase cancer risk.

CSIR and Green crackers

- The new CSIR-NEERI formulation for green crackers has NO **barium nitrate** — one of the key ingredients of traditional firecrackers.
- These crackers have been named "safe water releaser (SWAS)", "safe minimal aluminium (SAFAL)" and "safe thermite cracker (STAR)".
- The three crackers release water vapour or air as a dust suppressant and diluent for gaseous emissions.
- These products can only be manufactured by those who have signed a non-disclosure agreement (NDA) with CSIR-NEERI.
- The green crackers will be sold with a unique logo on the box, and will also have a QR code with production and emission details.

SWAS and STAR

- They eliminate the use of potassium nitrate and sulphur, and reduce particulate matter like sulphur dioxide and nitrogen oxide by at least 30 per cent.
- The two types have matching sound intensity with commercial crackers, that is, in the range of 105-110 dBA.

SAFAL

- It minimally uses aluminium, which results in at least 35 per cent reduction in particulate matter compared to commercial crackers.
- Its sound intensity matches with commercial crackers in the 110-115 dBA range.
- The product categories include Chinese crackers, maroons, atom bombs, flowerpots, pencils and sparklers.

Pesticides Management Bill (PMB), 2020

Ecology

Why is it in news?

Recently, experts have warned that some provisions in the bill will hurt farmers' livelihood and have called for wider consultations on the bill and asked it to place it before a select committee.

About the bill?

- The Pesticides Management Bill (PMB), 2020 was introduced in the Rajya Sabha on March 23, 2020 and **seeks to replace The Insecticides Act, 1968**.
- The Bill is slated to come up for discussions during the Monsoon Session of Parliament. In its present form, the bill has gaps that can directly **impact the Centre's goal of doubling farmers' income by 2022**.



Key provisions of the bill

- It will **regulate the business of pesticides and compensate farmers** in case of losses from the use of agrochemicals.
- It will **empower farmers by providing them with all the information about the strength and weakness of pesticides**, the risk and alternatives. All information will be available openly as data in digital format and in all languages.
- It has a unique feature in the form of a **provision for compensations** in case there is any loss because of the spurious or low quality of pesticides. If required, a central fund will be formed to take care of the compensations.
- It also intends to **promote organic pesticides**.
- All pesticide manufacturers have to be registered and bound by the new Act, once it is passed. The advertisements of pesticides will be regulated so there should be no confusion or no cheating by the manufacturers.

Major issues with the Bill:

- It would **not allow the manufacture and export of pesticides not registered** for use in India even if these are approved in other countries.
- It **does not reflect the government's repeated emphasis** on the need for **doubling farmer's income by 2022**.
- The demands presented by the **Ashok Dalwai Committee**, constituted in 2018 to **promote domestic and indigenous industries** and agricultural exports from India, are **missing from PMB, 2020**.
- The committee had recommended reduction in import and dependence on imported formulations but the present PMB, however, will increase the import of formulations and will damage the export of agro-chemicals,
- One of the provisions in the bill gives powers to the Registration Committee (RC) to subjectively review registration of a pesticide and then suspend, cancel or even ban its usage.
- It also provides for re-registration of pesticides already registered under the erstwhile 1968 Act. This will bring instability in the pesticides industry.

Insecticides Act, 1968:

- It came into force in August 1971 with a view of regulating the import, manufacture, sale, transport, distribution and use of insecticides in order to prevent risk to human beings and animals.
- A Central Insecticides Board was established under Section 4 of the Act and it works under the Ministry of Agriculture and Farmers' Welfare.
- The board advises the central government and state governments on technical matters arising out of the administration of the act and to carry out the other functions assigned to it.

INDIA- WORLD'S HIGHEST SULPHUR DIOXIDE PRODUCER

Ecology

Why is it in news?

In 2019, India emitted 21% of global anthropogenic (human-made) SO₂ emissions, nearly double that of second-ranked global emitter, Russia.

About the report

For the first time in four years India's sulphur dioxide (SO₂) emissions recorded a significant decline of approximately 6% in 2019 compared to 2018, the steepest drop in four years, according to a report from Greenpeace India and the Centre for Research on Energy and Clean Air (CREA).

However, India continues to occupy the top spot among emitters for the fifth consecutive year.

The report ranks the world's biggest emitters of SO₂, a poisonous air pollutant that increases the risk of stroke, heart disease, lung cancer, and premature death.

In 2019, India emitted 21% of global anthropogenic (human-made) SO₂ emissions — or about 5,953 kilotons a year — nearly double that of second-ranked global emitter, Russia at 3,362 kt/year. China occupied the third position at 2,156 kt per annum.

As per the report, the biggest emission hotspots in India, are thermal power stations (or clusters of power stations) at Singrauli, Neyveli, Sipat, Mundra, Korba, Bonda, Tamnar, Talcher, Jharsuguda, Kutch, Surat, Chennai, Ramagundam, Chandrapur, Visakhapatnam and Koradi.

Renewable energy capacity has been increasing in India's power sector, delivering more than two-thirds of the subcontinent's new capacity additions during the FY 2019-20. But most coal plants in India are lacking in flue-gas desulfurization (FGD) technology, which is necessary to scrub emissions clean off sulphur.

What is So₂?

- Sulphur dioxide (SO₂) is a colorless gas with a strong odour, similar to a just-struck match.
- It is formed when fuel containing sulphur, such as coal and oil, is burnt, creating air pollution.
- Most sulphur dioxide air pollution comes from the burning of coal and oil in power plants.
- It is also emitted by trains, large ships, and some diesel equipment that burns high sulphur fuel and also by volcanic eruptions.
- It is **used as a food preservative** for some fruits and vegetables.
- It becomes a liquid under pressure.
- Sulfur dioxide and nitrogen oxides affect the environment when they react with substances in the atmosphere to **form acid rain**.
- The **primary reason for India's high emission output** is the expansion of coal-based electricity generation over the past decade.

Efforts by India to reduce SO₂ emissions:

- The Environment Ministry had introduced SO₂ emission limits for coal power plants in December 2015 and set the initial deadline to control SO₂ emissions from power generation by December 2017.
- The deadline was later extended till December 2019 after a request from the Ministry of Power and power plant operators in Delhi-NCR and till 2022 for some other power plants across the country through a Supreme Court order.
- India has over 15 percent of all anthropogenic sulphur dioxide (SO₂) hotspots in the world. The **main SO₂ hotspots in India** are **Singrauli in Madhya Pradesh (5th position in the world)**, Korba in Chhattisgarh, Talcher and Jharsuguda in Odisha, Neyveli and Chennai in Tamil Nadu, Kutch in Gujarat, Ramagundam in Telangana and Chandrapur and Koradi in Maharashtra.
- Norilsk smelter complex in Russia is the largest SO₂ emission hotspot in the world, followed by Kriel in Mpumalanga province in South Africa and Zagros in Iran.

UN Biodiversity Summit

Ecology

Why is it in news?

The UN Summit on Biodiversity convened on September 30 in the midst of a global crisis caused by the novel coronavirus that is thought to have spilled over to humans from an animal reservoir.

Key Highlights of the UN Summit on Biodiversity

- The United Nations Summit on Biodiversity was convened by the President of the General Assembly on 30 September 2020.
- The Summit was convened under the theme "**Urgent Action on Biodiversity for Sustainable Development.**"
- The meeting takes place on the margins of the opening of the 75th session of the UN General Assembly.
- The Summit highlighted the crisis facing humanity from the degradation of biodiversity and the urgent need to accelerate action on biodiversity for sustainable development.
- It provided an opportunity for Heads of State and Government and other leaders to raise ambition for the development of the post-2020 global biodiversity framework to be adopted at the 15th Conference of Parties to the Convention on Biological Diversity in 2021.
- This framework, and its effective implementation, must put nature on a path to recovery by 2030 to meet the SDGs and realize the Vision of "Living in harmony with nature".

Convention on Biological Diversity

- The Convention on Biological Diversity (CBD) is the international legal instrument for "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources."
- The Convention on Biological Diversity (CBD) entered into force on **29 December 1993**.

- It has **3 main objectives**:
 1. The conservation of biological diversity
 2. The sustainable use of the components of biological diversity
 3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources
- It has been ratified by 196 nations.
- The Convention on Biological Diversity covers **biodiversity at all levels**: ecosystems, species and genetic resources. It also covers biotechnology, including through the Cartagena Protocol on Biosafety.
- The CBD's **governing body is the Conference of the Parties (COP)**. This ultimate authority of all governments that have ratified the treaty **meets every two years to review progress**, set priorities and commit to work plans.
- The Secretariat of the Convention on Biological Diversity (SCBD) is based in Montreal, Canada.

Aichi Targets

- Aichi Biodiversity Targets are **five strategic goals** and **20 ambitious targets** toward the conservation of biodiversity.
- The targets formally known as "Strategic Plan for Biodiversity 2011-2020". It is a ten-year framework for action to save biodiversity.
- The 'Aichi Target' was adopted by the Convention on Biological Diversity (CBD) at its **Nagoya conference**.
- They are aimed to inspire broad-based action in support of biodiversity over this decade (2011-2020) by all countries and stakeholders promoting the coherent and effective implementation of the objectives of the Convention on Biological Diversity.

International Day for Biological Diversity

- The United Nations has proclaimed **May 22** as the International Day for Biological Diversity (IDB) to increase understanding and awareness of biodiversity issues.
- When first created by the Second Committee of the UN General Assembly in late 1993, 29 December was designated The International Day for Biological Diversity.
- In December 2000, the UN General Assembly adopted 22 May as IDB, to commemorate the adoption of the text of the Convention on 22 May 1992 by the Nairobi Final Act of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity.
- Theme for the year 2020 was '**Our solutions are in nature**'.

Biodiversity conservation in India

- India is one of the world's **12 mega-biodiversity centres**, and the subcontinent one of the six Vavilovian centres of origin of species.
- In India, several Bills and Action Plans have been passed by the Parliament for the conservation of biodiversity.
- In India, commendable efforts have been made for **in-situ conservation of biodiversity**.
- Under Protected Area network, there are **13 Biosphere Reserves** set up in different biogeography regions of the country, besides 485 wildlife Sanctuaries and 87 National Parks.
- Some special projects were also started for providing protection to wildlife in their natural habitats.
- The **Project Tiger** was started in **1973**. Also projects for Asiatic lion, the Blackbuck, the Rhinoceros, the Musk deer, the Hangul and the Ghariyal are started.
- India is also a **party to CITES** (Convention on International Trade in Endangered Species).
- Major wetlands of India have already been listed under the Ramsar Convention (1981).

Some policy and legal frameworks are:

- The Forest (Conservation) Act, 1980
- The Wildlife (Protection) Act, 1972
- The Environment (Protection) Act, 1986
- The National Biodiversity Strategy and Action Plan (NBSAP), 1999
- Biological Diversity Bill, 2002

Major threats to biodiversity

There are many factors responsible for the loss of biodiversity, which is occurring at a very alarming rate.

- **Escalating Human Population**: Altogether population has increased by three times and is expected to increase upto 1807 million by 2050, which would further increase the pressure on biodiversity.
- **Habitat Destruction (Deforestation) and Fragmentation**: In tropical Asia, 65 per cent of the total forests have been destroyed with particularly high rate of destruction reported for Bangladesh (96%), Sri Lanka (86%) and India (78%).
- **Overuse of Natural Resources**: As humans become more numerous and widespread, they start killing species faster than those species can replace themselves, either through reproduction or immigration from elsewhere.

- **Impact of Non-native/Exotic Species:** The introduction of exotic species into some areas has had devastating impacts on the native biodiversity. Species introduced by humans have exterminated the native species by competing with them, preying upon them or destroying their habitat.
- **Climate change** is a significant driving force behind the loss of genes, species, speciation and critical ecosystem's services.
- **Natural calamities** such as floods, cyclones, landslides and avalanches, volcanism, etc., are also responsible for depletion of biological diversity.

How threats on biological diversity can be addressed?

Climate change:

- Individuals can take various steps to fight climate change, such as
- Reducing their carbon footprints
- Promoting education
- Contacting elected officials
- International governments and cities can lead the charge.

Deforestation and habitat loss:

- The solutions to deforestation mostly lie in policy- **companies and corporations can adopt best practices** and refuse to use timber and paper suppliers that contribute to deforestation.
- Conscious consumers can refuse to patronize companies that do, and put pressure on retailers that employ **unsustainable manufacturing methods**.
- **Individuals** can also participate in land preservation through charities and private corporations.
- International governments need to enact **stronger, scientific forest protection laws**.

Overexploitation:

- Conservation and continued awareness surrounding overexploitation, especially **poaching and overfishing**, are key.
- Governments need to **actively enforce rules against such practices**, and individuals can be more conscious.
- Removing subsidies granted to large-scale fisheries, can help.

Invasive species

- According to the National Wildlife Federation, solutions include creating systems to **prevent introduction of invasive species** in the first place, effectively monitoring for new infestations and swiftly eradication newly detected invaders.

Pollution:

- To fight atmospheric and hydrologic pollution:
- Recycling
- Conserving energy at home
- Using public transportation
- The Environmental Protection Agency has a helpful guide.

CONCLUSION

- In New York, member-nations of the Convention on Biological Diversity (CBD) took note of the link between biodiversity loss and the spread of animal pathogens, calling for an end to destructive industrial and commercial practices.
- There is consensus that conservation targets set a decade ago in Aichi, Japan, to be achieved by 2020, have spectacularly failed. Evidence is presented by the latest UN Global Biodiversity Outlook 5 report: none of the 20 targets has been fully met.
- Many countries have chosen to ignore the connection between biodiversity and well-being, and depleted ecological capital in pursuit of financial prosperity.
- Faced with fast-eroding ecosystem health, the 196 CBD member-countries must chart a greener course, aligning it with the Paris Agreement, which has a significant impact on the health of flora and fauna.

Blue Flag' Certification

Ecology

Why is it in news?

Union Ministry of Environment, Forest and Climate Change (MoEFCC) recommended **eight Indian beaches** for the **Blue Flag' Certification** on the eve of **International Coastal Clean-Up Day**.

About the recent decision

- The decision was taken on the basis of the recommendation of an independent National Jury composed of **eminent environmentalists & scientists**.
- The eight beaches are:
- Shivrajpur in Gujarat
- Ghoghla in Daman & Diu
- Kasarkod and Padubidri beach in Karnataka
- Kappad in Kerala
- Rushikonda in Andhra Pradesh
- Golden beach of Odisha
- Radhanagar beach of Andaman & Nicobar Islands.



BEAMS

- India has launched its own eco-label BEAMS (Beach Environment & Aesthetics Management Services) under ICZM (Integrated Coastal Zone Management) project.
- This program promotes beach recreation in absolute harmony with nature.
- Objectives:
- To Abate pollution in coastal waters,
- To promote sustainable development of beach facilities,
- To Protect & conserve coastal ecosystems & natural resources,
- To Strive and maintain high standards of cleanliness,
- To Hygiene & safety for beachgoers in accordance with coastal environment & regulations.

About Integrated Coastal Zone Management (ICZM) project:

- The concept of ICZM was introduced in 1992 during the Earth Summit at Rio de Janeiro and most of the coastal countries in the world have been adopting ICZM principles for managing their coastal zones.
- It is a process for the management of the coast using an integrated approach, regarding all aspects of the coastal zone, including geographical and political boundaries, in an attempt to achieve sustainability.

Blue Flag Beaches

- The 'Blue Flag' beach is an 'eco-tourism model' and marks out beaches as providing tourists and beachgoers clean and hygienic bathing water, facilities/amenities, a safe and healthy environment, and sustainable development of the area.
- The certification is accorded by the Denmark-based Foundation for Environment Education.
- It started in France in 1985 and has been implemented in Europe since 1987, and in areas outside Europe since 2001 when South Africa joined.
- It has 33 stringent criteria under four major heads for the beaches, that is, (i) Environmental Education and Information (ii) Bathing Water Quality (iii) Environment Management and Conservation and (iv) Safety and Services.

GLOBAL COUNTER TERRORISM COUNCIL

Security

Global Counter Terrorism Forum (GCTF) is an initiative to stop terrorist travel launched on UN General Assembly sidelines.

About:

- **Terrorist Travel Initiative:** Recently, USA and Morocco launched Terrorist Travel Initiative under Global Counter Terrorism Forum's (GCTF).
- **Purpose:** This will bring together various stakeholders to share expertise on how to develop and implement effective counterterrorism watch listing and screening tools.
- **Document:** The initiative will hold four regional workshops in 2018 and 2019 to develop a document that shall be endorsed at the 2019 GCTF ministerial meeting.
- **Objective:** This document will reinforce methods for countries and organizations to stop terrorist travel.
- **Currently,** terrorist travel is being curbed through Advanced Passenger Information (API), Passenger Name Record (PNR), and biometrics that have been prescribed in UNSC Resolution 2396.

Other Initiatives taken by GCTF:

- **New initiative for Counter Unmanned Aerial System (UAS) Threats:** Earlier, USA and Germany launched initiative for Counter-UAS Threats.
- **Purpose:** The Initiative will raise awareness of how terrorists can use UAS to threaten individuals and civilian targets and how countries can counter this specific threat.

Global Counter-Terrorism Forum

The GCTF is an informal, a-political, multilateral counterterrorism (CT) platform.

It was launched in 2011. India is a founding member of GCTF.

- **Member Countries:** GCTF is an international forum of 29 countries and the European Union.
- **Mission:** To reduce the vulnerability of people worldwide to terrorism by preventing, combating, and prosecuting terrorist acts and countering incitement and recruitment to terrorism.

BRAHMOS MISSILES

Security

Why is it in news?

A naval version of the **BrahMos supersonic cruise missile** was successfully test-fired from an indigenously built stealth destroyer of the Indian Navy in the Arabian Sea.

About the naval version

- The missile was fired from INS Chennai, a stealth destroyer which hit the target with pinpoint accuracy after performing "extremely complex" manoeuvres.
- BrahMos as 'prime strike weapon' will ensure the warship's invincibility by engaging naval surface targets at long ranges, thus making the destroyer another lethal platform of Indian Navy.



About BrahMos supersonic cruise missile

- BRAHMOS is a **joint venture** between the **Defence Research and Development Organisation of India (DRDO)** and the NPOM of Russia.
- Brahmos is named on the rivers **Brahmaputra and Moskva**.
- It is a **two-stage (solid propellant engine in the first stage and liquid ramjet in second)** air to surface missile with a flight range of around **300 km**.
- BrahMos is the first supersonic cruise missile known to be in service and first inducted into the **Indian armed forces in 2005** when it was deployed on Indian Navy ship INS Rajput
- However, India's entry into the **Missile Technology Control Regime (MTCR)** has extended the range of the BRAHMOS missile to reach 450 km-600km, a shade above its current MTCR capped range of 300 km.

Features of the missile

- **Stealth technology** and **guidance system** with **advanced embedded software** provides the missiles with special features.
- BRAHMOS supersonic cruise missile featuring **Indian propulsion system, airframe, power supply**, and other major indigenous components has been successfully test-fired.
- Brahmos is a **multiplatform** i.e it can be launched from **land, air, and sea** and **multi capability missile** with **pinpoint accuracy** that works in **both day and night** irrespective of the weather conditions.

- It operates on the **"Fire and Forgets"** principle i.e it does not require further guidance after launch.
- Brahmos is the heaviest weapon to be deployed on **Su-30 MKI fighter aircraft**, with a weight of 2.5 tonnes.
- Brahmos is one of the fastest cruise missiles currently operationally deployed with the speed of **Mach 2.8**, which is 3 times more than the speed of sound.

Significance of the missile

- These air-to-ground BrahMos missiles can conceivably be used for **pinpoint strikes on terror camps located deep inside enemy territory**, or to take out underground nuclear bunkers, command-and-control centres and other high-value military targets like aircraft carriers on the high seas, from long stand-off distances.
- The government had earlier approved the deployment of Block-III version of the **BrahMos missiles, which have "steep dive, trajectory manoeuvre, and top-attack capabilities"** for mountain warfare, in Arunachal Pradesh as a deterrent against China.
- India has already deployed a sizable number of the original BrahMos missiles and other key assets in several strategic locations along the de-facto border with China in Ladakh and Arunachal Pradesh.
- The successful launch has paved the way for the serial production of the **indigenous booster and other indigenous components** of the powerful BrahMos Weapon System realizing **Atmanirbhar Bharat** pledge.

EXERCISE BONGOSAGAR

Security

Why is in the news?

Recently, the second edition of **Exercise Bongosagar** is scheduled to be held in **Northern Bay of Bengal**.

About Exercise Bongosagar

- It is an **annual bilateral maritime** exercise between **Indian Navy and Bangladesh Navy**.
- It is aimed at **developing inter-operability and joint operational skills** through conduct of a wide spectrum of maritime exercises and operations.
- India will be represented by **INS Kiltan and INS Khukri** whereas Bangladesh is represented by **BNS Abu Bakr and BNS Prottoy**.
- The second edition of Exercise Bongosagar **assumes greater significance** since it is being conducted during **Mujib Barsho**, the **100th birth anniversary of Bangabandhu Sheikh Mujibur Rahman**.
- The **first edition** of Exercise Bongosagar was held in **2019**.

INS Kiltan

- It is an indigenously-built anti-submarine warfare stealth corvette.
- It is the third of the four Kamorta-class corvettes being built under Project 28.
- It is designed by Directorate of Naval Design and built by Garden Reach Shipbuilders & Engineers (GRSE) in Kolkata.
- It is India's first major warship to have a superstructure of carbon fibre composite material resulting in improved stealth features, lower top weight and maintenance costs.

SHAURYA MISSILE

Security

Why is it in news?

India successfully test-fired indigenously developed **hypersonic nuclear-capable Shaurya missile**, an advanced version of **Submarine Launched Ballistic Missile (SLBM) K-15 (B-05)**.

About

- 'Shaurya', which is the land variant of India's K-15 missile, has a strike range of 700 km to 1000 km and is capable of carrying payloads of 200 kg to 1000 kg.
- The missile can be stored in a composite canister.
- The missile is less vulnerable to anti-ballistic missile defence systems due to its high manoeuvrability.
- The surface-to-surface tactical missile is 10 metres long, 74 cm in diameter and weighs 6.2 tonnes.
- Its two stages use solid propellants.
- **Launching platform:** The missile can be launched from silos and canisters mounted on a truck and fixed on the ground, they said adding that it can be easily moved around. A truck itself can become a launching platform.



INDRA Networks

The K Family of missiles

- The K family of missiles are primarily **Submarine Launched Ballistic Missiles (SLBMs)**, which have been indigenously developed by DRDO and are named after **Dr Kalam**.
- The development of these naval platform launched missiles began in the late 1990s as a step towards completing **India's nuclear triad** — the capability of launching nuclear weapons from land, sea and air based assets.
- Because these missiles are to be launched from submarines, they are lighter, smaller and stealthier than their land-based counterparts, the Agni series of missiles which are medium and intercontinental range nuclear capable ballistic missiles.
- While K family are primarily submarine-fired missiles to be fired from India's Arihant class nuclear powered platforms, the land and air variants of some of its members have also been developed by the DRDO.

India towards self-reliance

- Recently, India also successfully testfired the **BrahMos supersonic cruise missile** which can hit targets at over 400 km strike range which is at least more than 100 kms from the previous capability of the missile.
- The Defence Research and Development Organisation (DRDO) has been working towards completing total self-reliance in the field of strategic missiles and has enhanced its efforts further under the Aatmanirbhar Bharat call by Prime Minister Narendra Modi earlier this year.

Significance

- The new version of the missile will be inducted in the strategic forces to complement one of the existing missiles in the same class. The missile would be lighter and easier to operate in comparison with the existing missile.
- The successful flight-test of Shaurya missile extended range version of surface-to-surface supersonic cruise missile BrahMos is seen by defence experts as major steps in enhancing the country's indigenous contents.
- The development of these capabilities is important in light of India's relations with the two neighbours China and Pakistan.

SMART Missile

Security

Why is it in news?

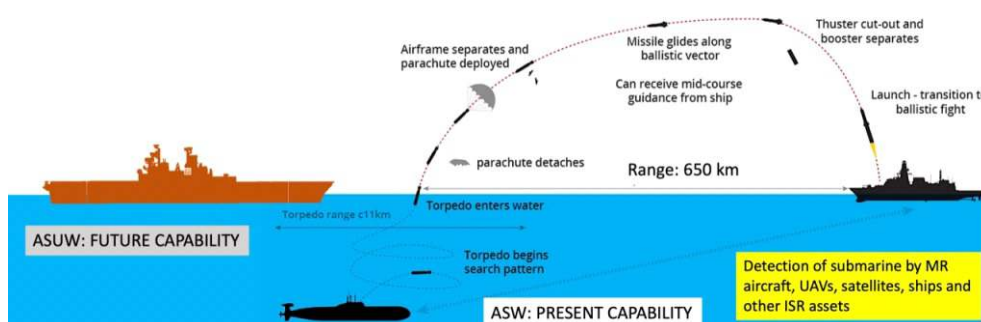
A successful flight test of the Supersonic Missile Assisted Release of Torpedo (SMART) system was conducted from Wheeler Island, off the coast of Odisha.

About

- SMART is a missile-assisted release of lightweight anti-submarine torpedo system for anti-submarine warfare (ASW) operations far beyond torpedo range.
- SMART is a hybrid missile that incorporates technologies of two different weapon systems making it faster and stealthier.
- With this, India has got an anti-submarine weapon having much higher range.
- While the long range torpedo available in the world is around 50 km and rocket-assisted torpedoes can strike at a range of 150 km, the SMART will have a range of over 600 km.



Supersonic Missile Assisted Release of Torpedo (SMART) CONOPS



Significance of the System

- The development of the system has been crucial in capacity building of naval platforms to strike beyond the torpedo range.
- The system will be a significant addition to India's anti-submarine warfare capabilities and the test is a key step towards its deployment.
- This launch and demonstration is significant in establishing anti-submarine warfare capabilities.

RUDRAM Missile

Security

Why is it in news?

DRDO successfully flight tests Indigenously Developed Anti Radiation Missile (RUDRAM). The missile was launched from **SU-30 MKI fighter aircraft**.

About Rudram:

- Rudram is an **air-to-surface missile**, designed and developed by the **Defence Research and Development Organisation (DRDO)** for **neutralizing surveillance and guidance radars, communication towers, command and control centres**, and other **radiation-emitting targets**.
- DRDO initiated the development of **anti-radiation missiles of this type** around **eight years** ago.
- Its integration with fighter jets has been a collaborative effort of various DRDO facilities and formations of the IAF and Hindustan Aeronautics Ltd.



The name of the missile

The **Sanskrit name Rudram** was given in keeping with tradition because it includes the letters **ARM (the acronym for anti-radiation missile)** and the word in Sanskrit describes a **"remover of sorrows" (one of its meanings)**.

Features of the missile

- The missile, powered by **two-pulse solid rocket motors** for enhanced range and it can be launched by using **Sukhois** from **different altitudes**, ranging from **500-meters to 15-km**
- It has both **'lock-on before launch (LOBL)'** and **'lock-on after launch (LOAL)'** modes
- It has **INS-GPS navigation** with a **passive homing head** for the final attack which can detect, classify and engage targets over a wide band of frequencies as programmed.
- It has a strike range from **100 to 200-km** depending on the altitude from which it is fired.
- The missile, with a launch speed from (twice the speed of sound),

Significance in aerial warfare

- Rudram has been developed for the IAF's requirement to enhance its **Suppression of Enemy Air Defence (SEAD) capability**.
- Modern-day warfare is more and more network-centric, which means it comprises elaborate detection, surveillance and communication systems that are integrated with the weapons systems.
- This will ensure IAF strike aircraft can carry out their missions without hindrance.

EXERCISE SURAKSHA KAVACH

Security

Why is it in news?

- Exercise Suraksha Kavach, a Joint Anti Terrorist Exercise By Indian Army and Police was held.

About the exercise

- The aim of the exercise was to harmonize the drills and procedures of both Army and Police for activating anti-terrorist Quick Reaction Teams (QRTs) to counter any terrorist actions in Pune.
- The exercise involved participation of Quick Reaction Teams, Dog Squads and Bomb Disposal Teams of Army as well as Anti-Terrorism Squad (ATS) and Quick Reaction Team of Maharashtra Police.

INS SINDHUVIR

Security

India will soon be delivering a kilo class submarine INS Sindhuvir to the Myanmar Navy, thus managing to checkmate CCP by not only giving a submarine but also training their sailors.

About INS Sindhuvir

- "This will be the first submarine of the Myanmar Navy and is in accordance with India's vision of SAGAR – Security and Growth for All in the Region.
- Both India and Myanmar (which is one of the strategic neighbours) share a 1,640-km border with the north-eastern states, including Manipur, Nagaland, and Mizoram, and also share 725 km India-Myanmar maritime boundary.

- This diesel-electric Kilo Class submarine is being given through the Line of Credit (LOC), India has extended to help in enhancing the military capability of Myanmar.
- The sailors of the Myanmar Navy have been trained in underwater combat operations onboard INS Sindhuvir with the help of Indian Navy.

About INS Sindhuvir

- INS Sindhuvir is a Russian refitted submarine and is known for its noiseless operational capability. It had joined the Indian Navy in the 1980s and has been modernized since then by the Hindustan Shipyard Limited (HSL) in Vizag.
- Capable of carrying various types of weapons it has a displacement of 3,000 tonnes and has the capacity to carry 52 personnel. And can go to a depth of around 300 meters.



Security and Growth for All in the Region (SAGAR) Doctrine

Security

- SAGAR Doctrine was outlined by **Indian Prime Minister in 2015** (and unveiled by India in 2016) underlining the **growing salience of the Indian Ocean and global maritime** commons in India's strategic calculus.
- It advocates for intensifying cooperation among navies and maritime agencies of the world to engineer virtuous cycles of cooperation.
- It is a maritime initiative which **gives priority to Indian Ocean region** for ensuring peace, stability and prosperity of India in Indian Ocean region.
- It approaches significant importance while India playing the role of a security provider for the entire Indian Region.

SLINEX 20

Security

The **Eighth Edition** of annual **bilateral maritime exercise SLINEX-20** is scheduled from **19 to 21 October 2020** in Trincomalee.

About SLINEX

- It is an annual bilateral maritime exercise between the Sri Lanka Navy (SLN) and Indian Navy.
- It is a series of exercises emphasising the deep engagement between India and Sri Lanka.
- It aims to enhance interoperability, improve mutual understanding and exchange best practices and procedures for multi-faceted maritime operations between both navies.
- The previous edition of SLINEX was conducted off Visakhapatnam in September 2019.
- Interaction between the Sri Lankan Navy and Indian Navy has also grown significantly in recent years, in consonance with India's policy of 'Neighbourhood First' and Hon'ble PM's vision of 'Security and Growth for all in the Region (SAGAR)'.

Significance of the exercise

The exercise will help in strengthening **cooperation** in the **maritime domain**. The exercise will also the capabilities of our indigenously constructed naval ships and aircraft. It will further enhance the high degree of interoperability already established between the two friendly navies.

Laser ATGM

Security

Recently, the **Defence Research and Development Organisation (DRDO)** has successfully test-fired the **Laser Guided Anti-Tank Guided Missile (ATGM)** from the **Main Battle Tank (MBT) Arjun**.

About Laser Guided Anti-Tank Guided Missile (ATGM)

- It is an **indigenously-developed Laser-Guided ATGM** under the **Cannon Launched Missile Development Programme** by Pune-based **Armament Research and Development Establishment (ARDE)**.
- The **missile employs a tandem HEAT** warhead to defeat **Explosive Reactive Armour (ERA)** protected armoured vehicles.
- It is **designed to destroy modern** as well as future enemy battle tanks.
- The missile's head provides it with the **guidance to actively engage a moving target**, including low-flying helicopters.
- The missile uses a warhead that has the **capability to neutralise armoured vehicles** which have reactive armours, which are **pecially-designed protective armours** used in military vehicles.



Vessel Traffic Services and Vessels Traffic Monitoring Systems

Security

Why in news?

Recently, the Union Ministry of Shipping launched the development of Indigenous Software solution for Vessel traffic services (VTS) and Vessels Traffic Monitoring Systems (VTMS).

Key Highlights

- VTS and VTMS is a software which **determines vessel positions, position of other traffic or meteorological hazard warnings** and extensive management of traffic within a port or waterway.
- The Vessel Traffic Services (VTS) **contribute to safety of life at sea, safety and efficiency** of navigation and protection of the marine environment.
 - The VTS also provides **protection to adjacent shore areas, work sites** and **offshore installations** from possible adverse effects of maritime traffic.
- The Vessels Traffic Management Systems are **installed at busiest waters in the world**, and are making **valuable contribution to safer navigation**, more efficient traffic flow, and protection of the environment.
- VTMS is **mandatory under IMO Convention SOLAS** (Safety of Life at Sea).
- The VTMS traffic image is **compiled and collected by means of advanced sensors** such as radar, AIS, direction finding, CCTV and VHF.
- Currently, India has approximately **15 VTS systems operational along the Indian Coast** and there is **no uniformity of VTS software** as each system has its own VTS software.
- The **indigenous development of VTS software** will benefit with respect to:
 - **Saving of foreign exchange** for various VTSs in India.
 - **VTS Software can be provided to Indian trade friendly nations** viz. Maldives, Mauritius, Myanmar, Sri Lanka, Mauritius, Bangladesh and Gulf countries.
 - **Minimize the cost** for future upgradations of software.
 - **Easier to interconnect** with MIS/ERP softwares of ports.
 - **Availability of Indian VTS software** shall make Indian companies to be competitive commercially in global bids.

INS Kavaratti

Security

Why is it in news?

Indigenously built ASW Corvette 'Kavaratti' to be Commissioned at Visakhapatnam.

INS KAVARATTI

- *Kavaratti* takes her name from erstwhile *INS Kavaratti* which was an **Arnala class missile corvette**.
- The older *Kavaratti* distinguished herself by operating in support of was **Bangladesh's liberation in 1971**.

CLASS

- **INS Kavaratti (P31)** is an **anti-submarine warfare corvette** of the Indian Navy built under **Project 28**.
- The ship has up to **90% indigenous content** using **carbon composites** for the superstructure is a commendable feat achieved in Indian shipbuilding.

DESIGN AND DEVELOPMENT

- The ship is designed by the Indian Navy's in-house organisation, **Directorate of Naval Design (DND)**. It is built by **Garden Reach Shipbuilders & Engineers (GRSE), Kolkata**. Kavaratti is capable of fighting under **nuclear, biological and chemical environments**.

CAPABILITIES

- Kavaratti is capable of fighting under **nuclear, biological and chemical environments**. It will be a **frontline warship of the Indian Navy with advanced stealth features and a low radar signature**.
- This will also enhances its **anti-submarine warfare** capability.
- The ship will have a complement of **17 officers and 106 sailors**.
- The ship's **weapons and sensors suite** is predominantly indigenous and showcases the nation's growing capability in this niche area.



FEATURES

- *Kavaratti* is India's one of the first ship to have a **superstructure of carbon fibre composite material**. It has been **integrated with its main hull resulting in lower top weight and maintenance costs and improved stealth features**.
- The ship is 109 metres long and 12.8 metres broad and is highly manoeuvrable with a **top speed of 25 knots**.
- It has a **displacement of 3,300 tonnes** and a range of about **3450 nautical miles at 18 knots**.
- It is powered by **4 diesel engines** that generate a combined power of 3000 kW.

ARMOUR

- *Kavaratti* is to be armed with a range of indigenously developed **cutting-edge weapons** and **sensors**.
- The ship will also contain an **integrated communication system** and an **electronic warfare system**.

SIGNIFICANCE

- *Kavaratti* has a **state-of-the-art weapons** and sensor suite capable of detecting and **prosecuting submarines**.
- The ship will be commissioned into the Navy as a **combat-ready platform** as the ship has **completed sea trials** of all the systems fitted onboard.

STAND-OFF ANTI-TANK (SANT) MISSILE

Security

Why is it in the news?

Recently, India has successfully test-fired its **Stand-off Anti-tank (SANT) missile** off the coast of Odisha.



About Anti-Tank SANT Missile

- It is an **air-to-surface missile** developed by **DRDO** for the **Indian Air Force**.
- It is an **upgrade on India's Helina missile** believed to have a range of 7 to 8km.
- It is **equipped with a nose-mounted active radar seeker**, enabling the launch platform to be located at a safe distance from the target area.
- The SANT missile has both **lock-on before launch and lock-on after launch capability**.
- The missile will be inducted after a series of tests from the **actual launch platform on-board light combat helicopters** and **advanced light helicopters**.

Defence Acquisition Procedure (DAP) 2020.

Security

Why is it news?

Recently, Defence Minister unveiled the **Defence Acquisition Procedure (DAP) 2020**.

About Defence Acquisition Procedure 2020

- The DAP 2020 will **eventually replace the existing Defence Procurement Procedure (DPP) 2016**.
- DAP comprises **processes that should be followed by the Government entities** while procuring defence items.
- It is framed to **simplify the defence procurement procedure** and to achieve the objective of self-reliance.
- The procedure **aims to promote indigenous design and manufacturing of defence weapons** in a time-bound manner.
- The **first Defence Acquisition Procedure was promulgated in 2002**. Since then it has been revised several times.

Significance

- DAP 2020 is padded with an **assortment of new ideas** – such as integration of artificial intelligence with platforms and systems, use of indigenous high-end material and special alloys, and setting up of a Project Management Unit to support contract management.
- Under the procedure, the following categories are to be exclusively reserved for Indian vendors:
 - o Buy (Indian-IDDMM)
 - o Make in India I and II
 - o Production Agency in Design and Development
 - o Ordnance Factory Board and Defence Public Sector Unit.
- From now on there **will be no offset clause in government-to-government**, single vendor and IGAs. Under the offset clause, foreign companies are required to invest part of their deal value in the country and meant to improve domestic defence manufacturing.

- **Indigenous Content of various categories has been increased by 10%.** This has been done to support the Make in India initiative.
- **New Category called Buy (Global – Manufacture in India)** has been introduced. The items under this category will hold a minimum of 50% indigenous content on the cost basis of the total contract value.
- A new category introduced to enable **operating of assets without owning** thereby, substitute huge initial capital outlays.



ROLE OF ARTIFICIAL INTELLIGENCE IN INDIAN ECONOMY

Science & Technology

Why is it in news?

The RAISE 2020 summit (Responsible AI for Social Empowerment) has brought issues around artificial intelligence (AI) to the center of policy discussions.

Background

- With the **growing trend of Artificial Intelligence** globally, its graph is showing an upward trend in Indian economy as well.
- With a move towards **digitization**, AI has acquired a bit higher position for providing a better future. This better future is not only including **better techniques and tools that will help the economy** to operate efficiently, but also opportunities for employment ensuring a better livelihood.
- According to a report of **FICCI and Nasscom with EY**, AI will create **2.3 million new jobs while eliminating only 1.8 million jobs in 2020**.

Effect on Indian Economy

- According to a report published by one of the renowned firms 'Accenture', the AI sector in India has the potential to add US\$957 billion to India's economy in 2035.
- They have done a comparative analysis among the G20 nations. Based on that analysis, they stated that

India remains the most competitive in South Asia.

- Beside this, they also stated that AI is expected to raise India's annual growth rate by 1.3% in a scenario of intelligent machines and humans working together to solve the country's most difficult problems in 2035.

Applications of Artificial Intelligence (AI)

- **Self-driving Cars:** Advances in artificial intelligence have brought us very close to making the decades-long dream of autonomous driving a reality. AI algorithms are one of the main components that enable self-driving cars to make sense of their surroundings, taking in feeds from cameras installed around the vehicle and detecting objects such as roads, traffic signs, other cars, and people.
- **Digital assistants and smart speakers:** Siri, Alexa, Cortana, and Google Assistant use artificial intelligence to transform spoken words to text and map the text to specific commands. AI helps digital assistants make sense of different nuances in spoken language and synthesize human-like voices.
- **Translation :** For many decades, translating text between different languages was a pain point for computers. But deep learning has helped create a revolution in services such as Google Translate. To be clear, AI still has a long way to go before it masters human language, but so far, advances are spectacular.
- **Facial recognition:** Facial recognition is one of the most popular applications of artificial intelligence. It has many uses, including unlocking your phone, paying with your face, and detecting intruders in your home. But the increasing availability of facial-recognition technology has also given rise to concerns regarding privacy, security, and civil liberties.
- **Medicine:** From detecting skin cancer and analyzing X-rays and MRI scans to providing personalized health tips and managing entire healthcare systems, artificial intelligence is becoming a key enabler in healthcare and medicine. AI won't replace your doctor, but it could help to bring about better health services, especially in underprivileged areas, where AI-powered health assistants can take some of the load off the shoulders of the few general practitioners who have to serve large populations.
- **Agriculture Sector :** AI can be used to predict advisories for sowing, pest control, input control can help in ensuring increased income and providing stability for the agricultural community. Image classification tools combined with remote and local sensed data can bring a revolutionary change in utilisation and efficiency of farm machinery, in areas of weed removal, early disease identification, produce harvesting and grading.
- **Business Sector:** To take care of highly repetitive tasks Robotic process automation is applied which perform faster and effortlessly than humans. Further, Machine learning algorithms are being integrated into analytics and CRM platforms to provide better customer service. Chatbots being used into the websites to provide immediate service to customers. Automation of job positions has also become a talking point among academics and IT consultancies such as Gartner and Forrester.
- **Education Sector:** AI can make some of the educational processes automated such as grading, rewarding marks etc. therefore giving educators more time. Further, it can assess students and adapt to their needs, helping them work at their own pace. AI may change where and how students learn, perhaps even replacing some teachers.
- **Financial Sector:** It can be applied to the personal finance applications and could collect personal data and provide financial advice. In fact, today software trades more than humans on the Wall Street.
- **Legal Sector:** Automation can lead to faster resolution of already pending cases by reducing the time taken while analyzing cases thus better use of time and more efficient processes.
- **Manufacturing sector:** Robots are being used for manufacturing since a long time now, however, more advanced exponential technologies have emerged such as additive manufacturing (3D Printing) which with the help of AI can revolutionize the entire manufacturing supply chain ecosystem.

- **Intelligent Robots:** Robots can perform the tasks given by a human because of sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. Moreover, they have efficient processors, multiple sensors and huge memory, to exhibit intelligence. Further, they are capable of learning from their errors and therefore can adapt to the new environment.
- **Gaming :** AI has a crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where the machine can think of a large number of possible positions based on heuristic knowledge.
- **Cyber Security:** In the 20th conference on e-governance in India it was discussed that AI can provide more teeth to cyber security and must be explored.
- **Smart Cities and Infrastructure :** Use of AI to monitor patronage and accordingly control associated systems such as pavement lighting, park maintenance and other operational conditions could lead to cost savings while also improving safety and accessibility.

Possible areas for AI applications in Indian conditions

- India has the potential to position itself among leaders on the global AI map – with a unique brand of #AIforAll.
- It can complement Digital India Mission by helping in the big data analysis which is not possible without using AI.
- Targeted delivery of services, schemes, and subsidy can be further fine-tuned.
- Smart border surveillance and monitoring to enhance security infrastructure.
- Weather forecasting models may become proactive and therefore preplanning for any future mishaps such as floods, droughts and therefore addressing the farming crisis, farmer's suicide, crop losses etc.
- By analyzing big data of road safety data and NCRB (National Crime Record Bureau) data for crimes, new policies can be formulated.
- Disaster management can be faster and more accessible with the help of robots and intelligent machines.
- In the counterinsurgency and patrolling operations, we often hear the loss of CRPF jawans which can be minimized by using the robotic army and lesser human personnel.
- AI can be used to automate government processes, therefore, minimizing human interactions and maximizing transparency and accountability.
- It can be applied to study ancient literature upon medicines and therefore help in modernizing the health care with the juxtaposition of modern machines and ancient techniques.
- In the remotest areas where the last leg of governance is almost broken, AI can do the job. For Example: in the tribal areas and the hilly areas of the northeast.



National Strategy for Artificial Intelligence

NITI Aayog has identified core areas for application of artificial intelligence:

- 1. Healthcare:** for increased access and affordability of quality healthcare.
 - AI based Radiomics is an emerging field that focuses on comprehensive quantification of tumor phenotypes by applying a large number of quantitative imaging features, which has resulted in improvement to existing biomarker signature panels.
 - A joint venture between Microsoft and Indian start-up 'Forus Health' has developed a portable device named "3Nethra" that can screen for common eye problems as well as complicated conditions like diabetic retinopathy.
- 2. Agriculture:** for enhanced farmers' income, increased farm productivity and reduction of wastage.
 - Agriculture sector is witnessing a large participation of startup sector such as – Intello Labs, Trithi Robotics.
 - Crop health monitoring and providing real time action advisories to farmers and using image classification tools combined with remote and local sensed data can bring a revolutionary change in utilization and efficiency of farm machinery.
 - AI is being used for soil care, sowing, herbicide optimization, precision farming.
- 3. Education:** For improved access and quality of education.
 - AI can be used for developing tools for customised learning, interactive and intelligent tutoring systems.
 - It can also be used in developing automated teacher posting and transfer systems, using analytics based on demand – supply gaps across schools.
 - Andhra Pradesh government has collaborated with Microsoft to predict drop-outs and address the issue.
- 4. Smart Cities and Infrastructure:** For efficient and connectivity for the burgeoning urban population.
 - Optimization of infrastructure in cities, service delivery, crowd management, cyber security, public safety and water and waste management are some of the areas where AI can be used. Bandicoot robot have been developed for sewer cleaning to put an end to manual scavenging

5. Smart Mobility and Transportation: For smarter and safer modes of transportation and better traffic and congestion problems.

- AI-based traffic management system including sensors, CCTV cameras, automatic number plate recognition cameras, speed detection cameras, signalised pedestrian crossings.
- Predictions in public transport journeys and optimising parking places.

Kamakoti Committee

AI Task Force headed by V.Kamakoti was set up to explore possibilities to leverage AI for development across various fields.

Key recommendations of the committee were:

- Set up digital data banks, marketplaces and exchanges to ensure availability of cross-industry information.
- Data ombudsman: to address data-related issues and grievances.
- Ensure availability of funds for R&D
- Setting up National Artificial Intelligence Mission (N-AIM)

Challenges

Although the figures of employment status for year 2020 seems very plausible to us. But, in order to achieve these figures, there are several challenges that need to be eliminated. Some of the major ones are:

- The major challenge that stands forth the government is the fact that **AI-based applications have been driven largely by the private sector** and have been **focused majorly on consumer goods** only. So, in order to maximize the scale of AI in our country it's important to lay down effective policies keeping these things in mind.
- The **education system** prevailing in our economy does not support the required work environment for AI based applications. As the **nature of jobs are shifting rapidly**, it's important to keep **our education system updated accordingly**.
- Access to **AI-led technology** is likely to be heavily differentiated. AI-based technology is most likely adopted by **organized sector only** and as the industries in organized sector are mostly capital intensive than labor intensive, it is **unlikely on its part to contribute to large scale employment**.
- Moreover, it is also **unlikely in the short or medium term that the unorganized sector will adopt AI technologies**, which engages more than 80% of India's labor force, strengthening the former statement. So, it's important for the government to formulate such policy measures that will **remedy this differentiation so created in the AI field**.
- AI-based industries **operate with a factor of risk** as they are not sure of whether the product they are producing will be a success or a failure. Due to the presence of this uncertain factor, **investors hesitate to invest in such projects**.

Recommendations

- Looking at the current scenario of AI in our economy and based on various studies in this respect, various recommendations have been suggested from time to time. Some of the major ones that need to be highlighted in this context are the following ones:
- Policymakers should make **AI a critical component of various initiatives** and programs launched by Prime Minister Modi such as **Make in India, Skill India and Digital India**. This can be done by offering **incentives for manufacturers, students and start-ups to innovate**.
- **National Education policy must be transformed radically** to suit the change that is expected in this industry in future.
- As **only the private sector is majorly operating in this sector**, which clearly shows a huge capacity that is available which can be efficiently utilized by the public sector. Moreover, the **government can also provide aid by investing for businesses** that find it difficult to attract funds from outside.
- India should come up with policies that will view **machine intelligence as a critical element** of its national security strategy and should also take incentive in evaluating models of defense research in collaboration with various universities involved in the field of innovation.
- The AI sector requires a **different set of skills and capabilities** in order to carry out their operations. In order to upgrade its citizens with the required skill set, it's important for the government to initiate appropriate policy measures that will help to train the citizens of our country accordingly.

Conclusion

- As the whole globe is entering into a **new phase of technology**, it's important for our country to keep innovating and upgrade its technology in every sector accordingly.
- Artificial Intelligence is one such field that contains a **lot of opportunity and good fortune** if India is capable to **utilize all the potentials** from it and at the same time it contains a bad fortune in case it's not able to match the technology level required by the prevailing competition level.
- So, it's important to take **corrective measures and initiate policies that are required by this sector**. Looking at the current challenges that this sector is facing, a lot of efforts are required from the government front.

NOBEL PRIZE FOR MEDICINE OR PHYSIOLOGY

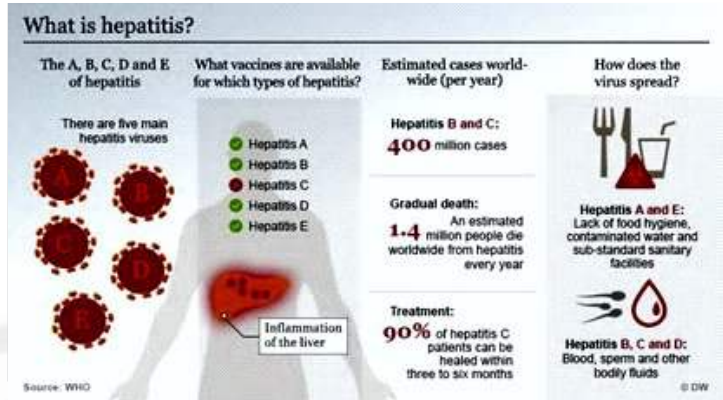
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Context

- Americans Harvey J Alter and Charles M Rice, and British scientist Michael Houghton were awarded the Nobel Prize for Medicine or Physiology on Monday for the discovery of the Hepatitis C virus.

Observations made by the Nobel Committee

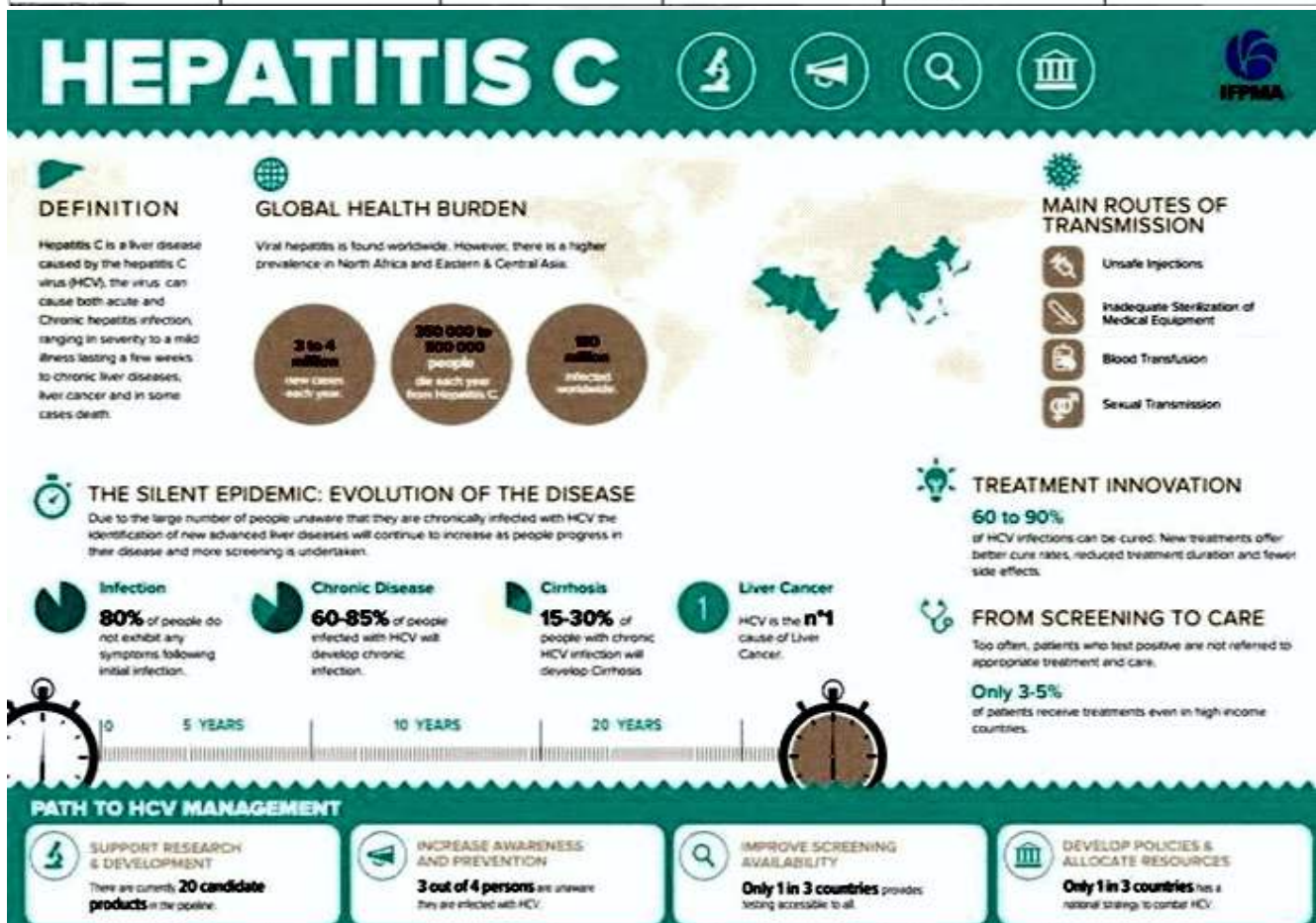
- Nobel Committee noted that the trio's work helped explain a major source of blood-borne hepatitis that couldn't be explained by the hepatitis A and B viruses.
- It makes possible blood tests and new medicines that have saved millions of lives.
- Highly sensitive blood tests for the virus are now available.
- These have essentially eliminated post-transfusion hepatitis in many parts of the world, greatly improving global health.
- Their discovery also allowed the rapid development of antiviral drugs directed at hepatitis C.
- For the first time in history, the disease can now be cured, raising hopes of eradicating hepatitis C virus from the world population.



Hepatitis C Virus

- Hepatitis C is a viral infection that causes liver inflammation, sometimes leading to serious liver damage.
- The hepatitis C virus (HCV) spreads through contaminated blood.

Feature	Hepatitis A	Hepatitis B	Hepatitis C	Delta	Hepatitis E
Incubation period (wk)	2–6 (avg. 4)	4–26 (avg. 13)	2–20	4–8	—
Virus	RNA	DNA	RNA	Incomplete RNA (needs presence of HBsAg)	RNA



NOBEL PRIZE IN PHYSICS

Science & Technology

Why is it in news?

2020 Nobel Prize in physics went to Roger Penrose and the other half jointly to Reinhard Genzel and Andrea Ghez for furthering the understanding of black holes

Observation by Nobel Laureates

- Penrose proved with mathematics that the formation of black holes was possible, based on Albert Einstein's general theory of relativity.
- Reinhard Genzel and Andrea Ghez discovered a supermassive compact object at the centre of our galaxy.

What are Black Holes?

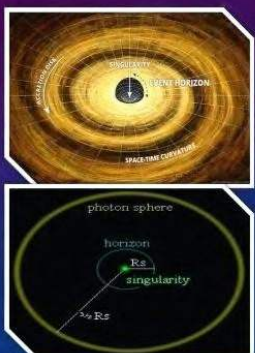
- A black hole is a region of space-time where gravity is so strong that nothing—no particles or even electromagnetic radiation such as light—can escape from it.
i.e it has a high escape velocity. Escape velocity is the speed at which an object must travel to override a planet or an object's gravitational force. For instance, for a spacecraft to leave the surface of the Earth, it needs to be travelling at a speed of about 40,000 km per hour.
- The boundary of the region of the black hole from which no escape is possible is **called the event horizon**.
- Here, the velocity of an object passing nearby needs to exceed the speed of light to escape the black hole.
- Otherwise Matter and radiation fall in, but they can't get out. Speed of light is the speed limit of the cosmos.

How Do Black Holes Form?

- Primordial black holes are thought to have formed in the early universe, soon after the big bang.
- Stellar black holes form when the center of a very massive star collapses in upon itself. This collapse also causes a supernova, or an exploding star, that blasts part of the star into space.
- Supermassive black holes formed at the same time as the galaxy they are in. The size of the supermassive black hole is related to the size and mass of the galaxy it is in.

STRUCTURE OF BLACK HOLES:

- **Singularity:**
The point where whole mass of a black hole is concentrated.
- **Photon Sphere:**
The outer edge where light bends but is still escapable.
- **Event Horizon:**
It is a "point of no return" around a black hole.
- **Accretion Disk:**
It is a disk of gases, dust, stars and planets that fall into the orbit of a black hole.



TYPES OF BLACK HOLES:

- **Stellar-mass Black Holes:**
Stellar-mass black holes are created when massive stars explode, leaving behind a black hole with the mass of just a few suns.
- **Supermassive Black Holes:**
Supermassive black holes exist in the hearts of galaxies and usually contain the mass equivalent to millions and billions of suns.
- **Intermediate Black Holes:**
Such bodies could form when stars collide in a chain reactions and usually contain the mass equivalent to hundreds and thousands of suns.



Theory of General Relativity & Black Hole Formation

- Einstein's 1915 general theory of relativity holds that gravity is due to the warping/bending of space and time.
- As a heavy ball curves a good mattress and deforms it, same way energy and matter (objects like planets, sun) curves space and time and deforms it which in turn results in gravity.
- Deformation of space and time in the plane; here represented as grids, gives rise to the gravity:
- When the deformation of space and time is infinite, the deformation is not a curve anymore. It is now a black hole.
- Thus, the theory of general relativity predicts that a sufficiently compact mass can deform spacetime to form a black hole.

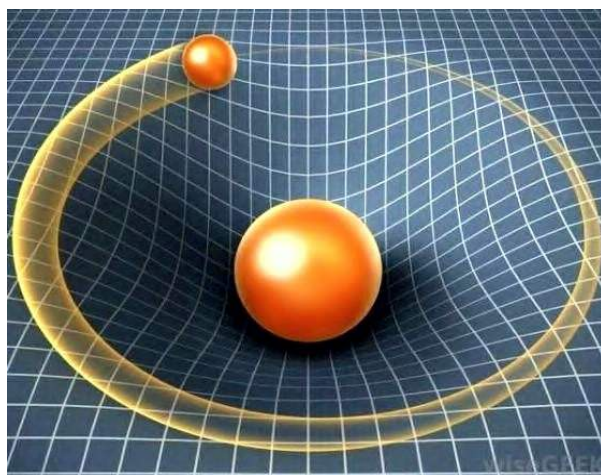
HOW DO WE FIND BLACK HOLES:

- The X-rays are sent off into space and when they strike the matter around the black hole, it can be detected.
- Binary X-ray sources are placed to find strong black hole.
- Another sign of the presence of a black hole is random variation of emitted X-rays. And gravitational lensing, accretion disks and gas jets.

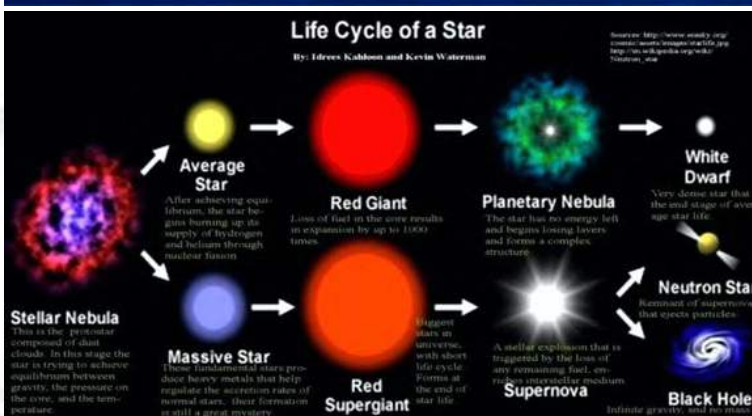
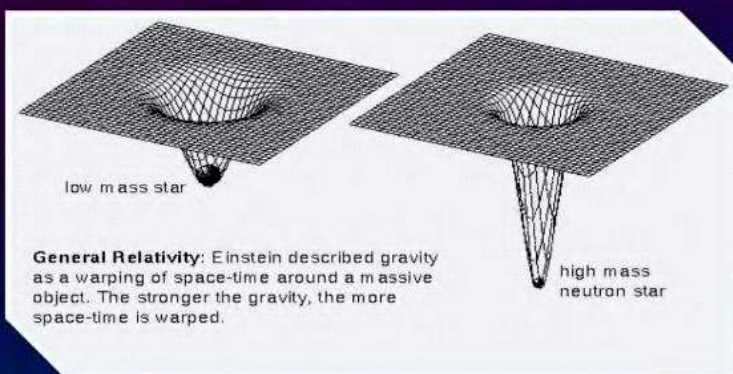


Could a Black Hole Destroy Earth?

- Black holes do not wander around the universe, randomly swallowing worlds.
- They follow the laws of gravity just like other objects in space.
- The orbit of a black hole would have to be very close to the solar system to affect Earth, which is not likely.
- If a black hole with the same mass as the sun were to replace the sun, Earth would not fall in.



GENERAL RELATIVITY: WARPED SPACE:



- The black hole with the same mass as the sun would keep the same gravity as the sun.
- The planets would still orbit the black hole as they orbit the sun now.

Will the Sun Ever Turn Into a Black Hole?

- The sun does not have enough mass to collapse into a black hole.
- In billions of years, when the sun is at the end of its life, it will become a red giant star.
- Then, when it has used the last of its fuel, it will throw off its outer layers and turn into a glowing ring of gas called a planetary nebula.
- Finally, all that will be left of the sun is a cooling white dwarf star.

THE MILKY WAY GALAXY:

- The Milky Way Galaxy is our home galaxy in the universe.
- The Milky Way began forming around 12 billion years ago and is part of a group of about 50 galaxies called the **Local Group** which itself is part of a larger gathering of galaxies called the **Virgo Super cluster** of galaxies.
- The Milky Way moves through space at a velocity of about 552 kilometers per second.
- 100-400 billion stars are present in this galaxy.
- Its galactic center is located about 26,000 light-years from Earth.
- At the center of Milky Way Galaxy lies a super massive black hole named as **Sagittarius A***.
- This black hole contains the mass of about 4.3 million suns.
- The Milky Way contains a few hundred million stellar black holes.
- The speed of stars, gases and dust in accretion disk of this black hole is 220 kilometers per second.

Nobel Prize in Chemistry

What is it in news?

This year's Nobel Prize in Chemistry has been awarded to two scientists who transformed a bacterial immune mechanism, called CRISPR, into a tool that can edit the DNA/genomes of everything from wheat to mosquitoes to humans.

CRISPR

- CRISPR (**clustered regularly interspaced short palindromic repeats**) is a family of DNA sequences found in the genomes of prokaryotic organisms such as bacteria and archaea.

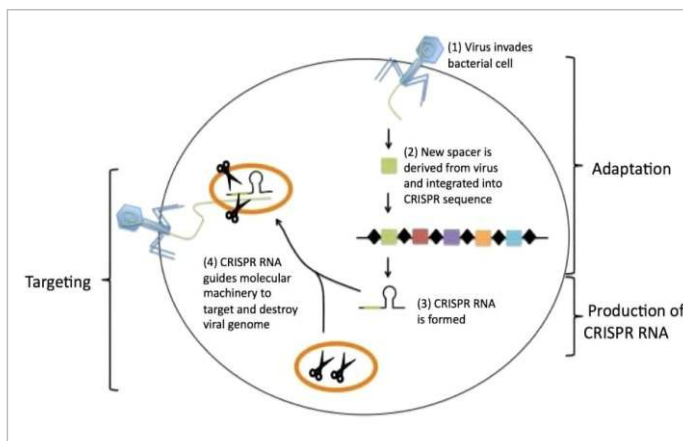
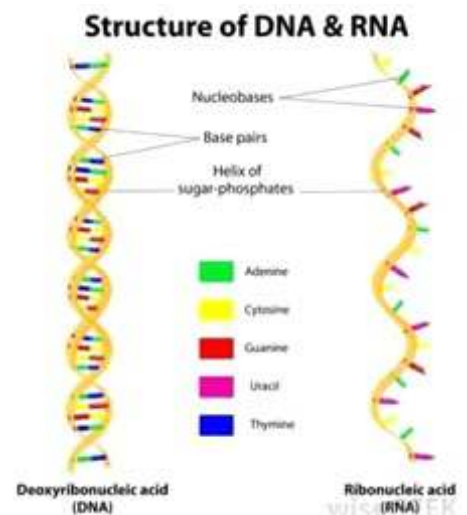
Science & Technology



- The CRISPR-Cas system is a prokaryotic immune system.
- It defends against phage and conjugative plasmid infection.
- A bacteriophage, also known informally as a phage, is a virus that infects and replicates within bacteria and archaea.
- A **plasmid** is a small, extra-chromosomal DNA molecule within a cell that is physically separated from chromosomal DNA and can replicate independently. It can cause infection.

Cas9

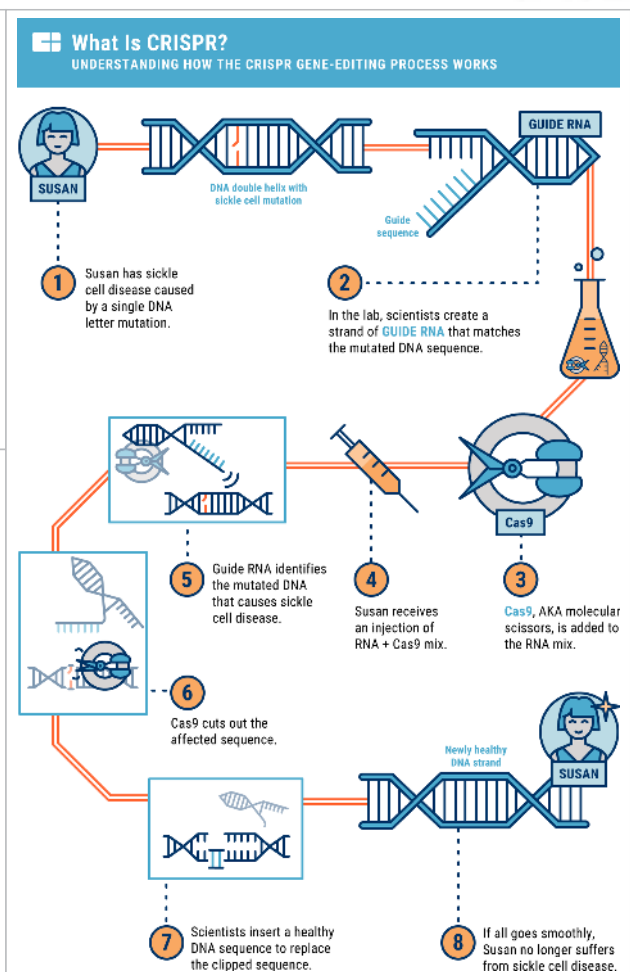
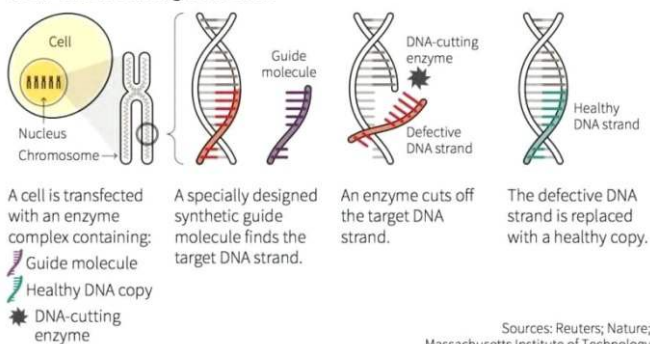
- Cas9 – is one of the enzymes produced by the CRISPR system – which binds to the DNA and cuts it, shutting the targeted gene off.



DNA editing

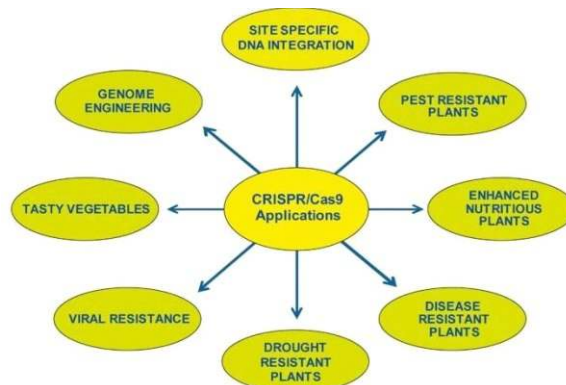
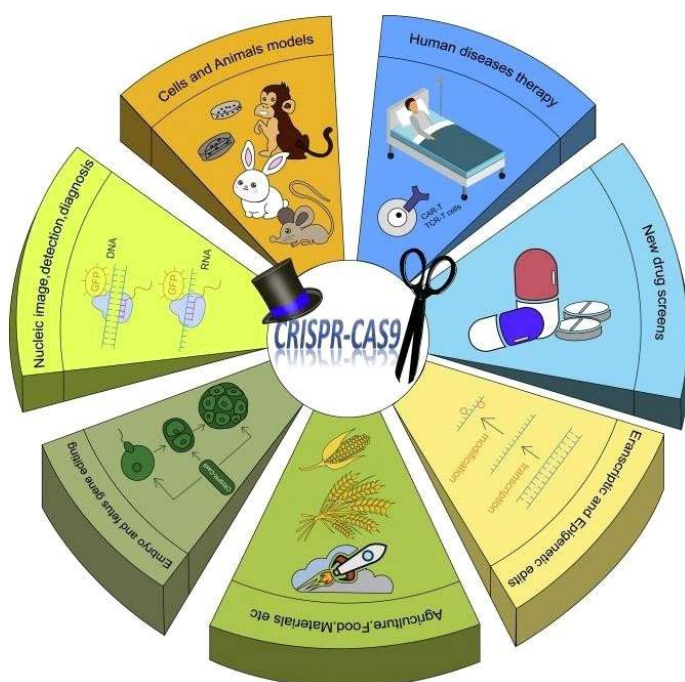
A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

HOW THE TECHNIQUE WORKS



Significance

- The **ability to cut DNA wherever we want** has revolutionized the life sciences.
- This editing process has a wide variety of applications including **basic biological research, development of biotechnology products, and treatment of diseases**.
- CRISPR-based therapies hold promise for the treatment of cancer and inherited disorders such as **sickle cell disease** and for the prevention and treatment of infectious diseases.
- CRISPR could enable scientists to **repair genetic defects** or use genetically modified human cells as therapies. Traditional gene therapy uses viruses to insert new genes into cells to try to treat diseases.
- The crispr-Cas9 genetic scissors were discovered 8 years ago, but have already benefited humankind greatly.



Concerns

- Various ethical concerns can emerge with genome editing including safety.
- Studies have shown that it could lead to mutations that lead to others down the line. If genetic edits are made to embryos, or to egg or sperm cells, these changes will be inherited by all future generations.
- CRISPR has also been used in one of the most controversial biomedical experiments, when a Chinese scientist edited the genomes of human embryos, creating a Designer Baby.

Ethical issues

Safety: Due to the possibility of off-target effects (edits in the wrong place) and mosaicism (when some cells carry the edit but others do not), safety is of primary concern

Informed Consent: Some people worry that it is impossible to obtain informed consent for germline therapy because the patients affected by the edits are the embryo and future generations.

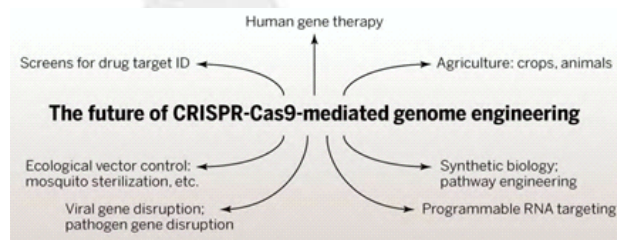
Researchers and bioethicists also worry about the possibility of obtaining truly informed consent from prospective parents as long as the risks of germline therapy are unknown.

Justice and Equity: As with many new technologies, there is concern that genome editing will only be accessible to the wealthy and will increase existing disparities in access to health care and other interventions.

Some worry that taken to its extreme, germline editing could create classes of individuals defined by the quality of their engineered genome.

Way Ahead

- Genome editing should be regulated within the framework for gene-transfer research for allaying ethical concerns and reaping the benefits of this novel technology in medicine, genetics and agriculture to its fullest potential.



Holographic Imaging

Science & Technology

Why is it in news?

Recently, scientists have developed a method using **holographic imaging to detect both viruses and antibodies**, the method has been described in the journal 'Soft Matter'.

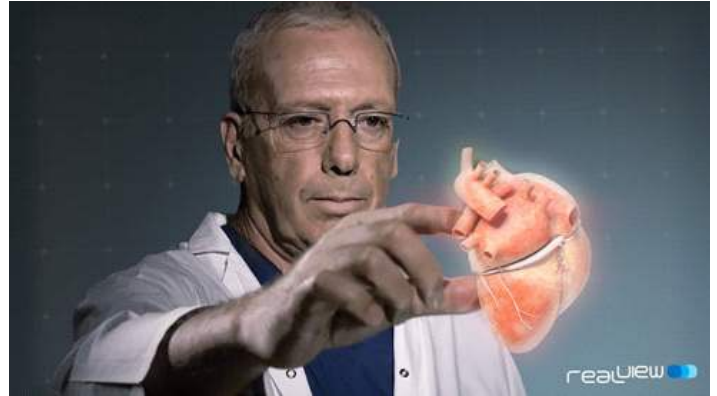
About:

- The method has been developed by scientists from New York University, and it uses laser beams to record holograms of their test beads.
- **Working-**The surfaces of the beads are activated with **biochemical binding sites** that attract either antibodies or virus



particles, depending on the intended test. The Binding antibodies or viruses cause the beads to grow by a few billionth parts of a metre.

- The test can analyse a dozen beads per second and this may help in cutting the time for a reliable thousand-bead diagnostic test to 20 minutes.
- The holographic video microscopy is performed by an instrument, xSight, created by Spheryx.



Significance:

- The test takes less time to complete like, it could be done in under 30 minutes.
- It is much accurate and efficient.
- It can be performed by minimally trained personnel.
- Overall, this will support doctors in distinguishing among possible diagnoses, speeding patients' treatment, reducing the risk of misdiagnosis, and cutting the cost of healthcare.

About holographic imaging:

- **Hologram:** A hologram is a physical structure that diffracts light into an image. The term 'hologram' can refer to both the encoded material and the resulting image.
- A holographic image can be seen by looking into an illuminated holographic print or by shining a laser through a hologram and projecting the image onto a screen.
- The **Hungarian-British physicist Dennis Gabor** was awarded the **Nobel Prize in Physics in 1971** "for his invention and development of the holographic method".
- **Applications-** Military mapping, Art, medical, research etc.

RAISE 2020

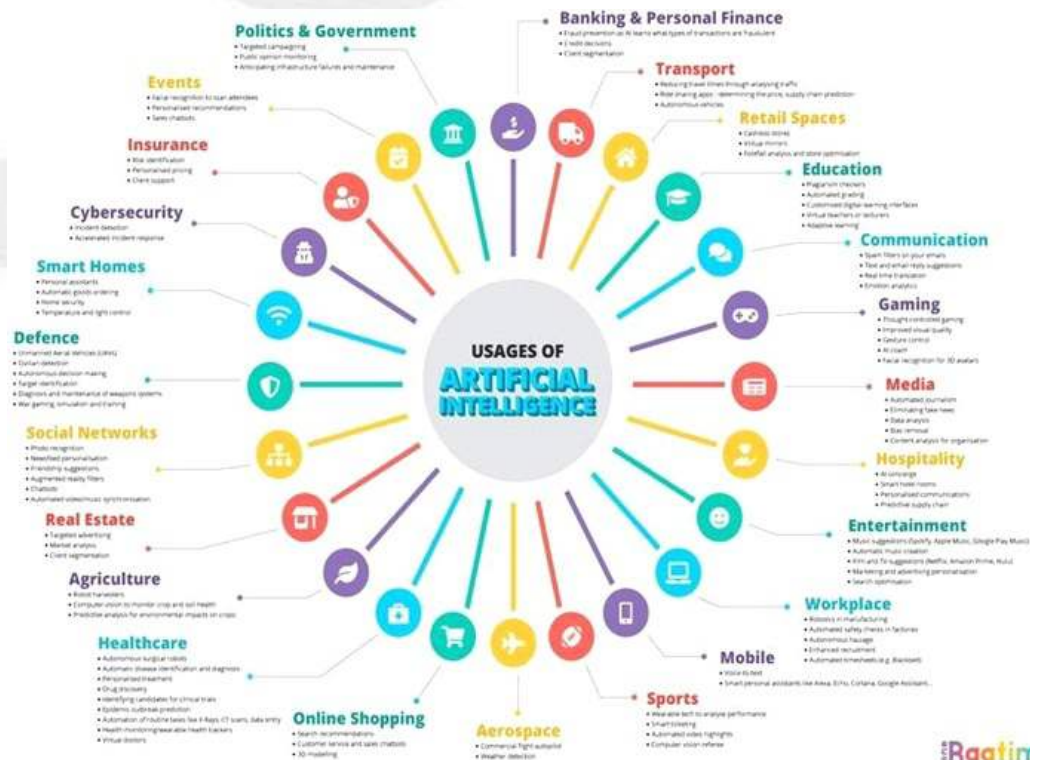
Science & Technology

Why is it in news?

Recently, Global Virtual Summit on Artificial Intelligence (AI), RAISE 2020- '**Responsible AI for Social Empowerment 2020, was held.**

About RAISE 2020

- RAISE 2020 is a **first-of-its-kind global meeting of minds on Artificial Intelligence.**
- It is to drive India's vision and roadmap for social transformation, inclusion and empowerment through responsible AI.
- The event witnessed robust participation from global industry leaders, key opinion makers, Government representatives and academia.
- The **MEITY** and **NITI Aayog** are organising the Mega Virtual Summit.



Aim and Objective

- To kick-start discussion on the creation of robust AI-powered public infrastructure that benefits all, not just in India but across the world.
- India, one of the founding members of the Global Partnership on Artificial Intelligence, aims to implement AI- based solutions around the world so that these lead to widespread social empowerment and prosperity.

- **#AIForAll** is at the core of India's AI strategy and the focus is to build responsible AI for social empowerment, transformation and inclusion.

Future prospects & Conclusion

- India is developing AI-based solutions for social empowerment across **spheres like healthcare, education, finance, agriculture and governance.**
- India **can become the AI laboratory of the world**, delivering intuitive solutions to a wide range of societal issues.
- From agriculture to fin-tech and healthcare to infrastructure, India is at the cusp of rapid development in artificial intelligence.

The Ministry of Electronics and Information Technology (MeitY) is an executive agency of the Union Government. It was carved out of the Ministry of Communications and Information Technology in 2016 as a standalone ministerial agency responsible for IT policy, strategy and development of the electronics industry.

MARS OPPOSITION

Science & Technology

Why is it in news?

Mars reached opposition on Oct. 13.

What is Mars Opposition?

- Mars and Earth both orbit the sun, but at different distances, and thus, different speeds.
- Every two years or so, Mars, Earth and the sun form a straight line during the course of their orbits, **with Earth in the middle — an event known as opposition.**
- It is the point when the outer planet is typically also at its closest distance to the Earth.
- As a result, the Red Planet appears bigger, brighter and redder than usual.
- Mars actually outshine Jupiter, becoming the third brightest object (moon and Venus are first and second, respectively) in the night sky.

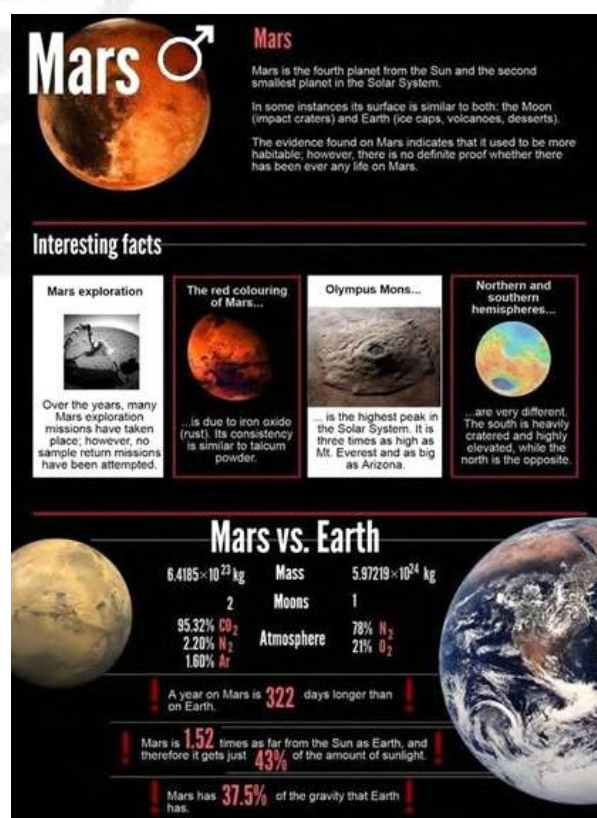
But why is it called opposition

- As per NASA, from an individual's perspective on the Earth, Mars rises in the east and after staying up all night, it sets in the west just as the sun rises in the east and sets in the west.
- Because from the perspective on Earth, the sun and Mars appear to be on the opposite sides of the sky, Mars is said to be in "opposition".
- Essentially, opposition is a reference to "opposing the sun" in the sky.

Why every two years?

- Mars orbits the sun at a greater distance than Earth and takes about 26 months to complete one orbit around the sun.
- Due to these different orbital speeds, Mars oppositions occur every two years or so.
- Mars's next close approach will happen on December 8, 2022, when the planet will be 62.07 km away from the Earth.

- Even so, the closest approach does not mean that Mars will appear to be the same size as that of the moon.
- Inner planets, Mercury and Venus cannot be in opposition to the Sun.



'SAVIOUR SIBLING' EXPERIMENT

Science & Technology

Why is it in news?

India's first "saviour sibling" experiment is a success, say doctors.

About the experiment

Under this experiment a one-year-old sibling saved her brother's life who was suffering from Thalassemia by donating her bone marrow.

Thalassemia

- Thalassemia is a chronic blood disorder.
- It is a genetic disorder due to which a patient cannot make enough hemoglobin found in Red Blood Cells (RBC's).
- This leads to anemia and patients need to acquire blood transfusions every two to three weeks to survive.
- Thalassemias are inherited disorders passed from parents to children through genes.

Thalassemia patients often suffer from

- Anemia
- Weak bones
- Delayed or slow growth
- Iron overload in the body
- Poor appetite
- Enlarged spleen or liver
- Pale skin

There are two main types of thalassemia

- Alpha thalassemia occurs when a gene or genes related to the alpha globin protein are missing or changed (mutated).
- Beta thalassemia occurs when similar gene defects affect production of the beta globin protein.

Standard Treatments

- **Blood Transfusions**
- **Iron Chelation Therapy:** aims to balance the rate of iron accumulation from blood transfusion by increasing iron excretion in urine and or faces with chelators.
- **Folic Acid Supplements**
- **Blood and Marrow Stem Cell Transplant**

Facts and Figures

- India is the thalassaemia capital of the world with 40 million carriers and over 1,00,000 thalassaemia majors under blood transfusion every month.
- Over 1,00,000 patients across the country die before they turn 20 due to lack of access to treatment.
- The first case of thalassaemia in India was reported in 1938
- Every year 10,000 children with thalassaemia major are born in India.

OSIRIS-Rex

Science & Technology

Why is it in news?

After a four-year journey, NASA's robotic spacecraft OSIRIS-REx briefly touched down on asteroid Bennu's boulder-strewn surface to collect rock and dust samples.

OSIRIS-REx

- OSIRIS-REx (**O**rigins, **S**pectral Interpretation, **R**esource Identification, **S**ecurity, **R**egolith Explorer) is a NASA asteroid-study and sample-return mission.
- The mission's primary goal is to obtain a sample of at least 60 g from 101955 Bennu, a carbonaceous near-Earth asteroid.

O – Origins

Return and analyze a sample of a pristine carbon-rich asteroid to study the nature, history, and distribution of its minerals and organic material.

SI – Spectral Interpretation

Define the global properties of a primitive carbon-rich asteroid to allow for direct comparison with existing ground-based telescopic data for all asteroids.

RI – Resource Identification

Map the global properties, chemistry, and mineralogy of a primitive carbon-rich asteroid to define its geologic and dynamic history and provide context for the returned sample.

S – Security

Measure the Yarkovsky effect* on a potentially hazardous asteroid and learn which asteroid properties contribute to this effect.

*a force caused by the emission of heat from a rotating asteroid that can change its orbit over time

REx – Regolith Explorer

Document the texture, morphology, geochemistry, and spectral properties of the regolith (surface material) at the sampling site.

Purpose

The material returned is expected to enable scientists to learn more about

- the formation and evolution of the Solar System,
- its initial stages of planet formation, and
- the source of organic compounds that led to the formation of life on Earth

Bennu

- 101955 Bennu is a **carbonaceous asteroid** in the Apollo group discovered by the **LINEAR Project** in 1999.
- It is a **potentially hazardous object**.
- It has a cumulative 1-in-2,700 chance of impacting Earth between 2175 and 2199.
- Within 10 million years of our solar system's formation, Bennu's present-day composition was already established.
- Bennu likely broke off from a much larger carbon-rich asteroid about 700 million to 2 billion years ago.
- It formed in the Main Asteroid Belt between Mars and Jupiter, and has drifted much closer to Earth since then.
- Because its materials are so old, Bennu may contain organic molecules similar to those that could have been involved with the start of life on Earth.



The Lincoln Near-Earth Asteroid Research (LINEAR) project is a collaboration of the United States Air Force, NASA, and the MIT's Lincoln Laboratory for the systematic detection and tracking of near-Earth objects. LINEAR was responsible for the majority of asteroid discoveries from 1998 until it was overtaken by the Catalina Sky Survey in 2005.

Aquaponics Technique

Science & Technology

Why is it in news?

The **Centre for Development of Advanced Computing (C-DAC)**, Mohali, developed the '**Aquaponics facility**' for aquaponic cultivation of plants.

About the facility

- The state-of-the-art facility is the first of its kind in the region which is **equipped with advanced sensors** for **monitoring** and **automated controls**.
- It has been developed with funding support from the **Ministry of Electronics and Information Technology**.
- The process is completely **organic**, increases the **productivity** of the given **land**, **saves water** and also **augments the farmers' income**.
- The technology has been developed and suitable protocols have been evolved for scientists and farmers.

Relevance:

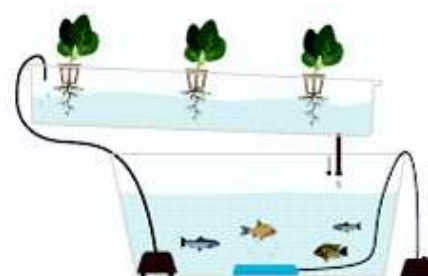
- The rural youth will be drawn in the mainstream with help of this technology and **agri-economy will get a boost**.
- Demand for **fishes** and such crops is increasing rapidly in urban areas and this type of system should be very helpful in increasing the **farmer's income**, especially in **non-coastal areas**.
- It is **environment-friendly** and also has high **socio-economic benefits** for the farming community.

What are Aquaponics?

- Aquaponics, a technique that marries horticulture and aquaculture, helps the farmer raise fishes while he also grows plants.
- It is a form of agriculture that combines raising fish in tanks (**recirculating aquaculture**) with **soilless plant culture (hydroponics)**.
- It is an **emerging technique** in which **both fishes**, as well as the **plants**, are grown in an integrated manner.
- It is a sustainable method of raising both **fish** and **vegetables**
- It is popular with **individuals, entrepreneurs, educators, missions** and **governments**.

How does it work?

- In aquaponics fish and plants are grown together in a tank. The tank has fishes in it and on the sides of the tank there are beds for plants. The water from the fish tank which is rich in nutrients due to the fish waste goes into the plants.
- The beds for supporting the plants can be made using material such as thermocol sheets or gravel.



Significance:

- The setup cost of aquaponic farm might be higher than conventional farms, but the **operational cost is much less.**
- There is **no need for fertilizers and the water requirement** is 90% less than that required in conventional farming.
- **Suits greatly to the demand of organic fruits and vegetables.**
- The **yield from aquaponics is two times higher** than that of conventional farming.
- However, there remains **one restriction** that fruits and vegetables which grow underground cannot be grown using aquaponics.

NATIONAL SUPERCOMPUTING MISSION (NSM)**Science & Technology****Why is it in news?**

The third part of the **National Supercomputing Mission (NSM)** will kick start in January- Department of Science and Technology.

About NSM

- It is a first of its kind Mission to boost the country's computing power.
- The mission was set up to provide the country with supercomputing infrastructure to meet the increasing computational demands of academia, researchers, MSMEs, and startups by creating the capability design, manufacturing, of supercomputers indigenously in India.

Agencies involved

- The National Super Computing Mission is steered jointly by the **Ministry of Electronics and IT (MeitY) and Department of Science and Technology (DST).**
- It is being implemented by the **Centre for Development of Advanced Computing (C-DAC), Pune and the Indian Institute of Science (IISc), Bengaluru.**

Target

- The target of the mission was set to establish a network of supercomputers ranging from a few Tera Flops (TF) to Hundreds of Tera Flops (TF).
- Plus, three systems with greater than or equal to 3 Peta Flops (PF) in academic and research institutions of National importance across the country by 2022.

Supercomputers

- Supercomputer, are a class of extremely powerful computers.
- They refer to the fastest high-performance systems available at any given time.
- Such computers have been used primarily for scientific and engineering work requiring exceedingly high-speed computations.
- Common applications for supercomputers include testing mathematical models for complex physical phenomena or designs, such as climate and weather, evolution of the cosmos, nuclear weapons and reactors, new chemical compounds (especially for pharmaceutical purposes), and cryptology.







Supercomputers in India

- As of June 2020, India is ranked 23rd in the world in terms of number of supercomputers.
- Cray XC40-based Pratyush is the fastest supercomputer in India. Mihir ranks 67 in the world.
- The first supercomputer of India assembled indigenously, called Param Shivay, was installed in IIT (BHU).
- 11 new systems are likely to be set up soon. By 2022, the government aims to install 73 indigenous supercomputers across the country.

Petaflop

- A petaflop is the ability of a computer to do one quadrillion floating point operations per second (FLOPS).
- Floating-point numbers have decimal points in them. The number 2.0 is a floating-point number because it has a decimal in it. The number 2 (without a decimal point) is a binary integer.
- Specific to floating-point numbers, a floating-point operation is any mathematical operation (such as +, -, *, /) or assignment that involves floating-point numbers (as opposed to binary integer operations).
- Pratyush and Mihir are the fastest supercomputer in India with a maximum speed of 6.8 PetaFlops
- The world's fastest supercomputer today, Titan, is capable of 20 petaflops.
- One petaFLOPS is equal to one thousand teraFLOPS.

Applications of Supercomputers

Energy	Defense	Transportation	Industrial	Medical	Science/Research
<ul style="list-style-type: none"> • Cables • FCLs • Generators • Transformers • SMES • Fusion Reactors 	<ul style="list-style-type: none"> • Motors • Cables 	<ul style="list-style-type: none"> • Maglev • Motors 	<ul style="list-style-type: none"> • Induction Heaters • Motors • Generators • Magnetic Separation • Bearings 	<ul style="list-style-type: none"> • MRI • Particle Therapy • Current Leads 	<ul style="list-style-type: none"> • HF Magnets • NMR • Accelerators • Neutron and X-ray Scattering • Undulators
					

Tackle problems: Developed and almost-developed countries have begun ensuring high investments in supercomputers to boost their economies and tackle new social problems. These high-performance computers can simulate the real world, by processing massive amounts of data, making cars and planes safer, and more fuel-efficient and environment-friendly. They also aid in the extraction of new sources of oil and gas, development of alternative energy sources, and advancement in medical sciences.

Disaster Management: Supercomputers have also helped weather forecasters to accurately predict severe storms, enable better mitigation planning and warning systems. They are also used by financial services, manufacturing and internet companies and infrastructure systems like water-supply networks, energy grids, and transportation.

Future applications of artificial intelligence (AI) also depend on supercomputing.

Due to the potential of this technology, countries like the US, China, France, Germany, Japan, and Russia have created national-level supercomputing strategies and are investing substantially in these programmes.

ROOM-TEMPERATURE SUPERCONDUCTOR

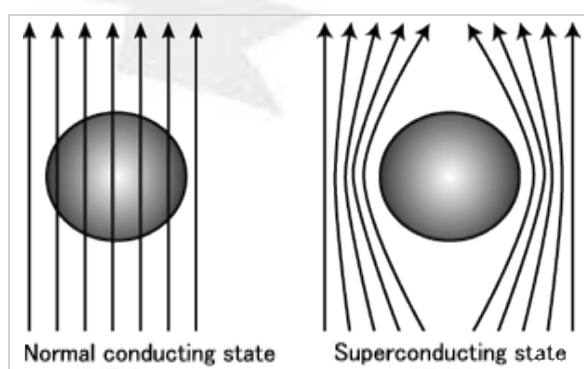
Science & Technology

Why is it in news?

Scientists have reported the discovery of the first room-temperature superconductor, after more than a century of waiting.

Superconductor

- A superconductor is a substance that **conducts electricity without resistance** when it becomes colder than a "critical temperature."
- At this temperature, electrons can move freely through the material.
- This means heat, sound or any other form of energy would not be released from the material when it has reached "critical temperature" (T_c), or the temperature at which the material becomes superconductive.
- Superconductors are different from ordinary conductors.
- Ordinary conductors lose their resistance slowly as they get colder. In contrast, superconductors lose their resistance all at once.
- This is an example of a phase transition. High magnetic fields destroy superconductivity and restore the normal conducting state.
- Prominent examples of superconductors include aluminium, niobium, magnesium diboride, cuprates such as yttrium barium copper oxide and iron pnictides.



About the Room Temperature Superconductor

- This superconductor was produced by squeezing carbon, hydrogen and sulfur between the tips of two diamonds and hitting the material with laser light to induce chemical reactions.

- At a pressure about 2.6 million times that of Earth's atmosphere, and temperatures below about 15° C, the electrical resistance vanished.
- The material is superconducting below temperatures of about 15° Celsius (59° Fahrenheit).
- However, the new material's superconducting superpowers appear only at extremely high pressures, limiting its practical usefulness.

Significance

- All superconductors previously discovered must be cooled, many of them to very low temperatures, making them impractical for most uses.
- This would not be the case anymore.

SATELLITE EOS- 01

Science & Technology

Why is it in news?

- Recently, India's Polar Satellite Launch Vehicle (PSLV C-49) successfully launched its latest earth observation satellite EOS- 01 and nine customer satellites from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

Details

- EOS-01 is an earth observation satellite, intended for applications in **agriculture, forestry and disaster management support**.
- The nine other customer satellites from Lithuania (1), Luxembourg (4) and USA (4) were launched under a commercial arrangement with New Space India Limited (NSIL).
- EOS-01 is nothing but another **Radar Imaging Satellite (RISAT)** that will work together with RISAT-2B and RISAT-2BR1 launched last year.

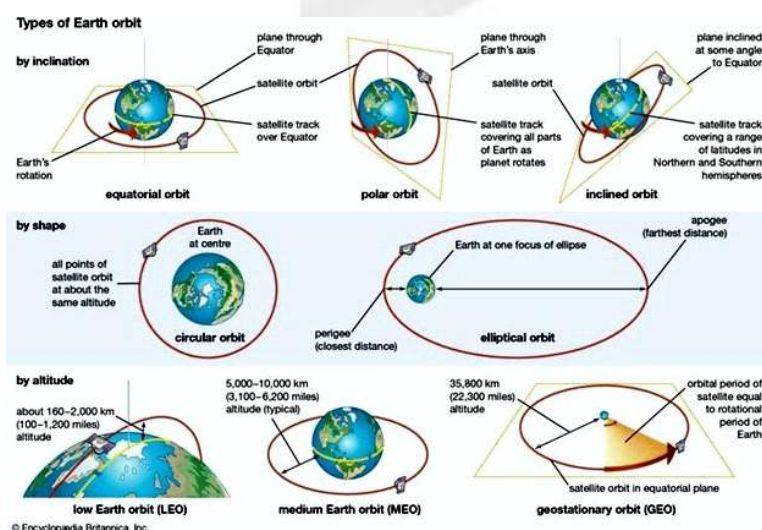


ISRO's new naming system

- EOS-01 was initially named RISAT-2BR2, and was supposed to be the third of the three-spacecraft constellation. It aimed at providing all-weather round-the-clock service for high-resolution images.
- With EOS-01, ISRO is moving to a new naming system for its earth observation satellites.
- Earlier satellites were named thematically, according to the purpose they are meant for.
- For example, the Cartosat series of satellites were meant to provide data for land topography and mapping,
- Oceansat satellites were meant for observations over sea.
- Some INSAT-series, Resourcesat series, GISAT, Scatsat etc are all earth observation satellites.
- Henceforth, all the earth observation satellites would be called EOS-series.

RISAT (Radar Imaging Satellite)

- RISAT is a series of Indian radar imaging satellites built by ISRO.
- They provide all-weather surveillance using synthetic aperture radars (SAR).
- The RISAT series are the first all-weather Earth observation satellites from ISRO.
- Previous Indian observation satellites relied primarily on optical and spectral sensors which were hampered by cloud cover.
- Post 2008 Mumbai attacks RISAT-2 were launched before RISAT-1 and it used SAR sensor of Israel Aerospace.
- The satellite is used for border surveillance, to deter insurgent infiltration and for anti-terrorist operations.



Note: Synthetic aperture radar is a way of creating an image using radio waves. The radio waves used in SAR typically range from approximately 3 cm up to a few meters in wavelength, which is much longer than the wavelength of visible light, used in making optical images. It creates two-dimensional images or three-dimensional reconstructions of objects, such as landscapes.

Types of satellites launched by ISRO

- 1) Communications Satellite
2. Remote Sensing Satellite
3. Navigation Satellite
4. Geocentric Orbit type satellites (LEO, MEO, HEO)
5. Global Positioning System (GPS)
6. Geostationary Satellites (GEOs)
7. Drone Satellite, Ground Satellite
8. Polar Satellite, Nano Satellites
9. CubeSats and SmallSats.



Earth Observation Satellite/ remote Sensing

- Earth observation satellites are the satellites equipped with remote sensing technology.
- Remote sensing is the process of detecting and monitoring the physical characteristics of an area by measuring its reflected and emitted radiation at a distance (typically from satellite or aircraft).
- Special cameras collect remotely sensed images, which help researchers "sense" things about the Earth.
- Functions: Land and forest mapping and monitoring, mapping of resources like water or minerals or fishes, weather and climate observations, soil assessment, geospatial contour mapping are all done through earth- observation satellites.
- Various sensors are equipped on these satellites in accordance with their respective missions.

New Space India Limited (NSIL) is a Central Public Sector Enterprise of Government of India and commercial arm of ISRO. It was established on 6 March 2019 under the administrative control Department Space (DOS) the Company 2013. The main objective of NSIL is to scale up industry participation in Indian space programmes.

1. Optical sensors

Vegetative conditions, ground surface temperatures, sea surface temperatures, ground elevation, cloud conditions, water distribution.

2. Active microwave sensor

Vegetative conditions, ground elevation, cloud conditions, water distribution

3. Passive microwave sensor

Ground surface temperatures, sea surface temperatures, cloud conditions.

FELUDA paper Strip Test

Science & Technology

Why is it in news?

Union Health Ministry said that **FELUDA paper strip test** will be soon rolled out for SARS-CoV-2 diagnosis.

About the test

- FELUDA, stands for **FNCAS9 Editor-Limited Uniform Detection Assay**. Unlike antigen tests it uses a CRISPR-cas9 based system and therefore more accurate in detecting the virus
- CRISPR-cas9 is a **genome-editing tool**. In FELUDA the cas9 enzyme, can be used to hone in on a specific sequence of DNA (in this case unique to the coronavirus) and thereby infer its presence.

A new test in horizon

A COVID-19 test named FELUDA, developed by the Delhi-based CSIR-Institute of Genomics and Integrative Biology, is quicker and cheaper. A lowdown on the test:



Test in time: The paper strip test has been approved for a commercial launch. • ANI

Cost: It is expected to cost between ₹500 and ₹600

Accuracy: Based on tests in over 2,000 patients, it showed **96% sensitivity** (100% sensitivity = all positive samples return positive results) and **98% specificity** (100% specificity = all negative samples return negative results)

Type of sample: Either saliva or blood, but saliva is preferred for testing

Turnaround time: The kit takes 45 minutes to give a result. In comparison, the real-time polymerase chain reaction

(RT-PCR) test takes 1.5 hours; Rapid antigen test takes 30-40 minutes and TruNat test gives results in 60 minutes

Is it similar to the pregnancy color-code test? The paper strip generates two lines for a positive result and one line in the case of a negative result, much like a pregnancy test kit. However, this is a nucleic acid test and not a protein based one

Electronic Vaccine Intelligence Network (eVIN)

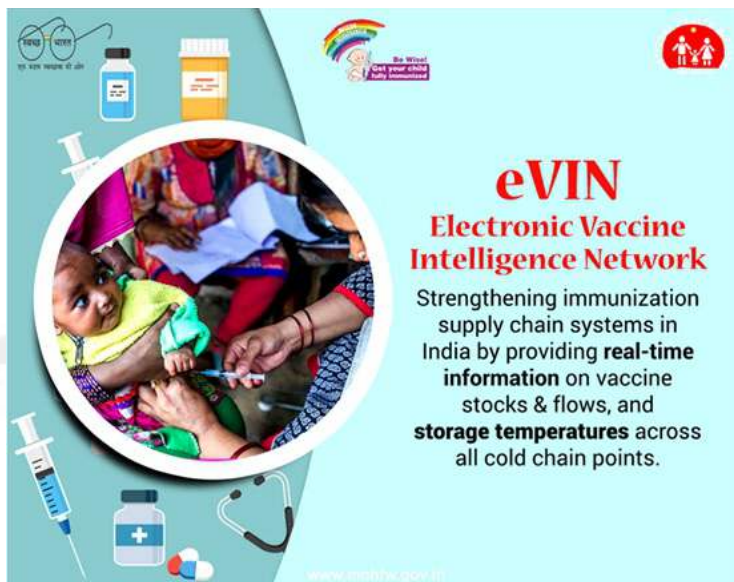
Science & Technology

Why is it in news?

The eVIN network is being repurposed for the delivery of the COVID-19 vaccine. It is being **implemented under the National Health Mission (NHM)** by the Ministry of Health and Family Welfare.

Key Highlights about eVIN:

- It is an innovative technological solution aimed at **strengthening immunization supply chain systems** across the country.
- It has been used with the requisite customization during the COVID pandemic for ensuring the **continuation of the essential immunization services** and protecting our children and pregnant mothers against vaccine-preventable diseases.
- It aims to provide **real-time information on vaccine stocks and flows**, and storage temperatures across all cold chain points in the country.
- It has state-of-the-art technology, a strong IT infrastructure and trained human resources to enable real-time monitoring of stock and storage temperature of the vaccines kept in multiple locations across the country.
- It has **helped create a big data architecture** that generates actionable analytics encouraging data-driven decision-making and consumption-based planning that helps in maintaining optimum stocks of vaccines leading to cost savings.
- It helps in **maintaining optimum stocks of vaccines** leading to cost savings. Vaccine availability at all times has increased to 99% in most health centres in India.



Status of Implementation:

- It has reached 32 States and Union Territories (UTs) and will soon be rolled out in the remaining States and UTs of Andaman & Nicobar Islands, Chandigarh, Ladakh and Sikkim.
- At present, 23,507 cold chain points across 585 districts of 22 States and 2 UTs routinely use the eVIN technology for efficient vaccine logistics management.
- Over 41,420 vaccine cold chain handlers have been introduced to digital record-keeping by training them on eVIN.
- To support the Government of India's efforts to combat COVID-19, eVIN India is helping the State/UT governments monitor the supply chain of COVID response material.
- This platform has the potential to be leveraged for any new vaccine including COVID-19 vaccine, as and when available.

About Universal Immunization Programme:

- **About-** It was launched by the government in 1985, to prevent mortality and morbidity in children and pregnant women against 12 vaccine-preventable diseases.
- **Aim and Objective-** Under this program free of cost vaccination is provided against twelve vaccine-preventable diseases i.e. Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Pneumonia, Meningitis due to Haemophilus Influenzae type b (Hib), Measles, Rubella, Japanese Encephalitis (JE) and Rotavirus diarrhoea. It is one of the largest health programmes in the world. Despite being operational for many years, UIP has been able to fully immunize only 65% of children under 1 year of age.

New Shepherd

Science & Technology

Why is it in news?

Recently, a rocket system meant to take tourists to space successfully completed its seventh test launch. It is called New Shepherd.

About

- New Shepherd has been named after astronaut Alan Shepherd, the first American to go to space.
- It offers flights to space over **100 km above the Earth** and accommodation for payloads.



- It is a rocket system that has been designed to take astronauts and research payloads past the **Karman line – the internationally recognised boundary of space.**
- Aim: To provide easier and more cost-effective access to space meant for purposes such as academic research, corporate technology development and entrepreneurial ventures among others.
- New Shepherd has been built by Amazon founder Jeff Bezos's space company called Blue Origin.
- It will eventually allow space tourists to experience microgravity by taking them over 100 km above the Earth.

COVIRAP

Science & Technology

Why is it in news?

IIT Kharagpur has developed a low-cost portable unit called COVIRAP for rapid diagnostics of coronavirus, which produces results in under an hour.

About COVIRAP

- The machine employed an **isothermal nucleic acid amplification method**, which did away with need for a thermocycler.
- Once the sample was processed in the machine after being mixed with solutions; paper strips (similar to the pregnancy strips) -- are dipped into it.
- The emergence of coloured lines will depict the presence of the virus.
- The COVIRAP method requires very little equipment, and is ideal for use in rural areas with limited facilities.

Amplification

- Amplification (molecular biology), is a mechanism leading to multiple copies of a chromosomal region within a chromosome arm DNA/RNA.
- Polymerase chain reaction (PCR), a molecular biology laboratory method for creating multiple copies of small segments of DNA.

Thermocycler

- Thermocyclers are instruments used to amplify DNA and RNA samples by the polymerase chain reaction.
- The thermocycler raises and lowers the temperature of the samples allowing for de-naturation and re-annealing of DNA/RNA with various reagents.

Isothermal nucleic acid amplification method

- In contrast to PCR, isothermal amplification enables rapid and specific amplification of DNA at constant temperature (60-65°C).

Novel solution

A look at how the new COVID-19 testing device works



Virus alert: Researchers with the COVIRAP device at IIT Kharagpur.

• SPECIAL ARRANGEMENT

• COVIRAP machine resembles a box and comes with a kit

• Kit has three master mixes which are markers of different genes to confirm the virus

• RNA samples are extracted from **nasal swabs** and mixed with the master mix in tubes

• Tubes are put in the machine which is set at a specific temperature and programmed to run for a fixed period

• Once the heating is over,

it's mixed with another solution and reheated

• A paper strip is dipped into reaction product

• Coloured lines develop, like in a pregnancy kit, to indicate presence or absence of virus

• A smartphone app can grab image of the strip and convey results

• COVIRAP can deliver results in an hour

DIFFERENCES WITH RT-PCR

• While RT-PCR machines can cost up to ₹25 lakh, the COVIRAP machine cost the IIT researchers only **₹5,000**

• COVIRAP test kits cost about **₹500**

• RT-PCR needs to be operated by a molecular biologist

• COVIRAP can be operated with minimal training

Tubarial Salivary Gland

Science & Technology

Why is it in news?

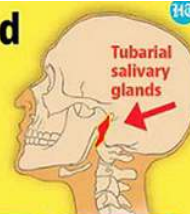
Researchers from the Netherlands Cancer Institute have discovered a new pair of salivary glands hidden between the nasal cavity and throat. It has been named as Tubarial Salivary Gland.

About

- The team proposed the name —tubarial glands as it was found draped over the torus tubarius - the structure that supports the entrance of the auditory tube.
- The glands were about 3.9 centimeters in length on average.

An unexpected discovery

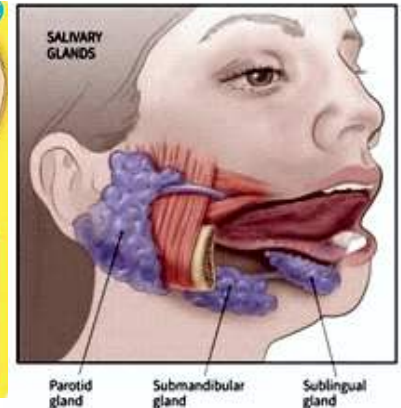
Scientists stumbled on a previously unknown set of salivary glands while studying prostate cancer



The new organ is set deep in the upper part of the throat, behind the nose

The organ is a set of salivary glands, about 1.5 inches in length on average

It is believed to lubricate and moisten the upper throat, the researchers wrote



Physiological Function

- The assumption of the physiological function is the **moistening and lubrication of the nasopharynx and oropharynx.**

SOFIA

Science & Technology

Why is it in news?

NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) has confirmed, for the first time, water on the sunlit surface of the Moon.

About SOFIA

- SOFIA has detected water molecules (H₂O) in **Clavius Crater**, one of the largest craters **visible from Earth**, located in the Moon's southern hemisphere.
- Previous observations of the Moon's surface detected some form of hydrogen, but were unable to distinguish between water and its close chemical relative, hydroxyl (OH).
- Data from this location reveal water roughly equivalent to a 12-ounce bottle of water – trapped in a cubic meter of soil spread across the lunar surface.

The observatory

- SOFIA, the Stratospheric Observatory for Infrared Astronomy, is a Boeing 747SP aircraft modified to carry a 2.7-meter Reflecting Telescope.
- Flying into the stratosphere at 38,000-45,000 feet puts SOFIA above 99 percent of Earth's infrared-blocking atmosphere.
- This allows astronomers to study the solar system and beyond in ways that are not possible with ground-based telescopes.
- SOFIA is made possible through a partnership between NASA and the German Aerospace Center (DLR).

Frontier Technologies Cloud Innovation Center

Science & Technology

Why is it in news?

- The National Institution for Transforming India (NITI Aayog) has established a Frontier Technologies Cloud Innovation Center (CIC) with Amazon Web Services (AWS).
- It has such centres across countries like Australia, Bahrain, Canada, France, Germany, South Korea, and the US, including one in partnership with the University of British Columbia.

Aim

- To help address societal challenges through digital innovation.

Details

- The CIC addresses a core mission to identify and deploy leading edge technologies to drive continuous innovation in delivering citizen services.
- The centre will work to identify and prioritize projects as well as collaborate with local leaders, including subject matter experts at the state and district level, to solve critical societal challenges.
- Local enterprises, startups, researchers, and universities in India will experiment and build prototypes on AWS Cloud, and contribute along with the global CIC community dedicated to accelerating societal innovation.

Gyan Circle Ventures

Science & Technology

Why is it in news?

Recently, Union Minister for Education virtually inaugurated the Gyan Circle Ventures.

Gyan Circle Ventures (TIDE2)

About

- It is a MeitY funded technology business incubator (TBI).
- A business incubator is a company that helps new and startup companies to develop by providing services such as management training or office space.
- Gyan Circle Ventures would function as a technology incubation and development of entrepreneurs (TIDE 2.0) incubation center as approved by the Ministry of Information Technology (MeitY).



- Gyan Circle Ventures will serve as a hub for innovation and startups by providing support, in various phases, via investments, infrastructure and mentoring.
- The incubator would leverage the institutions' entrepreneurial spirit via utilizing its intellectual capital.
- It will also engage in using emerging technologies such as Artificial Intelligence (AI), Blockchain, Cyber Physical Systems (CPS), Cyber Security, Internet of Things (IoT), Robotics, etc.
- TBI would have an advisory committee comprising leading industrialists, entrepreneurs and technical experts.
- The incubator will serve as a catalyst for the advancement of society-conscious entrepreneurship and fuel job creation.

ERIOCAULON

Science & Technology

Why is it in news?

- Scientists have recently discovered two new species of pipeworts in the Western Ghats of Maharashtra and Karnataka.
- The species reported from Sindhudurg district of Maharashtra has been named ***Eriocaulon parvicephalum*** (due to its minute inflorescence size)
- The other reported from Kumta, Karnataka is called ***Eriocaulon karaavalense*** (named after Karaavali, Coastal Karnataka region).
- The medicinal properties of the newly discovered species are yet to be explored.
- Identification of the species is very difficult as they all look similar, which is why the genus is often referred to as a 'Taxonomist's nightmare'.
- Its tiny flowers and seeds make it difficult to distinguish between different species



Pipeworts (Eriocaulon)

- It is a plant group, which completes its life cycle within a small period during monsoon.
- Around 111 species of pipeworts are found in India.
- Most of these are reported from the **Western Ghats and the eastern Himalayas**, and around 70 per cent of them are **endemic** to the country.

Eriocaulon cinereum

- It is well known for its anti-cancerous, analgesic, anti-inflammatory, and astringent properties.

E. quinquangulare

- It is used against liver diseases.

E. madayiparense

- It is an anti-bacterial from Kerala.

Emission norms for Tractors

Science & Technology

Why is it in news?

- The central government has announced the extension of the TREM Stage-IV emission norms.
- The TREM Stage-IV norms for tractors was scheduled to be enforced from October 2020. However, the Indian government has extended the deadline to October 1, 2021.
- The extension has been made to provide some relief to the manufacturers.
- The Central Motor Vehicles Rules, 1989 has been amended by the ministry of road transport and highways to accommodate the extension.



Why emission norm nomenclature amended?

- Government had announced an amendment to the emission norm nomenclature for tractors and construction equipment vehicles.
- This was initiated to avoid confusion between emission norms of other vehicles with the "Bharat Stage" or "BS" prefix against agricultural machinery, construction equipment vehicles and other such equipment.
- This would be applicable for agricultural machinery including agricultural tractors, power tillers and combined harvesters.



Spacecom Policy Draft 2020

Science & Technology

The Department of Space after deciding to open the space sector for private firms has now proposed to enable the private Indian companies to not just use the existing space assets for communication services but also launch satellites, develop new systems as well as sell services to foreign customers under Space-Based Communication Policy of India- Spacecom Policy-2020.

According to the Spacecom policy draft, which will replace the existing Satcom Policy, the private Indian firms will be allowed to set up control centres outside India and use overseas space assets.

The major change will be to encourage the private sector and renew focus on enhancing the capabilities of national security.

How does the Spacecom policy draft proposes to enhance the private sector's role?

- According to the prepared draft, the private firms will be able to establish tracking and command earth stations and satellite control centres in or outside India.
- The companies will be able to offer the capacity to commercial and societal communications within the country as well as outside, they can also supply their systems and solutions to the International market.
- Indian firms will be able to avail of Indian and non-Indian orbital resources in order to establish systems for services within and outside the country.
- Firms will also be able to avail of Indian resources from the designated entities under DoS on a commercial basis. While foreign resources can be used following the new norms.
- The draft also adds that the satellite communication systems which can't be in an open to all commercial domain will be brought into operation with the government's involvement for sustainability.
- No changes in societal development programmes in Spacecom Policy-2020
- The new Spacecom Policy will have everything that Satcom policy has in terms of the creation of new assets, protection of assets, monitoring, and operation.
- The draft explains that Satcom programmes that are focused on societal development- social empowerment, tribal development, education, health, and disaster management- will still remain under the domain of the Department of Space.



About Spacecom Policy-2020:

- As per K Sivan, Secretary, Department of Space, the policy envisions measures to authorize and monitor space assets for communication to or from Indian territory. It further lists steps to bring more assets under India's control in order to use space-based communication for national needs.
- He further added that soon the department will also have specific policies on navigation, launch vehicles, space exploration, remote sensing, and human spaceflight. This will propel India to the next level.

About Satcom Policy:

- The Satellite Communication Policy (SATCOM) was framed in 1997 by the Department of Space in partnership with the Telecommunications Department and Department of Science and Technology.
- The policy was framed to develop a strong satellite communication service industry in India. As the policy did not specify the manner in which it can be implemented, the Department of Space formulated the guidelines, norms, and procedures for implementing the framework of Satcom policy.

Significance of the private sector in space

1. **Increasing Demand:** Indian Space Research Organisation (ISRO)'s annual budget has crossed ₹10,000 crore (\$1.45 billion) and is growing steadily. However, demand for space-based services in India is far greater than what ISRO can provide. Therefore, private sector investment is critical, for which a suitable policy environment needs to be created.
2. **Overall growth of space sector:** Private sector participation is needed to ensure overall growth of the space sector. ISRO has a strong association with the industry, particularly with Public Sector Undertakings (PSUs) like Hindustan Aeronautics Limited and large private sector entities like Larsen and Toubro. Role of private industries should be increased.
3. **Country's security:** The most basic way to secure our space capabilities is to distribute them across many different satellites and spacecraft, so that continuity is unaffected even if an adversary manages to disable one or more of our satellites. For instance, the US is highly vulnerable in space because it depends on thousands of its satellites. But it is also best equipped to deal with a potential attack on its space assets because it can find alternatives to switch to.
4. **International trends and experience-** Elon Musk's "SpaceX" and its high profile projects have highlighted the increasing significance of the private players in the space sector. In India, despite the various strategic, security and regulatory constraints, a limited private ecosystem has evolved around the ISRO.
5. **Greater pool of resources:** Public resources- land, labour, capital are limited. Private sector participation will open a new pool of resources and talent. It will bring more funding, and experience into space exploration activities.
6. **Human Capital:** Restricting space activities to ISRO, limits proper utilisation of talent all over the country. With demographic dividend, private sector participation can exploit the talent across the nation contributing a lot to space explorations in India.
7. **Technological advancement:** Commercialisation will also develop better technologies which are important. It will allow integration of many other technologies like artificial intelligence into space exploration activities. With experience from space activities, the private sector can increase the role of technology in other areas.
8. **Risk Sharing:** Every launch consists of various risks. Private sector helps in sharing the risk of cost factor. Failure costs will be distributed. Also with increased private participation, failures will reduce due to increased available human capital and mind.
9. **Commercial demand:** There is a need to enhance internet connectivity for the masses, which is another demand pull factor for increased commercial interest in space. Asteroid mining is also another potential area that looks promising, with scope for monetisation and disrupting commodity markets.

Issues and Concerns of private participation in space industry in India:

1. **Data Risk:** Though space it gives an opportunity to entrepreneurs but raw data of ISRO in the hands of the public is sensitive and consists of danger of misuse or improper utilisation of data.
2. **Regulation:** Though it is a profitable investment, regulation of private sector participation is not easy. The time taken for regulatory clearances and unstable political institutions can cause delays and hurdle in decision making of investors.
3. **Revenue loss:** ISRO will lose a fair amount of money it is earning through its space activities. This will reduce government revenue.
4. **Unfair commercial practices:** Allowing private sector may lead to lobbying and unfair means to get space projects or launch of any satellite for their own profit. It may also lead to leakage of sensitive information by private players to other countries and companies to make profit.

Migration and Development Brief Report of World Bank

Reports

Why is it in news?

On October 30, 2020, the World Bank released the migration and development brief report. According to the report the remittances of India will fall by 9% by the end of 2020. India's remittances will drop down to 76 billion USD due to covid-19 crisis and the Global economic recession .

Key findings of the report

The report says that the top five countries that will receive lowest foreign remittances will be India, China, Mexico, Philippines and Egypt. The amount of money the migrant workers sending home is expected to reduce by 14% in 2021 as compared to that of 2019.

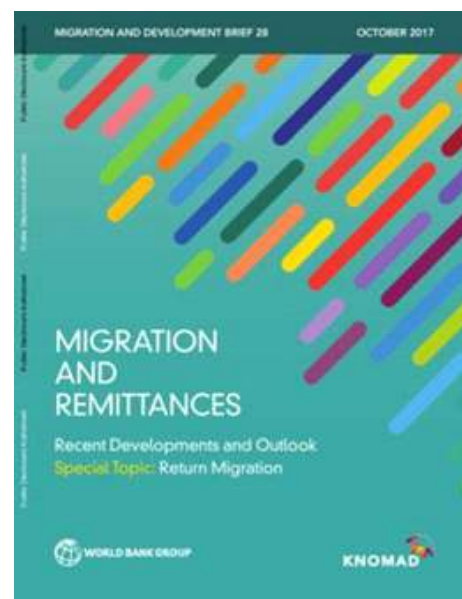
Remittance flows to the low income and middle income countries are predicted to fall by 7% in 2020. This will be around 508 billion USD. Further remittance is to decline by 7.5% in 2021. This has been predicted as 470 billion USD.

Region wise predictions

The major decline is to be found in regions such as Central Asia and Europe. This will be followed by East Asia and Pacific, Middle East and North Africa, sub Saharan Africa, South Asia and Latin America and the Caribbean. Remittances of South Asia is to decline by 4% in 2020.

Pakistan and Bangladesh

In South Asia, the Global economic slowdown impact on remittances of these countries was minimal. This is mainly because of the diversion of remittances from informal to formal channels as people in these countries faced difficulties in carrying money by hand due to travel restrictions. Pakistan on the other hand introduced tax incentives and withholding of taxes was exempted from July 2020. Remittances of Bangladesh increased after the July 2020 floods.



What is meant by remittances?

- A remittance is a money sent to another party, usually, one in another country and the sender is typically an immigrant and the recipient is a relative back home.
- Remittances represent one of the largest sources of income for people in low-income and developing nations, often exceeding the amount of direct investment and official development assistance.

Significance of remittances:

- Money sent home by migrants **is one of the largest financial inflows to developing countries.**
- Workers' **remittances are a significant part of international capital flows**, especially with regard to labour-exporting countries.
- Remittances can **provide the receiving countries with much-needed foreign exchange.**
- **Remittances are a more stable and reliable form of foreign earnings** in many developing countries in comparison to FDI or international aid.
- It **helps in alleviating the Balance-Of-Payments (BOP) and the debt crisis** of such countries.
- Remittances are a **stabilising factor for national currencies** of developing countries.

Public Affairs Index

Reports

Why is it in the news?

Recently, the **Public Affairs Centre (PAC)** has released the **Public Affairs Index (PAI)-2020**.

Key Highlights of Public Affairs Index-2020

- **Kerala** was adjudged the **best-governed state** in the country while **Uttar Pradesh** ended at the **bottom** in the large states category.
- The **four southern states**, namely, **Kerala** (1.388), **Tamil Nadu** (0.912), **Andhra Pradesh** (0.531) and **Karnataka** (0.468) stood in the **first four ranks** in the large state category in terms of governance.
- **Uttar Pradesh, Odisha** and **Bihar** were at the **bottom of the ranking**, scoring negative points in the category i.e. - 1.461, -1.201 and -1.158 points respectively.
- In the **small state category**, **Goa ranked first** with 1.745 points, followed by **Meghalaya** (0.797) and **Himachal Pradesh** (0.725).
- The **worst performers** who scored negative points are **Manipur** (-0.363), **Delhi** (-0.289) and **Uttarakhand** (-0.277).

- **Chandigarh** emerged the **best governed union territory** in the category of UTs with 1.05 PAI points, followed by **Puducherry** (0.52) and **Lakshadweep** (0.003).
- **Dadar and Nagar Haveli** (-0.69), **Andaman, Jammu and Kashmir** (-0.50) and **Nicobar** (-0.30) were the least performers.

What is Public Affairs Index (PAI)?

- According to the PAC, the **governance performance** is analysed in the context of **sustainable development** defined by three pillars of **equity, growth and sustainability**.
- It is a **data driven platform** to rank the **30 States of India** from the lens of governance.
- The Public Affairs Centre has developed PAI as a **unique statistical tool to evaluate the performance of governance** in the States.
- It is largely **based on secondary data** and has been extracted from Union Government Ministries and Departments.

Doing Business in India Report, 2020

Reports

Why is it in news?

The "Doing Business in India Report, 2020" was released by the UK India Business Council. The report is being published for the sixth time since 2015. This year the report has been prepared based on an in-depth survey of 106 UK firms that are operating in India. These firms belonged to services, manufacturing And Higher Education sector.

Highlights of the report

- The businesses in UK find *atma nirbhar Bharat* mission as an opportunity to do more business in India according to the report.
- The report says that 66% of the surveyed organisations believed that the ease of doing business in India is increasing. According to the report this change is mainly due to the progressive reforms and improvements in the business environment of India.
- The changes are predominantly found in availability of support, skilled labour, service providers and supply chain.

Key findings of the report

India's score of doing business has improved from 2.74 in 2019 22.9 to in 2020. The most frequent obstacles in doing business with India is its legal and regulatory boundaries. The other irritants according to the report in doing business in India are GST issues, foreign exchange regulations, high import tariffs and lack of alignment with international standards.

State wise report

According to the report, for the third consecutive Year Maharashtra emerged as the state with maximum incremental improvement. It was followed by Karnataka, Delhi, Gujarat and Tamilnadu.

Recommendations

The following solutions were suggested by the council to improve business between India and UK

- to increase regulatory certainty.
- to improve bureaucratic processes with the greater accountability
- to simplify GST processes.
- to improve quality of infrastructure
- to make single window clearance.

Electricity Access & Utility Benchmarking Report

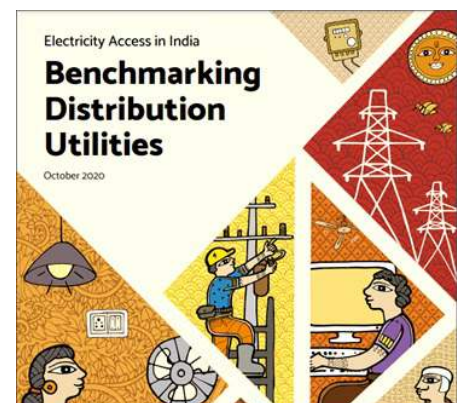
Reports

Why is it in news?

Recently, the **NITI Aayog** has released a report on '**Electricity Access in India and Benchmarking Distribution Utilities**'.

About Electricity Access in India and Benchmarking Distribution Utilities

- The report is jointly prepared and developed by **NITI Aayog, Ministry of Power, Rockefeller Foundation** and **Smart Power India**.
- The primary **survey was conducted across 10 states** which represent about 65% of the total rural population of India and with a sample size of more than 25,000, including households, commercial enterprises and institutions.
- The report is aimed at **capturing insights from both the demand** (electricity customers) as well as **supply side** (electricity distribution



utilities) and it also seeks to:

- ◇ **Evaluate the status of electricity access in India** across these states and distribution utilities along all dimensions that constitute meaningful access
- ◇ **Benchmark utilities' capacity** to provide electricity access and identify the drivers of sustainable access
- ◇ **Develop recommendations** for enhancing sustainable electricity access
- It highlights the benefits of government-led schemes such as **Pradhan Mantri Sahaj Bijli Har Ghar Yojana** and **Deen Dayal Upadhyaya Gram Jyoti Yojana**, which have been well received in rural as well as urban areas.

Key Findings of the Report

- 92% of customers reported the **overall availability of electricity infrastructure** within 50 metres of their premises.
- Overall, **87%** of the surveyed customers have **access to grid-based electricity** and the remaining **13% either use non-grid sources or don't use any electricity at all.**
- The **hours of supply have improved significantly** across the customer categories to nearly 17 hours per day.
 - ◇ Nearly **85% of customers** reported to have a **metered electricity connection.**
- A **satisfaction index** was created to assess the overall satisfaction level of customers with utility services.
 - ◇ The study suggested that a total of **66% of those surveyed were satisfied** i.e. 74% of customers in urban areas and 60% in rural areas.
- The **recommendations** provided under the report are:
 - ◇ **prioritizing the release of new connections** for non-household customers;
 - ◇ **transfer of subsidies or other benefits** directly into a customer's account;
 - ◇ **enhanced technology-driven customer service;**
 - ◇ **ensuring 100% metering of customers;** and
 - ◇ **segregation of feeder lines**
- **Karnataka** is the only state, among the 10 states that were surveyed, where access to **electricity is almost 100%.**

Highlights of Injeti Srinivas Committee report

Reports

Why is it in news?

The Injeti Srinivas Committee submitted its second interim report to the chairperson of International Financial Services Centres Authority (IFSCA).

About the report

It was an IFSCA Expert Committee that was constituted to study about the international retail business development in IFSC.

Highlights

- This interim report covers a number of suggestions aimed at swift and efficient development of international retail businesses in the IFSC, and focuses on recommendations for international insurance activity to flourish in the IFSC.
- This report follows the first interim report, covering banking-related proposals which were submitted on September 11, 2020.
- Other key business verticals, i.e., asset management and capital markets, will be covered in reports that the committee will submit in due course.



Recommendations

- Permit Non-resident Indians (NRIs)/ Persons of Indian Origin (PIOs) to buy Life Insurance policies for themselves as well as their family members who are based in India and abroad from companies set up in the IFSC and allow them to pay premium in the currency of their choice (including Indian rupees).
- Permit NRIs/PIOs to buy portable life insurance policies which offer them flexibility to pay premium in INR or in foreign currency, based on their choice, after they return to India.
- Permit residents to buy overseas health insurance for themselves and their dependents (in India and overseas) from insurance companies or intermediaries in the IFSC for medical treatment anywhere in the world.
- Allow insurance companies to offer health insurance products to NRIs/PIOs including covering their family members who are based in India.
- Permit insurance companies in the IFSC to offer personal accident cover, baggage loss, documents loss cover and travel health insurance anywhere in the world for NRIs/ PIOs and to any other non-resident.
- IFSC should emerge as Reinsurance Hub for Asia and Africa with more reinsurers encouraged setting up base in IFSC. IFSC can also emerge as Aviation insurance Hub for the world.

- Insurers are allowed to set up subsidiaries in IFSC to promote business.
- Indian investors are allowed to set up direct and reinsurance companies with lower capital requirements to promote insurance abroad.
- Foreign reinsurance brokers are encouraged to set up base in IFSC to create a vibrant insurance market.
- According to the committee the Indian Insurance sector is underperforming as compared to those in developed economies. The committee believes that IFSC it has potential to become an engine of economic growth for India.

What are International Financial Services Centres (IFSC)?

An IFSC caters to customers outside the jurisdiction of the domestic economy. Such centres deal with flows of finance, financial products and services across borders. London, New York and Singapore can be counted as global financial centres.

Services provided by IFSC

- It provides fundraising services
- Wealth Management
- Global tax management
- Global and regional corporate treasury management
- Risk management
- Merger and acquisition services
- Insurance and reinsurance services

Anemia Mukd Bharat (AMB) Index

Reports

Why is it in news?

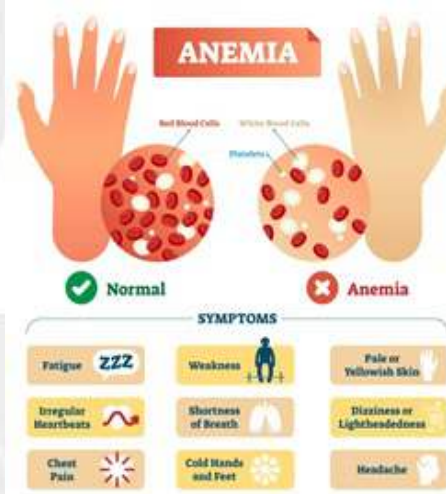
Recently, the Union Ministry of Health & Family Welfare has released the **Anemia Mukd Bharat (AMB) Index**.

Key Highlights of Anemia Mukd Bharat (AMB) Index

- **Haryana** was **ranked at the top slot** with an AMB Index of 46.7 among the 29 states.
- Haryana is **one of 11 states in the country** that have **achieved National Health Policy targets** well before 2020.
- The **institutional deliveries have increased** to 93.7 per cent and it was possible due to 24-hours delivery facilities in the state.

About Anemia Mukd Bharat (AMB)

- It is an initiative of **UNICEF** and the **Ministry of Health and Family Welfare**.
- It has been launched to **reduce the prevalence of anemia** all over the country.
- **Anemia** is caused due to **iron deficiency** which impacts the capacity of an **individual's blood cells to carry oxygen**.
- The scheme aims at **providing bi-weekly iron Folic acid** supplementation to the children under age five through Asha workers.
- It also provided **biannual deworming for adolescents and children**.



What is Anaemia?

- Anaemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.
- According to the World Health Organization (WHO), anaemia among women is defined as a haemoglobin concentration of <120 g/L for non-pregnant women aged 15 years and above, and a haemoglobin concentration of <110-g/L for pregnant women.
- Iron deficiency is thought to be the most common cause of anaemia globally, although other conditions, such as folate, vitamin B12 and vitamin A deficiencies, chronic inflammation, parasitic infections, and inherited disorders can all cause anaemia.
- In its severe form, it is associated with fatigue, weakness, dizziness and drowsiness. Pregnant women and children are particularly vulnerable.

Anaemia burden in India:

- According to National Family Health Survey (NFHS)-IV (2015-16), the prevalence of anaemia among women aged 15 to 49 years is 53% and among adolescent girls aged 15-19 years is 54%.

Why there is still such high prevalence of anaemia even within the developed markets?

- **Poor eating habits** (not eating enough fruits, vitamin C, and legumes such as and beans and peas) and **lack of access to healthcare** are the main causes for such a high prevalence of anaemia among women.
- **Iron supplementation programs have not been successful** in decreasing anaemia in India.
- **Anaemia is difficult to diagnose**, as the symptoms are non-specific in the mild early stages. Studies suggest that more than 50% of people with anaemia are not aware that they have the condition.
- **High prevalence of conditions that can cause anaemia, such as Chronic Kidney Diseases (CKD)**: In people with CKD, anaemia arises due to kidney damage lowering the production of hormones that direct haemoglobin production.

State of Global Air 2020 (SoGA 2020)

Reports

Why is it in news?

Recently, a global study, State of Global Air 2020 (SoGA 2020) has been released by the Health Effects Institute (HEI).

Highlights of State of Global Air 2020 concerning India:

- According to the report, India was followed by Nepal, Niger, Qatar and Nigeria in exposure to PM 2.5, which are fine, inhalable particulate matter with diameters that are generally 2.5 microns, or about 30 times smaller than a strand of human hair.
- India has been recording an increase in PM 2.5 pollution since 2010, said the report.
- The Central Pollution Control Board (CPCB)'s 2019 report indicates that the national average PM 2.5 concentrations has recorded a rising trend in the past three years owing to an increasing number of vehicles on the roads and re-suspension of natural dust.
- Out of 20 most populous countries, 14 have recorded a gradual improvement in air quality but India, Bangladesh, Niger, Pakistan and Japan are among countries that have recorded at least a modest increase in air pollution levels measured by PM 2.5 content, said the report.
- The report comes on top of others showing India to be one of the countries with the world's worst air quality.
- Two-thirds of the most polluted cities, or 21 out of 30, are in India, and Delhi has the worst air among all national capitals, according to the 2019 World Air Quality Report by IQAir AirVisual.

Exposed to pollution

India had the worst annual average concentration of PM2.5 in its air in 2019, according to the State of Global Air 2020 report

1,670,000 Deaths in India in 2019 attributed to air pollution, according to the report

EXPOSURE TO PM2.5 (population-weighted)



DEATHS ATTRIBUTED TO AIR POLLUTION



Infant Related Data:

- High PM contributed to the deaths of more than 1,16,000 Indian infants who did not survive their first month.
- Infants in the first month of life are already at a vulnerable stage and a growing body of scientific evidence-supported studies in India indicates that particulate air pollution exposure during pregnancy is linked to low birth weight and preterm birth.
- More than half of these deaths were associated with outdoor PM2.5 and others were linked to the use of solid fuels such as charcoal, wood, and animal dung for cooking.
- Although there has been a slow and steady reduction in household reliance on poor-quality fuels, the air pollution from these fuels continues to be a key factor in the deaths of these youngest infants

Current Pollution Status:

- Average pollution levels in India are declining over the past three years but these have been marginal, particularly in the Indo-Gangetic plains which see extremely high PM pollution especially during winter.
- After a decline in pollution due to the nationwide lockdowns after March, pollution levels are again rising and air quality is dipping to the 'very poor' category in several cities.

World Economic Forum: "The Future of Jobs Report, 2020"

Reports

Why is it in news?

The world economic forum recently released the third edition of the future of jobs report 2020. According to the report the covid-19 and its impacts will disrupt more than 85 million jobs by 2025.

About the report

The report is based on the future of jobs. The report has been prepared by the forum based on the projections of Senior Business leaders from more than 300 Global firms. These Global leaders together employ over a million of workers.

Key findings of the report

- The automation and new division of labour between the Machines and humans will be the major reason for disruption of jobs in the next five years.
- The redundancy in workforce will decrease from 15.4 % to 9 percentage.
- The covid-19 economic crisis has accelerated the disruption of jobs.
- Around 43 percentage of businesses all over the world have reduced their work force due to integration of Technology.
- Around 41 % of businesses in the world are using contractors for task specialised work.
- Around 31 percentage of the businesses in the world are planning to expand their workforce due to integration of Technology.

Key highlights of the report

50 percentage of the workers in the world require reskilling in order to secure their jobs in the next five years. The acceleration of Technology might increase Global inequality and reduce income of the workers. The most affected due to the acceleration of Technology will be the young people, women and low skilled workers.

Global Hunger Index 2020

Reports

On October 16, 2020, the Global hunger index was launched. It is jointly prepared by Welhunger life and Concern Worldwide.

About the report

- The reason for mapping hunger is to ensure that the world achieves "Zero Hunger by 2030" — one of the SDGs laid out by the UN.
- A low score gets a country a higher ranking and implies better performance.
- It is for this reason that GHI scores are not calculated for certain high-income countries.
- Each country's data are standardised on a 100-point scale and a final score is calculated after giving 33.33% weight each to components 1 and 4, and giving 16.66% weight each to components 2 and 3.

Methodology of the report

It is calculated on the basis of four indicators — **undernourishment**, **Child wasting**, the share of children under the age of five who are wasted (that is, who have low weight for their height, reflecting acute under nutrition);

Child stunting, children under the age of five who have low height for their age, reflecting chronic under nutrition;

And **child mortality**, the mortality rate of children under the age of five.

As we mentioned above, the report mentions India's ranking among 107 countries is 94 this year. Its neighbouring countries like Nepal, Bangladesh and Pakistan have secured a little better ranking with 73, 75 and 88 respectively.

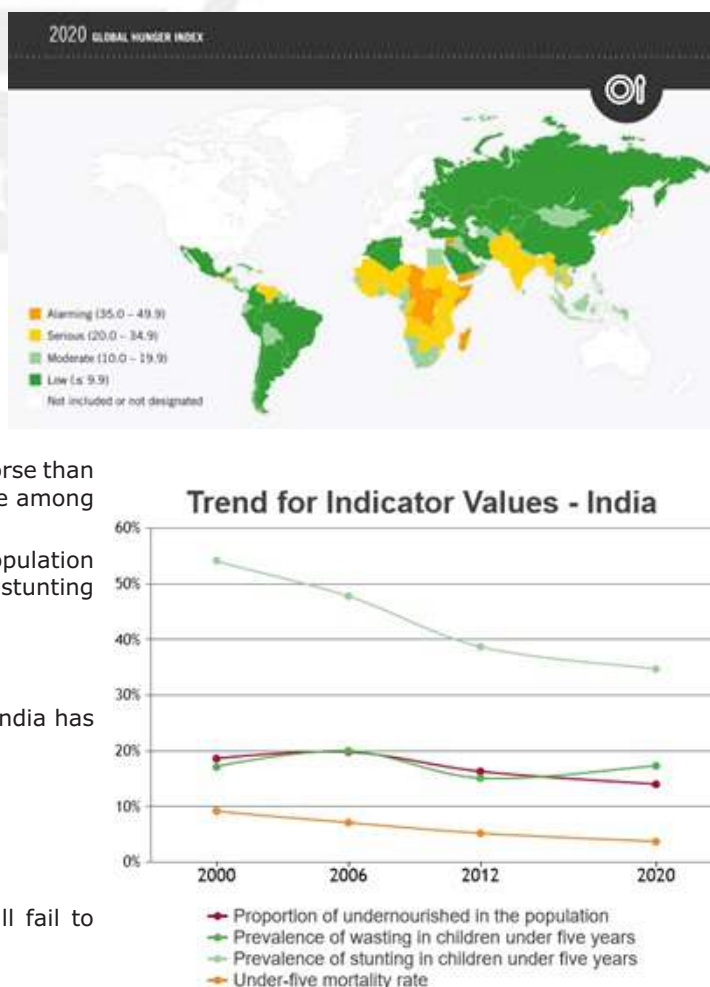
Only 13 countries out of 107 this year have performed worse than India, which include – Nigeria, Afghanistan, Mozambique among others.

The report also mentions that 14 percent of the Indian population is under nourished. The country has also recorded a child stunting rate of 37.4 per cent.

Some key findings of the report –

- The child stunting rate, for age group 0-5 years, in India has been reported 37.4 %.
- Wasting in child was reported as 17.3 %.
- Undernourishment rate of India is 14%.
- The child mortality rate is 3.7 %.

The latest GHI projections reveal that 37 countries will fail to achieve even low hunger by 2030.



Some of the Initiatives taken by India to battle hunger –

- **Poshan Abhiyan**– Launched by the Ministry of Women and Child Development. It aims to reduce stunting, under nutrition and anaemia.
- **EAT Right India Movement**– This initiative was organised by Food Safety and Standards Authority of India (FSSAI) for citizens to push them towards eating right.
- **Pradhan Mantri Matru Vandana Yojana**- A centre sponsored scheme executed by the Ministry of Women and Child Development. It is a maternity benefit programme being implemented in all districts of the country with effect from 1st January, 2017.
- **National Food Security Act, 2013**- The National Food Security Act, (NFSA) 2013 legally entitled up to 75% of the rural population and 50% of the urban population to receive subsidized food grains under the Targeted Public Distribution System.

Global Tuberculosis Report

Reports

Why is it in news?

According to the Global Tuberculosis Report, 2020 released by the World Health Organization (WHO), India registered a decline in the notification of tuberculosis (TB) cases by about 85 per cent in April this year, after the imposition of the novel coronavirus disease (COVID-19) lockdown.

Key Findings of the Report

- For every 100 cases being registered in India till January 2020, only 40 cases were registered by April due to a decline in access to TB services in the country.
- India, incidentally, has the highest TB burden across the globe, **which accounts for 26 per cent of the total global cases.**
- That a huge per cent of potential cases remained out of the TB registration net, could amplify the problems many times for India.
- The weekly and monthly number of TB case notifications fell by more than **50 per cent between the end of March and late April in India, following the imposition of a national lockdown.**

Plausible reasons for this decline amid COVID-19

- Delay in procurement and transportation of TB medicines and other laboratory consumables;
- Restrictions on the movement of people and loss of wages making it difficult to access health centres;
- A fear of stigma given the **similarities in some clinical features of TB (for instance fever and cough) with those of COVID-19, exacerbated the problem.**
- Many countries reported the use of GeneXpert machines for COVID-19 testing instead of diagnostic **testing for TB (43 countries including 13 high TB burden countries, including India).**
- Reassignment of staff in national TB programmes to COVID-19 related duties and reallocation of budgets **(52 countries including 14 high TB burden countries, including India).**
- People were generally discouraged from **seeking healthcare and were encouraged to delay it during the months of the lockdown if it was not urgent.**
- **Even there were general advisories to do so to avoid crowding in health facilities.**

Global targets

- In 2014 and 2015, all Member States of **WHO and the UN adopted the UN Sustainable Development Goals (SDGs) and WHO's End TB Strategy.**
- The SDGs and End TB Strategy **both include targets and milestones for large reductions in TB incidence, TB deaths and costs faced by TB patients and their households.**
- TB is included under **Goal 3 Target 3.3 of the SDGs which aims to "end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases" by the year 2030.**
- The WHO **End TB Strategy aims for a 90 per cent reduction in TB deaths and an 80 per cent reduction in the TB incidence rate by 2030, compared to the 2015 baseline.**
- Milestones for 2020 include a 20% reduction in the TB **incidence rate and a 35% reduction in TB deaths.**
- **But in reality, the world as a whole, is nowhere close to meeting the targets of the 2020 milestones of the 'End TB Strategy'.**
- **As against an aim of reducing TB cases by 20 per cent from 2015-2019, the actual reduction has been just nine per cent.**

The UN Political Declaration on TB also included 4 new targets for the period 2018-2022:

- **Treat 40 million people for TB disease**
- **Reach at least 30 million people with TB preventive treatment for a latent TB infection**

- **Mobilize at least US\$13 billion annually for universal access to TB diagnosis, treatment and care**
- **Mobilize at least US\$2 billion annually for TB research.**

Progress towards global targets

- According to the new report, the WHO European Region is on track to achieve **key 2020 targets of the WHO End TB Strategy, with reductions in incidence and deaths of 19% and 31%, respectively, over the last 5-year period.**
- The African Region has also made impressive gains, with **corresponding reductions of 16% and 19% in the same timeframe. On a global scale, however, the pace of progress has lagged, and critical 2020 milestones of the End TB Strategy will be missed.**

Financing

- As in previous years, most available **TB funding (85%) in 2020 came from domestic sources, with Brazil, Russian Federation, India, China and South Africa providing 57% of the global total.**
- **International donor funding increased from US\$ 900 000 in 2019 to US\$ 1 billion in 2020.** The Global Fund to Fight AIDS, Tuberculosis and Malaria was the single largest source of international TB financing in 2020, while the **United States remains the biggest bilateral funder of efforts to end TB.**



Q

A.

When there is a natural calamity or poor monsoon, farmers may be unable to repay loans.

In these situations often prompts states or centre to offer relief - reduction or complete waiver of loans.

★ Form loan waivers: FLW

1. Acc to 2011 report by the RBI, FLW amounting to Rs 88,000 crore likely to be released in 2012-18 by Seven states, including UP & Maharashtra, may push inflation on permanent basis by 0.2%.

★ Why Govt offering form loan waivers:

1. to fulfill following needs, Govt offers FLW:

1.1. control market forces:

Ex: MSP is skewed; only rice & wheat produces in North & South India, But minor food grain flexibility also important to Govt

1.2. promotes institutional credit system: (ICS)

Govt encourages farmers towards institutional credit through FLW

1.3. financial inclusion: (by institutional credit)

If people rely on ICS; which benefits financial inclusion, for this Govt provides many schemes like Jan Dhan Yojana etc

1.4. landholding pattern: Acc to Socio-economic Census 2014, 66% farmers own less than 1 ha of land

Have the report

data

goal

★ ADVANTAGE OF FARM LOAN WAIVERS:

1. Farm loan waiver provides immediate relief from indebtedness.
- 1.2. It also help in other capital expenditure like: Warehouses, Irrigation sources.
2. It encourages institutional credit system.
3. It improves country financial inclusion by promotion of institutional credit system.
4. FLW helps to promote credit worthiness.
- ⑤ taking risks capacity: because FLW, farmer motivate to horticulture crops also.

★ DISADVANTAGES OF FARM LOAN WAIVERS:

1. Band-aid-solutions: Instead of solving long term problems; Govt offers short term reliefs.
2. Indisciplinence in credit system: Because of FLW, NO farmers cares about Bank repayment issues; which creates Bank will reluctant to give farmers loans, it's huge problem.
3. Moral hazards: Some FLW schemes gives huge income to rich farmers & small income to small farmers which will creates huge income inequality.
4. Fiscal deficit: through Govt-FLW, NPA Rate increasing which makes Banks will reluctant to give loans to farmers.

Focus on environmental copying

Suggestions to form loan waivers:

1. long term problem solutions:
 - 1.1. Reducing debt traps: through promoting institutional credit system from top to bottom levels.
 2. cooperative farming: voluntarily small holding farmers create cooperative farming & extend capital expenditure & develop resources.
 3. Agriculture Extension: farmers should invest on profitable capital resources like drip irrigations and other etc.
 - ④ We need to focus on productivity also.
Ex: long benefit subsidies & capital invest etc
 - ⑤ loan constimization: Acc to crop/rain pattern & RRB & other banks should Respon for FLW at that farmers crops.

WAY FORWARD

there are some issues related with FLW, to overcome; As NITI Aayog recommended; we should improve our land leasing laws & land consolidation also.

farm loan waivers sustainability is crucial for farmers. It is good step by many state Govt & centre.

keep
go to
keep
keep

Date: 03/10/2020

V. Sushma
D-2

1. India has a coastline spanning 7516.6 km forming one of highest peninsulas in the world. According to Ministry of shipping, 95% of India trade by volume and 70% by value is done through maritime transport.

Sagarmala Project

Initiated to promote port-led development in India, boosting infrastructure for transporting goods to and from ports quickly, efficiently and cost-effectively.

Issues with existing Ports

① Lack of hinterland linkages:

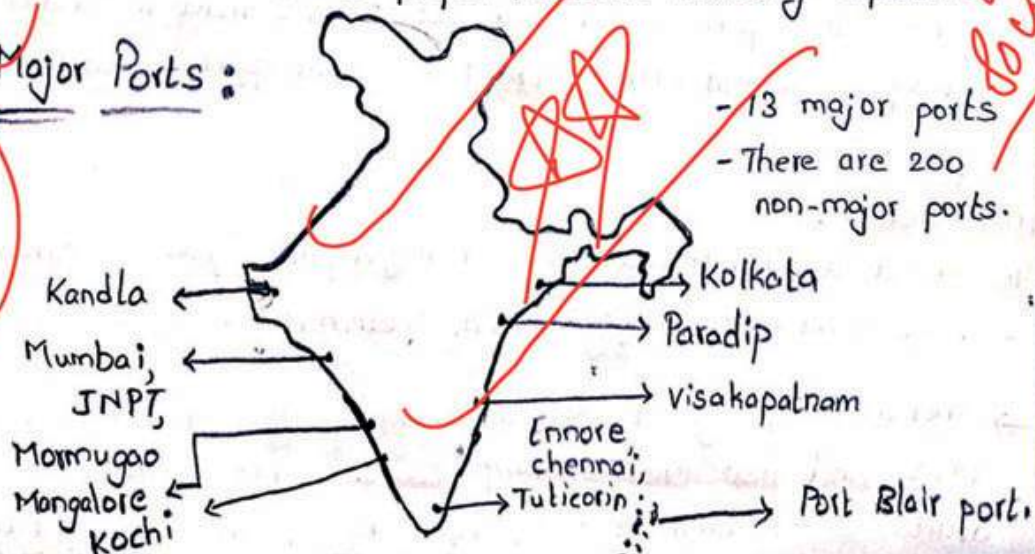
Due to this poor connectivity leads to increase in cost of transportation, turn around time (TAT).

② Technological issues:

like ① inadequate berthing facilities

② No proper material handling capacities

Major Ports:



water truck
franny report

data
data
source

6/2

② Environmental issues

like oil spills and Ballast water, dredging leads to threat to marine ecosystems and local water systems, fisheries.

④ Tariff Regulation

Major and non-major ports are under ambiguity of different jurisdictions.

Sagarmala. can reinvigorate Port Sector:

① Port modernization & Development.

This expands capacity of existing ports and green field projects.

② Port connectivity enhancement.

Improving hinterland linkages, connectivity through multi-modal mix.

③ Port link industrialisation.

Developing coastal economic zones through tax exemptions.

This project with 8 lakh crore worth can reinvigorate the port sector and also boosts make in India by developing manufacture structures near ports, create new jobs.

This covers :

→ The need of Tariff Authority for major ports, quick clearances - recommended by Vijay Kelkar committee.

→ increases capacity of Indian vessels, ease of Carbotage laws and also creates deep water ports with low drafts as - recommended by NITI Aayog in 3-year action Agenda.

Focus to
address
above
points

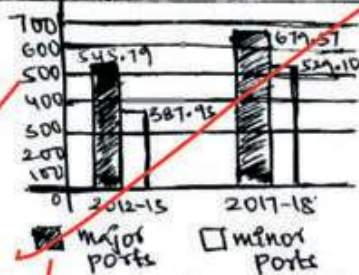
Conclusion
winner

CURRENT AFFAIRS

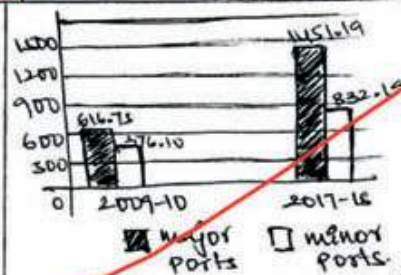
Indian ports are governed by Indian port act of 1908, it defines the jurisdiction, comes under ministry of shipping.

Ports Performance:

- 1) Capacity: major ports grew to 1,065 MMT in FY17, implying a CAGR of 7.75 percent since FY07



Traffic handled at major and minor ports 2012-13 to 2017-18.



Capacity at major and Non-major ports from 2007-10 to 2017-18

- 2) Cargo capacity: In FY17, cargo capacity is estimated to increase to 2,493.1 MMT from 1,806.8 MMT in FY15.
- 3) Cargo traffic: In FY18, major ports in India handled 679.36 MMT of cargo traffic, showing a CAGR of 2.75% during FY08-18.

Issues and challenges with Indian ports:

- 1) High turnaround times: Singapore average ship turnaround time is less than a day. India, it is over two days.
- 2) Port congestion: Container volume, shortage of handling equipment and inefficient operations Ex: Nhava sheva port.
- 3) Sub-optimal transport modal mix: Lack of requisite infrastructure for evacuation from major and non-major, leads to sub optimal transport modal mix.
- 4) Limited hinterland linkages: There is inefficiency due to poor hinterland connectivity through rail, road, highways, inland waterways. This in turn increases the cost of transportation.
- 5) Inadequate Infrastructure and Technology issues: Lack of adequate berth facility, navigational aids, equipment for large volume.
- 6) Issues with regulation: major and minor ports fall under diff jurisdictions, further regulatory framework is rigid.

