

# THE IAS GAZETTE

A House Journal of **APTI PLUS**

SEPTEMBER 2021



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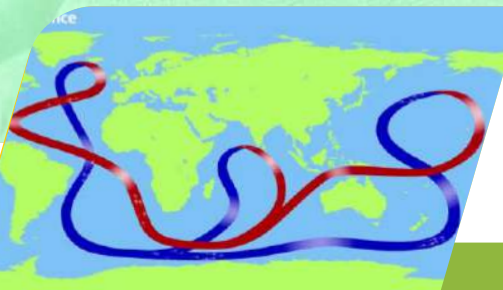
TH EDITION



## AFGHANISTAN CRISIS



GREEN HYDROGEN



ATLANTIC MERIDIONAL  
OVERTURNING  
CIRCULATION



GILGIT  
BALTISTAN  
REGION

A MONTHLY PERIODICAL FOR ASPIRANTS OF UPSC EXAMINATION



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## GENERAL STUDIES - I

### ADOPT A HERITAGE SCHEME AND TOURISM SECTOR IN INDIA

### GS-I CULTURE & HERITAGE

#### Context

- Uttarakhand's Narayankoti temple to get a facelift under Centre's Adopt a Heritage scheme.

#### About

- The 'Adopt a Heritage: Apni Dharohar, Apni Pehchaan' scheme is **an initiative of the Ministry of Tourism, in collaboration with the Ministry of Culture and the Archaeological Survey of India.**
- It was **launched in September 2017.**
- Under it, the government invites entities, including public sector companies, private sector firms **as well as individuals**, to develop selected monuments and heritage and tourist sites across India.
- Development of these tourist sites calls for providing and maintaining basic amenities, including drinking water, ease of access for the differently abled and senior citizens, standardized signage, cleanliness, public conveniences and illumination, along with advanced amenities such as surveillance systems, night-viewing facilities and tourism facilitation centres.
- The **sites/monument are selected on the basis of tourist footfall and visibility** and can be adopted by private and public sector companies and individuals – **known as Monument Mitras – for an initial period of five years.**
- The Monument Mitras are selected by the 'oversight and vision committee,' co-chaired by the Tourism Secretary and the Culture Secretary, **on the basis of the bidder's 'vision' for development of all amenities at the heritage site.**
- Note:** There is **no financial bid involved.**
- The corporate sector is expected to **use corporate social responsibility (CSR) funds for the upkeep of the site.**
- The oversight committee also has the power to terminate a memorandum of understanding in case of non-compliance or non-performance.

#### Narayankoti Temple

- The Narayankoti Temple is a group of ancient temples located about two kilometers from Guptkashi on the Rudraprayag-Gaurikund highway.
- It is a major attraction for devotees visiting Rudraprayag as it's the only place in the country where temples of all the nine planets - Mars, Mercury, Jupiter, Venus, Saturn, Sun, Moon, Rahu and Ketu - are present.
- These temples **were constructed in the 9th century.**
- It is devoted to Lakshmi Narayana who is associated with Pandavas.

#### Some other initiatives in Tourism Sector

##### DekhoApnaDesh


- The 'DekhoApnaDesh' webinar series is an effort to showcase India's rich diversity under **"Ek Bharat Shreshtha Bharat."**
- The DekhoApnaDesh Webinar Series is presented in technical partnership with Ministry of Electronics and Information Technology's Department of National e Governance.

##### SwadeshDarshan Scheme

- This is a **central sector scheme;** i.e. - 100% funded by Central Government of India.
- The **funding available for Corporate Social Responsibility (CSR) initiatives of Central Public Sector Undertakings** and Corporate Sector is also used in this scheme.
- The scheme aims to promote, develop and harness the potential of tourism in India.


##### MICE

- Meetings, incentives, conferences and exhibitions (MICE) is a type of tourism in which large groups, usually planned well in advance, are brought together. Recently there has been an industry trend towards using the term 'meetings industry' to avoid confusion from the acronym.
- Aim:** to promote India as a MICE Destination (Meetings, Incentives, Conferences and Exhibitions).



**Ek Bharat Shreshtha Bharat**

- Celebrate** the Unity in Diversity of our Nation and to strengthen the fabric of traditionally existing emotional bonds between the people
- Promote** the spirit of national integration through a deep and structured engagement between all Indian States & UTs
- Showcase** the rich heritage, culture, customs and traditions of States, thus fostering a sense of common identity
- Establish** long-term engagements
- Create** an environment which promotes learning between States by sharing best practices and experiences



## Achievements of Tourism Industry in India

### Investment

- India was globally the third largest in terms of investment in travel and tourism in 2018, accounting for 5.9% of the total investment in the country.

### Employment

- According to The **World Travel and Tourism Council (WTTC)**, tourism generated 6.8% of India's GDP in 2019 and supported 39.80 million jobs which is 8 % of its total employment.
- In 2014, Tourism & Hospitality sustained a total of 36.7 million direct, indirect, and induced jobs in India, which is more than the jobs created in banking, automotive manufacturing, chemicals manufacturing, education, financial services, and mining sectors.

### Medical tourism

- The total number of inward medical tourists doubled in last three years in India.

### Global Rankings

- India's rank in the Travel & Tourism Competitiveness Index (TTCI), 2017 has also shown a 25 places jump from 2013.
- Rank of India in TTCI Report of 2017 was 40th as compared to 52nd in 2015 and 65th in 2013.

## Challenges plaguing the Tourism Industry

### Lack of proper infrastructure

- An entrenched framework of infrastructure which includes proper transportation facilities, health facilities, stable, and uninterrupted connectivity and other human resources are mandatory for stable tourism.
- India positioned 112nd in the ICT readiness component and **104th rank in the health and hygiene components of the WEF's Travel and Tourism Competitiveness Index, 2017.**
- This basically mirrors the poor quality infrastructure our nation has.

### Human resources

- To maintain the growth of our Indian travel and tourism industry a large amount of skilled man force is required at different levels.
- In the past years, there was an exploding increase in manpower for other sectors like banking, engineering, and medicine. This gradually prompted abatement in the human resources available for the tourism sector.

### Insufficient promotion and marketing

- Great promotion and enough marketing push are excessively indispensable for a nation's travel industry improvement.
- In India, the financial backing allotted to help and advance the travel industry is less contrasted with other tourist destinations.

### Taxation

- High taxes on the entire industry including the airline facilities, hotels, and tour operators are highly expensive.
- This is the one main reason why India loses to other less expensive countries when it comes to tourism.

### Security issues

- The increasing rate of sexual abuse of women, theft, credit card fraud, identity theft, food poisoning, terrorism, and public violence is affecting Indian tourism to a high extent.

### B2B Pricing Wars

- The B2B travel industry in India is a highly cluttered market offering homogenous range of choices and highly customized services.
- Due to which most destination management companies in India are proposing and selling trips by pricing out competition.
- This has led to the advent of extremely low margins and a growing dependence on what is known as the "shopping culture."

### Technology and Funding

- Well-funded big companies are thriving through the deployment of state-of-the-art technology and innovation.
- Lack of proper infrastructure, funding, and research data acts as a major disadvantage and tends to leave the smaller companies at the mercy of big-companies.
- At present, in India, well-funded companies such as MakeMyTrip and ClearTrip have done really well in cementing their positions in the travel industry.
- However, the inbound travel industry in India, is still not very large and is dominated by a few large B2B companies.
- Smaller travel companies led by innovation have not received the recognition that they deserve.

### Perception of India

- Lack of cohesiveness across various state-led tourism campaigns has limited India as clichéd, and stereotypical spiritual destination. We can refer to this tourist section as the **Eat-Pray-Love crowd.**
- This is despite of the fact that as a travel destination, we have lots to offer such as ancient culture, historical heritage, spiritual experiences, beautiful landscape, natural diversity, adventure, wildlife and so on. Eg- The mighty Himalayas are our asset.

### Socio Political Agitations

- For example the temporary closure of Jammu and Kashmir to tourists and socio-political and religious agitations in other northern states of the country rendering them unattractive to tourists.

### Tourism Policy

- Lack of an Integrated Tourism Promotion Programme has hindered the growth of tourism.
- Indifference of many states and union territories to tourism, which has not yet been accorded industry status by them, is another factor limiting its growth.

### Suggestions

#### Association with Policy makers

- Experts in the fields of hotel management and tourism must be associated with all the decision-making bodies.

#### Coordination

- Better liaison should exist between State Tourism Department and ITDC.

#### Tourism Planning Board

- A state level Tourism Planning Board can be set up to do perspective planning to provide the required fillip to the tourism industry in India.

#### Subsidy

- Electricity and water to tourism & hospitality units should be charged at a subsidized rate and on actual consumption against fixed load.

#### Infrastructure Status

- Grant infrastructure status to all hotels to allow them to avail electricity, water and land at industrial rates as well as better infrastructure lending rates with access to larger amounts of funds as external commercial borrowings. It will also make them eligible to borrow from India Infrastructure Financing Company Limited (IIFCL).

#### National Tourism Policy

- A national tourism policy should be issued by the Ministry of Tourism, Government of India which covers common protocols for entry of a tourist into a state. This will act as a uniform guideline for all states to follow.

#### Targeted Marketing Campaign

- The states and union territories should have a targeted marketing campaign to communicate the safety measures taken by the Government at various tourist attractions and the private stakeholders to ensure the safety of the tourists when travelling to the destination.
- This will help to educate tourists and build their confidence to travel for tourism purposes.

#### Leave Travel Allowance

- The Government can provide tax rebate of upto rupees 1.5 lakhs for spending on Domestic holidays in the lines of the Leave Travel Allowance (LTA).

#### Tourism Fund

- Creation a separate Tourism fund under the aegis of Ministry of Tourism to support the Hospitality and Travel Industry in this time of crisis. The fund should be accessible to the Industry as a collateral free 10-year loan.

#### Combating Pandemic Crisis

- Stimulus package to stabilize and support the sector in the near term, including a workforce support fund to ensure that there are no job losses.

#### MSMEs as PSL

- Lending to MSMEs in the Hospitality sector may be treated as 'Priority Sector lending', which will enable increased access to bank finance.

### Steps taken to promote Tourism in India

#### Swadesh Darshan & PRASHAD

- Central Financial Assistance to States/UTs under the schemes of **Swadesh Darshan, National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD)** and Assistance to Central Agencies for the development of tourism related infrastructure in the country.

#### e- Visa Facility

- Extension of **e- visa facility** to citizens of 167 countries.

#### Incredible India 2.0 campaign

- Niche tourism products like Heritage Tourism, Adventure Tourism, Cruise Tourism, Rural Tourism, Wellness & Medical Tourism, MICE, Golf, etc. are being promoted through the Incredible India 2.0 Campaign.

#### Helpline

- Launch of **24x7 toll free multi-lingual tourist helpline** in 12 International languages including Hindi and English.



### Global Tourism Mart for India

- Organization of annual **Global Tourism Mart for India** in line with major international travel marts being held in countries across the world. It provides a platform for all stakeholders in tourism and hospitality industries to interact and transact business opportunities.

### International Buddhist Conclave

- Organization of biennial **International Buddhist Conclave**. It showcases the Buddhist Heritage in India and boost tourism to the Buddhist sites in the country and cultivate friendly ties with countries and communities interested in Buddhism.

### Annual International Tourism Mart

- Organization of Annual International Tourism Mart for promotion of tourism in North Eastern States.

### "Know India" seminars

- Promotional activities in tourist generating markets overseas through the India Tourism Offices abroad with active participation in travel fairs and exhibitions; organizing Road Shows, "**Know India**" seminars & workshops.

### Swachh Paryatan

- The Ministry of Tourism launched a mobile application called **SwachhParyatan** which will let citizens report any hygiene issues at various tourist destinations across the country.

### Adarsh Smarak

- ASI has identified 100 monuments to be developed as Model Monuments. These monuments would be provided necessary tourist facilities including Wi-Fi, security, signage, encroachment free area, interpretation centres showing short films about the importance of monuments and signboards of Swachh Bharat Abhiyan.

### SAATHI

- Ministry of Tourism developed an initiative called **SAATHI (System for Assessment, Awareness & Training for Hospitality Industry)** by partnering with the Quality Council of India (QCI) in October 2020.
- The initiative will effectively implement guidelines/SOPs issued with reference to COVID-19 for safe operations of hotels, restaurants, B&BS and other units.

### Audio Odigos

- Ministry of Tourism launched Audio Guide facility App called **Audio Odigos** for 12 sites in India (including iconic sites).

### Adopt a Heritage Project

- Ministry of Tourism has launched the 'Adopt A Heritage' project.
- Heritage sites are being offered for adoption by the public sector, private sector and individuals to become 'Monument Mitras' for developing amenities and facilities at these sites under this programme.

### 'Special Tourism Zones'

- Creation of 'Special Tourism Zones' anchored on Special Purpose Vehicles (SPVs) in partnership with the States.
- Creation of Special Tourism Zones would lead to overall development of the areas and offer diverse tourism experiences which would help in creating livelihood and improve standards of local communities living in those areas.

### Glass Top Coaches

- Ministry of Tourism as part of its Rail Tourism Policy is collaborating with Ministry of Railways for manufacturing of three glass to coaches to be deployed on scenic rail routes of the country.
- Two glass top coaches were launched in 2017 on the Vishakhapatnam – Araku Valley and Dadar to Madgaon route. The third glass top coach is being constructed for the Qazigund – Baramullah route in Jammu and Kashmir.

### Conclusion

- Tourism sector is predicted to grow at an annual rate of 6.9% to \$460 bn by 2028 which is 9.9% of GDP.
- Government of India is rightly working to achieve 2% share in world's international tourist arrivals by 2025.
- To achieve its goals India needs a colossal move from the conventional marketing techniques that are still being followed to a much modern approach.
- It is time to showcase the cultural diversity of the country and reinforce the principle of "Tourism for All".

**SAROOP AND GURU NANAK DEV****GS-I CULTURE & HERITAGE**

### Context

- Among the most striking images emerging from the flight of Sikhs from Afghanistan have been those of Union Minister Hardeep Singh Puri carrying on his head, one of the saroops of the holy Guru Granth Sahib flown in from that country.

### Guru Nanak Dev

- First of the 10 Sikh Gurus and the **founder of Sikhism**, **Guru Nanak** was born in a village, Talwandi, near Lahore (it was renamed later as Nankana Sahib).
- He rejected sacrifices, rituals, image worship, austerities and the scriptures of both Hindus and Muslim.

- He advocated the 'Nirguna' (devotion to and worship of formless divine) form of bhakti.
- Guru Nanak's hymns known as "Gurbani" were included in the Adi Granth compiled by Guru Arjan (1563-1606), the fifth Sikh guru.
- The book also contains teachings of Bhakti saints like Kabir, Ramananda, Namdev and a Sufi saint Sheikh Farid.
- Adi Granth came to be known as "**Guru Granth Sahib**" after the tenth Sikh guru- Guru Gobind Singh, included the compositions of the ninth guru, Guru Tegh Bahadur in the scripture.

### Relevance of Guru Nanak Dev's teachings in present day context

#### Building a classless and casteless society

- Today, India is one of the emerging superpowers of the world. Despite this fact, caste system is still engrained in its societal structure. Guru Nanak Dev's vision of a classless and casteless society can help us to establish an egalitarian society.
- His idea of equality can be presumed from his innovative social institutions:
  - **Langar (Common kitchenette):** Collective cooking.
  - **Pangat (Holy congregation):** sharing food without distinction and discrimination of caste.
  - **Sangat (General Assembly):** Collective decision-making.
- These practices had directly challenged the ill practices like untouchability and the caste system in the 16<sup>th</sup> century and continue to do so even today.

#### Communal harmony and social stability

- Increased cases of communal intolerance, riots, mob lynching etc has affected the secular fabric of the Indian society.
- Guru Nanak Dev's concept of "Sabna Jiya Ka Ek Data " is relevant even today and can tackle these issues in the society. "Sabna Jiya Ka Ek Data "means the whole world is God's creation and all are born equal. There is only one universal God i.e. "Ik Omkaar Satnaam."
- This concept clearly re-emphasizes the fact that there is no distinction between a Hindu and a Muslim.
- Further, forgiveness, patience, forbearance, and kindness are the core of Guru Nanak Dev's teachings.

#### Gender Equality

- Oppression of women in the form of violence, rape, acid attacks, female infanticide and customary practices has been failing our society like never before.
- Respect for women and gender parity are perhaps the most important lessons that need to be learnt from Guru Nanak Dev's teachings.
- Guru Nanak Dev's argument "How can women be inferior when they give birth to men?" and his words "Women as well as men share the grace of God and are equally responsible for their actions to him." are of huge significance in the present context and can help in building gender parity.

#### Neighborhood Peace

- Due to cross border terrorism and Kashmir issue, relationship between India and Pakistan has been grim since decades.
- Both the countries kept their political issues aside and inaugurated the Kartarpur corridor. This clearly demonstrates the influence of Guru Nanak Dev's teachings and appears to be a point of normalization between the two countries that will have a huge influence in maintaining peace and order in South Asia.

## HAMPI AND VIJAYNAGARA EMPIRE

## GS-I CULTURE & HERITAGE

### Context

- Recently, the Vice-president of India visited monuments at the UNESCO World Heritage Site of Hampi in Vijayanagara district, Karnataka.

### About Hampi

- Hampi is a UNESCO World Heritage Site located on the bank of Tungabhadra River in Karnataka.
- Emperor Ashoka's Rock Edicts suggest this region was part of the Maurya Empire during the 3rd century BCE.
- Hampi was under different dynasties like Chalukyas, Hoyslas and Vijaynagara Empire.
- It was during the Vijaynagara Empire in the 14<sup>th</sup> century under King Krishnadevaraya of Tuluva Dynasty that Hampi flourished and reached unfathomable heights.
- It became the pilgrimage centre of the Hindu religion.
- By 1500 CE, Hampi-Vijayanagara was the world's second-largest medieval-era city after Beijing.
- It was India's richest at that time, attracting traders from Persia and Portugal.
- The Vijayanagara Empire was defeated by a coalition of Muslim sultanates.



- Its capital was conquered, pillaged and destroyed by sultanate armies in 1565, after which Hampi remained in ruins.

### Remarkable sites in Hampi

- Vittala Temple (God Vittala - form of lord Vishnu); Virupaksha Temple (Lord Shiva); Kadalekalu Ganesha statue (14ft); Lakshmi Narasimha statue; Lotus Mahal and Hazara Rama Temple (depicting Ramayana themes).

### Vijayanagara Empire

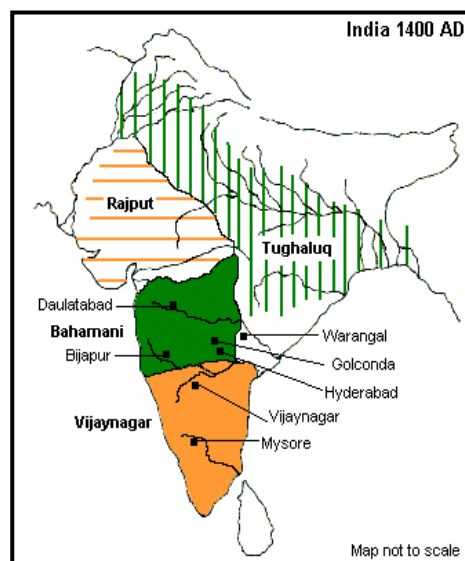
- **Founder** - Harihara and Bukka of the Sangama dynasty in 1336.
- **Alteranate Names**- Karnata Empire, and the Kingdom of Bisnagar (called by the Portuguese)
- **Ruled till**- 1646. Although its power declined after a major military defeat in the Battle of Talikota in 1565 by the combined armies of the Deccan sultanates.
- **Surrounds**- Hampi, now a World Heritage Site in Karnataka
- **Capital**- Vijayanagara, Penukonda, Chandragiri
- **Preceded by**- Hoysala Empire
- **Succeeded by**- Kingdom of Mysore
- **Sequence of Dynasties in Vijayanagara Empire**

#### 1. Sangama dynasty

#### 2. Saluva dynasty

#### 3. Tuluva dynasty

#### 4. Aravidu dynasty



### Administration in Vijayanagara Empire

- The Empire was a Monarchy.
- The vijaynagar Empire gradually developed a centralised administration with all its branches carefully organised.
- The king was the authority in civil, military as well as judicial affairs and also often intervened to settle social disputes.
- For purpose of administration, the empire was divided into 6 provinces.
- A province was called **Prant, or Rajya**.
- Each province was **under a viceroy or Nayak** who was either a member of the royal family or influential noble of the state.
- Every viceroy **enjoyed civil, military and judiciary powers** within the province.
- He was required to submit regularly account of the income and expenditure to the central government.

### Council of Ministers

- Though the Brahmanas held high offices in the administration and had considerable influence, the ministers were recruited not only from the rank but also from those of the Kshatriyas and the Vaishyas.
- The office of a minister was sometimes hereditary and sometimes rested on selection.

### Decentralised administration

- The rulers of Vijayanagara adopted the principle of the decentralisation of political power.
- The empire was, divided into provinces prants, districts, 'Nadus', 'Melagrams' and 'grams'. Administration of the villages was autonomous.

### Local Administration

- Each village was a self sufficient unit. The village assembly conducted the administration of the area under its charge- executive, judicial and police, through its **hereditary officers like the senateova or the village accountant, the talara or the village watchman or the commandant, the begara or the superintendent** of forced labour and others.
- These village officers were paid by grants of land or a portion of agricultural produce.
- The king maintained a link with the village administration through **his officer called Mahanayakacharyawho** exercised a general supervision over it.

### Nayankar system of administration

- Under this system, the ruler assigned a land track to officials in lieu of pay i.e. for maintaining themselves and that of their army from the land track itself.
- These officials or land-lords provided military service to the ruler.

### Sources of Revenue

- Land revenue was the chief source of income. Land revenue known as "sist"
- Land was divided into four categories for purposes of assessment, wet land, dry land, orchards and woods.
- So, the Vijaynagar rulers adopted the "principle of differential taxation", that is, levied taxes according to the relative fertility of the lands.
- Usually the share was one sixth of the produce.
- Land revenue could be paid in cash or kind.

- The rates varied according to the type of the crops, soil, method of irrigation, etc.
- Apart from land revenue, other taxes were: irrigation tax, grazing tax and import- export duties on merchandise goods.

### Military organization

- The army consisted of infantry, cavalry, artillery and camels.
- The rulers of Vijaynagar had a carefully organised military departments called '**Kandachara**', under the control of the Dandanayaka or Dannayaka (commander – in-chief) who was assisted by a staff of minor officials.
- The State maintained a large and efficient army, the numerical strength of which was not, however, uniform all through.
- The rulers of the Vijayanagara Empire neglected naval power.
- The rulers recruited Turkish archers in the army.
- The military organization was rather weak and its primary weakness was artillery.
- Chariots had gone out of use. The efficiency of the huge army was not proportionate to the number of force.

### Orders of the Rulers

- No written orders were issued by the rulers.
- The royal words were carefully noted down by secretaries, whose record was the sole evidence of the commands issued.

### Judiciary

- The king as the supreme judge, but there were regular courts and special judicial officers for the administration of justice.
- Sometimes, disputes were settled by the State officials with the co-operation of the local bodies.
- The only law of the land was not the law of the Brahmanas, but was based on traditional regulations and customs strengthened by the constitutional usage of the country, and its observance was strictly enforced.
- Severe punishment was inflicted on guilty persons.
- These penalties were chiefly of four kinds- fines, confiscation of property, ordeals and death.
- Death or mutilation was the punishment of crimes like thefts, adultery and treason.

### Position of Women

- Women occupied a high position and took an active part in political, social and literary life of the empire.
- They were educated and trained in wrestling, in the use of various weapons of offence and defense, in music and fine arts.
- Some women also received education of high order.
- Nuniz writes that the kings had women astrologers, clerks, accountants, guards and wrestlers

### Social Life

- The practice of untouchability existed.
- Child marriage, polygamy and sati were prevalent.
- Caste was determined either by individual's occupation or the community they belonged to.

### Economy

- The economy was dependent on Agriculture.
- The empire's capital city was the main business hub.
- The capital city was noted for its markets dealing in spices, textiles and precious stones.
- Land ownership was important.
- Textiles, mining, metallurgy perfumery, and other several industries existed.
- They had commercial relations with, the islands in the Indian Ocean, Abyssinia, Arabia, Burma, China, Persia, Portugal, South Africa, and The Malay Archipelago.

### Contribution to Architecture and Literature

- The Hazara Rama temple and Vittalaswamy temple was built during this period.
- Vijayanagara architecture is the combination of Chalukya, Hoysala, Pandya and Chola styles.
- The bronze image of Krishnadevaraya is a masterpiece.
- Sanskrit, Tamil, Telugu and Kannada literature were developed.
- Sayana wrote commentaries on Vedas.
- Krishnadevaraya wrote **Amuktamalyada in Telugu** and **UshaParinayam and Jambavathi Kalyanam** in Sanskrit.
- Field surveys indicate that the entire area was dotted with numerous shrines and small temples which proved that variety of cultures existed and were supported by different communities.

### About Krishnadevaraya

- Krishna Devaraya was the emperor of the Vijayanagara Empire during 1509-1529.
- He was the **third ruler of the Tuluva Dynasty** and is considered to be its greatest ruler.





- He possessed the largest empire in India after the decline of the Delhi Sultanate.
- Krishnadevaraya earned the titles **Kannada Rajya Rama Ramana**, Andhra Bhoja and MooruRayaraGanda (lit, "King of Three Kings").
- He became the dominant ruler of the peninsula of India by defeating the Sultans of Bijapur, Golconda, the Bahmani Sultanate and the Gajapatis of Odisha, and was one of the most powerful Hindu rulers in India.
- The Vijayanagar kingdom reached the pinnacle of its glory during his reign.
- He was successful in all the wars he waged. He defeated the king of Odisha and annexed Vijaywada and Rajmahendri.
- Krishnadeva Raya encouraged trade with the western countries.
- He had a cordial relationship with the Portuguese who had at that time established trade centers on the west coast of India.
- The decline of the Vijayanagar kingdom began with the death of Krishna deva Raya in 1529.
- The kingdom came to an end in 1565, when Ramrai was defeated at Talikota by the joint efforts of Adilshahi, Nizamshahi, Qutubshahi and Baridshahi. After this, the kingdom broke into small states.
- Portuguese travelers **Domingo Paes and FernaoNuniz** also visited the Vijayanagara Empire during his reign.
- The South Indian poet MukuTimmana praised him as the destroyer of the Turks.


### His Art and Literature

- The rule of Krishna Deva Raya was an age of prolific literature in many languages, although it is also known as **a golden age of Telugu literature**.
- Thus, he was not only a great warrior, but was also a playwright and a great patron of learning.
- **Telugu literature flourished under him.**
- Painting, sculpture, dance and music were greatly encouraged by him and his successors.
- Emperor Krishna Deva Raya was fluent in many languages.
- Krishna dev Raya took the title of **Abhinava-Bhoja and Sakala-Kala-Bhoja**("Bhoja of all the arts") in the honour of Parmara emperor Bhoja who was polymath, a master of 64 arts and a military genius.
- The poet MukkuTimma was his great admirer.
- **Ashtadiggajas: A group of eight scholars adorned his court and they were:**

I. Allasani Peddanna – the author of Manucharitram,	IV. Dhurjati
he was also known as Andhra Kavitaipitamaha	V. AyyalarajuRamabhadraKavi
II. Nandi Thimmana – the author of	VI. PingaliSurana
Parijathapaharanam	VII. RamarajaBhushana
III. MadayagariMallana	VIII. Tenali Ramakrishna






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## INCREASING TREND OF CYCLONES IN ARABIAN SEA

## GS-I GEOGRAPHY

### Context

- An analysis of past data of cyclones by IMD over the North Indian Ocean (Bay of Bengal and Arabian Sea) during the period 1891–2020 indicates that the frequency of extremely severe cyclonic storms has increased in recent few years over the Arabian Sea since 1990, and remained the same over the Bay of Bengal.
- The highest loss of lives occurred during Cyclones Tautkae, 2021, (118 deaths).

### The usual trend: India's east coast is a magnet for cyclones

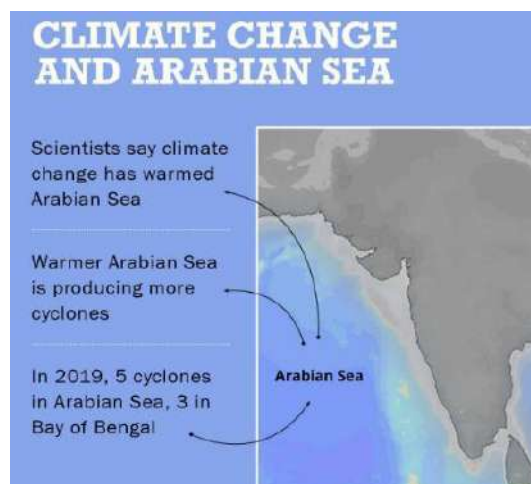
- Though both are located in the **same latitude band and receive the same amount of solar radiation** from the Sun, the Bay of Bengal is much warmer than the Arabian Sea and many more storms brew over the bay.

### Reasons

- Oceanic circulation and heat removal:** The winds over the Arabian Sea are stronger because of the presence of the **mountains of East Africa**. These strong winds force a much more vigorous oceanic circulation and the heat received at the surface is transported into the deeper ocean.  
The winds over the Bay of Bengal, in contrast, are more sluggish and the bay is unable to remove the heat received at the surface. Hot water temperature is the basic criteria for the development and intensification of cyclones. The average temperature in the Bay of Bengal around the year is high - about 28 degrees.
- Sea surface temperature:** The bay receives more rainfall; it also receives more freshwater from the large rivers, especially the Ganga and the Brahmaputra, that empty into it.  
This freshens the surface of the BOB and stabilizes the water column, making it more difficult for the winds to mix the warm, stable surface layer with the cooler waters below.  
In the Arabian Sea, there is no such stabilizing effect. As a consequence, the mixing with the cooler waters below is more vigorous. Since a sea surface temperature of about 28°C is necessary for convection to take place in the atmosphere, this condition is satisfied in the Bay of Bengal but not in much of the Arabian Sea.
- Pacific Ocean:** Pacific Ocean is a hot bed for cyclonic activities and hence typhoons originating in the Pacific ocean influences the cyclones in Bay of Bengal. This is not the case in Arabian Sea.
- Salinity:** The Arabian Sea is saltier than the Bay of Bengal. As a result, it easily gets heated up and evaporates faster. And the rate of evaporation is way higher than the rate of precipitation due to lack of supply of fresh water in Arabian Sea.
- Movement:** According to IMD cyclones originating in Arabian Sea move northwest. So they actually move away from Indian mainland.

### Why has Arabian Sea turned into a cyclone hotspot in the recent past?

- According to the India Meteorological Department, the frequency and intensity of cyclonic activity in the Arabian Sea was the highest it had been in over a century, in 2019.
- According to the Intergovernmental Panel on Climate Change (IPCC), a United Nations body, the sea surface temperature of the Arabian Sea is rising.
- Rising sea surface temperatures (SST) in the Arabian Sea** are contributing to the formation of an increased number of cyclones.
- Scientists attribute the **increased frequency of cyclones in the Arabian Sea to climate change**.
- Climate scientist Hiroyuki Murakami in his study found that **64 per cent of cyclones in the Arabian Sea in recent years were caused by climate change**.
- SST in the Arabian Sea rose by a staggering 0.36 degrees Celsius**, compared with the baseline temperatures between 1981 and 2010.
- The increase in temperature is in the **zone of 1.2-1.4 degree Celsius**.
- Heat works as food for cyclones. The temperature in the Bay of Bengal usually remains above 28 degrees Celsius.
- The Arabian Sea, in contrast, used to have a temperature 1-2 degree Celsius lower than that in the Bay of Bengal.
- Now, the rise in temperature in the Arabian Sea has pushed it in the 30 to 31-degree Celsius zone off the India's west coast.



### What are Tropical Cyclones?

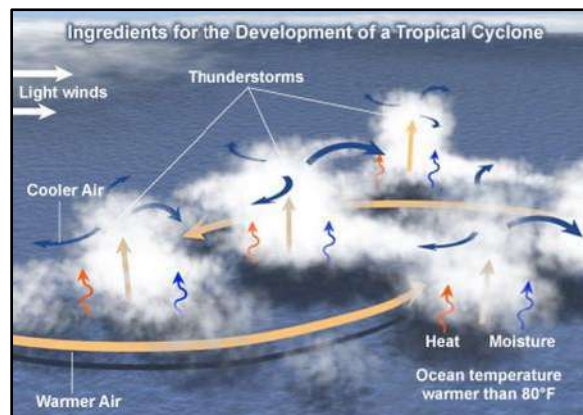
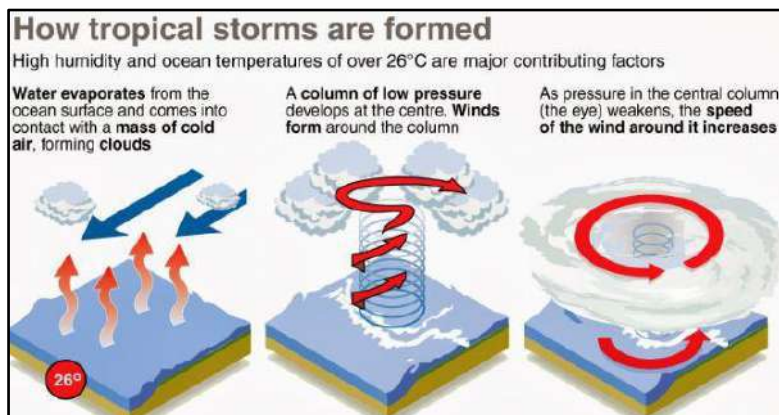
- Cyclones that develop in the regions **between the Tropic of Capricorn and Tropic of Cancer** are called tropical cyclones.

- Tropical cyclones are intense circular storms that **originate over warm tropical oceans**.
- They rotate in anti-clockwise direction in the Northern Hemisphere and in a clockwise direction in the Southern Hemisphere.
- They are characterized by **low atmospheric pressure, high winds, and heavy rain**.
- Drawing **energy from the sea surface** a tropical cyclones maintains its strength as long as it remains over warm water.

**Note:** Extra tropical cyclones occur in temperate zones and high latitude regions, though they are known to originate in the Polar Regions.

### Tropical Storms

- Hurricanes, cyclones and typhoons are all types of tropical storms. But are given different names depending on where they appear.
- **Hurricanes** are tropical storms that form over the **North Atlantic Ocean and Northeast Pacific**.
- **Cyclones** are formed over the **South Pacific and Indian Ocean**.
- **Typhoons** are formed over the **Northwest Pacific Ocean**.



### Favorable Conditions for Tropical Cyclone Formation

- Large sea surface with temperature **higher than 27° C**,
- **Presence of the Coriolis force** enough to create a cyclonic vortex,
- Small variations in the **vertical wind speed**,
- A pre-existing **weak low-pressure area** or low-level-cyclonic circulation,
- **Upper divergence** above the sea level system,

The India Meteorological Department (IMD) is an agency of the Ministry of Earth Sciences. It is the principal agency responsible for meteorological observations, weather forecasting and seismology. 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.

**ENSO**

**GS-I GEOGRAPHY**

### Context

- The latest forecast by **Asia Pacific Climate Centre (APCC)** assigns an over 50-60 per cent probability of above-normal rainfall during October - in Odisha **due to La Nina**.

### ENSO Cycle

- El Niño-Southern Oscillation (ENSO) is an irregularly periodic **variation in winds and sea surface temperatures** over the tropical **eastern Pacific Ocean**.
- Every three to seven years, the surface waters across tropical Pacific Ocean warm or cool by 1°C to 3°C, compared to normal.
- The warming phase of the sea temperature is known as El Niño and the cooling phase as La Niña.
- Thus, El Niño and La Niña are opposite phases of what is known as the **El Niño-Southern Oscillation (ENSO) cycle**.
- These deviations from normal surface temperatures can have large-scale impacts not only on ocean processes, but also on global weather and climate.

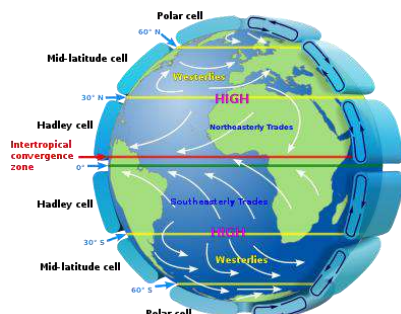
**Note:** El Niño and La Niña are the extreme phases of the ENSO cycle; between these two phases is a third phase called ENSO-neutral.

### Concepts we need to know before we delve deeper into the ENSO mechanism

A thermocline is the transition layer between the warmer water at the surface and the cooler deep water below.

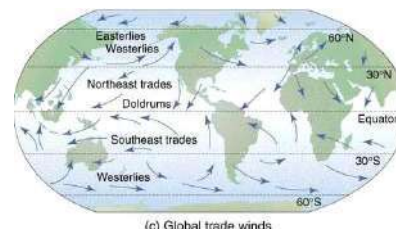
The trade winds or easterlies are the permanent east-to-west prevailing winds that flow in the Earth's equatorial region (between 30°N and 30°S latitudes).

Convection is the process generally associated with warm rising air and the formation of cloud.



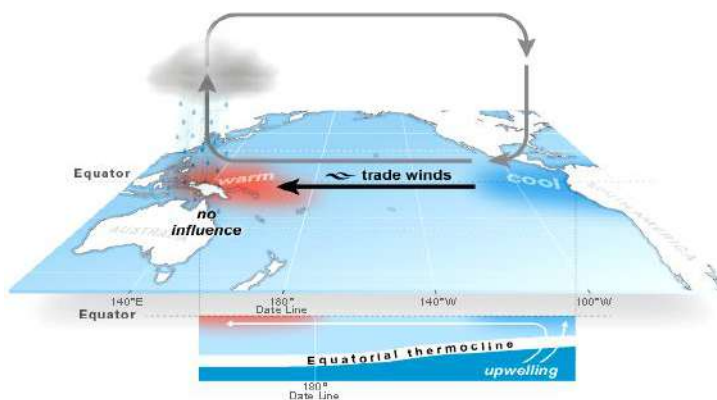
#### Upwelling

Upwelling is a vertical motion of water. When wind or currents displace water at the surface of the ocean, water from deeper in the ocean is drawn up to replace the displaced water. Deep water is generally cooler and richer in nutrients than surface water so upwelling is important in supporting productivity in the oceans of the world.

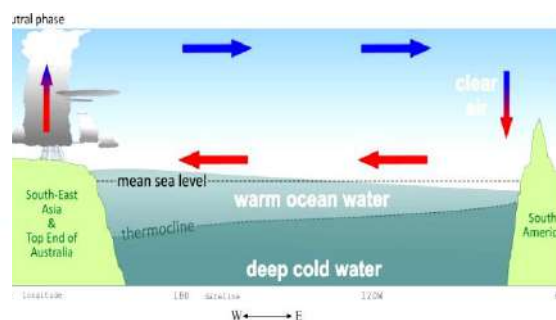


(c) Global trade winds

### ENSO Mechanism



El Niño–Southern Oscillation (ENSO): **Neutral**

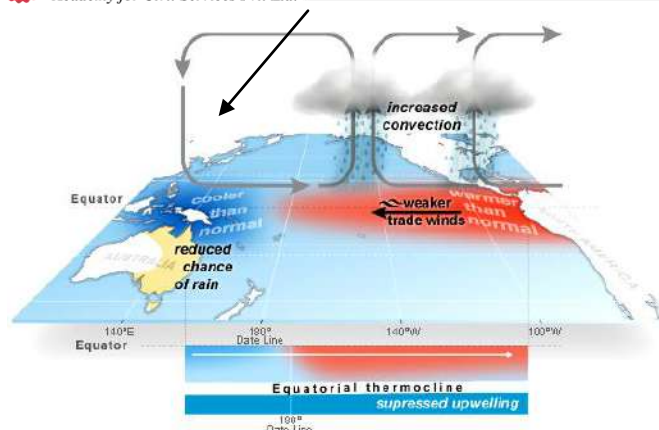


#### The 'Neutral phase'

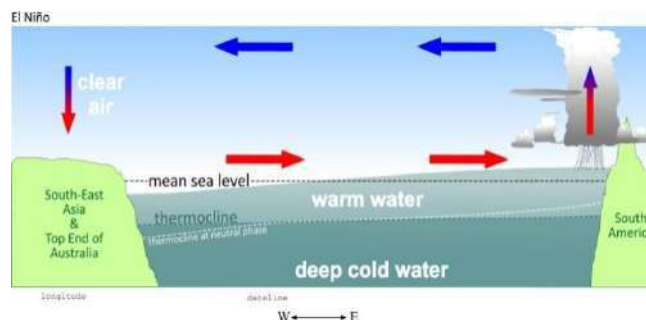
- Under 'normal' conditions, we have a situation referred to as a Neutral phase.
- **At first, Easterly Trade Winds** (blowing from east to west) push the warm **surface water** away from South America towards tropical South-East Asia.
- Conversely, off the west coast of South America the depth of the warm equatorial top layer of the ocean has reduced, and the thermocline is nearer the ocean surface. This means that **cold, nutrient-rich water upwells into the upper parts of the ocean here.**
- Around tropical South-East Asia, warm surface water evaporates.
- This causes increased rainfall around Indonesia and neighbouring lands such as the Top end of Australia.
- In contrast, over the eastern tropical Pacific and off the coast of Peru, dry air accompanied with cloud dissipation sinks, resulting in much drier weather there.

*Note: The pattern of air rising in the west and falling in the east with westward moving air at the surface is referred to as the Walker Circulation.*



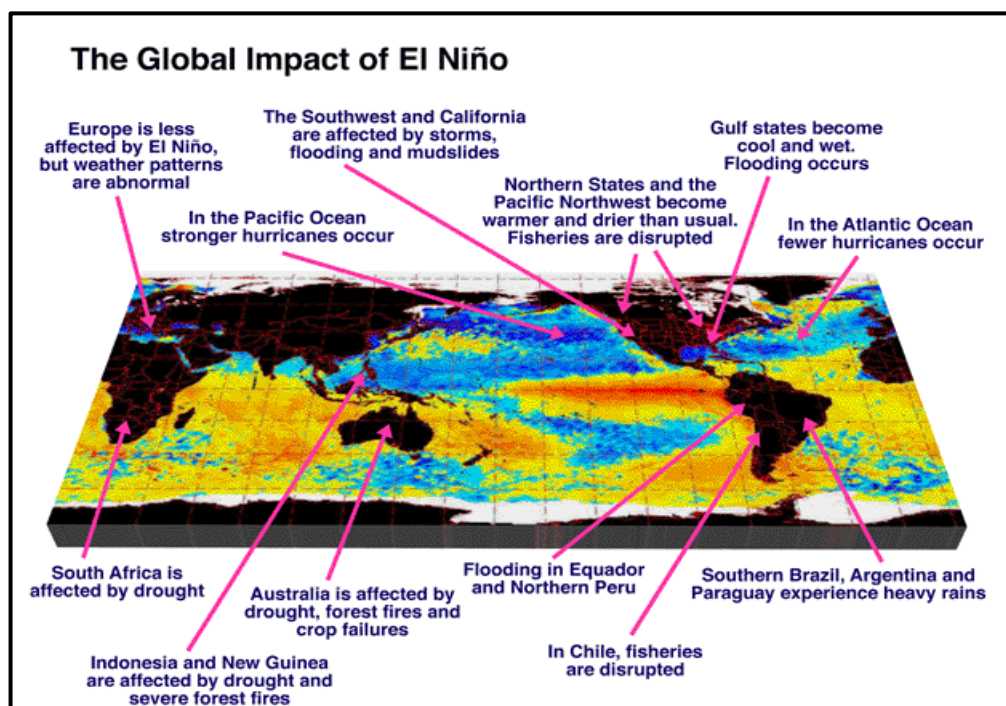


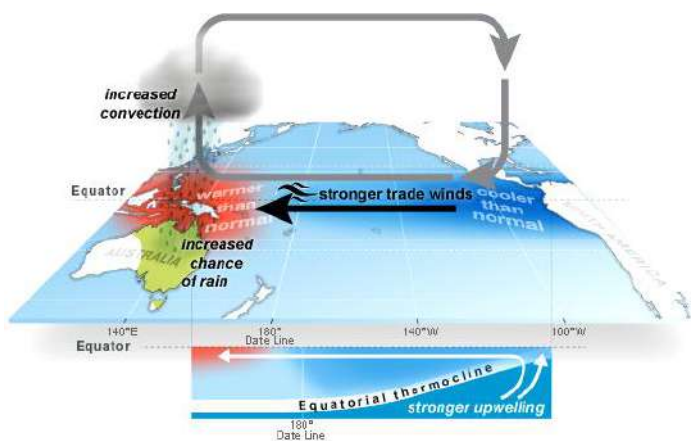
El Niño–Southern Oscillation (ENSO): El Niño



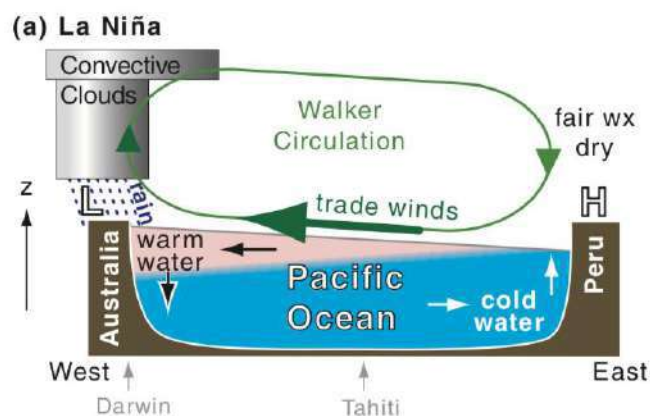
### El Niño phase

- The Trade Winds loses most of their strength in an El Niño phase, and may even reverse into a westerly wind (west to east) direction.
- As a result, warm surface water from tropical South-East Asia flows towards the coast of South America.
- Off the coast of South America, the thermocline sinks. The cold deep water no longer upwells into the surface layer of the ocean.
- The source of nutrients is cut off, which has a subsequent effect on fishing stocks off South America.
- Nearby, over the eastern tropical Pacific, warm surface water evaporates. This results in more rainfall than usual there.
- Conversely, on the other side of the Pacific, Indonesia and neighbouring countries are drier than usual during an El Niño.





El Niño–Southern Oscillation (ENSO): **La Niña**



### La Niña Phase

- In this pattern, trade winds blow warm water at the ocean's surface from South America to Indonesia.
- As the warm water moves west, cold water from the deep rises to the surface near the coast of South America.
- Since, La Niña blows all of this warm water to the western Pacific places like Indonesia and Australia get much more convectional rain than usual.
- However, the cold water in the eastern Pacific causes less rain clouds to form there. So, places like the southwestern United States are much drier than usual.
- La Nina can also lead to more lightning activity within the Gulf of Mexico and along the Gulf Coast.
- And more tropical cyclones—which include hurricanes—forming in the deep tropics (near the islands in the Caribbean, for example).
- In a nutshell, La Nina causes drought in the South American countries of Peru and Ecuador, heavy floods in Australia, high temperatures in Western Pacific, Indian Ocean, off the Somalian coast and a comparatively better monsoon rains in India.

### Impact of La Niña



### **ENSO and India**

El Nino and La Nina impact India greatly.

El Nino during winter causes warm conditions over the Indian subcontinent and during summer, it leads to dry conditions and deficient monsoon. **Whereas, La Nina results in better than normal monsoons in India.**

India experienced deficient rainfall during El Nino years 2002 and 2009 whereas monsoon was normal during El Nino years 1994 and 1997. It means that in about 50 per cent of the year with El Nino during summer, India experienced droughts during monsoon.

Crops like Paddy, Maize, Groundnut, Guar, Castor, Tur, Moong and Bajra suffer due to El Nino.



The APEC Climate Center (APCC) is a governmental institution that conducts research in climate prediction, analysis and climate change application areas. It also provides climate information services and capacity building programs with the aim of strengthening scientific and technological cooperation across the APEC region. APCC was established in 2005. It is currently located in Busan, South Korea.

## ATLANTIC MERIDIONAL OVERTURNING CIRCULATION

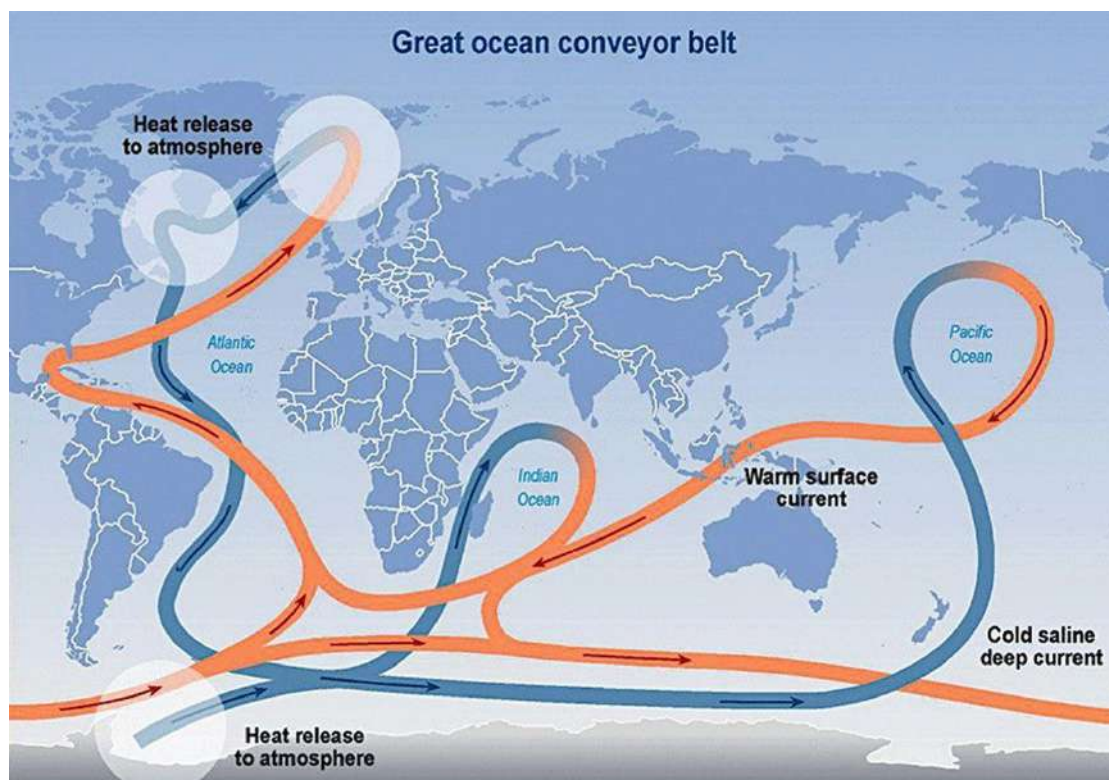
## GS-I GEOGRAPHY

### In News

- A study published in Nature Climate Change notes that the Atlantic Meridional Overturning Circulation (AMOC), is losing its stability. According to the IPCC's Report (AR6) released on August 9, it is very likely that AMOC will decline over the 21st century. AMOC is at its weakest in over a millennium. The team studied the evolution of AMOC over the past 1600 years.

### What is AMOC?

- The AMOC is a large system of ocean currents.
- It is the Atlantic branch of the ocean conveyor belt or Thermohaline circulation (THC), and distributes heat and nutrients throughout the world's ocean basins.
- AMOC carries warm surface waters from the tropics towards the Northern Hemisphere, where it cools and sinks.
- It then returns to the tropics and then to the South Atlantic as a bottom current.
- From there it is distributed to all ocean basins via the Antarctic circumpolar current.



### Why is the AMOC slowing down?

- Global warming can cause a weakening of the major ocean systems of the world.
- Last month researchers noted that a part of the Arctic's ice called "Last Ice Area" has also melted.
- The freshwater from the melting ice reduces the salinity and density of the water.
- Now, the water is unable to sink as it used to and weakens the AMOC flow.
- A 2019 study suggested that the Indian Ocean may also be helping the slowing down of AMOC.
- As the Indian Ocean warms faster and faster, it generates additional precipitation.
- With so much precipitation in the Indian Ocean, there will be less precipitation in the Atlantic Ocean, leading to higher salinity in the waters of the tropical portion of the Atlantic.
- This saltier water in the Atlantic, as it comes north via AMOC, will get cold much quicker than usual and sink faster.
- This would act as a jump start for AMOC, intensifying the circulation.

- If we continue to drive global warming, the Gulf Stream System will weaken further – by 34 to 45 percent by 2100 according to the latest generation of climate models.

### What happens if AMOC collapses?

- Gulf Stream, a part of the AMOC, is a warm current responsible for mild climate at the Eastern coast of North America as well as Europe. Without a proper AMOC and Gulf Stream, Europe will be very cold.
- Modelling studies have shown that an AMOC shutdown would cool the northern hemisphere and decrease rainfall over Europe. It can also have an effect on the El Nino.
- AMOC collapse brings about large, markedly different climate responses:
  - a prominent cooling over the northern North Atlantic and neighbouring areas,
  - sea ice increases over the Greenland-Iceland-Norwegian seas and to the south of Greenland, and
  - a significant southward rain-belt migration over the tropical Atlantic.
- Freshwater from melting Greenland ice sheets and the Arctic region can make circulation weaker as it is not as dense as saltwater and doesn't sink to the bottom.

## SURANGAM

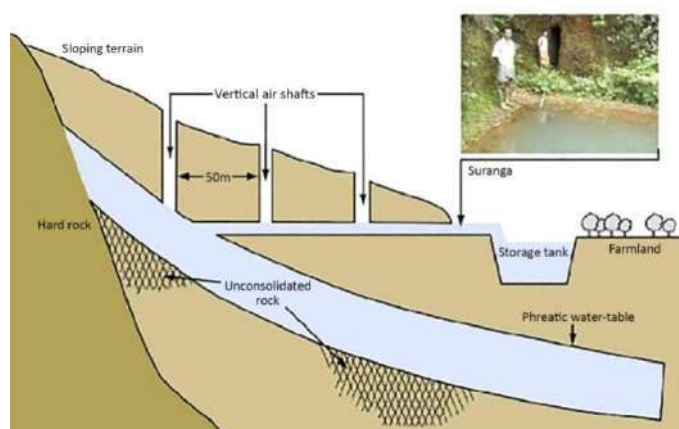
## GS-I GEOGRAPHY

### In News

- The karez system in Afghanistan, a legacy of its Persian cultural moorings, has suffered extensive damage in 43 years of war and stares at an uncertain future under the Taliban's second regime.
- But hundreds of miles to the south, a similar system in southern India is thriving.

### Surangam- Traditional Water Management System

- Surangam is basically a tunnel dug through a laterite hillock from the periphery of which water and moisture seeps out. This system has been very effectively used for domestic and agriculture purposes in dry areas of northern Malabar.
- Surangams resemble karez both in structure and spread.
- These are similar to qanats which once existed in Mesopotamia and Babylon around 700 Before Common Era.
- By 714 BCE, this technology had spread to Egypt, Persia and India.
- The surangam or suranga is today usually found in northern Kerala and southern Karnataka.



Region	Traditional Water Management System
Ladakh	Zing
Himachal Pradesh	Kul, Naula, Kuhl, Khatri
Eastern Himalaya	Apatani
Nagaland	Zabo
Brahmaputra Valley	Dongs / Dungs/ Jampo
Indo-Gangetic Plains	Ahars – Pynes, Bengal's Inundation Channels, Dighis, Baolis
Thar Desert	Kunds, Kuis/beris, Baoris / Ber/ Jhalaras, Nadi, Tobas, Tankas, Khandins, Vav/Bavadi, Virdas, Paar
Central Highlands	Talab, Bandhis, SazaKuva, Johads, Naada/Bandh, Pat, Rapat, Chandela Tank, Bundela Tank
Eastern Highlands	Katas / Mundas / Bandhas
Deccan Plateau	Cheruvu, Kohli Tanks, Bhandaras, Phad, Kere, The Ramtek Model
Western Ghats	Surangam
West Coastal Plains	Virdas
Eastern Ghats	Korambu
Eastern Coastal Plains	Eri / Ooranis
The Andaman & Nicobar Islands	Jack Wells

## KILAUEA VOLCANO

## GS-I GEOGRAPHY

### Context

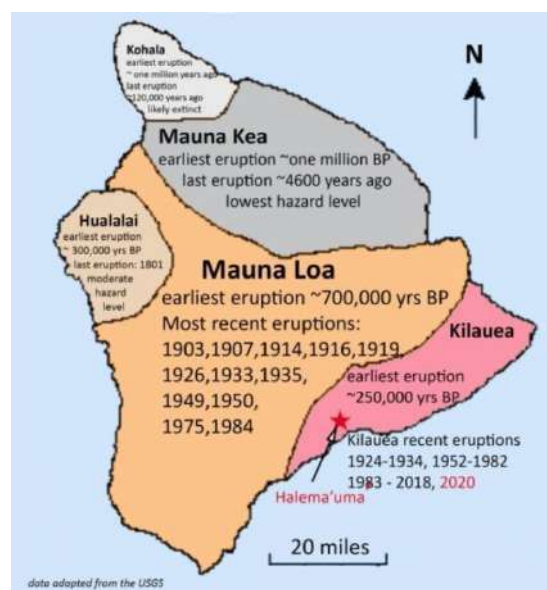
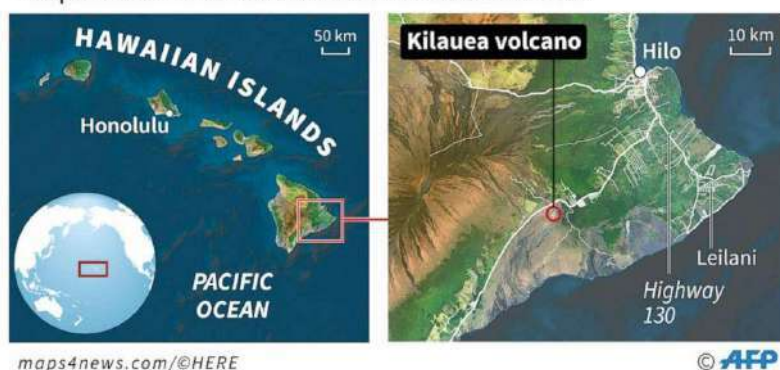
- The ground at the summit of Kilauea volcano in Hawaii has been rumbling and swelling in recent days, prompting scientists to warn that the mountain could once again disgorge lava.

### About

- Kilauea is an **active shield volcano in the Hawaiian Islands.**
- Historically, it is the most active of the five volcanoes that together form the Big Island of Hawai'i.
- Kilauea has erupted 34 times since 1952. From 1983 to 2018, it erupted almost continuously.
- Hawaii is typically recognized by its eight main islands: Hawai'i, Maui, Kaho'olawe, Lāna'i, Moloka'i, O'ahu, Kaua'i, and Ni'ihau.
- The largest, Mauna Loa, is 4,169 metres (13,678 ft) high.
- As shield volcanoes, they are built by accumulated lava flows, growing a few meters or feet at a time to form a broad and gently sloping shape.

### Kilauea volcano

People forced to flee as lava flows in residential areas



## ANDAMAN AND NICOBAR ISLANDS

## GS-I GEOGRAPHY

### EHP[Context]

- The Swarnim Vijay Varsh Victory Flame was taken to Indira Point, the southernmost tip of the country on August 22, 2021, as part of its voyage to the Nicobar Group of Islands.
- 2021 is being celebrated as Swarnim Vijay Varsh to mark the 50th year of India's historic victory in the 1971 war.

### Indira Point

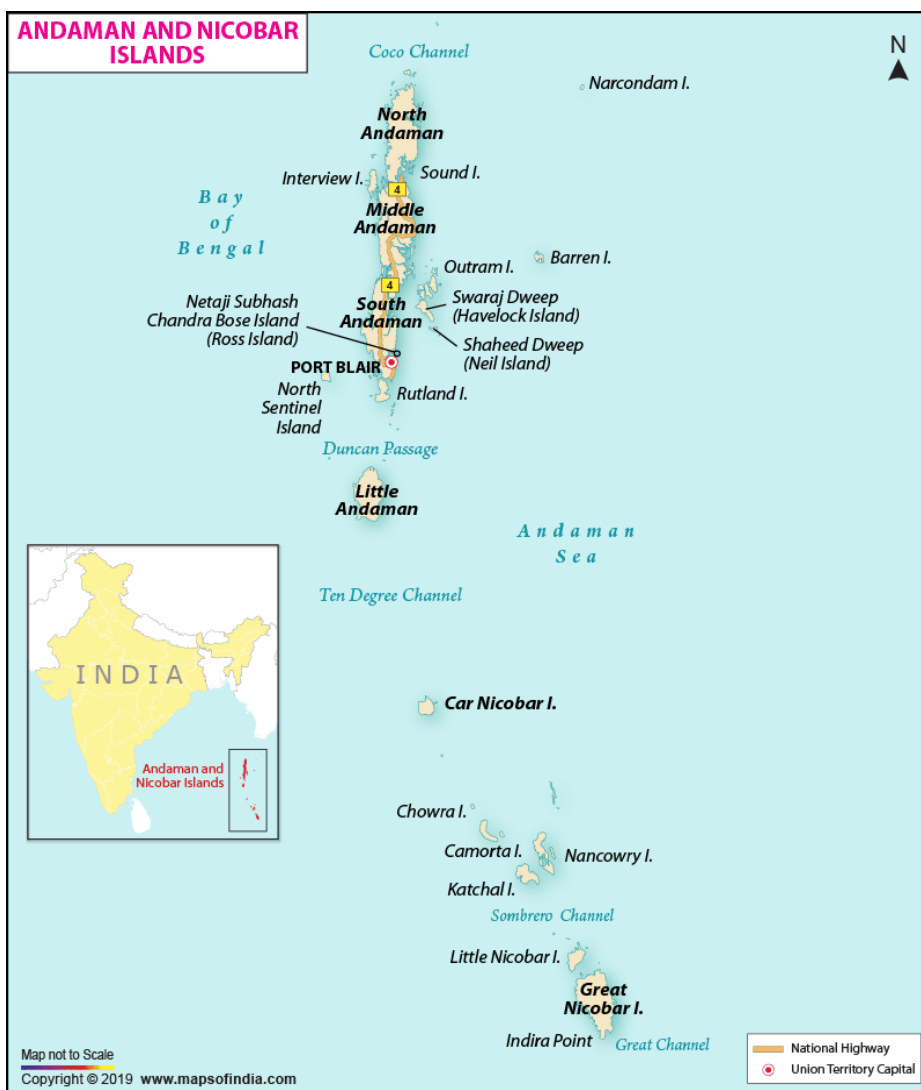
- Indira Point, southernmost point of India's territory, is a village in Great Nicobar Island. The point was formerly known as Pygmalion Point and Parsons Point.
- Galathea National Park and Lighthouse are the major attractions here.

### Andaman and Nicobar Islands

- Andaman and Nicobar Islands or Emerald Islands is a union territory of India consisting of 572 islands.
- It comprises two island groups, the Andaman Islands (partly) and the Nicobar Islands, **separated by the 150 km wide Ten Degree Channel (on the 10°N parallel).**
- The island chains are **a submerged extension of the Arakan Mountains.**
- The Andaman islands are divided into three main islands i.e. North, Middle, and South.
- Port Blair, the capital of Andaman Nicobar Islands lies in the South Andaman.
- Duncan passage** separates **Little Andaman from South Andaman.**



- The Coco Strait is between the North Andaman islands and the Coco Islands of Myanmar.
- The Barren and Narcondam Islands north of Port Blair – are the only active volcanoes in India.
- Saddle peak (737 m) in North Andaman is the highest peak.
- Ritchie's Archipelago lie 20 km east of Great Andaman and Neil Island and Havelock Island are in Ritchie's Archipelago.
- Ross Island in South Andaman has been renamed as Netaji Subhas Chandra Bose Dweep, Neil Island as Shaheed Dweep, and the Havelock Island as Swaraj Dweep.
- The Islands have dense tropical rain forests.
- The Andaman Islands are home to four 'Negrito' tribes – the Great Andamanese, Onge, Jarawa and Sentinelese.
- The Nicobar Islands are home to two 'Mongoloid' tribes – the Shompen and Nicobarese.
- The islands host the Andaman and Nicobar Command, the only tri-service geographical command of the Indian Armed Forces.



Tribe	Population (in 2011)	Per cent to total tribe population
<i>Tribes of Andaman Islands</i>		
Sentinelese (estimated)	15	0.05
Onges	101	0.36
Jarawas	380	1.36
Great Andamanese	44	0.16
<i>Tribes of Nicobar Islands</i>		
Shompens	229	0.83
Nicobarese	27168	97.25
<b>Total</b>	<b>27937</b>	<b>100</b>

## GENERAL STUDIES - II

### LEGISLATURE-JUDICIARY TUSSE

### GS-II POLITY

#### Context

- Chief Justice of India NV Ramana's remarks questioning the law passed last week relating to the process of appointment of tribunal members has triggered a fresh stand-off between the legislature and the judiciary over the powers of and limitations on lawmaking.

#### CJI Remarks

- Judiciary **must know the reasons of introducing a bill even it after** being struck down by the judiciary.
- No debates and discussions are taking place in the parliament which is hindering judiciary ability to understand the reasons behind any law.

#### Cause of Tussle

- Recently, Parliament passed the Tribunal Reforms Bill, 2021, which seeks to lay down terms for service and tenure of members of various tribunals.
- The new law contained the **same provisions as the Tribunal Reforms (Rationalisation and Conditions of Service) Ordinance, 2021, which the Supreme Court struck down last month in a 2:1 verdict.**
- Recently court had **expressed displeasure over the vacancies in various tribunals** and asked the Centre to take a stand in a week.
- Setting at naught a **decision of the Court without removing the defect pointed out in the judgment would sound the death knell of the rule of law.**
- The **rule of law would cease to have any meaning, because** then it would be open to the government to defy a law and yet to get away with it.

#### Court reason for the striking down the law

- Minimum age criterion of 50 years for appointment of advocates as members of tribunals and the four-year tenure that the amendment prescribes are arbitrary in nature.

#### Government response

- It is a matter of policy, whether four years or five years of the tenure. The policy cannot be interfered with.
- at a certain stage, even Parliament wonders, are we not having any powers if the judiciary is interfering to this extent?

#### Features of the Ordinance

- It **dissolves certain existing appellate bodies and transfers their functions (such as adjudication of appeals) to other** existing judicial bodies.
- The **Ordinance amends the 2017 Act to include provisions related to the composition of search-cum-selection committees** and term of office of tribunal members in the Act itself.
- The Ordinance **includes the National Consumer Disputes Redressal Commission established under the Consumer Protection Act, 2019** within the purview of the Finance Act, 2017.

#### Search-cum-selection committees

- The Ordinance specifies that these Committees will consist of:
- the Chief Justice of India, or a Supreme Court Judge nominated by him, as the Chairperson (with casting vote),
- two Secretaries nominated by the central government,
- the sitting or outgoing Chairperson, or a retired Supreme Court Judge, or a retired Chief Justice of a High Court, and
- The Secretary of the Ministry under which the Tribunal is constituted (with no voting right).

#### Term of Office

- The Ordinance specifies that the **term of office for the Chairperson of the tribunals will be of four years or till the attainment of the age of seventy years**, whichever is earlier.
- For other members of the tribunals, **the term will be of four years or till the age of sixty-seven years**, whichever is earlier.

#### Abolition of 9- Bodies

- The Ordinance removes the following bodies from the purview of the Finance Act, 2017:
  - the Airport Appellate Tribunal established under the Airports Authority of India Act, 1994,
  - the Appellate Board established under the Trade Marks Act, 1999,



- o the Authority of Advanced Ruling established under the Income Tax Act, 1961,
- o The Film Certification Appellate Authority established under the Cinematograph Act, 1952.

### Reasons behind Abolition of Bodies

- It is **part of the tribunal rationalisation process** which initiated in 2015. By the Finance Act, 2017, seven tribunals were abolished or merged based on functional similarity and their total number was reduced to 19 from 26.
- In these tribunals, **public at large are not the litigant, hence**, they will be merged with the commercial bench of high court.
- Abolition of bodies will **ensure more judicial independence**.

### Concern with the Act

- The tenure of four years fixed by the Ordinance is contrary to the directions issued by the Supreme Court in the Madras Bar Association case (2020). According to the Supreme Court, four year tenures discourages meritorious candidates.
- Supreme court **has also held that small tenure enhances arbitrariness of the executive by letting them interfere with the tribunal work**.
- Court had **directed to let search committee only recommend one name for the appointment**. But, the ordinance has kept it two names.
- Court had held **that appointment must be done within 3 months after submission of names by the search committee**. But, the central government has made it preferably in 3 months.

### Way Forward

- The Ordinance is a **path as per the multiple rulings of the court and try to rationalise the multiple act governing tribunals in India**.
- Abolition of **appellate tribunals have strengthened the position of high court and ensured judicial independence**.
- By incorporating court guidelines on search and selection committee, ordinance has tried to create balance between judicial independence and fast and speedy justice.

### Difference Between article 323A and 323B

- While **Article 323 A contemplates establishment of tribunals for public service matters only**, Article 323 B contemplates **establishment of tribunals for certain other matters** (mentioned above).
- While tribunals under **Article 323 A can be established only by Parliament**, tribunals under Article 323 B can be established **both by Parliament and state legislatures** with respect to matters falling within their legislative competence.
- Under Article 323 A, only one tribunal for the Centre and one for each state or two or more states may be established. There is no question of hierarchy of tribunals, whereas under Article 323 B a hierarchy of tribunals may be created.

### Constitutional Provisions regarding Tribunals

#### Administrative Tribunals:

- **Article 323 A empowers the Parliament to provide** for the establishment of administrative tribunals.
- In pursuance of Article 323 A, the **Parliament has passed the Administrative Tribunals Act in 1985**. The act authorises the **Central government to establish one Central administrative tribunal** and the state administrative tribunals.

#### Purpose of Administrative tribunals:

- It is for the adjudication of disputes relating to recruitment and conditions of service of persons appointed to public services of the Centre, the states, local bodies, public corporations and other public authorities.

#### Tribunals for other matter:

- Under **Article 323 B, the Parliament and the state legislatures are authorised to provide for the establishment of tribunals** for the adjudication of disputes relating to the following matters:
  - o Taxation
  - o Foreign exchange, import and export
  - o Industrial and labour
  - o Land reforms
  - o Ceiling on urban property

## POST OF SPEAKER

## GS-II POLITY

### Context

- Frequent parliamentary disruption has brought the role of speaker in the question.

### Role of Speaker

- In the Lok Sabha, as in the United Kingdom, the Speaker is the supreme authority;
- he has vast powers and it is his primary duty to ensure the orderly conduct of the business of the House.
- Once a person is elected Speaker, he is expected to be above parties, above politics.
- he **belongs to all the members or belongs to none**.
- He **holds the scales of justice evenly, irrespective of party or person**.

- Pandit Nehru referred to the Speaker as “the symbol of the nation’s freedom and liberty”.
- Speakers should be men of outstanding ability and impartiality.
- He is conscience and guardian of the House.
- As the principal spokesperson of the Lok Sabha, the Speaker represents its collective voice.

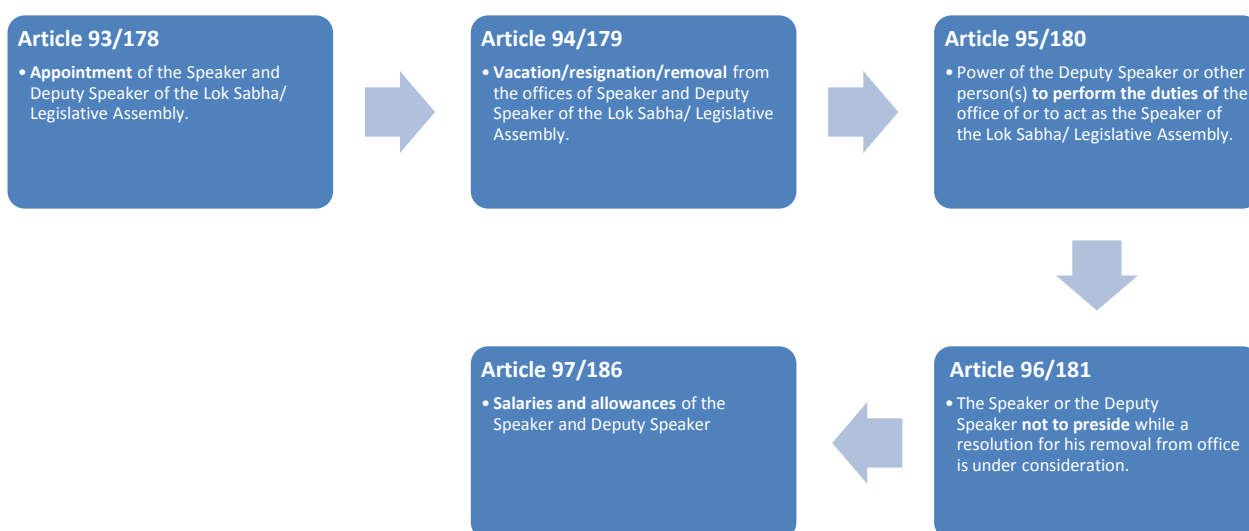
### Powers of the Speaker

- It is the Speaker’s duty to decide what issues will be taken up for discussion.
- He has the sole discretion to permit an adjournment motion to be tabled or to admit a calling attention notice, if the issue is of urgent public importance.
- **Quasi-Judicial Body:** His/her decision in all Parliamentary matters (including disqualification matters under Tenth Schedule) is final, binding and ordinarily cannot be challenged in the Court of law. Thereby, Speaker acts as the ultimate arbitrator.
  - o For example, on this question whether a bill is a money bill or not, his/her decision is final.
  - o However, on the questions of disqualification of the members, the Supreme Court in Kihoto Hollohanvs Zachillhu and Others, 1992 case ruled that the decision of the Speaker in this regard is subject to judicial review.
- **Maintains order and decorum in the House for conducting its business** and regulating its proceedings.
- **Allocates duration for debates, can discipline members of the House,** and even override decisions taken by the Committees of the House.
- **Final interpreter of the provisions of the Constitution of India, Rules of Procedure and Conduct of Business of Lok Sabha,** and Parliamentary precedents within the House.

### Issues with the Partisan role of Speaker

- The present practice of the Speaker continuing to be an active member of the ruling party has the inevitable result of his **refusing to allow any debate or discussion that may be essential in national interest** but may embarrass the ruling party.
- This inevitably leads to **constant disruption of Parliament by the Opposition.**
- The persistent disruption of Parliament **causes extensive damage not only to the prestige of the House but also frustrates the primary function of any legislature:** The responsibility to make laws for the good governance of the country after careful debate and deliberation.
- The stalling of parliamentary proceedings **has led to the passing of important bills in several sessions without any discussion.**
- It leads to **law making by the bureaucracy.**

### Constitutional Provisions related to Speaker



### Supreme Court Observations

Supreme Court Judgement	Observations
<i>Jagjit Singh versus State of Haryana</i> (2006)	• Highlighted the allegations about the confidence on the <b>role of Speaker</b> in the matters of <b>impartiality</b> .
<i>Kihoto Hollohan case</i> (1992)	• The suspicion of bias on the Speaker’s role could not be ruled out as his/her <b>election and tenure</b> depends on the majority will of the House (or specifically of the ruling party).

Manipur Legislative  
Assembly (2020)

- Why a Speaker- who is a member of a particular political party and an insider in the House, should be the sole and final arbiter in the cases of disqualification of a political defector.

### Rules related to power of speaker

- **Rules 378:** The Speaker shall preserve order and shall have all powers necessary for the purpose of enforcing own decisions.
- **Rules 373:** Speaker can ask any member to withdraw from the house in case of grossly disorderly conduct. The member has to withdraw compulsorily and remain absent for the day's sitting of the house.
- **Rules 374:** The Speaker may name a **member who disregards the authority of the Chair or abuses the rules of the House through disorderly conduct**. Speaker can disqualify such members after a passed motion to be absent for remaining session. House can revoke such disqualification through a motion.
- **Rules 374(1):** If a member abuses **rules of house by coming into the well or shouting slogans, can be automatically suspended from the** service of the House for five consecutive sittings or the remainder of the session through naming by Speaker.

### Cases

- Speaker **Sumitra Mahajan suspended 45 members of Lok Sabha belonging to the TDP and AIADMK after they** continuously disrupted proceedings for days.
- Speaker Meira Kumar had suspended 18 MPs from (undivided) Andhra Pradesh following pandemonium in the House.

### Possible reforms in Power of Speaker

- Making it compulsory **for the speaker to resign from his party before taking the position of speaker. It will ensure neutrality** of the post.
- Some of **speaker's decision like suspension of members** may be subject to review by judiciary.
- A code of **ethics for MPs must be formed to clearly define** cases for suspension and dismissals
- Power must be given to speaker to form a parliamentary committee to recommend removal of MPs regularly disrupting the house.

## JUDICIAL CHALLENGES

## GS-II POLITY

### Context

- Supreme Court Collegium showing the way in judicial appointments.

### Background

- The Indian Judiciary acts as a guardian of the Constitution of India and protects the fundamental rights of the society, thus making it the most important organ for the citizens of India.

### Challenges faced by the judiciary

#### Delay in justice

- The Indian judiciary system has failed to deliver justice expeditiously.
- This **delay in justice has proved to be one of the biggest drawbacks** of the judiciary system.
- Delay in **justice implies the time taken to dispose of a case, in excess of the time which should be reasonably consumed** by the court to decide the case.
- Delay of **justice creates disillusionment amongst the litigants, it also undermines the capability of the judiciary system.**

#### The pendency of cases

- If we look at the figures, **2.84 crore cases are pending in the subordinate courts, the backlog clogging the High Courts and Supreme Court (SC)** is 43 lakh and 57,987 cases, respectively.
- According to **National Judicial Data Grid (NJDG), the five states which account for the highest pendency are Uttar Pradesh (61.58 lakh), Maharashtra (33.22 lakh), West Bengal (17.59 lakh), Bihar (16.58 lakh) and Gujarat (16.45 lakh).**
- This number is increasing day by day which shows the inadequacy of the courts to deal with this matter.
- Generally, the **victims of this are ordinary or poor people.**
- The pendency of the cases also **creates a big blockade for international investors and corporations to do business in India.**

#### Low judges strength and appointment problem

- The **vacancy of judges can also result in the delay of justice.**
- There is a tussle between executive and judiciary over who should be appointing judges rather than how judges should be appointed.
- There are almost 5000 vacancies in trial courts.

- In this regard, the **All India recruitment exam (All India judicial services)** may help in resolving the issue of appointment of judges.

#### Strike by Lawyers

- The Supreme Court bench stated that **lawyer strikes are one of the major reasons for pendency of cases.**
- As per the High Court of Uttarakhand, **advocates were on strike for 455 days between 2012 to 2016. That means that on average, lawyers went on strike for 91 days per year.**
- The figures of the **UP courts are worse, as the periods of the strike over five years in the worst affected districts were.**

#### Lack of transparency

- In the functioning of the Indian judiciary system, the **substantial issues like the quality of justice and accountability are not known to the citizens properly.**
- There is also a **need for transparency in the appointment of the judges.**
- Right to know is a part of freedom of speech and expression, as provided by the Constitution, **however, the present system violates this fundamental right.**
- The citizen's right to know is also an international trend also supported by judicial decisions.
- Right now we do not have a transparent and foolproof system of appointment of judges. These also lead to delays in filling the vacancies.

#### Hardships of the under trials

- In India, over two-thirds of India's roughly 4.2 lakh prisoners are under trial, which is one of the world's largest number of under-trial prisoners.
- They are in jail **not because they have been found guilty but because they are being prosecuted on charges that are non-bailable** or when they are too poor to afford a bail.
- In most of the cases **they end up spending more time in jail during the prosecution than the actual term awarded of the crime** has been actually committed. Under trials are not guilty till convicted.

#### No interaction with the society

- In order to form an effective judiciary, is necessary that the judiciary form an integral part of the society.
- Judiciary's interaction with society is a must and it should be both regular and relevant.
- Several countries involve their citizens in judicial decision making, however, in India, there is no such setup.
- The citizens need to actively take part in judicial activities to build an effective judicial system

#### Less use of technology

- In order to have a more effective judiciary, it needs to adopt the technology. This will reduce the huge amount of paperwork involved.
- The database of the court is also not maintained in one place and there is no recording of the proceedings and hearings.

### How to speed up the Indian Judicial System

#### To increase the strength of the judiciary

- In order to increase the strength, the All India recruitment exam (All India judicial services) may help in resolving the issue of appointment of judges.

#### To keep courts open throughout the year

- In order to deal with the pendency of cases it is necessary that the courts are open throughout the year, however, calendar of Supreme Courts (which is also applicable to other courts) provides week-long vacations each for Holi, Dussehra, Muharram, and Diwali along with the fortnight-long winter vacations.

#### Proper modernization of courts

- In the era of modernization, the court should not be left behind.
- They need to be fully digitized and a proper infrastructure should be built to provide easy access.

#### Introduction of fast-track courts

- The 11th Finance Commission recommended the creation of 1734 Fast track courts.
- These courts were established for expeditious disposal of long pending cases in sessions courts and other courts.

#### To do away with the archaic laws

- The Indian judicial system needs to let go of archaic laws and focus on taking consideration of the present social condition while giving a judgment.

#### Non-acceptance of flippant cases

- The judges should have clear instruction about the kind of cases they can accept in the court.

**PUBLIC INTEREST LITIGATION****GS-II POLITY****Context**

- The Supreme court allowed public interest litigation to intervene in the case of subordinate courts.

**Background**

- The concept of Public Interest Litigation (PIL) originated and developed in the USA in the 1960s.
- In the **USA, it was designed to provide legal representation to previously unrepresented groups and interests.**
- It was undertaken in recognition of the fact that the ordinary marketplace for legal services fails to provide such services to significant segments of the population and to significant interests.
- Such groups and interests include the poor, environmentalists, consumers, racial and ethnic minorities, and others.
- In India, the PIL is a product of the judicial activism role of the Supreme Court. It was introduced in the early 1980s.
- PIL is also known variously as **Social Action Litigation (SAL), Social Interest Litigation (SIL) and Class Action Litigation (CAL).**

**Meaning of PIL**

- PIL is absolutely necessary for maintaining the rule of law, furthering the cause of justice and accelerating the pace of realization of the constitutional objectives. In other words, the real purposes of **PIL(Public Interest Litigation)** are :
- Vindication of the rule of law.
- Facilitating effective access to justice to the **socially and economically weaker sections of the society.**
- Meaningful **realization of the fundamental rights.**
- Public interest litigation is the use of the law to **advance human rights and equality, or raise issues of broad public concern.**

**Role of PIL**

- It helps advance the cause of minority or disadvantaged groups or individuals.
- Public interest cases may arise from both public and private law matters.
- Public law concerns the **various rules and regulations** that govern the exercise of power by public bodies.
- Private law concerns those cases in which **a public body is not involved**, and can be found in areas such as employment law or family law.
- Public interest litigation is **most commonly used to challenge** the decisions of public authorities by judicial review.

**Features of PIL**

- **PIL is a strategic** arm of the legal aid movement and is intended to bring justice within the reach of the poor masses, who constitute the low visibility area of humanity.
- PIL is a totally **different kind of litigation** from the ordinary traditional litigation which is essentially of an adversary character where there is a dispute between two litigating parties, one making claims seeking relief against the other and the other opposing such claim or resisting such relief.
- PIL is brought before the **Court not for the purpose of enforcing the right of one individual against another** as happens in the case of ordinary litigation, but it is intended to promote and vindicate public interest.
- PIL demands that violations of constitutional and **legal rights of large numbers of people who are poor, ignorant or in a socially or economically disadvantaged position** should not go unnoticed and unredressed.
- PIL is essentially a **co-operative** effort on the part of the petitioner, the State or Public Authority, and the Court to secure observance of the constitutional or legal rights, benefits and privileges conferred upon the vulnerable sections of the community and to reach social justice to them.
- In PIL, litigation is undertaken for the **purpose of redressing public injury**, enforcing public duty, protecting social, collective, individual rights and interests or vindicating public interest.
- In **PIL, the role held by the Court is more assertive than in traditional actions**; it is creative rather than passive and it assumes a more positive attitude in determining acts.
- Though the PIL court enjoys a degree of flexibility unknown to the trial of traditional private law litigations, whatever the procedure adopted by the court it must be procedure known to **judicial tenets and characteristics of a judicial proceeding.**
- In a PIL, unlike traditional dispute resolution mechanisms, there is no determination on adjudication of individual rights.



### Challenges

- PIL actions may sometimes **give rise to the problem of competing rights**. For instance, when a court orders the closure of a polluting industry, the interests of the workmen and their families who are deprived of their livelihood may not be taken into account by the court.
- It could lead to **overburdening of courts with frivolous PILs by parties with vested interests**. PILs today has been appropriated for corporate, political and personal gains. Today the PIL is no more limited to problems of the poor and the oppressed.
- Cases of Judicial Overreach by the Judiciary in the process of solving socio-economic or environmental problems** can take place through the PILs.
- PIL matters concerning the **exploited and disadvantaged groups are pending for many years**. Inordinate delays in the disposal of PIL cases may render many leading judgments merely of academic value.

### Way Forward

- The court must be careful to see that the petitioner must be acting bona fide and not for personal gain.
- The court should not allow its process to be abused by politicians and others to delay legitimate administrative action or to gain political objectives.
- In shaping the relief the court must take into account its impact on those public interests.
- The PIL activists should be responsible and accountable.
- Since it is an extraordinary remedy available at a cheaper cost to all citizens of the country, it should not be used by all litigants as a substitute for ordinary ones or as a means to file frivolous complaints.

### LandMark Cases:

#### HussainaraKhatoun v. State of Bihar

- Many have regarded this case as the first PIL in India.
- The Court focused on the situation of under-trials in Bihar who had been in detention pending trial for periods far in excess of the maximum sentence for their offences.

#### Vishaka v. State of Rajasthan

- PIL was initiated in the Supreme Court to challenge sexual harassment in the workplace.
- The Vishaka judgment recognized sexual harassment as "a clear violation" of the fundamental rights of equality, non-discrimination, life, and liberty, as well as the right to carry out any occupation.

#### M.C. Mehta v. Union of India

- The judgement lashed out at civic authorities for allowing untreated sewage from Kanpur's tanneries to make its way into the Ganges.
- The court passed three landmark judgments and a number of Orders against polluting industries in the Ganga basin.

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## SECTION 66A OF IT ACT

## GS-II GOVERNANCE

### Context

- The Supreme Court asked the States to respond to a petition that stated citizens continued to get booked and prosecuted under Section 66A of the Information Technology Act for expressing themselves freely on social media.

### Background

- Section 66A of the Information Technology Act, 2000 was struck down 6 years ago.
- The Centre has now written to states, asking them not to register cases under the repealed provision and withdraw any such case that may have been filed.
- "The Union Ministry of Home Affairs (MHA) has requested States and Union Territories (UTs) to direct all police stations under their jurisdiction not to register cases under the repealed Section 66A of the Information Technology Act, 2000.

### About Section 66A

- Introduced by the UPA government in 2008, the amendment to the IT Act, 2000, gave the **government power to arrest and imprisons an individual for allegedly "offensive and menacing" online posts, and was passed without discussion in Parliament.**
- Section 66A **empowered police to make arrests over what policemen, in terms of their subjective discretion, could construe as "offensive" or "menacing" or for the purposes of causing annoyance, inconvenience, etc.**
- It prescribed the **punishment for sending messages through a computer or any other communication device like a mobile phone or a tablet**, and a conviction could fetch a maximum of three years in jail.
- The section came to the **notice of supreme court after the first petition came up in the court following the arrest of two girls in Maharashtra by Thane Police in November 2012** over a Facebook post. The girls had made comments on the shutdown of Mumbai for the funeral of Shiv Sena chief Bal Thackeray. The arrests triggered outrage from all quarters over the manner in which the cyber law was used.

### Criticism

- The problem was **with the vagueness about what is "offensive".**
- The **word having a very wide connotation, was open to distinctive, varied interpretations.**
- It was seen as **subjective, and what might have been innocuous for one person, could lead to a complaint from someone else and, consequently, an arrest under Section 66A if the police prima facie accepted the latter person's view.**
- Most of the terms used in the section had not been specifically defined under the Act, and the petitions argued that the law was a **potential tool to gag legitimate free speech online, and to curtail freedom of speech and expression guaranteed under the Constitution, going far beyond the ambit of "reasonable restrictions" on that freedom.**

### Supreme Court intervention

- Justices J. Chelameswar and R.F. Nariman ruled in *Shreya Singhal v. Union of India* declared Section 66A unconstitutional for "being violative of Article 19(1)(a) and not saved under Article 19(2)."
- Article 19(1)(a) **gives people the right to speech and expression whereas 19(2) accords the state the power to impose "reasonable restrictions" on the exercise of this right.**
- Section 66A of the **Information Technology Act is unconstitutional in its entirety, the Supreme Court ruled while striking down a "draconian" provision that had led to the arrests of many people for posting content deemed to be "allegedly objectionable" on the Internet.**
- According to the Supreme Court, the definition of offences **under the provision was "open-ended and undefined", and thus prone to be misused by the law enforcement agencies.**
- The decision was considered a **landmark judicial pushback against state encroachment on the freedom of speech and expression.** "Section 66A is cast so widely that virtually any opinion on any subject would be covered by it ...and if it is to withstand the test of constitutionality, the chilling effect on free speech would be total," the court said.
- Section 79 says that **any intermediary shall not be held legally or otherwise liable for any third party information, data, or communication link made available or hosted on its platform.**
- Section 66A is **clearly violative of Articles 19 (free speech) and 21 (right to life) of the Constitution.**

### Way Forward

- There is a pressing need to move from a system where communication about judicial decisions is at the mercy of initiatives by scrupulous officers, to a method not contingent on human error to the greatest possible extent. The urgency cannot be overstated.

- Enforcing unconstitutional laws is sheer wastage of public money.
- But more importantly, until this basic flaw is addressed, certain persons will remain exposed to denial of their right to life and personal liberty in the worst possible way imaginable.
- They will suffer the indignity of lawless arrest and detention, for no reason other than their poverty and ignorance, and inability to demand their rights.

## Historical Timeline

**Several violations** | Section 66A of the IT Act penalised the sending of "offensive messages" via online communication but failed to define the term "offensive". In 2015, it was deemed unconstitutional by the Supreme Court due to its vagueness. However, the provision continues to be invoked in cases across the country even today

### TIMELINE:

▪ **Dec. 2008:** Information Technology (Amendment) Bill passed in Parliament

▪ **Oct. 2009:** IT (Amendment) Act, 2008, comes into force

▪ **Nov. 2012:** PIL filed by Shreya Singhal challenging the constitutionality of Section 66A of the Act

▪ **March 2015:** The Supreme Court, in *Shreya Singhal vs Union of India* (2015), declared Section 66A unconstitutional

▪ **Feb. 2019:** Supreme Court directs the judgment in *Shreya Singhal vs Union of India* (2015) to be sent to all courts in the country, senior administrative officers and Director Generals of Police

### CASE COUNT\*:

▪ As on **August 2, 2021**, a total of **1,988** cases have been registered under the Act, of which **681** were registered prior to the judgment, and **1,307** after it

▪ Currently, **799** of the cases are still pending and active

▪ Judgments have been passed in **236** cases filed, of which **132** were before 2005 and **104** after

\*The data considers cases registered between October 27, 2009, and February 15, 2020, in 11 States – Assam, Andhra Pradesh, Delhi, Jharkhand, Karnataka, Maharashtra, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal

Source - <https://zombietracker.in>

## THE ESSENTIAL DEFENCE SERVICES BILL 2021

## GS-II GOVERNANCE

### Context

- Recently, the **Minister of Defence introduced the Essential Defence Services Bill, 2021**, in the Lok Sabha to provide for the maintenance of essential defence services.

### Objective of the Bill

- To **secure the security of nation and the life and property of the public at large** and prevent staging of the government-owned ordnance factories from going on strike.

### Background

- The Bill seeks to replace the Ordinance promulgated in June 2021. The Bill allows the central **government to prohibit strikes, lock-outs, and lay-offs in units engaged in essential defence services.**
- The Bill seeks to empower the government to declare services mentioned in it as "essential defence services" and prohibit strikes and lockouts in any industrial establishment or unit engaged in such services.

### Constitutional Provision for Armed Forces

- **Under Article 33 of the Constitution, Parliament, by law, can restrict or abrogate the rights of the members of the armed forces or the forces** charged with the maintenance of public order so as to ensure the proper discharge of their duties and maintenance of discipline among them.
- Thus, for the **armed forces and the police, where discipline is the most important prerequisite, even the fundamental right to form an association** can be restricted under Article 19(4) in the interest of public order and other considerations.

### Supreme Court Ruling Regarding Strike

- The Supreme Court in *Delhi Police v. Union of India* (1986) **upheld the restrictions to form association by the members of the non-gazetted police** force after the Police Forces (Restriction of Rights) Act, 1966, and the Rules as amended by Amendment Rules, 1970, came into effect.
- While the right to freedom of association is fundamental, recognition of such association is not a fundamental right.
- Parliament can by law regulate the working of such associations by imposing conditions and restrictions on their functions, the court held.
- In *T.K. Rangarajan v. Government of Tamil Nadu* (2003), the Supreme Court held that the employees have no fundamental right to resort to strike.



- Further, there is prohibition to go on strike under the Tamil Nadu Government Servants' Conduct Rules, 1973.
- Also, there is **no moral or equitable justification to go on strike**.
- The **court said that government employees cannot hold the society to ransom by going on strike**.
- In this case, about two lakh employees, who had gone on strike, were dismissed by the State government.

#### Key features of the Bill include

- **Essential defence services:** Essential defence services include any service in: (i) any establishment or undertaking dealing with production of goods or equipment required for defence related purposes, or (ii) any establishment of the armed forces or connected with them or defence. T
- These also include services that, if ceased, would affect the safety of the establishment engaged in such services or its employees.
- In addition, the government may declare any service as an essential defence service if its cessation would affect the: (i) **production of defence equipment or goods, (ii) operation or maintenance of industrial establishments or units engaged in such production**, or (iii) repair or maintenance of products connected with defence.
- **Public utility service:** The Bill **amends the Industrial Disputes Act, 1947 to include essential defence services under public utility services**. Under the Act, in case of public utility services, a six-week notice must be given before: (i) persons employed in such services go on strike in breach of contract or (ii) employers carrying on such services do lock-outs.
- **Strikes:** Under the Bill, strike is defined as cessation of work by a body of persons acting together. **It includes: (i) mass casual leave, (ii) coordinated refusal of any number of persons to continue to work or accept employment, (iii) refusal to work overtime**, where such work is necessary for maintenance of essential defence services, and (iv) any other conduct which results in, or is likely to result in, disruption of work in essential defence services.
- **Prohibition on strikes, lock-outs, and lay-offs:** Under the Bill, the central government may prohibit strikes, lock-outs, and lay-offs in units engaged in essential defence services. The government may issue such an order if necessary in the interest of: (i) sovereignty and integrity of India, (ii) security of any state, (iii) public order, (iv) public, (v) decency, or (vi) morality. The prohibition order will remain in force for six months, and may be extended by another six months.
- **Strikes and lock-outs that are declared after the issue of the prohibition order**, or had commenced before the prohibition order was issued will be illegal.
- The prohibition **will not apply to lay-offs made due to power shortage or natural calamity**, or lay-offs of temporary or casual workmen.
- **Punishment for illegal lock-outs and lay-offs:** Employers violating the prohibition order through illegal lock-outs or lay-offs will be punished with up to one year imprisonment or fine, or both.
- **Punishment for illegal strikes:** Persons commencing or participating in illegal strikes will be punished with up to one year imprisonment or fine, or both.
- All offences punishable under the Bill will be cognisable and non-bailable.

#### Issues with the bill

- The bill would **adversely affect service conditions of the employees of the Ordnance Factory Board (OFB)**. It would diminish their independence and lessen their bargaining power by controlling them from going on strikes.
- It would **enhance the trust shortfall between** the public authority and 70000 representatives of 41 arms processing plants as it has been presented without due counsel.
- It may **lead to future privatization of the ordnance factories**.
- The harsh **provisions of the bill may lead to suppression of the genuine demands of the employees**. It suggests penal provisions against the strike which leaves out limited option for the employees.

#### Suggestions

- Government **must undertake due consultation with the employees** to enhance confidence building measures.
- **Employees concerns must be addressed through consultation** and by highlighting them the benefits of the provisions.
- Thorough **debate and discussion must take place in the parliament** and the bill must be sent to the select committee.

## ROLE OF MEDIA IN DEMOCRACY

## GS-II GOVERNANCE

#### Context

- Opposition parties allege that government of not allowing the media to talk about issues like 'jobs or the ones raised by farmers'.

#### Background

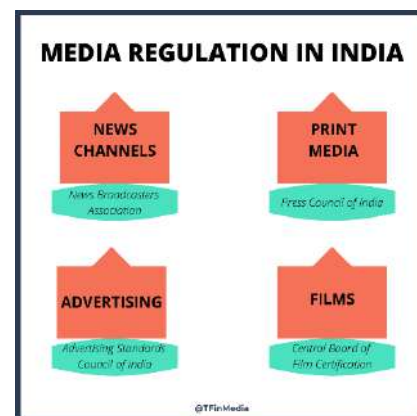
- A free, objective, skilled media is an **essential component of any democratic society**.



- On the one hand, it provides the information which the polity requires to make responsible, informed decisions.
- On the other, it performs a “checking function” ensuring that elected officials uphold their oaths of office and campaign promises and that they carry out the wishes of the electorate.
- Media is supplying the political information that voters base their decisions on. They identify problems in our society and serve as a medium for deliberation.
- They also serve as watchdogs that we rely on for uncovering errors and wrongdoings by those who have power.
- Media is vital in generating a democratic culture that extends beyond the political system and becomes ingrained in the public consciousness over time.

### Media in protecting freedom of expression

- This rationale is based on the notion that democracy – which recognises that people have the right to elect a government of their choosing – cannot exist in any meaningful way without the right to freedom of expression.
- There are many aspects to this rationale, but the fundamental concept is that in order for democracy to be effective, the citizenry that votes in elections and engages in public processes with the government must be informed and must have the right to participate freely in public discourse.<sup>9</sup>
- If there is no freedom of expression – if people are not free to share information and express a range of ideas, opinions and political views; and, the corollary to that, if people are not free to receive information in the form of a range of ideas, opinions and political views – they will not be sufficiently well informed to make appropriate and meaningful political choices, whether at the ballot box or in their interactions with government more generally.



### Role of Media in society

- The media can play a positive role in democracy **only if there is an enabling environment** that allows them to do so.
- They **need the requisite skills for the kind of in depth reporting** that a new democracy requires.
- There should **also be mechanisms to ensure they are held accountable to the public and that ethical and professional standards are upheld.**
- Media **independence is guaranteed if media organizations are financially viable, free from intervention of media owners and the state, and operate in a competitive environment.**
- The **media should also be accessible to as wide a segment of society as possible.**
- Efforts to **help the media should be directed toward: the protection of press rights, enhancing media accountability, building media capacity and democratising media access.**
- Enabling independent **media to perform the crucial roles of being a watchdog over government and educating people about the issues that affect their lives also requires supporting** organizations such as trade unions and professional associations for journalists, and a public education about these roles and responsibilities of media and their function in a democratic and open society (Civil society) .
- If a **democracy is to run smoothly in any country, it is a must that the media in all fairness should be given full autonomy and a free hand** it deserves in airing its views among the people and no unnecessary restrictions should be imposed on it.

### Challenges with the Media

- The **issues of paid news, media trial, non-issues being presented as real news while the real issues are sidelined, the news is being doctored and fact distortion for profits and political favour,** fake news, yellow journalism are important concerns which are influencing public and impacting national security. For instance, fear mongering through media has led to mob lynchings, attacks on the migrant population.
- The **absence of objective journalism leads to the false presentation of truth in a society which affects** the perception and opinions of people. As observed in the case of Cambridge Analytica case, the biased news coverage on social media platform affected the Presidential elections in the U.S.
- The **chase for sensationalism and higher TRP rates as observed in the coverage of 26/11 terrorist attacks in India risked the internal security** of the nation. The sensationalism-driven reporting compromised the identities of rape victims and survivors despite SC guidelines.
- **Trial by media does not follow the due process of law and can reduce the public trust** in institutions of governance like the judiciary.
- **Paid news and fake news can manipulate public perception and can instigate hatred, violence, and disharmony among the various community within society.**

- With the advent of social media, technological changes, the reach of media has grown profoundly. Its reach and role in impacting public opinion have made it even more important to ensure its objectivity, non-partisanship calls for the enforcement of journalistic ethics.

### Media regulating agencies in India

#### Press Council of India (PCI)

- It is a statutory body established under PCI act, 1978.
- It was established for preserving the freedom of press and for maintaining standards of newspapers and news agencies in India.
- The functions of the PCI includes
  - o Helping newspapers to maintain their independence
  - o Build a code of conduct for journalists and news agencies
  - o Help maintain 'high standards of public taste' and foster responsibility among citizens
  - o Review developments likely to restrict flow of news.

#### Central Board of Film Certification

- The role of the CBFC is limited to controlling content of movies and television shows, etc. Unlike the PCI, it does not have the power to issue guidelines in relation to standards of news and journalistic conduct.

#### Other Authorities

- Program and Advertisement Codes for regulating content broadcast on the television, are issued under the Cable Television Networks (Regulation) Act, 1995.
- **IT Rules regulate content over internet.** However, there is no overarching body to control the content on internet.
- **Radio channels have to follow the same Programme and Advertisement Code as followed by All India Radio.**
- **News channels are governed by mechanisms of self-regulation.** National broadcasting association has devised code of ethics to regulate news content.
- The Advertising Standards Council of India has also drawn up guidelines on content of advertisements.

### Reforms suggested for Media

- Media must remain honest and truthful and act with great restraints and responsibility.
- TRPs, circulation figures and bottom lines, though important, must not dictate media's path.
- Media should get rid of established prejudices and try to give voice to youth, women, farmers and entrepreneurs.
- Media should report and highlight more positive stories and best practices to inspire positive changes. Success of Swachh Bharat showed the power of media in bringing behaviour change.
- Media should help in protecting, preserving and promoting India's rich cultural heritage and languages.
- Development of vernacular newspapers should be encouraged to promote regional languages and to spread awareness across rural masses.
- Regulators should effectively counter fake news because pervasive menace of fake news threatens to destroy the credibility of media.

## UJJAWALA 2.0

## GS-II GOVERNANCE

### Context

- Government has **launched the second phase of the Ujjwala gas connection** scheme for the poor
- It **would provide the biggest relief to lakhs of migrant worker families** in the country.
- **Now migrant workers would only be required to submit a self-declaration of their residential address** to get the gas connection.

### Pradhan Mantri Ujjwala Scheme

- Under this scheme, **5 crore connections are to be provided to the people needing them.**
- **BPL families will be offered a support of Rs.1600 per connection.** This is for the cylinder, booklet, pressure regulator, safety hose, etc. and will be borne by the government itself.
- Apart from these, **the scheme also provides interest-free loans to buy stove and refill by oil marketing companies.**
- The **connections would be given in the name of women of the households.**
- An initial outlay of Rs.8000 crore was sanctioned for the implementation of the scheme.
- The authorities would identify BPL families based on the Socio Economic Caste Census data.
- Target of Pradhan Mantri Ujjwala Yojana (PMUY) has been enhanced from five crore to eight crore.

## Success of Ujjwala Scheme

- Usage pattern of PMUY customers who have been in the system for a year or more and have been buying four or more cylinders a year.
- Users focus on the value that LPG generates for them and not on its cost.
- customers are able to devote more time towards children, the elderly and sick, along with reduced drudgery and gains in health.
- It has also witnessed the emergence of a peer learning platform: the Pradhan Mantri LPG Panchayat.
- LPG penetration in India has risen from 56% in 2014 to 90%.
- Women are engaging in economic opportunities leading to income generation rather than engaging in non-remunerative work of collecting fodder.
- It is also helping in reducing indoor air pollutions.

## CAG reports/Concerns

- Risk of diversion of domestic LPG cylinders for commercial use, as 1.98 lakh beneficiaries had an average annual consumption of more than 12 cylinders.
- The oil marketing companies had issued 7.19 crore connections, which is about 90% of the target to be achieved until March 2020.
- Out of 3.78 crore LPG connections, 1.60 crore (42%) connections were issued only on the basis of beneficiary Aadhaar which remained a deterrent in de-duplication.
- Laxity in identification of beneficiaries.
- Lack of input validation check in the IOCL software allowed issue of 0.80 lakh connections to beneficiaries aged below 18.
- 8.59 lakh connections were released to beneficiaries who were minor as per the SECC-2011 data, which was in violation of PMUY guidelines and LPG Control Order, 2000.
- Mismatch in the name of 12.46 lakh beneficiaries between the PMUY database and SECC-2011 data.
- Connections were given to “unintended” persons.
- Delay of more than 365 days in the installation of 4.35 lakh connections against the stipulated time period of seven days.

### Vanishing into thin air?

A CAG audit found that in 3.43 lakh instances LPG distributors had issued 2 to 20 refills in a day to a single Pradhan Mantri Ujjwala Yojana beneficiary having a single cylinder connection. Table lists customers who ordered more than one refill in a single day and the number of such instances

Daily refills	Customers	Instances
2	2,60,934	3,02,193
3	17,589	20,389
4	6,931	7,574
5	3,829	4,065
6 - 13	9,283	9,587
14 - 20	5	5
<b>Total</b>	<b>2,98,571</b>	<b>3,43,813</b>

- At least 2.98 lakh customers have applied for more than one refill a day in 3.43 lakh instances
- As a domestic connection won't need so many refills, the CAG suspects that they are being diverted for commercial use (such as in restaurants)



## SELF HELP GROUP

## GS-II GOVERNANCE

### Context

- The Prime Minister hails work done by women SHGs, and says they can connect villages with prosperity.

### Background

- Self-help groups are informal groups of people who come together to address their common problems.
- Villages are faced with problems related to **poverty, illiteracy, lack of skills, health care etc.**
- These are problems that cannot be tackled individually but can be better solved through group efforts.
- Today these groups known as Self-help groups have become the vehicle of change for the poor and marginalized.
- While self-help might imply a focus on the individual, one important characteristic of self-help groups is the idea of mutual support, people helping each other. Self-help groups can serve many different purposes depending on the situation and the need.
- For example, within the **development sector**, self-help groups have been used as an effective strategy for **poverty alleviation, human development** and **social empowerment**, and are therefore often focused on microcredit programmes and income-generating activities.

### Characteristics of Self-help group

- **Voluntary nature** – they are run by and for group members, have regular meetings, and are open to new members.
- Generally being formed in response to a particular issue, e.g. no access to education for children with disabilities, limited income-generating opportunities.
- **clear goals**, which originate from the needs of group members and are known and shared by all members.

- **Informal structure and basic rules**, regulations and guidelines to show members how to work effectively together.
- **Participatory nature** – involving getting help, sharing knowledge and experience, giving help, and learning to help oneself.
- **Shared responsibility among group members** – each member has a clear role and contributes his/her share of resources to the group.
- **Democratic decision-making.**
- **Governance by members**, using an external facilitator only if necessary in the formation of the group.
- Evolution over time to address a broader range of issues.
- Possibility of joining together to form a federation of groups across a wider area.



### Guiding principles in formation of SHGs

- Effort is built on mutual trust and mutual support.
- Every individual is equal and responsible.
- Every individual is committed to the cause of the group
- Decision is based on the principles of consensus.
- Savings is the foundation on which to build the group for collective action.

### Challenges with SHG

#### Ignorance of Members/Participants

- Even though the authorities take measures for creating awareness among the group members about the schemes beneficial to them, still majority of the group are unaware of the schemes of assistance offered to them.

#### Inadequate Training Facilities

- The training facilities given to the members of SHGs in the specific areas of product selection, quality of products, production techniques, managerial ability, packing, other technical knowledge are not adequate to compete with that of strong units.

#### Problems of Marketing

- Marketing is an important area of functioning of the SHGs. However they face different problems in the marketing of products produced by them.

#### Exploitation by Strong Members

- It is also observed that in the case of many SHGs, strong members try to earn a lion's share of the profit of the group, by exploiting the ignorance and illiterate members.

#### Weak Financial Management

- It is also found that in certain units the return from the business is not properly invested further in the units, and the funds diverted for other personal and domestic purposes like marriage, construction of house etc.

#### Low Return

- The return on investment is not attractive in certain groups due to inefficient management, high cost of production, absence of quality consciousness etc.

### Way Forward

- The Government should play the role of a facilitator and promoter, create a supportive environment for the growth and development of the SHG movement.
- **Expanding SHG Movement to Credit Deficient Areas of the Country** - such as Madhya Pradesh, Rajasthan, States of the North-East.
- **Rapid expansion of financial infrastructure (including that of NABARD)** and by adopting extensive IT enabled communication and capacity building measures in these States.
- **Extension of Self-Help Groups to Urban/Peri-Urban Areas** – efforts should be made to increase income generation abilities of the urban poor as there has been a rapid rise in urbanisation and many people remain financially excluded.
- **Positive Attitude** – Government functionaries should treat the poor and marginalized as viable and responsible customers and as possible entrepreneurs.
- **Monitoring** – Need to establish a separate SHG monitoring cell in every state. The cell should have direct links with district and block level monitoring system. The cell should collect both quantitative and qualitative information.
- **Need Based Approach** – Commercial Banks and NABARD in collaboration with the State Government need to continuously innovate and design new financial products for these groups.



**EXTRADITION IN INDIA****GS-II GOVERNANCE****Context**

- Chief Financial Officer of Huawei is facing extradition case in Canada for alleged bank fraud.

**About Extradition**

- Extradition is an act where one jurisdiction delivers a person accused or convicted of committing a crime in another jurisdiction, over to their law enforcement.
- It is a cooperative law enforcement process between the two jurisdictions and depends on the arrangements made between them.
- Besides the legal aspects of the process, extradition also involves the physical transfer of custody of the person.

**Need and Underlying Philosophy of The Law of Extradition**

- Balance of Territorial concept of Criminal law: extradition allows states to show solidarity in repression of criminality and co-operate in the international battle against crime. It balances the traditional principle of territoriality of Criminal Law.
- Ensuring Justice: It ensures that nobody is able to bypass the rule of law in order to flee to other countries. This creates an expression of deterrence and enhances respect in rule of law.
- Balance of International law with sovereignty: It balances competing imperatives of comity of nations (respect for a foreign court) on one hand, and international crime control on the other.

**India Extradition Law**

- In India, the extradition of a fugitive from India to a foreign country or vice versa is covered by the **provisions of the Extradition Act, 1962**.
- The act lays down the first principles of extradition law.
- The obligation to extradite springs out of treaties/arrangements/conventions entered into by India with other countries.

**Basic Principles Governing Extradition**

- Principle of relative Seriousness of the offence: Extradition is usually permissible only for relatively more serious offences, and not for trivial misdemeanours or petty offences.
- Principle of Dual Criminality: This is the most important principle governing Extradition Law. This requires that the offence that the fugitive is alleged to have committed, should be an offence both in the requesting as well as the requested state.
- Principle of proportionality between offence and sentence :A Requesting state should respect the principle of proportionality between offence and sentence
- Rule of specialty: when a fugitive is extradited for a particular crime, he can be tried only for that crime.

**A few common restrictions on extradition**

- Failure to fulfil dual criminality: if the act for which the criminal's extradition is requested is not a crime in the requested state, then the state can refuse extradition.
- Political crimes: most nations refuse the extradition of political criminal suspects. This excludes terrorist offences and violent crimes.
- The possibility of certain forms of punishment: if the accused is likely to receive capital punishment or torture in the requesting State, the requested state can refuse extradition.
- Jurisdiction: jurisdiction over a crime can be invoked to refuse extradition.
- The absence of an extradition treaty.

**Conclusion**

- Extradition is a great step towards international cooperation in the suppression of crime. States should treat extradition as an obligation resulting from the international solidarity in the fight against crime.

**ELECTION RELATED VIOLENCE****GS-II GOVERNANCE****Context**

- Calcutta High Court **directed a CBI investigation into all cases of murder** and crimes against women in connection with alleged post-poll violence in West Bengal.

### Background

- Election-related violence has significantly **hindered the meaningful engagement of young people in electoral processes**.
- Elections are one of the **main pillars of democracy**.
- However, elections can trigger violence when fundamental human **rights such as the rights of association and expression** are violated and when certain segments of society are unable to engage with political processes.
- Countries emerging from internal conflicts such as civil war have an especially **high potential for conflict during electoral processes**.
- The use of media including **social media** to intimidate and **harass** is an increasing form of election-related violence.

### Strategies involved in electoral disruptions

- In countries with a history of **electoral violence**, **young people** are often involved as perpetrators or **victims of the violence**.
- That is because they are often used as **foot soldiers by politicians** and armed groups that want to **disrupt polling**.
- As long as youth are vulnerable for political and military exploitation they will be hindered from **fully participating in electoral processes**.
- **Women** are affected in different ways than men by **electoral violence**.
- Voter turnout among women is much lower than among men, particularly in post-conflict countries where there is a **high threat of gender-based violence** and in countries with **high risks of intimidation of women in public life**.

### Prevention of electoral violence

- Preventing the eruption of **election-related violence** to preserve the integrity of elections and democratic systems is thus fundamental to a country's **long-term peace and stability**.
- This objective is also acknowledged in **Agenda 2030's Sustainable Development Goal 16.1**, which focuses on reducing all forms of violence to achieve "**peace, justice and strong institutions**."
- Reducing the **risk of election-related violence** is a complex proceeding that requires "[building] general trust among key players, including **media, security services, political parties, civil society, and others in crisis prevention programmes**."
- "Therefore, the **Election commission of India**, in conjunction with other electoral stakeholders, should take action to reduce the risks of electoral violence and enhance peoples' sense of security and freedom in **exercising their right to vote**."
- In taking this action, the **Election commission of India** and other electoral stakeholders should follow an approach that acknowledges the importance of youth empowerment, **participation and inclusion**.
- Such an approach is more likely to address young people's underlying experiences of marginalization than one which perpetuates **negative stereotypes** of the youth population as a whole.

## REFUGEE POLICY OF INDIA

## GS-II GOVERNANCE

### Context

- Many Afghan nationals are seeking refuge in India after takeover by the Taliban.

### Afghan Refugees in India

- There are currently 21,000 Afghan refugees in India.
- The United Nations Human Rights Council (UNHRC) documented 8275 Afghan refugees and 6000 plus asylum seekers in India, under its mandate.
- Total Afghan Refugees in world:
- According to UNHRC data for 2020, the total number of refugees from Afghanistan globally, number roughly 28 lakh.
- Of this, Pakistan housed the most refugees from Afghanistan at 14.3 lakh, followed by Iran (7.8 lakh) and Germany (1.4 lakh).
- As of 2020, India had the 12th highest number of Afghan refugees, according to the UNHRC.

### Definition of Refugee

- Under the 1951 UN Convention on the Status of Refugees and the subsequent 1967 Protocol, the word refugee pertains to any **person who is outside their country of origin and unable or unwilling to return owing to well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion**.
- Stateless persons may also be refugees in this sense, where country of origin (citizenship) is understood as 'country of former habitual residence'.

### International Protocol for Refugees

- The United Nations' 1951 Refugee Convention, the only refugee instrument that existed at the time, had been created to accord protection to people displaced in the aftermath of World War II.

- The 1951 Refugee Convention and its 1967 Protocol are the key legal documents that form the basis of our work. With 149 State parties to either or both, they define the term 'refugee' and outlines the rights of refugees, as well as the legal obligations of States to protect them.
- The core principle is non-refoulement, which asserts that a refugee should not be returned to a country where they face serious threats to their life or freedom. This is now considered a rule of customary international law.

### Difference between Refugee and Migrant

- Refugees are forced to flee **because of a threat of persecution** and because they lack the protection of their own country.
- A migrant, in comparison, **may leave his or her country for many reasons that are not related to persecution, such as for the purposes of employment, family reunification or study.**

### Determination of the Refugee

- Although the 1951 Convention does not prescribe a particular procedure for the determination of whether a person is a refugee, where an individual assessment is the preferred approach, any procedures must be fair and efficient.

### Indian stand on UNHCR Convention

- India has signed neither the 1951 United Nations Refugee Convention nor its 1967 Protocol, which has 140 signatories.
- India continues to host a large population of refugees. In the main, they are treated kindly.
- Security Concern: borders in South Asia are extremely porous and any conflict can result in a mass movement of people. This can have two results:
  - o a **strain on local infrastructure and resources in countries that** are poorly equipped to deal with sudden spikes in population.
  - o it **can upset the demographic balance**, a tinderbox in South Asia.
- India **already does its duty, so where's the need** to sign this piece of paper? It mostly doesn't even take UN money to look after the refugees.
- India retains a **degree of scepticism about the UNHCR**. This apparently flows from the Bangladesh war of 1971. As it doesn't perceive the role of UNHCR as fair and neutral.

### Rights of Refugees under UNHCR Convention

- The cornerstone of the 1951 Convention is the principle of non-refoulement contained in Article 33. According to this principle, a refugee should not be returned to a country where he or she faces serious threats to his or her life or freedom.
- The right not to be punished for illegal entry into the territory of a contracting State (Article 31);
- The right to work (Articles 17 to 19);
- The right to housing (Article 21);
- The right to education (Article 22);
- The right to public relief and assistance (Article 23);
- The right to freedom of religion (Article 4);
- The right to access the courts (Article 16);
- The right to freedom of movement within the territory (Article 26); and
- The right to be issued identity and travel documents (Articles 27 and 28).

### Challenges associated with signing the convention

- India will be **bound by law not to repatriate a single refugee against their will**. It's known as the non-refoulement principle—no forcible repatriation.
- The Convention requires the **signatory nation to accord a minimum standard of hospitality and housing towards those it accepts as refugees**. Failure to provide the minimum continues to attract a lot of international criticism for host nations even today.

### Challenges with the refugees

#### Social consequences of permitting refugees

- By permitting refugees India might face many social consequences. Such as,
  - o Refugees might **create an identity crisis** with the indigenous people. For example, the refugees from Bangladesh currently in Assam and Arunachal threatens to overtake the indigenous population of the region.
  - o **Difficult to identify and deport** them back to their country after a few years. For example, the illegal migrants from Bangladesh and Rohingya refugees entered through North-East. But later they spread to all other states, like Haryana, Kerala, Telangana and UTs like Jammu and Kashmir, Delhi, etc. Identifying them among more than a billion Indians is a great challenge.

#### Economic consequence of permitting refugees

- **Increased financial responsibility of the state**. According to the UNHCR report in 2014, there were more than 200,000 refugees in India. There are millions of illegal immigrants in India. India at present does not have the financial capacity to satisfy all their basic needs.

- **Decreases wage level and replace the native people.** Since illegal immigrants and refugees require food and shelter, they also work at very low wages in their settling areas. It impacts the lives of locals, as they don't get adequate jobs.

#### Political consequence of permitting refugees

- **Issue of illegal voting:** The illegal migrants to avail the benefits, procure illegal national identity cards such as voter id. By procuring that, they also vote in elections and influence the outcome.
- **Issue of terrorism:** These refugees, since not accepted by governments, are vulnerable to join Pakistani based terror outfits for work and revenue.

#### Challenges Associated with India's Refugee Policy

- **Refugees vs. Immigrants:** In the recent past, many people from neighboring countries tend to illegally immigrate to India, not because of state persecution but in search of better economic opportunities in India.
- While the reality is that much of the debate in the country is about illegal immigrants, not refugees, the two categories tend to get bunched together.
- Due to this, policies and remedies to deal with these issues suffer from a lack of clarity as well as policy utility.
- **Ambiguity in the Framework:** The main reason why our policies towards illegal immigrants and refugees are confused is that as per Indian law, both categories of people are viewed as one and the same and are covered under the Foreigners Act, 1946.
- **Ad-hocism:** The absence of such a legal framework also leads to policy ambiguity whereby India's refugee policy is guided primarily by ad hocism.
- Ad hoc measures enable the government in office to pick and choose 'what kind' of refugees it wants to admit for whatever political or geopolitical reasons.
- This results in a discriminatory action, which tends to be a violation of human rights.
- **Discriminatory CAA:** The Government of India has passed the Citizenship Amendment Act (CAA). CAA envisages providing citizenship to people who are religious minorities in India's neighborhood and persecuted by the state.
- However, CAA is not the answer to the refugee problem primarily because of its deeply discriminatory nature, as it doesn't include a particular religion under its ambit.
- Further, many political analysts have dubbed the CAA as an act of refugee avoidance, not refugee protection.

#### Conclusion

- In spite of not being a party to the 1951 Refugee Convention and its 1967 Protocol, India has been one of the largest recipients of refugees in the world. However, if India had domestic legislation regarding refugees, it could have deterred any oppressive government in the neighborhood to persecute their population and make them flee to India.

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**MANUAL SCAVENGING****GS-II SOCIAL JUSTICE****Context**

- Condemning the Centre for its “inhuman and cruel” statement that no deaths due to manual scavenging have been reported in the past five years, SafaiKaramchariAndolan convener.

**Background**

- Manual scavenging is a term used mainly in India for "manually cleaning, carrying, disposing of, or otherwise handling, human excreta in an insanitary latrine or in an open drain or sewer or in a septic tank or a pit"
- Manual scavenging refers to the practice of manually cleaning, carrying, disposing or handling in any manner, human excreta from dry latrines and sewers.**
- It often involves using the most basic of tools such as buckets, brooms and baskets.
- The **practice of manual scavenging is linked to India's caste system where so-called lower castes were expected to perform this job.**
- Manual scavengers are amongst the poorest and most disadvantaged communities in India.

**Reasons Behind Manual Scavenging**

- Association of the Caste stigma with manual scavenging.
- Lack of acceptance among states about manual scavenging pushes the issue under the carpet.
- Lack of rehabilitation of the manual scavenger.
- Poor implementation of the Prohibition of Manual Scavenging act. Governments do not provide the equipment like gloves and Masks while cleaning the drainage.
- Manual scavenging has crept up in urban India through cleaning of septic tanks and drainage systems.
- Low awareness of their rights, lower education, and lack of self-esteem continues the manual scavenging.
- Low per capita income, lack of skills to engage in other works, social stigma associated with this work also curtails mobility of manual scavengers.
- Lower inculcation of technology in scavenging.
- Low political mobilization, lack of leaders in the community, social exclusion further aggravates the issue.

**Steps taken for Eradication of Manual Scavenging**

- In 1993, the Government of India enacted the Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act.
- The act **prohibited the employment of manual scavengers for manually cleaning dry latrines and the construction of dry toilets (that do not operate with a flush).**
- Government brought Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, which is wider in scope and importance, acknowledging the urgency of rehabilitating manual scavengers.**
  - It prohibits the construction or maintenance of insanitary toilets.
  - It prohibits a person from being engaged or employed for hazardous cleaning of a sewer or a septic tank.
  - Offences under the Act are cognizable and non-bailable.
  - It calls for a survey of manual scavengers in urban and rural areas within a time-bound framework.
- A **Supreme Court order in March 2014 makes it mandatory for the government to identify all those who died in sewerage work since 1993 and provide Rs.10 lakh each as compensation to their families.**
- Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS) with the objective to rehabilitate remaining manual scavengers and their dependents in alternative occupations, in a time bound manner.**
- Focus has been given on conversion of insanitary latrines into sanitary latrines under Swachh Bharat Mission.**
- Under the Scheme of “Pre Metric Scholarship to the Children, the children of manual scavengers are also provided scholarship.

**Supreme Court observation on Manual Scavenging**

- Nowhere in the world, people are sent to “gas chambers to die.”
- Why proper protective gear like mask and oxygen cylinders were not being provided to people engaged in manual scavenging and cleaning of sewage or manholes.**
- The Constitution has if all human beings are equal but they are not being given equal facilities by the authorities.**
- No law, which deals with civil wrong and its liabilities thereof, is developed in the country and the magistrates are not empowered to take cognisance on their own of such incidents.

### NHRC Recommendations

- **Rehabilitation process of manual scavengers may be linked to schemes under which they can immediately start earning like MNREGA and revisit to see how they and their families are doing;**
- **The amount of compensation paid as one time cash assistance for rehabilitation of manual scavengers may be enhanced from Rs. 40,000/- to Rs. 1 Lakh.**
- Nodal authority/department that will bear the expense of such Compensation may also be clearly specified.
- **Ensure to remove the role of middlemen by making provisions like direct benefit transfer or by collaborating with NGOs.**
- **Strict Action against local authorities, who employ people to work as manual scavengers; An App and a toll-free number for registration of complaints.**
- **The National Crime Research Bureau (NCRB) to monitor the sewer deaths and data reflected in its report.**
- Union Finance Ministry of GOI may **designate a particular Nationalized Bank for each State to take-up the responsibility of extending loans to the Manual Scavengers** and their dependents' up to Rs.10.00 lakhs to take up the business Activity.
- **Either individual or group insurances must be provided to Manual Scavengers and the premium shall be paid by the concerned Local Bodies.**
- **The National SafaiKaramcharis Finance and Development Corporation, NSKFDC may provide financial assistance to manual scavengers** to help start up working in the domain of sanitation and training to them.
- Government needs to plan adequate investment facilitating the shift to the use of technology, maintenance of technology and training the workers to operate the technology.
- Officers in the Supervisory level or In charge of the area should submit a declaration to the respective civic body to the effect that the required safety gears are being provided before any person enters the sewer/septic tank.
- Monitoring Mechanism and a vigilance committee with a proper SOP must be established, under Section 24 of the PEMSRA, 2013 (Prohibition of Employment as

## TRIPLE TALAQ

## GS-II SOCIAL JUSTICE

### Context

- Recently, government met the victims of the triple talaq. Government has hailed the triple talaq act as a key reform for muslim women rights.

### Triple Talaq act (The Muslim Women [Protection of Rights on Marriage] Bill, 2019)

- The act **makes all declaration of talaq, including in written or electronic form, to be void (i.e. not enforceable in law) and illegal.**
- It defines talaq as talaq pronounced by a Muslim man resulting in instant and irrevocable divorce.
- The Bill makes declaration of talaq a cognizable offence, attracting up to three years' imprisonment with a fine. (A cognizable offence is one for which a police officer may arrest an accused person without warrant.)
- Magistrate may grant bail to the accused.
- The offence **may be compounded by the Magistrate upon the request of the woman (against whom talaq has been declared).** Compounding refers to the procedure where the two sides agree to stop legal proceedings, and settle the dispute.
- Victim is entitled to seek subsistence allowance from her husband for herself and for her dependent children.

### Concerns Related to This act

- Supreme Court verdict has already prohibited the instant triple talaq.
- There is **no rationale to criminalise the practice of talaq-e-biddat and imprison Muslim men.**
- Since Muslim **marriage is a civil contract between two adult persons, the procedures to be followed on its breakdown** should also be of civil nature.
- The government should strengthen the negotiating capacities of women by providing them economic and socio-legal support rather than criminalising the pronouncement of triple talaq.
- No economic and socio-legal support is provided by the government in the Bill to women, children and other dependents, when the erring men are put behind bars.
- The terms of imprisonment up to three years is arbitrary and excessive.

### Justification behind Criminalization of Triple Talaq

- Continuous reporting of the Triple talaq cases even after outlawing them by Supreme Court.
- Discretion has been given to magistrate to provide the bail.
- Magistrate can also provide maintenance and compensation for the victim and her children.

## HOW THE JUDGES RULED

### MAJORITY JUDGMENT

**Justices RF Nariman & UU Lalit**

- Say practice is arbitrary as "marital tie can be broken capriciously and whimsically... without any attempt at reconciliation"
- Triple talaq is only one of three permissible forms of divorce in Islam; stated to be sinful by the very Hanafi school that tolerates it
- Rule that it is arbitrary and violative of Article 14 of Constitution

**Justice Kurian Joseph**

- Says practice not dictated by Quran, hence not integral to Islam
- Cites Shamim Ara vs State of UP (2002) judgment of SC to say triple talaq lacks legal sanctity

“Merely because a practice has continued for long, that by itself cannot make it valid...”

### DISSENTING REMARKS

**CJI JS Khehar, Justice S A Nazeer**

- Recognise triple talaq as part of Islamic personal practices; followed by Sunni Muslims of Hanafi school for 1,400 years
- Part of right to religion guaranteed under Article 25, doesn't violate Art 14, 15 & 21
- As part of 'personal law', has stature equal to fundamental right, courts can't set it aside

- Govt should enact law banning triple talaq as it had done for sati & devadasi system among Hindus
- Till such a law is enacted, no Muslim man can use triple talaq route to get instant divorce

“Unfortunately, the Union seeks at our hands what truly falls in its own”

**The 5 judges belong to 5 different faiths**—Khehar (Sikh), Nazeer (Muslim), Nariman (Parsi), Lalit (Hindu) & Kurian (Christian)

## THE FIVE WOMEN WHO LED THE FIGHT

**1** **Shayara Bano**, mother of two, filed SC petition in 2016. A year earlier, she had been divorced via speed post

**2** **Gulshan Parveen**, 31, received talaqnama on a ₹10 stamp paper. Her petition was clubbed with Shayara's plea

**3** **Atiya Sabri**, a PG in Sociology, got a scribbled divorce note from

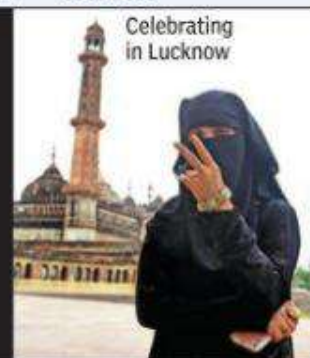
husband Wazid Ali

**4** Married at 15, **Ishrat Jahan** had four children before her husband divorced her over a telephone call from Dubai in 2014. He then remarried

**5** **Afreen Rehman**, an MBA in finance, married an Indore-based lawyer in 2014. Two years later, he sent her talaq through speed post

“Judgment is historic. It grants equality to Muslim women and is a powerful measure for women empowerment”  
— PM Narendra Modi

My daughter will now not have to face such regressive practices when she grows up  
— Shayara Bano, Petitioner



Celebrating in Lucknow

## MALNUTRITION IN INDIA

## GS-II SOCIAL JUSTICE

### Context

- Government has told the Rajya Sabha that there are over 9 lakh children with severe malnutrition in the country as of November 30 last year.

### Reasons behind Malnutrition

- Calorie deficiency
- Protein Hunger
- Micronutrient malnutrition

### Other reasons:

- Poor uneducated women don't focus on children nutrition.
- Poor sanitation, lack of access to good quality food, lack of access to mineral drinking water are biggest reasons behind it.
- Birthing child in lower age, poor nutritional status of pregnant women and lack of adequate gap between two children are other reasons.
- Low per capita income, Higher food inflation especially fruit inflation, monodiet (having rice and lentils only) further aggravates the malnutritions.
- Poor implementation of the Policies like ICDS (Integrated Child development scheme), corruption in implementation of Mid-day meal scheme, lack of convergence between different ministries is other policy related causes.
- Poor fund utilization: Many States have only utilized 16% of their allotted funds in National Nutrition Mission.

### Methods to mitigate malnutrition:

**ICDS scheme:** It focuses on improving the nutritional and health status of children in the age group 0-6 years. It involves:

- Supplementary nutrition (SNP),
- Immunization,
- Health check-up,
- Referral services,
- Pre-school non-formal education
- Mid day meal: It focuses on improving the nutritional status of children.

### PoshanAbhiyan:

- POSHAN Abhiyaan has been set up by Government of India on 18.12.2017 for a three-year time frame commencing from 2017-18 with an aim to reduce the level of stunting in children (0-6 years), under-nutrition (underweight prevalence) in



children (0-6 years) and Low Birth Weight at 2% per annum and reduce anaemia among young children (6-59 months), women and adolescent girls at 3% per annum across the country.

- It ensures convergence with various programmes, organising Community Based Events; incentivising States/UTs for achieving goals.

#### Other Approach:

- **Include pulses in the PDS, mid day meal for dealing with protein hunger.**
- **National Horticulture mission is an attempt to reduce the micronutrient malnutrition.**

#### Challenges in the Schemes

- Schemes has not **been able to utilise the budget allotted to them. Most revised figures have been downgraded from estimate** budgeted figures.
- In PoshanAbhiyan, **much focus has been on digitisation of the process than achieving the convergence in the schemes.**
- **National nutrition mission doesn't focus on making low cost nutrition diet** popular among the masses to make nutrition diet available for everyone.
- It **doesn't make focus on disseminating information to public about basic dietary practices for children, adolescents, and mothers.** For example, what is a balanced diet on a limited budget.
- National nutrition mission doesn't focus on breaking down the silos existing between health and women & child ministry to provide a comprehensive package for dealing with malnutrition.

#### Way forward

- Focus on nutrition-related interventions, beyond digitisation;
- Intensify the convergence component of POSHAN Abhiyaan, using the platform to bring all departments in one place to address nutrition;
- Direct the **announcement to form 10,000 farmer producer organisations with an allocation of Rs. 500 crore** to nutrition-based activities;
- **Promotion of youth schemes to be directed to nutrition-agriculture** link activities in rural areas;
- Give explicit emphasis and fund allocation to agriculture-nutrition linked schemes;
- Ensure early disbursement of funds and an optimum utilisation of schemes linked to nutrition.

## POVERTY IN INDIA

## GS-II SOCIAL JUSTICE

#### Context

- Poverty in India is on the rise again.

#### Background

- Unemployment had reached a 45-year high in 2017-18, as revealed by NSO's Periodic Labour Force Survey (PLFS).
- Two-thirds of people in India live in poverty: 68.8% of the Indian population lives on less than \$2 a day.
- Over 30% even have less than \$1.25 per day available - they are considered extremely poor.
- This makes the Indian subcontinent one of the poorest countries in the world; women and children, the weakest members of Indian society, suffer most.
- India is the second most populous country after China with about 1.2 billion people and is the seventh largest country in the world with an area of 3,287,000 km<sup>2</sup>.
- The highly contrasted country has enjoyed growth rates of up to 10% over many years and is one of the largest economies in the world, with a gross domestic product (GDP) of 1,644 billion US dollars.
- But only a small percentage of the Indian population has benefited from this impressive economic boom so far, as the majority of people in India are still living in abject poverty.

#### Reasons for Poverty

- In his book 'Poverty and Un-British Rule in India', Dadabhai Naoroji explains that the very nature of **British rule in India has encouraged poverty and impoverished the masses.** The decimation of the rural handicrafts and artisan communities, backwardness of agriculture and expenditure on the company officials are described as some of the reasons.
- **Illiteracy and lack of quality education:** Despite more than 15 million graduates being produced every year, there are no jobs available for them due to lack of quality of education. Most of these graduates are studying outdated educational syllabus and hence cannot be productively employed anywhere.
- **Vicious trap of poverty: Prevalence of massive malnourishment, stunting and wasting amongst children** which negatively impact their physical and mental potential pushing them deeper into the vicious trap of poverty for the rest of their lives.



- **Sub-standard health outcomes:** More than 60% of the household incomes in many families is devoted towards health expenditure. This out of pocket expenditure on healthcare is one of the biggest pulling factor for poverty.
- **Administrative Bottleneck:** Certain government policies that favour one sector over the other. Also there is lack of rule of law and enforcement of laws such as the Minimum Wages Act.
- **Income Inequality:** According to the Oxfam, the top 10% of the Indian population holds 77% of the total national wealth. 73% of the wealth generated in 2017 went to the richest 1%, while 67 million Indians who comprise the poorest half of the population saw only a 1% increase in their wealth.
- **Discrimination:** Discrimination and poverty go hand in hand. Discrimination can both cause poverty and be a hurdle in alleviating poverty. Ex: Discrimination against women, SC, ST, Disabled, Old age people etc is one of the major causes of poverty among them.
- **Nature of job:** Approximately 56% of the total working population is in the agricultural sector. Which is marked by poor landholding, low productivity and disguised unemployment?
- The issue of low employment growth within industrial and service sectors has contributed to stagnant or declining standards of living.
- **Inadequate public infrastructure:** Lack of accessibility to primary health care centres, quality public schools, research institutions, roads, waterways, rural markets, etc. act complementary for the rise and sustenance of poverty in India.
- **Inadequate policy structure:** Given the vicious cycle of poverty, government hand-holding is needed to support those above poverty lines to prevent them from slipping below the line.



## Consequences of Poverty

### The high infant mortality

- 1.4 million children die each year in India before their fifth birthday.
- In addition to Nigeria, Pakistan, the Democratic Republic of the Congo and China, India is one of the countries with the highest child mortality rates.
- Pneumonia, malaria and diarrheal diseases as well as chronic malnutrition are the most frequent causes of death.

### Malnutrition - not even a bowl of rice a day

- India is one of the world's top countries when it comes to malnutrition: More than 200 million people don't have sufficient access to food, including 61 million children. 7.8 million infants were found to have a birth weight of less than 2.5 kilograms - alarming figures for a country commonly referred to as the emerging market.

### Child labour - no time to play and learn

- Although child labour for children under the age of 14 in India is prohibited by law, according to official figures, 12.5 million children between the ages of 5 and 14 are working.
- Aid agencies assume that in reality, there are many more estimating that 65 million children between 6 and 14 years do not go to school.
- Instead, in order to secure survival, it is believed that Indian children contribute to the livelihood of their families; they work in the field, in factories, in quarries, in private households and in prostitution.

### Lack of education - no opportunities without education

- According to UNICEF, about 25% of children in India have no access to education.
- The number of children excluded from school is higher among girls than boys. Although women and men are treated equally under Indian law, girls and women, especially in the lower social caste, are considered inferior and are oppressed by their fathers, brothers and husbands.
- Without education, the chance of finding a living wage from employment in India is virtually hopeless.

### Child marriage - the early end of childhood

- In spite of banning minors from marrying in 2006, it is still widespread in many regions of India.
- The main leaders in this practice are young girls, who are still children themselves and become mothers too early.
- Many of them die at birth. According to an investigation by the medical journal The Lancet, 44.5% of girls are still married in India before they are of legal age.
- Due to poverty, many parents encourage early marriages for their daughters in hopes of better lives for them.

### HIV / AIDS - a taboo in Indian society

- 2.7 million Indians are infected with the HIV virus; about 220,000 of them are children, with the tendency rising.

- The lack of education and the lack of condoms mean that the virus is spreading faster and faster and more and more people are dying of AIDS - especially in the slums of the growing cities. More and more children are living there as so-called AIDS orphans, often being infected with the virus as well.

### Committees to determine the Poverty level in India

#### YK Alagh Committee (1979)

- It defined a poverty line based on the nutritional requirements for the urban and rural areas and assigned a consumption expenditure amount for it. Every year, this line was adjusted for inflation.

#### Lakdawala Committee (1993)

- This committee continued with the poverty line and nutritional requirements approach. However, it recommended that it is important for every state to define its own poverty line based on the diversity and also a separate poverty for the rural and urban areas.

#### Suresh Tendulkar Committee report (2009)

The following were the recommendations:

- Shift away from consumption-based poverty estimation to a more inclusive approach. The committee noted that the consumption patterns of people had changed and it was important to add more items than just calories needed for basic nutrition.
- It also recommended the addition of various intoxicants, education, fuel, medical and sanitation.
- Uniform poverty line- It did away with the system of having different approaches for the urban and rural areas of different states.
- Private expenditure on health and education.

#### Rangarajan committee report (2012)

- It set the poverty line at Rs 47 in urban areas and Rs 32 in rural areas as a poverty line per day per person as a poverty line.
- The international poverty line set up by the World Bank is USD 1.90 per individual in a day.

### Way Forward

#### Universal Basic Income

- It gained currency in the West because of the threat of automation-induced job losses.
- Economic Survey 2016-17 has suggested replacing all current cash transfers with universal basic income. The survey wants UBI to replace and not supplement the existing social welfare, anti-poverty schemes like MGNREGA, PMJSY etc.
- The Survey points out that the two prerequisites for a successful UBI are: functional JAM (Jan Dhan, Aadhar and Mobile) system as it ensures that the cash transfer goes directly into the account of a beneficiary and CentreState negotiations on cost sharing for the programme.

#### Conditional Cash Transfer Schemes for Alleviating Human Poverty

- Such schemes aim at reducing extreme poverty in the short run while protecting the formation of human capabilities in the long run. This programme represents a shift in government's approach of focusing on the supply-side to a demand driven approach. Ex: In 2005, India launched a conditional cash transfer (CCT) programme, Janani Suraksha Yojana (JSY), to reduce maternal mortality ratio (MMR) through promotion of institutional births. JSY is the largest CCT in the world.

#### Public investment in human capital and public goods

- Investments in human capital and public goods have significant positive impacts on private-sector productivity, with estimated rates of return ranging from 15 percent to upwards of 45 percent.
- The enhanced productivity of human beings or human capital contributes substantially not only towards increasing labour productivity but also stimulates innovations and creates ability to absorb new technologies.

## ECONOMICALLY WEAKER SECTION (EWS) QUOTA

## GS-II SOCIAL JUSTICE

### Context

- Recently, government has announced the EWS quota for the medical education.
- The Constitution (103rd Amendment) Act provides for 10% reservation in government jobs and educational institutions for the economically weaker section in the unreserved category.
- The Act amends Article 15 and 16 to provide for reservation based on economic backwardness.

### More about EWS quota

- It is in addition to 50% reservation already provided to SC, ST and OBC communities.
- Declaration of EWS is based on fulfilling of following criteria:
- Income should be less than 8 Lakh per annum.

- One should not have more than 5 acre farm land.
- Home size should be less than 1000 sq. feet.

## YOU ARE ELIGIBLE FOR THE 10% RESERVATION IF YOU:

 <p><b>1</b> Have household income of less than ₹8 lakh a year At least 95% (127 crore)</p>	 <p><b>2</b> Have agricultural land of less than 5 acres 86% land holdings in India fall under this category</p>	 <p><b>3</b> Have a house smaller than 1,000 square feet At least 80% of households in India have houses smaller</p>	 <p><b>4</b> Have a residential plot smaller than 100 yards in a municipality Data not available</p>	 <p><b>5</b> A residential plot of less than 200 yards in a non-notified municipality NA</p>
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### Positives of EWS reservation

- It provides legitimacy to already existing reservation. Now, universities won't be segregated between merit candidates and reserved communities.
- It is secular in nature and includes all religions: Muslims, Christians
- Economic justice is the philosophy behind it. In an increasing economic society, class becomes a tool of oppression.
- It addresses contemporary reservation movements like Jats reservation, Patel reservation.
- 8 Lakh is creamy layer identified in OBC reservation. Hence, 8 Lakh is justified as a basis of class criteria.

### Concerns/drawbacks of EWS reservation

- It violates Indira Sawhney judgement of Supreme court which applied 50% cap on the reservation.
- Social justice has been the philosophy behind reservation. Upper caste are at the top of caste pyramid and doesn't require any reservation.
- It is not based on any scientific data. A survey of 450 educational institutions had found 28% students belonging to EWS section.
- The criteria qualifies around 90-95% population.
- The reservation doesn't make any sense when jobs are on the rise in private sector. Public sector is already declining and not creating many jobs.
- This reservation move can be abused by changing the economic status by selling property or showing lower income.

### Conclusion

- Administration must ensure that non-deserving population doesn't get the EWS certificate.
- Genuine poor and needy section should get the opportunity.

## 127TH CONSTITUTIONAL AMENDMENT BILL

## GS-II SOCIAL JUSTICE

### Context

- The Constitution 127th Amendment Bill, 2021, which seeks to restore the states' power to make their own OBC lists, has been passed in the Lok Sabha with 385 members voting in support and no member opposing it.

### Background

- Reservation is a form of positive discrimination, created to promote equality among marginalised sections, so as to protect them from social and historical injustice.
- Generally, it means giving preferential treatment to marginalised sections of **society in employment and access to education**.
- National Front government in 1990, to implement the recommendation of the Mandal Commission that jobs in central government should be reserved for the **Other Backward Classes**.
- This led to violent 'anti Mandal' protests in different parts of the country.
- This dispute between the supporters and opponents of OBC reservations was known as the 'Mandal issue' and was to play an important role in shaping politics since 1989.
- The decision was also challenged in the Supreme Court and came to be known as the "**Indira Sawhney case**".

### Reservation for OBCs in Educational Institutions

- 1979, the Central Government appointed the Second Backward Classes Commission under the chairmanship of B.P. Mandal.

- The Mandal Commission was appointed in terms of Article 340 of the Constitution to investigate the conditions of the socially and educationally backward classes and suggest measures for their advancement .
- The **reservation to OBC was an exception to Article 15** of the Indian Constitution which was added by the 93rd Amendment Act of 2005.
- The Central Government enacted the Central Educational Institutions (Reservation in Admission) Act, 2006, **providing a quota of 27% for candidates belonging to the Other Backward Classes (OBCs).**

#### Indra Sawhney case

- **Indra Sawhney case 1992** ruled that the total reservation for backward classes cannot go **beyond the 50% mark.**
- **Not only Maharashtra** but Tamil Nadu, Haryana and Telangana also exceed the reservation **quota above 50% .**
- **1990, when the V P Singh** led-government set out to implement the Mandal report and it was challenged in court.
- **The court in this judgment upheld the 27 % quota** that was provided to the Socio economic Backward classes.
- **The advanced sections among the OBCs (the creamy layer- Economically well) should be excluded from the list of beneficiaries of reservation.**
- **Limit should not exceed 50%** except in exceptional circumstances and extraordinary situations, this limit can be crossed.

#### Constitutional provisions

- **Article 15 and 16 of the Constitution** enabled the State and Central Governments to reserve seats in government services for the members of the SC and ST.
- **Article 330 and 332** provides for specific representation through reservation of seats for SCs and STs in the Parliament and in the State Legislative Assemblies respectively.
- **Article 243D** provides reservation of seats for SCs and STs in every Panchayat.
- **Article 233T** provides reservation of seats for SCs and STs in every Municipality.
- **Article 335** of the constitution says that the claims of STs and SCs shall be taken into consideration constitutively with the maintenance of efficiency of the administration. Intensity of climate change.

#### About the 127th Constitutional amendment bill

- The Constitution (One Hundred and Twenty-Seventh Amendment) Bill, 2021 was introduced in Lok Sabha by the Minister of Social Justice and Empowerment.
- The Bill **amends the Constitution to allow states and union territories to prepare their own list of socially and educationally backward classes.**
- List of socially and educationally backward classes: The National Commission for Backward Classes (NCBC) was established under the National Commission for Backward Classes Act, 1993.
- The Constitution (One Hundred and Second Amendment) Act, 2018 gave constitutional status to the NCBC, and **empowered the President to notify the list of socially and educationally backward classes** for any state or union territory for all purposes.
- The 2021 Bill amends this to provide that the President may notify the list of **socially and educationally backward classes only for purposes of the central government.**
- This central list will be prepared and maintained by the central government. Further, the Bill enables states and union territories to prepare their own list of socially and educationally backward classes.
- This list must be made by law, and **may differ from the central list.**
- Consultation with the NCBC: **Article 338B of the Constitution** mandates the central and state governments to consult the NCBC on all major policy matters affecting the socially and educationally backward classes.
- The Bill exempts states and union territories from this requirement for matters related to **preparation of their list of socially and educationally backward classes.**

**MGNREGA**

**GS-II SOCIAL JUSTICE**

#### Context

- Social Audit Units (SAU) under Rural Development Departments (RDD) across India have found financial misappropriation of Rs 935 crore under various schemes of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

#### Finding of Social Audit Units

- SAU audits have been carried out in 2.65 lakh Gram Panchayats (GPs) in the states and Union Territories of the country at least once over the last four years.
- The Centre released Rs 55,659.93 crore for MGNREGA in 2017-18, and the amount has since risen every year to reach Rs 1,10,355.27 crore in 2020-21.



- Total expenditure on the scheme has risen from Rs 63,649.48 crore in 2017-18 to Rs 1,11,405.3 crore in 2020-21.
- One of key findings of the audit is “financial misappropriation”, which includes bribery, and payments to non-existent persons and to vendors for material procured at high rates.

#### Issues attached with social audits of MGNREGA

- determination of culpability of the persons concerned for the irregularities
- Lack of attention on this aspect
- absence of SOPs to handle such cases
- There were often not enough people to ensure payment of amounts shown as recoverable.
- the ‘real’ misappropriation could well be three or four times the identified amount, as in many GPs, audits have been done only once.
- A key requirement is for the SAU to be independent. Half of the SAUs are not independent and that the quality of audits and intensity of action on the findings needs to improve.

#### Social Audit under MGNREGA

- Section 17 of the MGNREG Act mandates social audit of all works in gram panchayats.
- The Audit of Scheme Rules were notified in 2011, and The Auditing Standards for Social Audit in 2016.
- The Rural Development Ministry has released a Financial Management Index, in which social audit is a key parameter to judge the efficiency of states in management of finances.
- The 2011 Rules say the state government will facilitate the social audit of work done under MGNREGA in every GP once every six months.

#### About MGNREGA


- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has the following objectives:
  - o Provide 100 days of guaranteed wage employment to rural unskilled labour
  - o Increase economic security
  - o Decrease migration of labour from rural to urban areas
  - o Grassroots-driven approach to employment generation.
  - o Programmes under the act are demand driven.
  - o The scheme is funded by the central government, which bears the full cost of unskilled labour and 75% of the cost of material for works undertaken under this law.
  - o The central and state governments audit the works undertaken under this act through annual reports prepared by CEGC (Central Employment Guarantee Council) and the SEGC (State Employment Guarantee Councils).

#### Success of MGNREGA

- **Reduced the distress in agriculture & economy** due low agricultural productivity & small land-holding size thus provided them better livelihood opportunities.
- **Most of MGREGA work is directed towards** building irrigation canals, tanks etc. thus provides resources base for further rural development.
- It has **reduced rural distress & intensive urban migration**.
- The provisions like **work up to 5 km from home, equal wages promotes women** empowerment, gender parity & directed towards backward section of society.
- The programme has **generated over 1,980 crore person-days**. In the short span of 10 years that the Act has been in existence, it has **generated 19.86 billion person-days of employment benefitting 276 million workers**, with more than half the jobs going to women workers and almost a 3rd to members of scheduled castes and scheduled tribes.
- It has **resulted into social upliftment for all sections including SC/ST**. The percentage of Scheduled Caste workers benefitted under the scheme has consistently been about 20% and of Scheduled Tribe workers has been about 17%.
- The **legislation has reduced distress migration in traditionally migration-intensive areas**.

### Kickstarting rural demand

The government aims to revise wages of MGNREGA workers to address the slowdown in the rural economy



- MGNREGA wages will be linked to an updated inflation index
- Higher wages will increase MGNREGA expenditure by 10%
- They may also increase purchasing power and revive rural demand
- MGNREGA budgetary allocation for FY20: ₹60,000 crore
- Funds released till Sept. 17: ₹46,486 cr.
- Additional funds requested: ₹15,000-20,000 crore

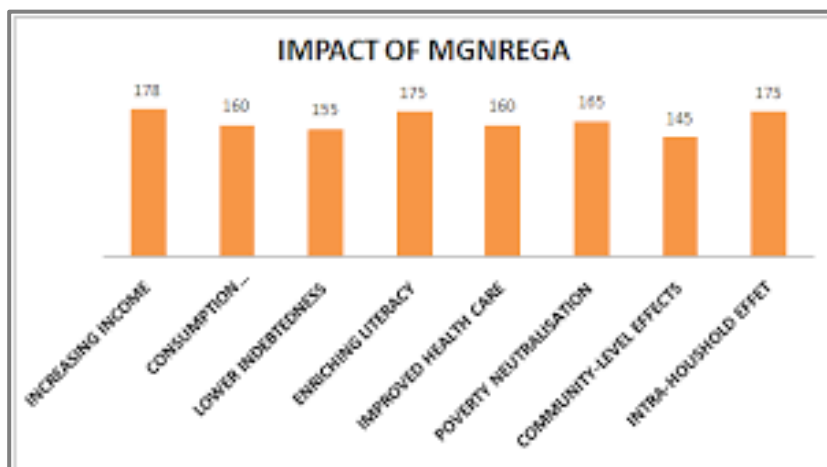
- MGNREGA has played a much larger role in revitalizing the labour market in rural areas. Not only has it led to the creation of a class of workers who are using the MGNREGA as a safety net, but also these workers are also able to use it as a bargaining tool for extraction of higher wages.

### Challenges

- **Ridiculously low wage rate:** Currently, MGNREGA wage rates of 17 states are less than the corresponding state minimum wages.
- **Insufficient budget allocation:** MGNREGA's success at the ground level is subject to proper and uninterrupted fund flow to the states.
- **Regular payment delays:** The Union Ministry of Rural Development considers wages paid once the FTO (Fund Transfer Order) is signed by the second signatory. However, delays take place even in the processing of signed FTOs, for which the Management Information System (MIS) does not calculate compensation.
- **Workers penalised for administrative lapses:** The ministry withholds wage payments for workers of states that do not meet administrative requirements within the stipulated time period
- **The banking puzzle:** The rural banks are highly de-capacitated in terms of staff and infrastructure and thus always remain hugely crowded. The workers normally have to visit the banks more than once to withdraw their wages.
- **Faulty MIS data:** The increase in corruption and weakening accountability has roots in the excessive dependence of implementation of MGNREGA on technology (real-time MIS being one of them). There is a growing pile of evidence on how real-time MIS has made MGNREGA less transparent for workers, reduced accountability of frontline functionaries and aided in centralisation of the programme.
- **Non-payment of unemployment allowance:** There are a huge number of unemployment allowances being shown in the MIS currently.
- **Genuine job cards being deleted to meet 100% DBT targets:** Genuine job cards are being randomly deleted, as there is a huge administrative pressure to meet 100 per cent Direct Benefit Transfer (DBT) implementation targets in MGNREGA.
- **Too much centralisation weakening local governance:** A real-time MIS-based implementation and a centralised payment system has further left the representatives of the Panchayats Raj Institutions with literally no role in implementation, monitoring and grievance redress of MGNREGA schemes.
- **Administration not honouring local priorities:** MGNREGA could be a tool to establish decentralised governance. However, with the administration almost dictating its implementation, it is literally a burden now for the people and especially for the local elected representatives.

### Government Reforms

- **Geo MGNREGA** is a path breaking initiative that uses space technology for geo-tagging all assets created under MGNREGA for improved planning, effective monitoring, enhanced visibility and greater transparency.
- **Direct benefit transfer:** To further streamline the fund flow mechanism and bring down delay in payment of wages, the Ministry of Rural Development has implemented National Electronic Fund Management System (NeFMS) in 21 States and 1 Union Territory.
- Initiative has been taken to simplify MGNREGA through issuance of Annual Master Circular (AMC) for FY 2016-17 by superseding 1039 circulars/advisories issued earlier.
- Reduction in number of Registers being maintained at Gram Panchayat level to seven simplified Registers from an average of 22 Registers has been implemented.
- The programme is progressing towards a more independent and empowered system of Social Audit and Internal Audit to ensure growth with accountability through a trained community cadre of social auditors drawn from women SHGs.
- The Ministry has taken up skill development of the MGNREGA workers through initiatives like Bare Foot Technicians and Project LIFE (Livelihood in Full Employment) in order to move them up the skilling ladder.
- The Ministry initiated Inter State Exchange Programmes, a process ensuring sharing of ideas and good practices.



## WOMEN AND EDUCATION

## GS-II SOCIAL JUSTICE

### Context

- We must bring more and more women within the ambit of higher education.

### Need for education for Women

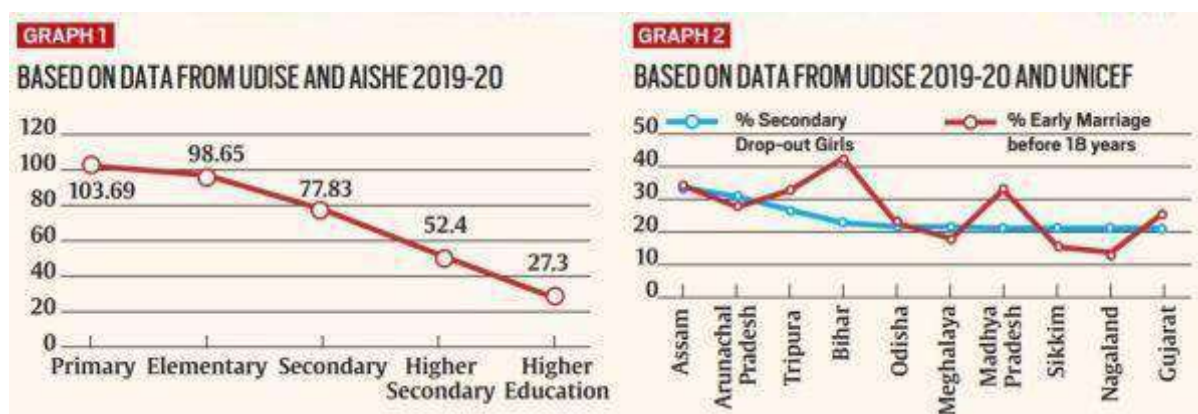
- As a society, women can be the pivot to bring about critical and lasting social transformation.
- As individuals, they deserve a shot at being the very best they can.
- Their economic participation is necessary to make India an economic powerhouse.
- The global **average for the private rate of return (the increase in an individual's earnings) with just one extra year of schooling is about 9 per cent.**
- the **social returns of an extra year of school are even higher – above 10 per cent at the secondary and higher education levels as per a decennial World Bank review.**
- Interestingly, the **private returns for women in higher education are much higher than for men – 11 to 17 per cent as per different estimates.**

### Issues with Women Education

- As girls progress from primary to secondary to tertiary school levels, their numbers decrease by the year.

### Challenges of Economic Conditions

- The primary ones for the dropouts are obvious: Girls drop out of school because:
  - they are engaged in domestic activities (31.9 per cent)
  - they have financial constraints (18.4 per cent),
  - they are not interested in education (15.3 per cent)
  - they get married (12.4 per cent).
  - over one crore girls are on the verge of dropping out of schools due to the pandemic alone.



### Challenges of Social Norms

- the states having the highest rate of secondary school drop-outs among girls are also the ones where a significant percentage of girls get married before the age of 18 years.
- at the higher secondary level, 28 per cent of boys attend private schools as opposed to 24 per cent of girls.
- The average annual household expenditure on girls at this level is Rs 2,860 less than that on boys.
- Of the girls who do manage to enroll in a tertiary degree, a smaller proportion go on to pursue professional courses such as engineering (28.5 per cent), while many more take courses such as pharmacy (58.7 per cent) or opt for "normal graduation" (52 per cent) as per AISHE 2019-20.
- Their representation is lowest in institutions of national importance, followed by deemed and private universities.

### Means to enhance women participation in Education

#### Setting up Community schools

- As an immediate step, in every locality, a mohalla school or a community learning programme should be started with appropriate Covid norms if the local disaster management authorities and the state governments permit.
- Evidence from the Ebola pandemic shows that continued engagement with educational activities reduces drop-outs in a statistically significant way.



- NITI Aayog, with the help of civil society organisations, had started a community programme led by volunteers called “SakshamBitya” in 28 aspirational districts where more than 1.87 lakh girl students were trained in socio-emotional and ethical learning.
- **Developing a Gender Atlas:** to predict likely drop-outs, a gender atlas comprising indicators that are mapped to key reasons for school drop-outs should be developed.
- **Training of Teachers:** Teachers should also be trained in all the scholarships and schemes available that provide economic support to girls and their families for continuing their education.
- **Conditional Cash Transfers:** there is a need to revise the National Scheme of Incentive to Girls for Secondary Education in areas or states with high prevalence of drop-outs and early child marriages. The scholarship amount may be increased and tied to the completion of graduation, with yearly scholarships paid to students upon successful completion of each year of their undergraduate degree.
- **Targeting the backward district:** special education zones need to be set up in areas which have been traditionally backward in education. Every panchayat showing a consistent trend in girl child drop-outs should have composite schools till higher secondary (classes I-XII).
- **Setting up of Gender Inclusion Fund:** The National Education Policy 2020 provides for a gender inclusion fund. This fund should be utilized to support STEM education in these schools as well as in all Kasturba Gandhi BalikaVidyalayas.
- **Seeking private participation:** The recently modified viability gap funding scheme includes provisions for social infrastructure projects, including education. For greenfield projects in higher education, 60 per cent of the funding can be accessed as viability gap funding from the central and state governments. For pilot projects in education, close to 80 per cent of the funding is available as viability gap funding and an additional 50 per cent as operational cost in initial years.
- **Developing appropriate behaviour:** Behavioural Insights Units (BIU) may be established across states to tackle social issues with the help of ultra-local NGOs/CSOs to reach the last mile. NITI Aayog has taken a leap forward in this direction by establishing a BIU to tackle nutrition and health challenges in aspirational districts.

### Conclusion

- With recent experiments and learning experience, informed targeting of ample resources and an agile policy environment, this challenge could well prove to be an opportunity. Given the right enabling environment, educational outcomes can be improved.

# ANSWER WRITING PROGRAMME FOR MAINS 2021

**20** QUESTIONS

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## AFGHANISTAN CRISIS

## GS-II INTERNATIONAL RELATIONS

### Context

- Afghanistan has been plunged into chaos after the Taliban took over in the wake of the pull out of American forces from the country.
- President Ghani left the country, Afghan National Defence and Security Forces put up no resistance and Taliban fighters walked into Kabul, took control of the Presidential Palace.
- Experts fear that it could lead to a catastrophe for Afghanistan.
- Many feel that it is **a repeat of the 1975 Fall of Saigon**– when the capital of the US-backed South Vietnam fell to Communist-ruled North Vietnam two years after the withdrawal of American military presence of 19 years.
- The Taliban wants to reimpose its version of Islamic law as the country's system of governance.

### Background or events timeline

- The Taliban emerged in the early 1990s following the withdrawal of Soviet troops from Afghanistan, before the demise of the Soviet Union.
- 2001 – US-led coalition marches into the Afghan capital after 9/11 attack as Taliban regime had turned down U.S. demand to hand over al-Qaeda leaders, including Osama bin Laden, who plotted the attacks.
- 2001– The **Bonn Agreement** is signed.
- 2001 – Karzai is sworn in as chairman of a **29-member governing council** established under the Bonn Agreement.
- 2004 and 2009 – General elections are held and Karzai is elected president.
- 2014 – U.S. negotiates a power-sharing deal for a so-called **Unity Government**, with Ghani serving as president and Abdullah as chief executive.
- 2014 – American and NATO troops formally end their combat mission, transitioning to a support and training role.
- 2015-2018 – The Taliban surge further.
- 2018 – President Trump appoints veteran Afghan-American diplomat ZalmayKhalilzad as negotiator with the Taliban.
- 2018-2019 – Zalmay engages in on-again, off-again talks with the Taliban, mainly in Qatar. The Taliban refuse to negotiate with the Kabul government
- 2020 – The U.S. and the Taliban sign a deal in Doha, Qatar, laying out the withdrawal of U.S. troops from Afghanistan; the deal also envisions intra-Afghan talks on a future political road map. In the agreement, the Trump administration promised that it would withdraw all American troops from Afghanistan by May 1, 2021.
- President Joe Biden endorsed the Trump-Taliban deal, but pushed the deadline for withdrawal to September 11.
- 2021- **Blinken Proposal**: United Nations will convene a meeting of the foreign ministers from China, Russia, Pakistan, Iran, India, and the United States. It will develop a “unified approach” to peace in Afghanistan.
- The United States has asked Turkey to convene a meeting of the Afghan government and the Taliban to finalise a peace settlement.
- The US has asked the Taliban to accept an immediate agreement to reduce violence for 90 days.
- US has asked the Afghan Government and Taliban to move towards a permanent and comprehensive ceasefire and form an interim unity government.
- 2021: US troops will withdraw from Afghanistan.
- 2021: Taliban takes over.
- The U.S. had reached the conclusion that the war is unwinnable.

### Taliban

- The Taliban, or students in the Pashto language, emerged in the early 1990s in northern Pakistan following the withdrawal of Soviet troops from Afghanistan.
- It is an Islamic fundamentalist political and military organisation operating in Afghanistan.
- They have dominated Afghan polity for quite some time and feature regularly in international affairs.
- The Taliban have been fighting against the U.S.-backed government in Kabul for around 20 years. They seek to re-impose their strict version of Islam in Afghanistan.

### Challenges for India

- **Bringing home Indian nationals**: The first concern is for **Indian diplomats, personnel and citizens based in Afghanistan**. With thousands of desperate Afghans seeking to leave the country, the tarmac has been overrun by people blocking the airplanes from taking off or landing.
- Helping Afghans who want to leave: Hundreds of Afghan nationals have applied for visas from the Indian Embassy in Kabul. If the government does accept them, then arrangements for thousands of refugees will need to be made.

- **Recognising the Taliban regime:** Recently talks comprising 12 countries including India, U.N. representatives and Afghan representatives with the Taliban in Doha, a nine-point statement issued made it clear that they will "not recognise any government in Afghanistan that is imposed through the use of military force".
- India is President of the U.N. Security Council this month, and must take decisions on whether to convene meetings on Afghanistan's future, including possible sanctions, and is also chairing the committee on Taliban sanctions.

#### India's stand on Afghan peace process

- The peace process has to be Afghan-led, Afghan-owned and Afghan-controlled.
- Afghanistan should build national consensus for talks with the Taliban.
- All initiatives and processes **must include all sections of the Afghan society**, including the legitimately elected government.
- Any process should respect the constitutional legacy and political mandate.
- Establishment of **democratic process** with respect for human rights, including women's rights.
- The peace process should not leave any ungoverned spaces where terrorists and their proxies can relocate.

#### Dealing with the Taliban regime

- Regardless of whether or not India recognises the Taliban as the legitimate ruler in Afghanistan, the **government will have to open channels of communication to engage the Taliban**.
- India reaching out to the Taliban signals acknowledgement from the Indian side that the Taliban would play a critical role in Afghanistan in the coming years.
- India has three critical areas in dealing with the Taliban.
  1. **protecting its investments**, which run into billions of rupees, in Afghanistan
  2. **preventing a future Taliban regime from being a pawn of Rawalpindi;**
  3. **making sure that the Pakistan-backed anti-India terrorist groups do not get support from the Taliban.**

#### Future issues that India could face

- India's influence with the new government is likely to be considerably curtailed, as **Pakistan's influence over the Taliban remains strong**.
- Concerns that anti-India terror groups could occupy space in Afghanistan to carry out terror attacks against India
- Strategic issues involving future connectivity, which India had sought to do via Chabahar port in Iran, must also be considered in the longer term.
- **Trade through Afghanistan under a Taliban regime** would be routed through Karachi and Gwadar, and the Indian investment in the Chabahar port, meant to circumvent Pakistan, may become unviable.
- The Taliban's control will also mean a bigger hand for the Pakistani military and intelligence agencies to influence outcomes for the country.
- For New Delhi, already countering hostilities at the LAC with China and the LoC with Pakistan, an unfriendly government in Kabul can only complicate its strategic options.
- The Indian-built projects, including the already built Zaranj-Delaram Highway and Salma Dam, are already under Taliban control, and a cloud hangs over those under construction, including check-dams, schools and urban projects.
- **Threat of radicalisation:** the threat of growing radicalisation and space for pan-Islamic terror groups in India's neighbourhood.
- New Regional Geopolitical Developments: There can be new regional geopolitical alignments (such as China-Pakistan-Taliban) which may go against the interests of India.
- Impact on Afghanistan: there is the worry for India of the impact on Afghanistan itself, given the Taliban's past record in power, of an erosion in women's and minority rights, the overturning of a democratic system and the imposition of the Taliban's brutal form of justice.

#### Why is Afghanistan important for India?

- **Security:** A stable Afghanistan is crucial for regional and domestic security and stability for India.
- **Connectivity:** The most important role of Afghanistan is always considered as India's gateway to Central Asia.
- **Energy ambitions:** Peaceful Afghan is essential to address the energy needs of India.
- **Regional Balance of Power:** Afghanistan is tied to India's vision of being a regional leader and a great power, coupled with its competition with China over resources and its need to counter Pakistani influence.
- **Natural Resources:** The country is home to resource deposits worth one trillion dollars, according to the US Geological Survey.
- India's development initiatives:

## Implications for Pakistan, Russia, China & Iran

### Pakistan

- This is a moment of both vindication and concern in Islamabad.
- The Taliban are a creation of the Pakistani security establishment.
- But the situation also means Pakistan will need to shoulder the entire burden of the chaos that experts predict.

### China

- China would have much to lose from instability in Afghanistan as this could have an impact on the China Pakistan Economic Corridor.
- A Taliban regime in Afghanistan might end up stirring unrest in the Xinjiang Autonomous region, home to the Uighur minority.
- Conversely, as an ally of Pakistan, it could see a bigger role for itself in Afghanistan.

### Russia

- The US exit is for Russia a full circle after its own defeat at the hands of US-backed Mujahideen and exit from Afghanistan three decades ago.
- In recent years, Russia has taken on the role of peacemaker in Afghanistan.
- But both the Taliban and the Afghan government have been wary of its efforts.
- Russia's growing links with Pakistan could translate into a post-US role for Moscow in Afghanistan.

### Iran

- As a country that shares borders with Pakistan and Afghanistan, Iran perceives active security threats from both.
- And a Taliban regime in Kabul would only increase this threat perception.
- Despite the mutual hostility and the theological divide between the two, Iran opened channels to the Taliban a few years ago, and recently, even hosted a Taliban delegation at Tehran.

## Way forward

### Addressing the immediate challenges

- 1) Securely evacuate Indian diplomatic personnel and other citizens from Afghanistan. This will require a major logistical effort.  
The government of India must also offer refuge to a large number of those Afghans who have worked with Indian initiatives and are desperate to avoid potential retribution from the Taliban.
- 2) **Diplomatic crisis:** India must make all possible efforts to get the international community to hold the Taliban to its word on letting all foreigners leave in peace, protecting the lives of all Afghan citizens and respecting international humanitarian law.  
As a non-permanent member of the UN Security Council, Delhi will have a voice in shaping the international debate on the situation in Afghanistan.
- 3) The **final challenge is domestic**. Tensions are bound to rise on India's western borders. Delhi must maintain vigil against a resurgence of cross-border terrorism that could quickly destabilize Kashmir and escalate the conflict between India and Pakistan.

### Options available

1. The first option is to stick to its principle of backing only a democratically-elected government in Kabul, and providing political and humanitarian support while that lasts.
2. The second would be to go further and supply the ANDSF with military supplies, including ammunition and air power, possibly via the Iranian route.
3. The third would be to accelerate contacts with the Taliban.



4. Finally, **India could simply wait and watch, until the chaos of conflict reveals a winning side, and weigh its options accordingly.** This option seems expedient, but it also denies India relevance at the “high table” where Afghanistan’s future is being discussed.

#### Way Ahead

- **Broader Diplomatic Engagement:** India should consider appointing a special envoy dedicated to Afghanistan. The envoy can ensure that Indian views are expressed at every meeting, and broaden engagement with the Taliban.
- **Decoupling of Taliban-Pakistan:** The Taliban is bound to seek a measure of autonomy from Pakistan. India will have to wait a while before the current issues between India and the Taliban can be overcome.
- **Balancing the Opportunities in Afghanistan:** Structuring the internal balance of power within Afghanistan has always been hard. However, for a patient, open-minded and active India, there will be no dearth of balancing opportunities in Afghanistan.
- **Leverage Indian Infrastructural Developments:** Indian USD 3 billion assistance to Afghanistan is in concrete projects that serve its population and have earned it their goodwill that will endure.
- **Continued Training and Investments:**
  - o India should provide more military training to Afghan security forces and invest in longer-term capacity-building programs.
  - o It should actively support and invest in the National Directorate of Security
  - o Finally, given the continued levels of violence and the impact of the corona virus on the Afghan economy, India should expand its development assistance.

## US OCCUPATION OF FOREIGN LAND

## GS-II INTERNATIONAL RELATIONS

### Introduction

- The US occupation of a foreign land and the chaos it leaves behind are hardly new.
- In the past two decades alone, there have been many such interventions, the most significant of these being the **Wars in Iraq and Afghanistan.**

### Background:

- Spurred by the September 11 terrorist attacks on the Twin Towers in New York, both were launched by then US President George W Bush purportedly to **annihilate Al-Qaeda** and related terror organisations.
- The **strategic locations of the regions and their vast oil reserves too have** been cited as peripheral reasons for the wars.
- Interestingly, just between 2018 and 2020, the US undertook 12 ‘combat or potential combat via surrogates’ activities around the world. Many of these actions have been in Africa and West Asia.

### US in Iraq

- The US invaded Iraq in the aftermath of the September 11 attacks, claiming that Iraqi dictator Saddam Hussein was in possession of weapons of mass destruction (WMD).
- Though Hussein had **used biological and chemical weapons during the Gulf War**, he had agreed to unconditionally give them up after the ceasefire of 1991.
- However, the **US and United Kingdom**, under George W Bush and Tony Blair, respectively, claimed to have intelligence that Hussein had stockpiled dangerous quantities of WMDs.
- The **UN Security Council, though, remained unconvinced of this evidence**, with a memorandum submitted by France, Russia and Germany.
- United Nations secretary general Kofi Annan said **the war on Iraq was illegal and violated the UN Charter.**
- Bush administration invaded Iraq on March 19, 2003, leading a **coalition of troops from the UK, Australia and Poland.**
- The forces overthrew the ruling Ba’ath government, installing a West-backed elected government in its place, and disbanded the Iraqi army, leading to a **power vacuum** and the **eventual destabilization of the country.**
- These **highly-trained military members later joined forces to form the Al Qaeda of Iraq** which later became a part of the **Islamic State of Iraq**, which eventually morphed into the Islamic State of Iraq and Syria (ISIS).
- Even after the withdrawal of US forces in December 2011, **Iraq saw political instability, sectarian conflicts and insurgency**, resulting in a **civil war in 2014.**
- This prompted a second US intervention. The crisis is ongoing.

### US in Libya

- The **US-backed bombing in Libya**, which resulted in the **collapse of the 42-year-old government**, cannot quite be referred to as an invasion because it **did not involve foreign troops** on the ground.



- The **military intervention** by a multinational coalition **under NATO** was carried out by airplanes and missiles, and lasted over seven months.
- The bombing campaign began after the **UN Security Council passed a resolution approving strict sanctions against Libyan dictator Muammar Gaddafi** and the establishment of a no-fly zone over the country's airspace.
- Since early 2011, Gaddafi's security forces had been clashing violently with anti-government protesters in different parts of Libya.
- The pro-Gaddafi forces had threatened to unleash violence over rebel groups in Benghazi, the second most-populous city in Libya.
- The NATO-led coalition, with significant support from France and Canada, enforced the **no-fly zone, a naval blockade and an arms embargo against the regime** until Gaddafi's execution in October 2011.
- After the government collapsed, the ground situation deteriorated, and **tensions between the various ethnic and religious groups in Libya rose to the forefront**.
- Since then, Libya has seen a second civil war and a rise in Islamist insurgency.

### US in Syria

- Following the Syrian Civil War of 2011, the **US had been providing underground support to select rebel groups fighting against the autocratic regime of Syrian President Bashar al-Assad**.
- In 2014, a US-led international coalition began brutal airstrikes against Islamic State of Iraq and the Levant (ISIL) militants in the country.
- The US had refrained from military action against the al-Assad government until April 2017.
- That changed with a chemical weapon attack in Khan Shaykhun area in northwestern Syria that killed and injured hundreds of civilians. The US blamed the Russia-backed Assad regime for the attack.
- Citing this, the Trump administration launched a missile attack on a Syrian airbase controlled by the al-Assad government.
- There was status quo until December 2018, when Trump, against counsel of his advisors, declared that US troops would "soon" be pulled out of Syria.
- As of now, the timeline and scope of withdrawal of US troops remains fluid.
- Meanwhile, the Biden administration continues airstrikes against militia groups in Syria till date.

### US in Afghanistan

- The US has a protracted history with Afghanistan.
- In 2001, in the wake of 9/11 attacks orchestrated by Al Qaeda, the US forces invaded Afghanistan to fight the terror group and its host Taliban.
- With the support of the UK government and its military forces, the US toppled the Taliban regime and **established a West-backed government led by President Hamid Karzai**.
- However, the Taliban regrouped and insurgency took root, prompting Obama, who had been elected to office under the promise of ending the Afghan occupation, to inject more than 30,000 US troops into the fight in 2009.
- The first serious attempt at withdrawing foreign troops from the country came under President Trump, who signed an accord with Taliban in Doha in 2020, promising a conditional withdrawal of troops from Afghanistan by May 1, 2021.
- Joe Biden, began a phased withdrawal, which culminated in the frenzied scenes that have unfolded in Kabul.
- Taliban has now returned to form a government almost two decades after they were ousted from power by the US.

## GILGIT-BALTISTAN REGION

## GS-II INTERNATIONAL RELATIONS

### Context

- Pakistan's Law and Justice Ministry has finalised draft legislation to incorporate Gilgit-Baltistan, the region known before 2009 as Northern Areas, as a province of the country.

### What's the historical background of this region?

- The British sold it, along with the rest of Jammu and Kashmir, to the Dogra ruler of Jammu, Gulab Singh, after defeating the Sikh army in 1846, but retained controlled over the area through a lease extracted from the Maharaja.
- On November 1 1947, after J&K ruler **Hari Singh had signed the Instrument of Accession with India**, and the Indian Army had landed in the Valley to drive out tribal invaders from Pakistan, there was a rebellion against Hari Singh in Gilgit.
- Pakistan **did not accept G-B's accession** although it took administrative control of the territory.
- After India went to the UN and a series of resolutions were passed in the Security Council on the situation in Kashmir, Pakistan believed that neither G-B nor PoK should be annexed to Pakistan, as this could undermine the international case for a plebiscite in Kashmir.

### Why special status for this region?

- Though both PoK and GB are **ruled directly from Islamabad**, both are “**autonomous territories**”.
- During the first Indo-Pak war of October 1947, Pakistan occupied 78,114 sq km of the land of Jammu and Kashmir, including the ‘**Northern Areas**’.
- The Northern Areas is the other name of Gilgit-Baltistan that Pakistan has used for administrative reasons because it was a disputed territory.
- Pakistan initially governed the region directly from the central authority after it was separated from ‘Azad Jammu and Kashmir’ on April 28, 1949.
- Under Prime Minister Zulfikar Ali Bhutto, the name of the region was changed to the **Federally Administered Northern Areas (FANA)**.
- Pakistan passed the Gilgit-Baltistan Empowerment and Self-Governance Order in 2009, which granted “self-rule” to the ‘Northern Areas’.
- The local situation altered considerably with Pakistan signing an agreement with China for mega infrastructure and hydel power projects in September 2009.

### Why “Statehood” now?

- On January 17, 2019, a seven-judge bench of the **Supreme Court of Pakistan**, took up the constitutional status of Gilgit-Baltistan.
- The purpose of the court’s intervention was to **determine the extent of political rights that could be enjoyed by the people of the ‘Northern Areas’**.
- Over the years, the region has de facto status of a province of Pakistan, but the constitutional status of the region remained vague without explicit statehood.
- The Supreme Court allowed Islamabad to amend a 2018 administrative order to hold general elections in the region.
- The Gilgit-Baltistan Order of 2018 provided for administrative changes, including empowering the Prime Minister of Pakistan to legislate on an array of subjects.

### Why this region matters for both countries?

- It is one of the most mountainous regions in the world that is **rich with mines of gold, emerald and strategically important minerals**. It’s home to **K-2**, the second tallest mountain in the world.
- It is known for its extraordinary **scenic beauty, diversity and ancient communities** and languages. It has some of the **ancient Buddhist sculptures and rock edicts**.
- It is also home to an old Shia community, which often finds itself subjected to persecution in Pakistan’s urban centres.
- This **water-rich region** is known for high altitude dams, its biggest hydroelectricity project is the **Diamer-Bhasha dam**, which was launched in July 2020.

### What’s India stand on this move?

- India **reiterated its territorial sovereignty** over the region.
- Ministry of External Affairs stated that the Pakistani move to change the status of the region **will “have no legal basis whatsoever”**.
- India has consistently opposed Pakistan’s activities in Gilgit-Baltistan.
- It also opposed the announcement of the commencement of the Diamer-Bhasha dam in July.
- There have been local and international concerns as reports suggest priceless Buddhist heritage will be lost once the dam is built.
- India has objected to the use of Gilgit-Baltistan to build and operate the China Pakistan Economic Corridor (CPEC), which cuts through the region before heading to the Arabian Sea coastline of Balochistan’s Gwadar port.
- India launched a new political map last November, which showed the Gilgit-Baltistan region as part of the new Union Territory of Ladakh.

### What is the motive of Pakistan behind this move?

- While some links it to **China Pakistan Economic Corridor (CPEC) and Chinese interest**, others think it might have come in **retaliation of India’s passage of 2019 reorganization of Jammu & Kashmir**.
- There is a widespread feeling that Pakistan, under pressure from China, is firming up its control over Gilgit-Baltistan, eventually creating conditions for the **declaration of the Line of Control (LoC) in Kashmir as the International Border**.
- Full statehood for the region may give **Pakistan a political and legal upper hand and strengthen China’s position in the region**, but Gilgit-Baltistan will continue to remain one of the hotspots in the tense India-Pakistan relations.

### What lies across the LoC?

- Pakistan Occupied Kashmir is an area of 13,297 sq km, which was under the control of the Pakistani forces when the ceasefire line came into effect on January 1, 1949.
- In 1963, through an agreement, Pakistan ceded to China over 5,000 sq km of J&K land under its control, in the Shaksgam area, in northern Kashmir, beyond the Karakoram.

## Pakistan to upgrade status of part of Kashmir

Pakistan's Prime Minister Imran Khan has said his government will grant provincial status to Gilgit-Baltistan – part of the disputed territory of Kashmir – drawing condemnation from India



# Gilgit Baltistan

### Gilgit Baltistan (pink)

Located at the northern tip of the Indian subcontinent with borders touching China to the east, Afghanistan and Pakistan to the west and India to the south. Six times the area of 'Azad Jammu & Kashmir'

### Shaksgam Valley (green)

Gifted (5,180 sq km) by the Pakistani government to China for the construction of the Karakoram Highway (KH) as part of the China-Pakistan Border Agreement signed on 2 March 1963

### Population

Estimated 1.9 million (2015)

### Area

72,971 sq km

### Capital

Gilgit  
220,000 inhabitants

### Language

Shina, Burushaski, Balti, Wakhi, Khowar and Domaki are the widely spoken dialects

A high potential and a resource-rich region with two key areas of interest: mineral and water resources

The State Subject Rule was illegally abrogated in 1974 by Pakistan, enabling it to change the socio-economic demography, affecting local culture of the territory

Info on the controversial planned Diamer-Bhasha project



Surrounded by three world famous mountain ranges: The Hindukush, the Himalaya, and the Karakoram

Residents of Gilgit Baltistan observe the paradox that when it comes to the building of the China Pakistan Economic Corridor, their land is, without their consent, considered to be a part of Pakistan. However, when it comes to their basic human rights, it is conveniently projected as disputed

### Precious metals

Gold  
Gypsum  
Uranium  
Chalcopryrite

The Diamer-Bhasha Dam would be located in a highly seismic zone, which is a great concern to the local population

### Main minerals

Tourmaline  
Emerald  
Topaz  
Peridot  
Morganite

### State Subject Rule

The Maharaja of Jammu & Kashmir granted special provisions to the people of his princely State, one of which was the State Subject Rule. It protected the status of the indigenous people since the rule only allowed the natives to acquire permanent residence in the State. Pursuant to this Rule, the natural resources of the State were the property of the indigenous people who had the right to utilize them without any outside interference

### Why this region is strategically important?

- Gilgit-Baltistan is the **only territorial frontier**, and thus a land route, that connects Pak. with China, where it meets the Xinjiang Autonomous Region.
- To G-B's west is **Afghanistan**, to its south is Pakistan-occupied Kashmir, and to the east J&K.
- For India, the **region represents the continuity with the past of Jammu and Kashmir**, which included Gilgit-Baltistan at the time of Partition of 1947.
- The ongoing stand-off with China at the Line of Actual Control in Eastern Ladakh has a Gilgit-Baltistan connection as the Darbuk-Shyok-DBO road of India is viewed as a tactical roadway to access the Karakoram Pass, which provides China crucial access to Gilgit-Baltistan and Pakistan.

### What do the people in G-B want?

- The people of G-B have been demanding for years that it be **made a part of Pakistan**, they do not have the same constitutional rights Pakistanis have.
- There is virtually **no connect with India**, the people of G-B have no real connect with Kashmir either.
- They belong to **several non-Kashmiri ethnicities**, and speak various languages, none of these Kashmiri.



- A majority of the estimated 1.5 million G-B residents are Shias, with the predominant sentiment that their conditions will improve once they are part of the Pakistani federation.
- There is a small movement for independence, but it has very little traction.

## UNSC ADOPTS RESOLUTION ON AFGHANISTAN

## GS-II INTERNATIONAL RELATIONS

### Context

- The **United Nations Security Council**, under the current **Presidency of India**, adopted a resolution on the situation in Afghanistan, demanding that the war-torn country not be used to threaten or attack any nation or shelter terrorists.
- The resolution was adopted after 13 Council members voted in favor, while **permanent members Russia and China abstained** from the voting.
- The resolution was **put forward by the US, the UK, France**.
- The Taliban seized power in Afghanistan on August 15, two weeks before the United States was set to complete its troop withdrawal after a costly two-decade war.
- India has assumed the Presidency of the UN Security Council for the month of August.

### More about India at UNSC

- India has **taken over the presidency of the United Nations Security Council** and will be in line for the presidency next in December 2022.
- The UN Security Council is composed of **15 members, including five permanent member states**.
- Each non-permanent member gets the opportunity to work as UNSC president.
- This is not the first time India has taken over the presidency of the United Nations Security Council (UNSC).
- India began its **eighth term as a non-permanent member** of the UNSC on January 1 and will remain as such for a period of **two years**.
- India's bid for a permanent seat at the UN Security Council has support from four of the **five P5 nations, namely the US, UK, France and Russia**.
- **China is the only permanent member** which is yet to officially back India's bid.

### How does presidency of UNSC rotate?

- **Each non-permanent member gets the opportunity to operate as president of the UN Security Council** during the two years it is part of the grouping.
- The **presidency of UNSC changes hands every month between its members** in the English alphabetical order of the member states' names.
- In August, the presidency was passed on from France to India. Similarly, Ireland is slated to take over the presidency from India in September.
- India will be **in line for the presidency again in December 2022**.
- The country's last term as a non-permanent member of the UNSC was in 2011-12, which was preceded by stints in **1991-92, 1984-85, 1977-78, 1972-73, 1967-68, and 1950-51**.

### Composition of UN Security Council

- The UN Security Council is composed of **15 members, including five permanent member states - China, France, Russian Federation, the United States, and the United Kingdom - and 10 non-permanent member states elected by the United Nations General Assembly (UNGA)**.
- Ten non-permanent members are elected to the UNSC every year for a two-year term. India's current term began on January 1 of this year and will last until December 31, 2023.
- The 10 non-permanent seats are distributed among the regions of the world: five seats for **African and Asian countries** (three are for Africa and two for Asia), one for Eastern European countries, two for Latin American and Caribbean countries, and the remaining two for Western European and other countries.
- The Africa and Asia Pacific group takes turns every two years to put up an Arab candidate.

### Powers of the UNSC President

- The presidency **derives responsibility from the Provisional Rules of Procedure of the United Nations Security Council** as well as UNSC's practice.
- The holder of the presidency is considered to be the **'face' and spokesperson of the UNSC**.
- The UNSC president is also authorized to issue both presidential statements (subject to consensus among Council members) and notes, which are used to make declarations of intent that the full Security Council can then pursue.



### Responsibilities of the UNSC president include

- Calling meetings of the UN Security Council
- Appealing to parties in a conflict to "exercise restraint"
- Reading statements of the UN Security Council to the press
- Approving provisional agenda (proposed by the secretary-general)
- Presiding at UNSC meetings and deciding questions relating to policy and overseeing any crisis

### Veto power of UNSC member states

- The UN defines 'veto' as a "special voting power", which provides that "if any one of the five permanent members cast a negative vote in (UNSC), the resolution or decision would not be approved".
- However, the "veto power" is restricted to P5 member states of the UN Security Council. Non-permanent members of the UNSC do not enjoy this privilege.
- Article 27 of the UN Charter says each member of the UNSC shall have one vote and that decisions on "procedural matters" shall require no more than the affirmative vote of nine out of the 15 members.
- Decisions on any other matter need not only an affirmative vote of nine members but also the concurring votes of the permanent members.

### India's agenda during presidency

- India's agenda during its presidency will also be to focus on UN reforms for a more equitable representation of the new global order.

## INDO-US NUCLEAR DEAL

## GS-II INTERNATIONAL RELATIONS

### Context

- A decade after the historic Indo-US nuclear deal, the pact did not lead to India setting up foreign-built reactors, but it helped fuel domestic power plants and give India access to critical technologies in strategic areas.
- It gave India the recognition of being a responsible nuclear weapon state with strong non-proliferation credentials.

### Status of projects

- Other than the imported Russian-built reactor-based project in Tamil Nadu, which is grandfathered under an earlier 1998 agreement, progress of green-field projects since the Indo-US nuclear deal has been tardy.
- While the US has been discussing the sale of nuclear reactors to India since the 2008 pact, two subsequent agreements were signed only in 2016 and 2019.
- A "project proposal" to set up six reactors in collaboration with Westinghouse Electric Company (WEC) has been announced, but work is yet to begin.
- In terms of building foreign reactors, despite the waiver from the Nuclear Suppliers Group, there was "absolutely no construction" at any sites identified for imported reactors.
- The GE Hitachi Nuclear Energy is reluctant to take up the project citing the Civil Liability Nuclear Damage (CLND) Act, 2010.

### U.S.-India Civil Nuclear Agreement or Indo-US nuclear deal

- The 123 Agreement signed between the United States of America and the Republic of India is known as the U.S.-India Civil Nuclear Agreement or Indo-US nuclear deal.
- It was signed on October 10, 2008.
- It gave a fillip to the ties between the two nations, which since then have been on an upswing.

### Why this agreement was signed?

- India conducted a nuclear test in 1974, following which sanctions hit the country's defence, nuclear and space programmes hard.
- India developed Pressurized Heavy Water Reactors (PHWRs), which are currently the backbone of the Indian nuclear power generation.
- In 1998, after conducting nuclear tests, India declared itself a nuclear weapon state.
- As the number of nuclear reactors rose, their performance had reduced 50-55 per cent due to shortage of nuclear fuel, as sanctions were there.
- At that time, the concept of global warming was also gaining ground, India required energy for its growing economy.

### Terms and features of 123 Agreement

- A major aspect of the Indo-US nuclear deal was the **Nuclear Suppliers Group (NSG)** gave a special waiver to India that enabled it to sign cooperation agreements with a dozen countries.
- The pact also **enabled India to separate its civilian and military programmes**.
- The country currently has 15 of its reactors under the International Atomic Energy Agency (IAEA).
- Post waiver, India signed nuclear cooperation agreements for peaceful means with the **US, France, Russia, Canada, Argentina, Australia, Sri Lanka, United Kingdom, Japan, Vietnam, Bangladesh, Kazakhstan and Korea**.
- Following the pacts, there have been specific agreements for import of uranium from France, Kazakhstan, Australia, Canada and Russia.
- Long-term uranium arrangements enabled India to run the existing plants at 80 per cent efficiency.
- India imported over 7841.51 metric tonnes of nuclear fuel from 2008-2009 to 2017-18.
- Work is also on to **create a uranium reserve** by importing the element to ensure the **power reactors under IAEA safeguards do not face fuel shortage**.
- **Building of foreign nuclear reactors** was a major aspect of the Indo-US deal. For this, two sites were earmarked---**MithiVirdi** for General Electric Hitachi Nuclear Energy and **Kovaddain** Andhra Pradesh---for building 12 reactors.
- The deal helped "**build confidence**" of other countries in India and the **cooperation has now been extended to other areas like defence technology**.
- After the deal India has joined three major control regimes like the export control regimes---the **Missile Technical Control Regime, Wassenaar Arrangement and Australia Group**, while work is on for India's entry into the elite NSG.

### MTCR



### What is Wassenaar Arrangement?

- It is an **elite club of countries**, which subscribe to **arms export controls**, similar to the Nuclear Suppliers Group and the Missile Technology Control Regime.
- The body came into being in 1996 to succeed the Cold War-era Coordinating Committee for Multilateral Export Controls.
- The goal of the Arrangement is to "**promote transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies**".
- Participants are required to "**ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine the goal**".
- The aim, according to WA, is also to **prevent the acquisition of these items by terrorists**.

### The Australia Group

- It is a **multilateral export control regime** and an **informal group** of countries established in 1985 to help member countries to **identify those exports which need to be controlled so as not to contribute to the spread of chemical and biological weapons**.

## QUAD GROUPING

## GS-II INTERNATIONAL RELATIONS

### Context

- Quad officials discuss possible leaders' summit in September.

### About QUAD

#### Background

- In the aftermath of Indian Ocean tsunami of **2004**, **Australia, Japan, India, and America** formed a **Regional Core Group** in **2004**.
- Then **Japanese PM Shinzo Abe** proposed an **"Arc of Freedom and Prosperity"** in **2006**.
- The first meeting of the initial Quad was held in **May 2007** as officials gathered for the **ASEAN Regional Forum** meeting.
- Japanese- PM Shinzo Abe after returning to office called for a **"democratic security diamond,"** a **Quad 2.0**.

#### The QUAD 2.0

- The move to set up the quadrilateral also comes in the **backdrop of growing Chinese assertiveness in the South China Sea and China's aggressive posturing**.
- Since its revival in late 2017, the Quad met twice a year in 2018 and 2019.
- In New York in September 2019, the four countries held the first ministerial-level meeting of the Quad "to discuss collective efforts in shared commitments and close cooperation on counter terrorism, mentoring, assistance in disaster relief, airtime security, cooperation, development, finance and cyber-security efforts."

#### Significance of quad- grouping

- All four nations **share a deep interest in maintaining a stable balance of power in the Indo-Pacific** and preventing a regional state from becoming dominant.
- All four states share an interest in **detering the use of forceful or coercive practices to resolve political and territorial disputes in the region**.
- All four states are committed to the current **rules-based economic order** in the Indo-Pacific. This is based on free trade, open investment environments, open competitive tendering, the rule of law, and standards of good governance from which all continue to benefit.
- All four nations support to **strengthen liberal democratic governance** within the Indo-Pacific. The region has not been immune to the global decline in observance of political rights and civil liberties.

### How is china responding to quad?

- China's endeavor is to conflate the Quad with the Indo-Pacific vision, and link both to the so-called China Containment Theory.
- In 2016, China itself established a **Quadrilateral Cooperation and Coordination Mechanism with Afghanistan, Pakistan and Tajikistan**.
- More recently, China has established **Quadrilateral Cooperation with Pakistan, Afghanistan and Nepal**.
- The strategic community in China, nevertheless, had branded it an emerging "Asian NATO".

### Quad Nations and China

- USA had followed a policy to contain China's increasing influence in East Asia. Therefore, USA sees **the coalition as an opportunity to regain its influence in the Indo-Pacific region**.
- **Australia** is concerned about China's growing interest in its land, infrastructure and politics, and influence on its universities.
- **Japan** has expressed concerns related to **China's territorial transgression in the region**.
- China's violation of international norms, particularly its **construction of military facilities on reclaimed islands** in the South China Sea, and its growing military and economic power, pose a **strategic challenge to India**.

### QUAD Significance for India

- **Act East Policy:** It gives a **powerful platform to advance its interests in East Asia**, coordinate strategies with powerful friends and add more strength to its Act East initiative.
- It will **deepen India's ties with US, Australia and Japan** and will provide New Delhi significant leverage in shaping US policies in Afghanistan-Pakistan to the benefit of India.
- Through QUAD India seeks to reassert rule based world order to **counter China's growing power and assertion**.
- **Defence-related spending reduced** in this time of COVID pandemic and associated with lockdowns, Quad will provide heavyweight to India's interests.
- **Sustainable Development in the Indian Ocean Region:** India holds the responsibility to act as the net security provider in the Indian Ocean region.

- **Issue-based alliance or minilateralism:** India has moved beyond non-alignment towards an issue-based alliance with no formal agreements. Therefore, joining Quad will be in line with the present foreign policies of the government.

### Challenges

- **Translating intent into action** will require a strengthening of ties in existing fields, as well as non-traditional areas such as cyber/information security, energy and climate change, disaster management, etc.
- Poor Indian and Japanese financial and logistical bandwidth to competitively invest in the IPR compounds the Quad's shortcomings.
- **Complex economic relationships between the Core Quad and China** – for all Quad members, China is either the first or the second largest trading partner, or a key import/export partner.
- If the Quad begins a **Quad-plus initiative**, it will not only be confronting these challenges, but will also have to contend with other issues such as disputes even amongst members, and differing dispositions towards China.

### Challenges for India

- **Non-alignment:** India is abandoning its “sacred” tradition of non-alignment.
- **Trustworthiness of US:** US military alliances with Japan and the Philippines has not provided any challenge to Chinese aggression in the region.
- **No clarity on objectives:** India wants advancing the security and economic interests of all countries having legitimate and vital interests in the Asia-Pacific region whereas US is pitching for mutating the Indo-Pacific Quad into a more formal security grouping modelled on NATO.
- **Individual visions of the Indo-Pacific:** It would be difficult to align the combined vision of the grouping with that of their individual visions regarding Indo-Pacific.
- **Internal economic changes:** If India wants to engage the Quad partners on reforming the China-centered economic globalisation, it also requires to engineer many changes on trade-related aspects, which might prove to be difficult, given India's drive for self-reliance

### Recommendations for greater collaboration among quad member governments in the years to come

- **Establish Working Groups on Defense And Infrastructure:** Broadening the current Quad format of foreign ministry senior official-level meetings to include representatives from defense ministries would be a necessary first step toward creating a whole-of-Quad “working 2+2.”
- **Develop An Indo-Pacific Infrastructure And Development Coordination Working Group:** it would ensure that all four Quad nations are committed to creating a roadmap to sustainable, high-quality infrastructure for developing countries.
- It would further permit the streamlining of various inter- Quad infrastructure initiatives, including the Japan. India sponsored Asia-Africa growth corridor.
- Pursue An Annual Meeting Of Joint Operational Commands And Encouragement Of Exchanges:
- **Add Crisis Response, Humanitarian Aid, And Disaster Relief to the Quad's Agenda.**
- **Appeal To ASEAN:** The Quad should seek to harness consensus with ASEAN as a whole, promoting cooperation in the shared interests among the two.
- **2+2 And Malabar:** Three of the four Quad countries enjoy ministerial-level “2+2” defense and foreign ministers dialogues with one another. India and Australia should upgrade their “2+2” to the ministerial level to close the loop and complete the square.
- **Boost Non-Traditional Security Cooperation:** elevating collaboration on mine-sweeping technologies, anti-piracy operations, pollution control, pandemic responses, joint escorts of international shipping, force structuring, coast guard collaboration, counter-proliferation initiatives, and exchange of information on white shipping.
- Expand Cooperation On Space And Maritime Domain Awareness.

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## WEST NILE VIRUS

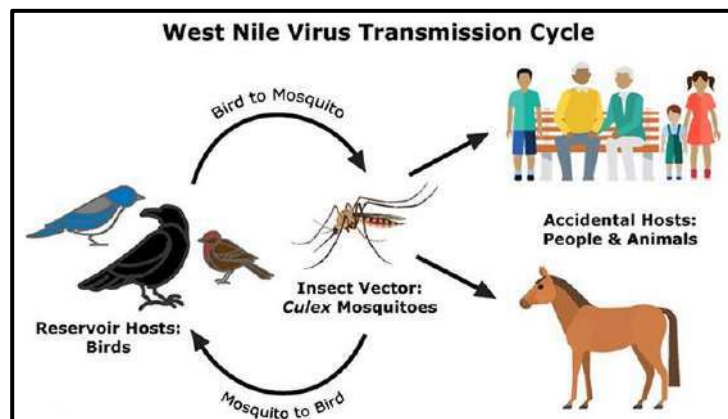
## GS-II HEALTH

### Context

- Recently, Russia warned of a possible increase in West Nile Virus (WNV) Infections this autumn as mild temperatures and heavy precipitation create favourable conditions for the mosquitoes that carry it.

### About

- West Nile virus (WNV) is a single-stranded RNA virus that causes West Nile fever.
- It is a member of the family Flaviviridae, from the genus Flavivirus, which also contains the Zika virus, dengue virus, and yellow fever virus.
- West Nile virus can cause a fatal neurological disease in humans.
- However, approximately 80% of people who are infected will not show any symptoms.
- The virus can cause severe disease and death in horses.
- Birds are the natural hosts of West Nile virus.



### Transmission

- Human infection is most often the result of bites from infected mosquitoes.
- Mosquitoes become infected when they feed on infected birds, which circulate the virus in their blood for a few days.

### Symptoms

- Mild or no symptoms. Fever, headache, body aches, skin rash and swollen lymph glands.

### Prevention

- In the absence of a vaccine, the only way to reduce infection in people is by raising awareness of the risk factors and educating people about the measures they can take to reduce exposure to the virus.
- Vaccines are available for use in horses but not yet available for people.

TRANSMITTED BY MOSQUITOES		
<ul style="list-style-type: none"> <li>West Nile virus (WNV) can cause a fatal neurological disease in humans</li> <li>It is transmitted to people through the bites of infected Culex mosquitoes</li> <li>Mosquitoes transmit this virus by biting an infected bird and then biting a person</li> <li>It is commonly found in Africa, Europe, the</li> </ul>	<p>Middle East, North America and West Asia</p> <p><b>Symptoms</b></p> <ul style="list-style-type: none"> <li>80% of people who are infected will not show any symptoms</li> <li>Symptoms include fever, headache, tiredness and body aches, nausea and vomiting</li> </ul>	<ul style="list-style-type: none"> <li>People over the age of 50 and some immunocompromised persons are at the highest risk of getting severely ill when infected with WNV</li> <li>The incubation period is usually 3 to 14 days</li> </ul> <p><b>Treatment</b></p> <ul style="list-style-type: none"> <li>No vaccines</li> <li>Infected persons should be hospitalized</li> </ul> <p><b>Prevention</b></p> <ul style="list-style-type: none"> <li>Effective mosquito surveillance and control programmes</li> </ul>

## RIGHT TO PROTEIN MOVEMENT

## GS-II HEALTH

### Context

- Recently, experts discussed on how the retail industry can help consumers become more aware about soy adoption through a panel discussion on 'Soy for a Quality Protein Product Differentiator' by Right To Protein.

### About

- Right to Protein is India's first health awareness campaign, calling all to bring proteins at the core of nutrition.

### Need of such movements

- In India, over 80 per cent adolescents suffer from hidden hunger, according to UNICEF's 2019 report 'Adolescents, Diets and Nutrition: Growing Well in a Changing World'.
- Hidden hunger is a deficiency of one or more micronutrients such as iron, folate, zinc, vitamin A, vitamin B12 and vitamin D.
- It is in concurrence that India has one of the highest rates of childhood stunting and wasting in the world, occurring in approximately one-third of all children.
- Anaemia affects 40 per cent of adolescent girls in India compared to 18 per cent of boys, and the trend continues as they get older.
- Nutrient deficiencies lead to a range of severe implications including increased mortality, morbidity, physical, and mental defects.
- The report also observed that with growing incomes Indians were moving away from traditional diets to a dietary lifestyle majorly consisting of processed and fast-foods which are high on calories and low in micro-nutrients.

- This trend is particularly visible in India's youth population. As such, the country faces a **triple threat: undernourishment, micronutrient deficiencies, and obesity.**
- To ensure the country's health and progress, there is an urgent need to address the issue of hidden hunger through a combination of intervention strategies.
- These include **dietary diversification of micronutrient-rich produce** (including fruits and vegetables, pulses, and animal-based products), **fortification of commercial foods, bio-fortification of agricultural produce, supplementation and behavioral change.**
- Right to Protein Movement is a step in the right direction.

#### Final Thoughts

- Deliberations on protein consumption in the country and such sessions can help highlight how retailers can play an important role in making India protein sufficient.
- It highlights the role of retailers in making India protein sufficient.

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## GENERAL STUDIES - III

### PRIVATISATION OF RAILWAY TRANSPORT

### GS-III ECONOMY

#### Context

- On July 1, 2020, the Indian Railways launched the formal process of inviting private parties to run trains on the Indian railway system.
- Hopes of a large participation were belied as there were no bids for nine clusters and only two bids for three clusters.
- Even for these three clusters, the only serious bid was by Indian Railways' (IR) own company IRCTC, which in effect negated the basic objectives of bringing in private capital.

#### Background

- In 2015, the expert panel chaired by Bibek Debroy constituted by the Ministry of Railways a year earlier, recommended that the way forward for the railways was "liberalisation and not privatisation" in order to allow entry of new operators "to encourage growth and improve services."
- It also made it clear that a regulatory mechanism was a prerequisite to promote healthy competition and protect the interests of all stakeholders.

#### Need for the privatization

##### Betterment of Infrastructure

- Given this, a strong argument in favour of privatization is that it will lead to better infrastructure which in turn would lead to improved safety, reduction in travel time, etc.

##### Improved Quality of Services

- Indian Railway services are marred by issues like lack of punctuality, mismanagement in the form of stinking washrooms, lack of water supply and dirty platforms.
- Privatisation may solve these issues, as the move would foster competition and hence lead to overall betterment in the quality of services.

##### Technology Infusion

- The privatization will also help in accommodating the latest technology in railways coaches, safety and travelling experience. Thereby, it may help Indian Railways to become a world-class network.

##### Failure in attracting private capital

- It is an outcome of the lack of alignment of the interests of IR and the concessioners.
- IR wants the capital and technology without giving up control**, while the concessioner wants a far more equal relationship to be moderated by a regulator.
- IR has imposed **constraints that prevent efficient decisions and adopted an organisational design** that does not take into account the characteristics and associated risks that will determine outcomes and investment decisions.
- The biggest dampener is the **lumpiness of investment before a single passenger can be carried. Train sets have to be purchased without really knowing** how much traffic the service will be able to attract in the face of rising competition from airlines.
- The other big dampener is **the absence of a regulator for resolving disputes. The proposed independent engineer is far from satisfactory.**

#### Way Forward

- The central issue is **how to align the three interests: India's need to be capable of designing and manufacturing state-of-the-art rolling stock**, IR's need for private capital participation and private capital's necessity of earning a profit.
- Government **should establish a company that leases rolling stock not only to concessioners but also to IR. This will also enable reducing the concession period from 35 years to a more reasonable 10-15 years**, bringing in competition.
- Government **must undertake investment of large sums of money and the involvement of universities, research institutes and national laboratories**. For example, for developing high-speed train technology, the Chinese involved 25 national first-class key universities, 11 first-class research institutes, and 51 national-level laboratories for research, development and production.
- There is **need to reduce the period of the concession to around 15 years**, establish a regulator and moderate charges like the amount for the maintenance of tracks and stations.

**VEHICLE SCRAPPAGE POLICY****GS-III ECONOMY****Context**

- Recently, Government has launched the vehicle scrappage policy.

**About the Policy**

- All automobiles over a certain age should be off the roads in the interest of better pollution control and safety, which new vehicles ensure.
- Commercial vehicles over 15 years old and personal vehicles over 20 years old are marked for scrapping — it doesn't matter if they run on diesel or petrol — if they fail an automated fitness test.
- These will be deregistered; the owner can choose to scrap them but cannot use them on the road.

**Implementation of these policies**

- The **government has come out with rules and specifications on what kind of** Automated Fitness Centres should come up and who can set them up.
- It has also come up with how the scrapping yards should be.
- It will give India Inc time to come up with an ecosystem wherein testing and subsequent scrapping can happen organically without the consumer facing duress.
- That is **why mandatory testing of heavy commercial vehicles will start in April 2023, and that of other categories of vehicles — personal vehicles, for instance — will start, in a phased manner, in June 2024.**

**Targeted Vehicles**

- India has 51 lakh light motor vehicles that are more than 20 years old and 34 lakh over 15 years old.
- Around 17 lakh medium and heavy commercial vehicles are older than 15 years without valid fitness certificates, according to data with the Ministry of Road Transport and Highways.

**Benefits of the Policy**

- The resultant **ecosystem can attract investment worth Rs 10,000 crore and create 35,000 new jobs.**
- It will help in creating a viable circular economy and bring value for all stakeholders while being environmentally responsible.
- It will **enhance the safety of users and the passengers both.**
- A scrappage **policy has been followed by boost in demand in the auto manufacturing sector, especially in Europe and the US.**
- This has also been a tool to **deal with economic slowdown in the manufacturing sector and consumption** due to recession.
- Besides, there are **spelt-out benefits vis-à-vis environment since newer cars come with better** emission standards and better fuel efficiency.

**Benefits to the individual**

- The government envisages **that the scrappage certificate will entitle the owner with something extra, such as a tax rebate, sops, and a discount on the new car.**
- The certificate is tradable, which means it can be used by anyone and not necessarily by the owner of the scrapped vehicle.

**About Fitness Centre**

- Automated Fitness **Centres will have tracks and equipment suitable to test for various criteria such as emission norms, braking and other parameters, without human intervention.**
- The Ministry has **requested states to consider providing land for free** for these centres.
- Market demand **will drive the number and concentration of fitness centres** in an urban area.

**About Circular Economy**

- A circular economy depends on reuse, sharing, repair, refurbishment, remanufacturing and recycling of resources to create a closed-loop system, minimising the use of resources, generation of waste, pollution and carbon emissions.
- When a car is scrapped, apart from metals including iron and steel, many other parts may emerge that can be refurbished and ploughed back into use. Recycled steel from scrap, even seats and plastic parts, have value in the scrap economy.
- In a circular economy, products, materials, equipment and infrastructure are kept in use for longer, thus improving productivity.



## LPG REFORMS

## GS-III ECONOMY

### Context

- The Indian economy has travelled through an eventful period through the last three decades.

### Background

- The Economic reforms which changed the path of the economy that the country witnessed in later years was the LPG reforms (**Liberalization, Privatization, Globalization**) sometimes also referred to as LPGM where M stands for Marketization introduced in 1991 introduced during the crisis that affected the government.
- The Indian economy has travelled through an eventful period through the last three decades.
- In the post-independence economic history of our country, **1991 stands out as a watershed year**.
- This was the year in which the economy was faced with a severe balance of payments crisis. In response, we launched a **wide-ranging economic programme**, not just to restore the balance of payments but to reform, restructure and modernise the economy.
- Thus, the crisis was converted into an opportunity to bring about fundamental changes in the approach and conduct of economic policy.
- A near tragedy was averted and a new path was laid out before the country.

### Factors which led to 1991 reforms

- Rise in Prices: The inflation rate increased from 6.7% to 16.7% and the country's economic position became worse.
- Rise in Fiscal Deficit: Due to increase in non-development expenditure, the fiscal deficit of the government increased. Due to the rise in fiscal deficit there was a rise in public debt and interest. In 1991 interest liability became 36.4% of total government expenditure.
- Increase in Adverse Balance of Payments: In 1980-81 it was Rs. 2214 crore and rose in 1990-91 to Rs. 17,367 crores. To cover this deficit a large amount of foreign loans had to be obtained and the interest payment got increased.
- Iraq War: In 1990-91, war in Iraq broke, which led to a rise in petrol prices. The flow of foreign currency from Gulf countries stopped and this further aggravated the problem.
- Dismal Performance of PSUs: These were not performing well due to political interference and became a big liability for the government.
- Fall in Foreign Exchange Reserves: India's foreign exchange reserve fell to low ebb in 1990-91 and it was insufficient to pay for an import bill for 2 weeks.

### International events associated with Indian reforms

- The **Soviet Union was collapsing** at the time, proving that more socialism could not be the solution for India's ills.
- Deng Xiaoping had revolutionized China with market-friendly reforms.**
- The 1990-91 Iraq war** led to the stoppage of flow of foreign currency from Gulf countries.
- To tide over the Balance of Payment (**BoP**) issues, India borrowed huge amounts from the International **Monetary Fund (IMF)**.
- The **Asian financial crisis of 1997-99** laid India low.
- The **dot-com collapse and global recession of 2001**, and the huge global uncertainty created in the run-up to the **invasion of Iraq in 2003**.
- The **global boom of 2003-08** was spearheaded by China.

### Scope of LPG Reforms

- Liberalization**- It refers to the process of making policies less constraining of economic activity and also reduction of tariff or removal of non-tariff barriers.
- Privatization**- It refers to the transfer of ownership of property or business from a government to a privately owned entity.
- Globalization**- It refers to the expansion of economic activities across political boundaries of nation states.

### Features of LPG Policy

- Abolition of Industrial licensing/ Permit Raj
- Public sector role diluted
- Beginning of privatisation
- Free entry to foreign investment and technology
- Industrial location policy liberalized
- Abolition of phased manufacturing programmes for new projects
- Removal of mandatory convertibility clause
- Reduction in import tariffs
- Deregulation of markets
- Reduction of taxes

## Outcomes of LPG Reforms 6.1

### Positive outcomes

- **India's GDP growth rate increased.** During 1990-91 India's GDP growth rate was only 1.1% but after 1991 reforms GDP growth rate increased year by year and in 2015-16 it was estimated to be 7.5% by the IMF.
- Since 1991, India has firmly established itself as a lucrative foreign investment destination and **FDI equity inflows in India** in 2019-20 (till August) stood at US\$ 19.33 billion.
- In 1991 the unemployment rate was high but after India adopted a new LPG policy **more employment got generated** as new foreign companies came to India and due to liberalization many new entrepreneurs started companies.
- **Per Capita income increased** due to an increase in employment.
- **Exports** have increased and stood at USD 26.38 billion as of October, 2019.

### Challenging outcomes

- In 1991, agriculture provided employment to 72 percent of the population and contributed 29.02 percent of the GDP. Now the **share of agriculture in the GDP has gone down drastically to 18 percent**. This has resulted in a lowering the per capita income of the farmers and increasing the rural indebtedness.
- Due to opening up of the Indian economy to foreign competition, **more MNCs are competing with local businesses and companies** which are facing problems due to financial constraints, lack of advanced technology and production inefficiency.
- Globalization has also contributed to the **destruction of the environment** through pollution by emissions from manufacturing plants and clearing of vegetation cover. It further affects the health of people.
- LPG policies have led to **widening income gaps within the country**. The higher growth rate is achieved by an economy at the expense of declining incomes of people who may be rendered redundant.

## CRYPTO- CURRENCIES

## GS-III ECONOMY

### Context

- Finance Ministry is awaiting an approval from the Cabinet on the Bill on cryptocurrency as the proposed legislation is before it.
- An inter-ministerial panel on cryptocurrency under the Chairmanship of Secretary (Economic Affairs) to study issues related to virtual currencies has recommended that all private cryptocurrencies, except any virtual currencies issued by State, will be prohibited in India.

### About the Cryptocurrency

- A **cryptocurrency is a form of digital asset based on a network** that is distributed across a large number of computers.
- **Cryptocurrencies typically use decentralized control as opposed** to centralized digital currency and central banking systems.
- Blockchains, which are organizational methods for ensuring the integrity of transactional data, are an essential component of many cryptocurrencies.

### Benefits of Cryptocurrency

- **Autonomy:** Digital currencies allow users more autonomy over their own money than fiat currencies do, at least in theory. Users are able to control how they spend their money without dealing with an intermediary authority like a bank or government.
- **Discretion:** Bitcoin purchases are discreet. Unless a user voluntarily publishes his Bitcoin transactions, his purchases are never associated with his personal identity, much like cash-only purchases, and cannot easily be traced back to him.
- **Peer-to-Peer Focus:** The bit-coin payment system is purely peer-to-peer, meaning that users are able to send and receive payments to or from anyone on the network around the world without requiring approval from any external source or authority.
- **Elimination of banking fees:** bitcoin users are not subject to the litany of traditional banking fees associated with fiat currencies. This means no account maintenance or minimum balance fees, no overdraft charges and no returned deposit fees, among many others.
- **Accessibility:** bitcoin is theoretically available to populations of users without access to traditional banking systems, credit cards and other methods of payment.

### Challenges with Cryptocurrency

- Can be used for illegal transactions – Since the privacy and security of cryptocurrency transactions are high, it's hard for the government to track down any user by their wallet address or keep tabs on their data.
- Decentralized but still operated by some organization –The cryptocurrencies are known for its feature of being decentralized. But, the flow and amount of some currencies in the market are still controlled by their creators and some organizations. These holders can manipulate the coin for large swings in its price.

- Adverse Effects of mining on the environment – Mining cryptocurrencies require a lot of computational power and electricity input, making it highly energy-intensive.
- Security Risk: Bitcoin exchanges are digital and therefore vulnerable to hackers, operational glitches, and malware.
- Decentralised Control: Given the essentially decentralized control approach associated with cryptocurrencies like the Bitcoin as against the traditional centralized digital currency and centralized banking systems, they render government monetary policies ineffective.

#### Indian stand on cryptocurrency

- The **Ministry of Corporate Affairs (MCA)** has made it mandatory for companies to disclose crypto trading/investments during the financial year.
- The **Centre has assured crypto stakeholders that there won't be a blanket ban on digital currencies** and that it's still formulating its full opinion on the matter. Finance minister Nirmala Sitharaman has said the Centre was open to experimentation with new technologies and is not closing its minds for them.
- India **does not have a regulatory framework to govern cryptocurrencies** as of now. The government had constituted an Inter-Ministerial Committee (IMC) on November 2, 2017, to study virtual currencies.

#### Way Forward

- Learning from international experience: The U.K. has classified cryptocurrency as property and this has paved the way for cryptocurrencies to be encompassed within a regulated legal framework in the country's economy. The U.K. has sought to regulate the functioning of crypto-businesses while still imposing some restrictions to protect the interests of investors.
- There is a need for a balanced regulation of the cryptocurrency which could allow private individuals the freedom to harness a powerful new technology like blockchain technology-based digital currency with appropriate regulatory standards.

#### Conclusion

- The government should use this as an opportunity to allow private individuals the freedom to harness a powerful new technology with appropriate regulatory standards.

## GREEN HYDROGEN

## GS-III ECONOMY

#### Context

- Recently, government has announced the Green Hydrogen mission where the target is to make the country self-reliance in energy by 2047.

#### Types of Hydrogen

- **Brown Hydrogen:** most of the gas that is already widely used as an industrial chemical is either brown, if it's made through the gasification of coal or lignite
- **Grey Hydrogen:** if it is made through steam methane reformation, which typically uses natural gas as the feedstock. Neither of these processes is exactly carbon-friendly.
- **Blue hydrogen:** where the gas is produced by steam methane reformation but the emissions are curtailed using carbon capture and storage.
- **Green Hydrogen:** Green hydrogen, in contrast, could almost eliminate emissions by using renewable energy – increasingly abundant and often generated at less-than-ideal times – to power the electrolysis of water.

#### Making of Green Hydrogen

- With electrolysis, all you need to produce large amounts of hydrogen is water, a big electrolyzer and plentiful supplies of electricity.

#### Usage of it

- replace the industrial hydrogen that gets made every year from natural gas
- use it as a precursor for other energy carriers, from ammonia to synthetic hydrocarbons
- directly power fuel cells in cars and ships
- add it to natural gas and burn it in thermal power or district heating plants.

#### Challenge in making it

- The challenge right now is that big electrolyzer are in short supply, and plentiful supplies of renewable electricity still come at a significant price.

- Storing and transporting the highly flammable gas is not easy; it takes up a lot of space and has a habit of making steel pipes and welds brittle and prone to failure.
- The bulk transport of hydrogen will require dedicated pipelines, which would be costly to build, pressurizing the gas, or cooling it to a liquid.
- High Cost: In a report published last year (using data from 2018), the International Energy Agency put the cost of green hydrogen at \$3 to \$7.50 per kilo, compared to \$0.90 to \$3.20 for production using steam methane reformation.
- Loss of Efficiency in every process: Electrolyzer efficiencies range from around 60 percent to 80 percent, according to Shell. The efficiency challenge is exacerbated by the fact that many applications may require green hydrogen to power a fuel cell, leading to further losses.

#### Key Words

- **Average per-unit cost of supply:** It is the cost incurred by the discom in procuring electricity from power generators and further distributing it.
- **Average revenue realised:** It is the cost received by the discom after selling it to final consumers.

### Why Green Hydrogen is such a big deal

- Green hydrogen is one of several potential low-carbon fuels that could take the place of today's fossil hydrocarbons.
- Other low-carbon fuels require the production of green hydrogen as a precursor, why not just stick with the original product?
- Hydrogen is already widely used by industry, so technical problems relating to storage and transport are not likely to be insurmountable.
- The gas is potentially very versatile, with possible applications in areas ranging from heating and long-term energy storage to transportation.
- The opportunity for green hydrogen to be applied across a wide range of sectors means there is a correspondingly large number of companies that could benefit from a burgeoning hydrogen fuel economy.

### Current Production

- Green hydrogen **currently accounts for less than 1 percent** of total annual hydrogen production.
- The **pipeline of green hydrogen electrolyzer projects** nearly tripled in the five months leading up to April 2020, to 8.2 gigawatts.

### Green Hydrogen Infrastructure in India

- Government has said that country was focusing on producing blue and green hydrogen along with blended hydrogen in Compressed Natural Gas (CNG) for various purposes, including transport.
- Through technological advancements, India is blending hydrogen with compressed natural gas for use as transportation fuel as well as an industrial input to refineries.
- 50 buses in Delhi are plying on blended hydrogen in Compressed Natural Gas on a pilot basis.
- The Indian Oil Corporation Limited announced it would set up the country's first green hydrogen plant.
- Reliance Energy said that it would invest Rs 600 billion in building factories to produce green hydrogen among other carbon friendly technologies.

## POWER DISTRIBUTION SECTOR IN INDIA

## GS-III ECONOMY

### Context

- Recently, Ministry of Power says speculations about DISCOMs achieving loss levels of Rs 90,000 crore in FY2021 seem to be grossly inflated.

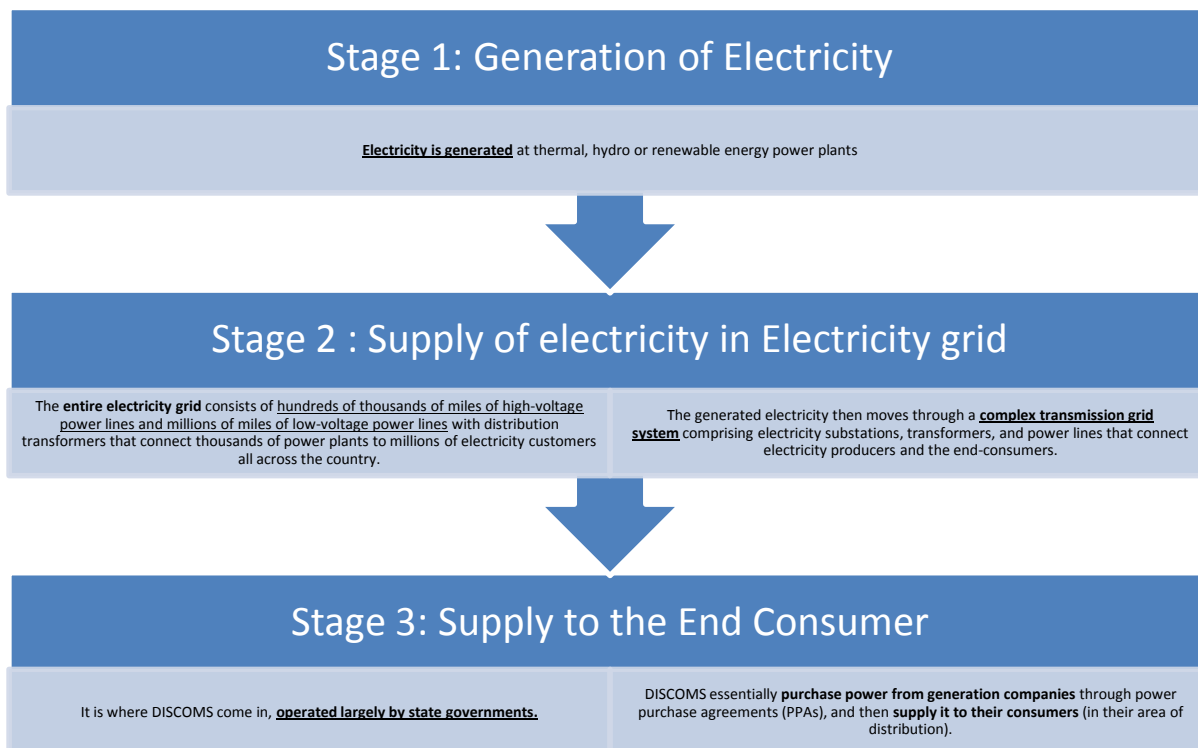
### Performance of Discoms in recent years

- The Aggregate Technical & Commercial (AT&C) losses have come down from 23.5% in FY 2016-17 to 21.83% in FY 2019-20.
- The gap between average **cost of supply (ACS)** and **average revenue realised (ARR)** narrowed down to Rs 0.28/kWh in 2019-20 from Rs 0.33/kWh in 2016-17.
- The annual Profit After Tax (PAT) figures being negative have also shown improvement from Rs.33,894 Cr in FY 2016-17 to Rs.32,898 Cr in FY 2019-20.



## About the working of electricity sector

Electricity Sector works in three stages.



## Issues with Discoms

### Cross Subsidisation

- In India, electricity price for certain segments such as agriculture and the domestic category (what we use in our homes) is cross-subsidised by the industries (factories) and the commercial sector (shops, malls).
- This affects the competitiveness of industry. While the government has started a process through which the extent of cross-subsidisation is gradually being reduced, this is easier said than done as states do not like to increase tariffs for politically sensitive constituents, such as farmers.

### Aggregate Technical and Commercial (AT&C) Losses

- The discoms suffer Aggregate Technical and Commercial (AT&C) Losses.
  - Technical Loss: It is due to the flow of power in transmission and distribution system. Almost 25% of the power is lost, and never gets billed.
  - Commercial Loss: It is due to the theft of electricity, deficiencies in metering, etc.

### Gap Between Revenue realization and cost of supply

- The gap between the average per-unit cost of supply (ACS) and average revenue realised (ARR).
  - The remaining 75% is sold at prices that are much lower than the discoms' procurement costs.
  - In almost every state, the increase in tariff rates is avoided because of the associated political costs.
  - Therefore, political unwillingness is at the heart of commercial losses.

## Government Steps to improve the functioning of Discoms

- To tide over the liquidity problems of increasing DISCOM payables to Gencos arising out of the outbreak of COVID-19 lockdowns, the Government of India has launched a Liquidity Infusion scheme under which DISCOMs are already availing benefits under the scheme tied to reforms.
- The Government has also **incentivised the DISCOMs to transform, reform and perform by linking 0.5% of the Additional borrowings linked to power sector reforms** from FY 2022 to FY 2024.
- Apart from the above, the **Government of India has also launched the Revamped Reforms-Based Results-Linked Scheme, which allows the States to create infrastructure** tied to initiation of Reforms and achievement of Results for improving their financial sustainability and operational efficiencies.
- This scheme **would be in operation till FY 2025-26, and includes a major component of prepaid Smart metering.**

## About Reforms Based Results Linked Scheme

### Targets

- Reduction of AT&C (aggregate technical & commercial) losses to pan-India levels of 12-15% by 2024-25.
- Reduction of ACS-ARR gap (i.e. between the total cost of electricity and revenues generated from supplying power) to zero by 2024-25.
- Developing institutional capabilities for modern discoms.
- Improvement in the quality, reliability, and affordability of power supply to consumers through a financially sustainable and operationally efficient Distribution Sector.
- Implementation of the Scheme would be based on the action plan worked out for each state rather than a “one-size-fits-all” approach.

### Key Objectives

- The Scheme provides for **annual appraisal of the DISCOM performance** against predefined and agreed upon performance trajectories.
- **The Scheme has a major focus on improving electricity supply for the farmers and for providing daytime electricity to them through solarization of agricultural feeders.**
- A key feature of the Scheme is to **enable consumer empowerment by way of prepaid Smart metering to be implemented in Public-Private-Partnership (PPP) mode.**
- it is also proposed to take up **System metering at Feeder and Distribution Transformer (DT) level with communicating feature simultaneously in PPP mode.**

## PRIVATISATION

## GS-III ECONOMY

### Context

- Recently, government has initiated further proceedings for the sale of BPCL.

### Evolution for Privatisation

- The **balance of payment (BoP) crisis in early 1990s changed the official narrative about PSUs – from “temples of modern India” to “the government has no business to be in business”.**
- In order to bring the economy back on track, the PV Narasimha Rao government (June 21, 1991- May 16, 1996) launched economic reforms by ending the era of license-quota raj and encouraging privatisation.
- The Atal Bihari Vajpayee government classified PSUs into two categories – strategic and non-strategic – and decided to gradually to offload its stake in non-strategic firms.
- To have a focused approach, **a Department of Disinvestment was set up on December 10, 1999, which was later renamed as the Ministry of Disinvestment from September 6, 2001.**
- The budget (2000-01), for the first time, used the word privatisation along with disinvestment.
- In 2001, the government approved privatisation of 27 companies. These companies include among others VSNL, Air India, and Maruti Udyog Ltd.
- **Between 2001 and 2004, India saw disinvestments of government’s stake in several companies, including strategic sale of Bharat Aluminium Co Ltd, CMC Ltd, Hindustan Zinc Ltd, three properties of HCL, 18 properties of ITDC, Indian Petrochemicals Corp Ltd (IPCL) and Paradeep Phosphates Ltd.**
- In November 2007, the government constituted the National Investment Fund (NIF) into which the proceeds from disinvestment of government equity in central public sector enterprises (CPSEs) were deposited. It was said that three-quarters of annual income of the fund would be used to finance select social sector schemes that promote education, health and employment.
- Current Policy is no longer limited to strategic sale or dilution of government’s minority stake in the company. It also included monetization of assets owned by CPSEs.

### Disinvestment Commission under GV Ramakrishna

- The essence of a long-term disinvestment strategy **should be not only to enhance budgetary receipts, but also minimize budgetary support towards unprofitable units while ensuring their long-term viability and sustainable levels of employment in them.**

### Need for Privatization

- Need to push for privatization so that **there is overall enhancement of total factor productivity. It will ensure growth at high rates on a sustained basis.**
- **Enhance Gross Capital Formation: To enhance gross capital formation enhanced participation of the private sector is must.**
- **privatisation push is based on the rationale of bad performance by these PSUs and therefore, they need private sector support to survive.**

- Economic Survey has highlighted that **several areas from banking to cement and steel where opening up the sectors to private players has led to massive efficiency gains, increased profitability**, improved return on assets, and better access and service to customers.
- According to the Economic Survey, A **comparative analysis of the before-after performance of 11 CPSEs that went through strategic disinvestment reveals that net worth, net profit, return on assets, return on equity, gross revenue, net profit margin, sales growth and gross profit per employee** of the privatised CPSEs, on an average, have improved significantly in the post privatization period compared to the peer firms
- Strategic sale of majority stake to private players produced much better results, indicating its preference for privatisation** of government-owned companies.
- Increased Borrowing by the Government:** The gap between the government's income and expenditure shot up from Rs 7.96 lakh crore to Rs 18.48 lakh crore and is expected to be capped at Rs 15.06 lakh crore. The level of borrowings and deficit will hurt cost competitiveness and economic growth. **To pave a path towards a low-cost high-growth economy, the government must cut its borrowings and shrink debt and deficit levels. And the moolah mantra is obviously privatisation.**
- Monetisation of Assets:** Privatisation affords the monetisation of assets, caps erosion of public wealth, frees resources for human and physical infrastructure and promises the upside of enhanced growth as enterprise productivity improves.

## MAX 4 PER SECTOR

► Budget made it clear that there will be only **four key strategic sectors** and in these key segments, there will be a maximum of 3 or 4 public sector units

► In all other areas where there are PSUs, **Union govt will move out**. Finally, there will be less than two dozen PSUs left in total

### Challenges with the Privatisation

- It will lead to **monopoly over the important shared resources** of the public.
- Sale of **profit-making and dividend paying PSUs** would result in the **loss of regular income** to the Government
- There would be **chances of "Asset Stripping"** by the strategic partner. Most of the PSUs have valuable assets in the plant and machinery, land and buildings, etc.
- Strategic and National Security Concerns:** Strategic Disinvestment of Oil PSUs is seen by some experts as a threat to National Security since Oil is a strategic natural resource and possible ownership in the foreign hand is not consistent with our strategic goals.
- Disinvestment affects labor forces' social security.**
- It also **raises concerns about cronyism.**
- The depressed state of the markets and the paucity of reasonable buyers would land in a bad deal.
- Using funds from disinvestment to bridge the fiscal deficit is an unhealthy and a short term practice. It is said that it is the equivalent of selling 'family silver' to meet short term monetary requirements.

### About Strategic Disinvestment:

- Strategic disinvestment would imply the sale of substantial portion of the **Government share holding of a central public sector enterprise (CPSE) of upto 50%, or such higher percentage as the competent authority may determine, along with transfer of management control.**

### New Public Sector Enterprise Policy

#### Under the New Policy

- Strategic:** Atomic energy, space, defence, transport and telecom, power, petro, coal, other minerals, banking, insurance and financial services will be classified as strategic sectors.
- Privatization:** The remaining companies in strategic sectors will be considered for privatization/merger/closure and non-strategic sectors will be considered for privatization, where feasible or for closure.
- In strategic sectors, **the minimum presence of existing companies at the holding level will be retained under government control.**
- The **strategic sectors have limited number of players restricting it to maximum four public sector enterprises** of the holding nature.

## Disinvestment policy

### Key highlights

#### Objectives

Minimising the presence of Central Government Public Sector Enterprises including financial institutions and creating new investment space for private sector

Post disinvestment, economic growth of Central Public Sector Enterprises (CPSEs)/ financial institutions will be through the infusion of private capital, technology and best management practices. Will contribute to economic growth and new jobs.

Disinvestment proceeds to finance various social sector and developmental programmes of the government.

#### Policy features

- Policy covers existing CPSEs, Public Sector Banks and Public Sector Insurance Companies.
- Various sectors will be classified as strategic and non-strategic sectors
- The strategic sectors classified are:
  - Atomic energy, Space and Defence
  - Transport and Telecommunications
  - Power, Petroleum, Coal and other minerals
  - Banking, Insurance and financial services
- In strategic sectors, there will be a bare minimum presence of the public sector enterprises. The remaining CPSEs in the strategic sector will be privatised or merged or subsidised with other CPSEs or closed.
- In non-strategic sectors, CPSEs will be privatised, otherwise shall be closed.

Source: Budget 2021-22



- NITI has been asked to work out on the next list of Central Public Sector companies that would be taken up for strategic disinvestment.

### Current Status

- The government has already set in motion privatisation plans for large PSU companies BPCL, Air India, Container Corporation of India, and Shipping Corporation of India.

## NATIONAL MISSION ON EDIBLE OIL PALM

## GS-III ECONOMY

### Context

- Centre's palm oil plan enthuses farmers in Kerala.

### Background

- The National Mission on Edible Oils-Oil Palm (NMEO-OP), a project by the **Union government to maximise cultivation and production**, is expected to bring in remarkable growth prospects for the palm oil industry in Kerala.
- While both farmers and refiners find the scheme extremely encouraging, it can also revitalise the estates run by the Oil Palm India Limited and the Plantation Corporation of Kerala.
- Since India is **heavily dependent on imports** when it comes to crude and refined palm oils, the industry stakeholders believe that the current development will be highly beneficial for the sector.

### About the Scheme

- NMEO-OP is a new **Centrally Sponsored Scheme**. It is proposed to have an **additional 6.5 lakh hectares for palm oil by 2025-26**.
- It will involve **raising the area under oil palm cultivation** to 10 lakh hectares by 2025-26 and 16.7 lakh hectares by 2029-30.
- Oil palm farmers will be provided **financial assistance** and will get remuneration under a price and viability formula.
- The Viability Formula is a **Minimum Support Price-type mechanism** and the government will fix this at **14.3% of Crude Palm Oil (CPO) price**.
- It will eventually go up to 15.3%.
- Another focus area of the scheme is to substantially **increase the support of inputs / interventions**.
- **Special assistance will be given to replant old gardens** for their rejuvenation.

### Introduction

- India is one of the major oilseeds grower and importer of edible oils. India's vegetable oil economy is the **world's fourth largest** after the USA, China & Brazil.
- The oilseed accounts for **13% of the Gross Cropped Area, 3% of the Gross National Product and 10% value of all agricultural commodities**.
- This sector has recorded annual growth rate of area, production and yield @ 2.44%, 5.47% and 2.96% respectively during the last decade (1999-2009).
- The diverse **agro-ecological conditions** in the country are favourable for growing 9 annual oilseed crops, which include **7 edible oilseeds (groundnut, rapeseed & mustard, soybean, sunflower, sesame, and niger)** and two non-edible oilseeds (**castor and linseed**).
- Oilseeds cultivation is undertaken across the country in about 27 million hectares mainly on marginal lands, of which **72% is confined to rainfed farming**.
- During the last few years, the domestic consumption of edible oils has increased substantially and has touched the level of **18.90 million tonnes in 2011-12** and is likely to increase further.
- With per capita consumption of vegetable oils at the rate of 16 kg/year/person for a projected population of 1276 million, the total vegetable oils demand is likely to touch 20.4 million tonnes by 2017.



- Cabinet approves Mission on Oil Palm as a new **Centrally Sponsored Scheme**
- Special focus on the **North east region and Andaman & Nicobar Islands**
- Focus on increasing area and productivity of **oilseeds and Oil Palm**
- Assistance to seed gardens
- Price Assurance to Oil Palm farmers for **Fresh Fruit Bunches**
- Financial outlay of **Rs.11,040 crore**

### Benefits

- Increase capital investment
- Create employment generation
- Reduce the import dependence
- Increase income of the farmers



### Need for reforms in oil seeds and oil palm

- **Import Substitution:** A substantial portion of our requirement of edible oil is met through import of palm oil from Indonesia and Malaysia. It is, therefore, necessary to exploit domestic resources to maximize production to ensure edible oil security for the country.
- **High Yield:** Oil Palm is comparatively a new crop in India and is the highest vegetable oil yielding perennial crop.
- **Enhance the Oil Production:** With quality planting materials, irrigation and proper management, there is potential of achieving 20-30 MT Fresh Fruit Bunches (FFBs) per ha after attaining the age of 5 years. Therefore, there is an urgent need to intensify efforts for area expansion under oil palm to enhance palm oil production in the country.
- **Farming in Dry Region:** Tree Borne Oilseeds (TBOs), like sal, mahua, simarouba, kokum, olive, karanja, jatropha, neem, jojoba, cheura, wild apricot, walnut, tung etc. are cultivated/grown in the country under different agro-climatic conditions in a scattered form in forest and non-forest areas as well as in waste land / deserts/hilly areas.
- These TBOs are also a good source of vegetable oil and therefore need to be supported for cultivation.
- **Enhanced Farmers Income:** It will lead to enhancement in the farmers income.

### Challenges with the Mission

- **Threat to Wildlife:** Andaman and North -Eastern region is biodiversity hotspot and monoculture can affect the diversity of wildlife.
- **Palm is Invasive:** The palm is an invasive species that is not a natural forest product of northeastern India and its impact on the biodiversity as well as on soil conditions has to be analysed even if it is grown in non-forest areas.
- **Impact on Tribal Lands:** High yield of Palm oil than the oil seeds **creates apprehension of land diversion for palm oil cultivation.**
- **Enhanced inequality:** The oil palm is a water-guzzling, monoculture crop with a long gestation period unsuitable for small farmers. It will further enhance the income inequality.

### Way Forward

- Similar subsidies **must be extended to the other oilseeds crop** to enhance self-reliance.
- Focus must be to **incentivize the farmers of main lands to take it up as a crop and diversify from paddy, wheat cultivation.**
- There should be **certainty in the policy through appropriate tweaking to provide long term incentives for the farmers.**

## INDUSTRY 4.0 AND MSME

## GS-III ECONOMY

### Context

- Adopting Industry 4.0 technologies would make MSMEs more efficient and competitive.

### Background

- The term '**Industry 4.0**' was coined by the German government in 2011.
- Additive manufacturing, Internet of Things, Cyber Physical Systems, Augmented Reality/Virtual Reality and data analytics are some of the technologies associated with Industry 4.0.
- Micro, Small and Medium Enterprises (MSMEs) are expected to become the **backbone of India as the economy grows larger** who lack basic focus in the direction of Industry 4.0.
- MSMEs form more than **95% of the industries in India**, produce more than **45% of the total manufacturing output and employ more than 40% of the workforce.**
- According to the **Economic Survey 2020-21**, over **6 crore MSMEs** employ more than 11 crore people and contribute roughly 30% to the GDP and half of the country's exports.
- MSMEs are also ancillaries to larger enterprises, leading to a seamless supply chain integration. As a result, making MSMEs more efficient will be advantageous for the whole economy.

### Industry 4.0

- Industry 4.0 is the digital transformation of manufacturing/production and related industries and value creation processes.
- Industry 4.0 is used interchangeably with the fourth industrial revolution and represents a new stage in the organization and control of the industrial value chain.
- Cyber-physical systems form the basis of Industry 4.0 (e.g., '**smart machines**').
- They use modern control systems, have embedded software systems and dispose of an Internet address to connect and be addressed via IoT (*the Internet of Things*).
- Industry 4.0 refers to the intelligent networking of machines and processes for industry with the help of information and communication technology.

- **Industry 4.0 is often used interchangeably with the notion of the fourth industrial revolution. It is characterized by, among others**
  - o Even more automation than in the third industrial revolution.
  - o The bridging of the physical and digital world through cyber-physical systems, enabled by Industrial IoT
  - o A shift from a central industrial control system to one where smart products define the production steps,
  - o Closed-loop data models and control systems
  - o Personalization/customization of products.

### Challenges faced

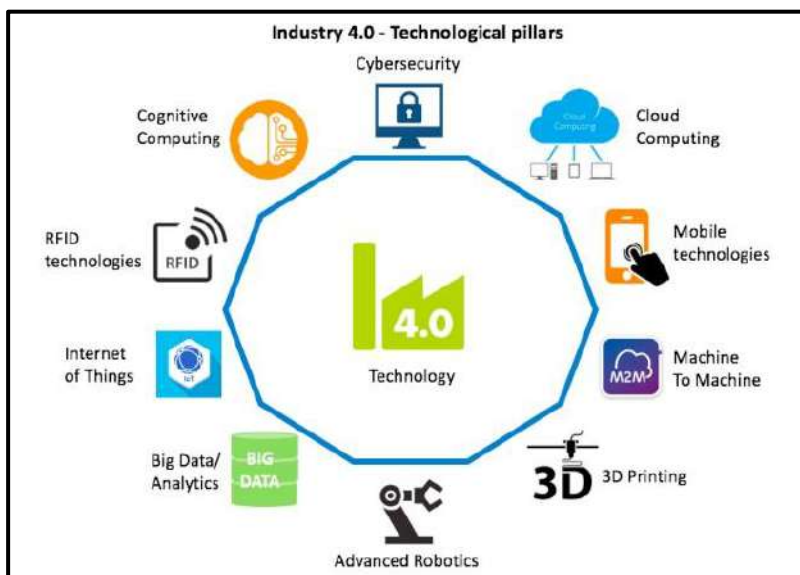
- MSMEs face challenges when it comes to adopting new technologies **such as Industry 4.0.**
- They lack awareness regarding **Industry 4.0 and its benefits.**
- They consider such technologies disruptive and have the potential to demolish their existing system.
- Industry 4.0 believes in improving the existing system.
- Scientific literature provides **evidence of sensors and WiFi networks** being integrated with old machines like lathes and mills to improve their performance.
- MSMEs will need to make major financial investments to adopt **Industry 4.0.**
- Investing in the **right set of technologies** will need experts and consultants as well.
- For any new technology to be adopted, an organisation requires a positive **organisational culture and the support of people.**
- MSMEs need to believe in the advantages that **Industry 4.0 technologies** can offer.
- The frameworks and steps that can assist MSMEs in adopting Industry 4.0 technologies have been missing.
- In this regard, MSMEs need to understand the data they are producing from all their operational activities.
- Based on such data, their readiness can be evaluated.
- Finally, **MSMEs** should develop their own vision of **Industry 4.0 technologies** that they want to adopt and identify the relevant tools and practices they need for such a tailored vision.

### Micro, Small and Medium Enterprises Classification 2020

Size of the Enterprise	Investment and Annual Turnover
Micro	Investment less than Rs. 1 crore Turnover less than Rs. 5 crore
Small	Investment less than Rs. 10 crore Turnover up to Rs. 50 crore
Medium	Investment less than Rs. 20 crore Turnover up to Rs. 100 crore

### Importance of MSMEs for Indian Economy

- **Employment:** It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.
- **Contribution to GDP:** With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.
- MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a \$5 trillion economy.
- **Exports:** It contributes around 45% of the overall exports from India.
- **Inclusive growth:** MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.
- For example: Khadi and Village industries require low per capita investment and employs a large number of women in rural areas.
- **Financial inclusion:** Small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.
- **Promote innovation:** It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.



## NANO UREA AND UREA SECTOR

## GS-III AGRICULTURE

### Context

- Nano Urea can enhance farmer's crop yields and save nitrogen to the extent of 50%, shows trials.

### About

- Nano Urea is a nutrient to provide nitrogen to plants as an alternative to the conventional urea.
- Nano Urea Liquid can curtail the requirement of the same by at least 50%.
- It contains 40,000 ppm of nitrogen in a 500 ml bottle which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- Nano nitrogen (Nano Urea) can enhance farmer's crop yields beside nitrogen saving to the extent of 50%.

### Significance

- The excess conventional urea causes an environmental pollution, harms soil health, and making plant more susceptible for disease & insect infestation, delayed maturity of the crop & production loss.
- Nano Urea Liquid makes the crops stronger, healthy and protects them from lodging effect.
- It will lead to reduction in Global Warming
- It will improve the quality of underground water by polluting it less.
- It will cut down post harvesting costs and increase farmers' income.

### Natural Urea

- Urea is a waste product in the body with no physiological function.
- It dissolves in the kidney and blood before it is excreted as urine.
- The organic compound of Urea has two different NH<sub>2</sub> groups that are connected by the carbonyl functional group. Urea is non-toxic, which is why it dissolves in water. Apart from being colorless, it also has no smell. It is found in milk, blood, and sweat of mammals.

### Conventional Artificial Urea

- Urea is a white crystalline organic chemical compound (CH<sub>4</sub>N<sub>2</sub>O). It is the most important nitrogenous fertiliser in the country because of its high N content (46%N).
- Urea was separated from urine by Hilaire Marin Rouelle, a French chemist back in 1773.
- Later in 1828, Friedrich Wohler, a German chemist, started its official preparation from Ammonium Cyanate.

### Uses of Urea

- As fertilizers as it increases the yield of crops
- As animal feed additive.
- as a cleaner; hair removal creams and dish soaps
- in the fermentation industry
- as a refrigerant
- neutralize pollutant
- in textile industries
- as a fuel for rocket engines
- manufacture of synthetic fibre like rayon and nylon
- in creams/oointments
- manufacturing melamine.

### Production and Import

- India is the top country by urea production in the world.
- As of 2018, urea production in India was 23.9 million tonnes that accounts for 44.42% of the world's urea production.
- The top 5 countries (others are Indonesia, the United States of America, Canada, and Viet Nam) account for 81.22% of it.
- India's import of urea rose 22 per cent to 91.23 lakh tonnes during the last fiscal year i.e 2019-2020.

### The only regulated Fertilizer

- Urea is the only fertilizer at present with pricing and distribution being controlled statutorily by the Government.
- The Central Govt. pays subsidy on urea to fertiliser manufacturers on the basis of cost of production at each plant and the units are required to sell the fertilizer at the government-set Maximum Retail Price (MRP).
- Thus, no one can sell urea above the MRP declared by the Govt. Under the Concession Scheme, the MRP for each fertilizer is indicative in nature.

### Advantages of Urea Fertilizer

- Highest nitrogen content. This percentage is much higher than other available nitrogenous fertilizers in the market.

- The cost of production of urea is relatively low.
- Not subject to fire or explosion hazards, so there is no risk in the storage of urea.
- Wide application. Urea fertilizer can be used for all types of crops and soils.

### Issues plaguing the Urea Sector

- India's Fertiliser industry is **classified under the "red category"** of polluting sectors by CPCB.
- Wastewater generated at urea plants contain ammoniacal and Kjeldahl nitrogen, and cyanides in varying concentrations.
- This leads to **water-pollution problems**.
- The sample of groundwater and effluents tested in the laboratory has high levels of contaminants (way above permissible limits) - **Centre for Science and Environment's innovative Green Rating Project (GRP) Report**.
- Using urea excessively on crops causes **adverse effect on soil, crop quality and overall eco-system** besides leading to pest and insect attacks.
- **Too much Urea damages plants:** nitrogen impairs or completely impedes seed germination, and too much nitrogen can give crops a "burn."
- The sector as a whole emits far lower CO<sub>2</sub> per tonne of urea than the urea sector in the US or China.
- However, water consumption of Urea sector in India is high and can be reduced by at least one-third by using recycling/reuse technologies.

### How to address the issues

- Indian agriculture needs to graduate from the present practice of bulk application of urea to a more precise supply of required nutrients.
- The industry needs to come up with new and innovative products to improve efficiency of nitrogen use from the current 30-35% to more than 60%. (Nano Urea could be a breakthrough)
- This will reduce urea consumption, improve soil health, increase yields and reduce N<sub>2</sub>O emissions.
- The production of nitrogen fertilizers **will have to shift from fossil fuels to renewables**.

### Case Study

- Fertilizer Corporation of India's Nangal plant employed electrolysis of water to produce hydrogen until it switched to hydrocarbons in the 1970s due to shortage of power in the Bhakra grid.
- So clearly, we have the technology to produce nitrogenous fertilisers without using fossil fuels.
- The falling costs of renewable energy will make this an economically feasible option.
- The **system of subsidies and controls** in its present form has led to imbalanced and gross overuse of urea with adverse consequences both for the environment and for agricultural productivity.
- Further, it neither benefits the small farmer nor does it support the industry adequately.
- The government needs to change its policy and bring a measure of decontrol Urea.
- **Decontrol will make the industry competitive and bring innovations in production and products.**
- The sector must go **from being a volume driven industry** which measures its performance by tonnes of urea produced, **to a functionality driven industry** which measures its performance by improved soil health and better yields.

### Non-Urea Fertilisers

- The MRPs of non-urea fertilisers are **decontrolled or fixed by the companies**.
- The Central Govt, pays a per-tonne subsidy on these nutrients to ensure they are priced at "reasonable levels".
- Examples of non-urea fertilisers: Di-Ammonium Phosphate (DAP), Muriate of Potash (MOP).

### Indian Fertilizer Industry

- The Indian fertilizer industry can broadly be divided into two categories, depending on the nutrient composition:
  - (i) nitrogenous fertilizers and
  - (ii) phosphatic and potassic (P&K) fertilizers.
- The overall fertilizer consumption in India has grown at a CAGR of 2.0% from 50.6 million t in FY2009 to 61.4 million t in FY2020

## COFFEE

## GS-III AGRICULTURE

### Context

- Heavy rains in July and August in coffee producing states of Karnataka, Kerala and Tamil Nadu is estimated to cut coffee crop size by 10 per cent, producers said.



## About

- India is the **third-largest producer and exporter of coffee in Asia**, and the sixth-largest producer and fifth-largest exporter of coffee in the world.
- The country accounts for **3.14% (2019-20)** of the **global coffee production**.
- Coffee production in India is dominated in the hill tracts of South Indian states, with Karnataka accounting for 71%, followed by Kerala with 21% and Tamil Nadu (5%).
- Indian coffee is said to be the finest coffee grown in the shade rather than direct sunlight anywhere in the world.
- Almost **80% of Indian coffee is exported**.
- The two well known species of coffee grown are the Arabica and Robusta.
- The first variety that was introduced in the Baba Budan Giri hill ranges of Karnataka in the 17th century.
- Brazil is, the largest coffee producer in the world.**



### In what climates does coffee grow?

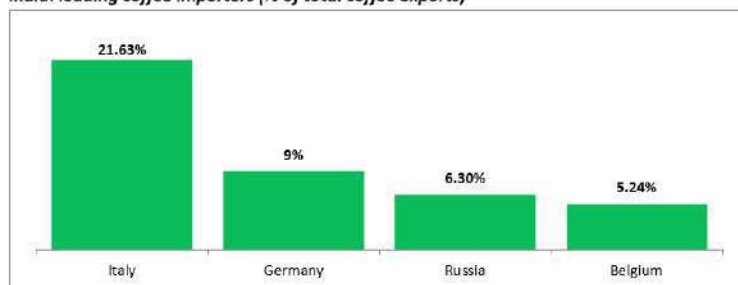
- Between temperatures of 13-26°C
- It requires both sun (dry season) and rain
- Wind and humidity have a negative impact on coffee: they damage branches, burn its buds (cold wind) and cause the development of fungi and parasites (excess moisture).
- Coffea needs shade in its growth phase and sun when it starts to produce its fruits (not direct sun).

All of these climatic conditions are found in tropical zones.

Another feature that distinguishes the areas suitable for the cultivation of coffee is altitude:

- Between 1000 -2000 metres for Arabica
- Around 200-300 metres for Robusta

India: leading coffee importers (% of total coffee exports)



## GM SOYA CAKE

## GS-III AGRICULTURE

### Context

- Government of India has relaxed the rules for import of crushed and de-oiled GM soya cake (Non-living organism only).
- This decision will positively impact farmers, poultry farmers, and fishermen.

### About

- The Ministry of Forest and Climate Change has said that since soya de-oiled cake and crushed cake does not contain any living modified organism, the Ministry has no objection for import of soya cake or meal from the environmental angle.
- Hence, import of **soya meal will not be subjected to the Schedule 1 of GEAC import policy approval as it is a non-living organism**.
- Anything which is non-food (not consumed by humans) is not within the ambit of the FSSAI Act, 2006, and therefore feed is not regulated by FSSAI.**
- Note:** India has been importing GM soyabean oil and also consumes locally produced GM cotton seed oil.
- Bt cotton is the only genetically modified (GM) crop that has been approved for commercial cultivation in 2002.

### What are GM crops?

- GM food involves the editing of genes of a crop in such a way that it incorporates beneficial traits from another crop or organism.
- This could mean changing the way the plant grows, or making it resistant to a particular disease.
- Food produced using the edited crop is called GM food. This is done using the tools of genetic engineering.

### Advantages of GM crops

- Genetic engineering can improve crop protection.
- Crops with better resistance to pest and diseases can be created.
- The use of herbicides and pesticides can be reduced or even eliminated.
- Farmers can achieve high yield, and thereby get more income.
- Nutritional content can be improved.

### Why is there stiff opposition to GM crops?

- India has one of the strongest regulatory protocols for field trials of GM crops.
- Genetically engineered foods often present unintended side effects.
- Genetic engineering is a new field, and long-term results are unclear. Very little testing has been done on GM food.
- Some crops have been engineered to create their own toxins against pests. This may harm non-targets such as farm animals that ingest them.
- The toxins can also cause allergy and affect digestion in humans.
- Further, GM crops are modified to include antibiotics to kill germs and pests.
- And when we eat them, these antibiotic markers will persist in our body and will render actual antibiotic medications less effective over a period of time, leading to superbug threats.
- This means illnesses will become more difficult to cure.
- Besides health and environmental concerns, activists point to social and economic issues.
- They have voiced serious concern about multinational agribusiness companies taking over farming from the hands of small farmers.
- People in general are wary of GM crops as they are engineered in a lab and do not occur in Nature.

### World scenario

- Only 29 countries allow commercial cultivation of GM crops while a similar number also allow their import.
- And most of the 170 million hectares under GM crops are in the USA, Brazil, Argentina, India and China.
- 98% of GM cultivation falls under four main crops: soyabean, maize, cotton and canola.

### Way Ahead

- GM Crops can withstand drought, resist pests and raise yields to feed the growing world population.
- But this should be done through a transparent regulatory process that is free of ethical conflicts.
- All this underscores the need for a cautious approach — one that fosters scientific inquiry, allows for scrutiny and is underpinned by regulation.
- Enacting a comprehensive law that covers all aspects of GM crops should be a priority.

### GEAC

- GEAC is apex body under Ministry of Environment, Forests and Climate Change for regulating manufacturing, use, import, export and storage of hazardous micro-organisms or genetically engineered organisms (GMOs) and cells in the country.
- It is also responsible for giving technical approval of proposals relating to release of GMOs and products including experimental field trials.
- However, Ministry of Environment, Forests and Climate Change gives final approval for GMOs.

**What is a GM crop?**  
A crop which has a gene artificially inserted into it from another species, even unrelated, to give it some desired properties. GM crops are mostly either pest-resistant or herbicide-tolerant

**GM CROPS IN INDIA A PRIMER**

**When did India get its first GM crop?**  
The first GM crop variety approved for commercialisation was Bt cotton, Bollgard-I, which provided immunity against the pink bollworm and developed by Monsanto, was given the go ahead in 2002. Monsanto released Bollgard-II in 2006. India has become the world's largest producer of cotton partly due to Bt cotton, which accounts for over 90% of the total cotton acreage in the country

**Are there other GM crops in India?**  
No, the government has not approved commercial cultivation of other GM crops, though efforts have been made for brinjal and mustard

- Shelf life of foods can be extended.
- Food with better taste and texture can be achieved.
- Crops can be engineered to withstand extreme weather.

## FAIR AND REMUNERATIVE PRICE (FRP)

## GS-III AGRICULTURE

### Context

- The Cabinet Committee on Economic Affairs has approved Fair and Remunerative Price (FRP) of sugarcane for sugar season 2021-22 (October - September) at Rs. 290/- per quintal for a basic recovery rate of 10%.
- This is the highest ever FRP on sugarcane.
- The FRP has been determined on the basis of recommendations of Commission for Agricultural Costs and Prices (CACP) and after consultation with State Governments and other stake-holders.

### Pricing policy for sugarcane

- Sugarcane prices are determined by the Centre as well as States.
- The pricing of sugarcane is governed by the statutory provisions of the Sugarcane (Control) Order, 1966 issued under the Essential Commodities Act (ECA), 1955.
- Prior to 2009-10 sugar season, the Central Government was fixing the Statutory Minimum Price (SMP) of sugarcane and farmers were entitled to share profits of a sugar mill on 50:50 basis.
- As this sharing of profits remained virtually unimplemented, the Sugarcane (Control) Order, 1966 was amended in 2009 and the concept of SMP was replaced by the Fair and Remunerative Price (FRP) of sugarcane.
- The Centre announces Fair and Remunerative Prices which are determined on the recommendation of the Commission for Agricultural Costs and Prices (CACP) and are announced by the Cabinet Committee on Economic Affairs, which is chaired by Prime Minister.
- The State Advised Prices (SAP) are announced by key sugarcane producing states which are generally higher than FRP.
- The amended provisions of the Sugarcane (Control) Order, 1966 provides for fixation of FRP of sugarcane having regard to the following factors:-
  - cost of production of sugarcane;
  - return to the growers from alternative crops and the general trend of prices
  - of agricultural commodities;
  - availability of sugar to consumers at a fair price;
  - price at which sugar produced from sugarcane is sold by sugar producers;
  - recovery of sugar from sugarcane;
  - the realization made from sale of by-products viz. molasses, bagasse and
  - press mud or their imputed value
  - reasonable margins for the growers of sugarcane on account of risk and profits

\*\*Read more about Sugarcane industry in detail in Aug 2021 edition.

## OPERATION GREEN

## GS-III AGRICULTURE

### Context

- Wholesale tomato prices in Maharashtra have crashed to Rs 3/kg to Rs 5/kg, while wholesale potato prices in Delhi are ruling between Rs 7/kg to Rs 9/kg and are expected to decline further.
- Farmers demand support measures

### About

- Operation Green was originally launched in 2018.
- Operation Greens seeks to stabilize the supply of Tomato, Onion and Potato (TOP) crops and to ensure availability of TOP crops throughout the country round the year without price volatility.
- The scheme was extended during June 2020 to cover all fruits & vegetables for a period of six months on pilot basis as part of Aatmanirbhar Bharat Abhiyan.
- The Ministry of Food Processing Industries has launched the scheme.
- NAFED will be the Nodal Agency to implement price stabilisation measures.

### Objectives

- Enhancing value realisation of TOP farmers by targeted interventions to strengthen TOP production clusters and their FPOs, and linking/connecting them with the market.
- Price stabilisation for producers and consumers by proper production planning in the TOP clusters and introduction of dual use varieties.

- Reduction in post-harvest losses by creation of farm gate infrastructure, development of suitable agro-logistics, creation of appropriate storage capacity linking consumption centres.
- Increase in food processing capacities and value addition in TOP value chain with firm linkages with production clusters.
- Setting up of a market intelligence network to collect and collate real time data on demand and supply and price of TOP crops.

### Strategy

- The strategy will comprise of a series of measures as decided by the Ministry which include:
- **Short term Price Stabilisation Measures**: MoFPI will provide 50% of the subsidy on the following two components:
  - a. Transportation of Tomato Onion Potato (TOP) Crops from production to storage;
  - b. Hiring of appropriate storage facilities for TOP Crops;
- **Long Term Integrated value chain development projects**
  - a. Capacity Building of FPOs & their consortium
  - b. Quality production
  - c. Post-harvest processing facilities
  - d. Agri-Logistics
  - e. Marketing / Consumption Points
  - f. Creation and Management of e-platform for demand and supply management of TOP Crops.

### Funding

- The pattern of assistance will comprise of **grants-in-aid at the rate of 50% of the eligible project cost in all areas**, subject to maximum Rs. 50 crores per project.

### Current Status

- After a closer examination of the scheme and its implementation, the experts feel that it is in slow motion mode and is nowhere near its objectives.
- As per the study at Indian Council for Research on International Economic Relations (ICRIER), "**price volatility remains as high as ever**, and farmers' share in consumers' rupee is as low as 26.6% in the case of potatoes, 29.1% in the case of onions, and 32.4% in the case of tomatoes"
- The dairy sector has been said to improve more than Greens.
- There are a few lessons Operation Green can take from Operation Flood.
- However, its comparison with Operation Flood is a bit critical as the latter has been in operation for 20 years.

### Way Forward

- Results are not going to come in three to four years.
- Operation flood lasted for almost 20 years before milk value chains were put on the track of efficiency and inclusiveness.
- There has to be a **separate board to strategize and implement the OG scheme**, more on the lines of the National Dairy Development Board (NDDB) for milk, which keeps itself at arm's length from government control.
- The criteria for choosing clusters for TOP crops under OG is not very transparent and clear.
- The reason is while some important districts have been left out from the list of clusters, less important ones have been included.
- The subsidy scheme will have to be made innovative with new generation entrepreneurs, startups and FPOs.
- The announcement to create an additional 10,000 FPOs along with the Agriculture Infrastructure Fund and the new farm laws are all promising but need to be implemented fast.

## PO AND FPOS

## GS-III AGRICULTURE

### Context

- The Tata-Cornell Institute for Agriculture and Nutrition launched a Hub for Farmer Producer Organizations (FPOs) within its Center of Excellence in New Delhi. The Hub features a database of Indian FPOs.

### What is a Producer Organisation (PO)?

- A Producer Organisation (PO) is a **legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen.**
- A PO can be a producer company, a cooperative society or any other legal form which provides for sharing of profits/benefits among the members.
- In some forms like producer companies, institutions of primary producers can also become member of PO.



### What is the need for PO?

- The main aim of PO is to ensure better income for the producers through an organization of their own.
- Small producers do not have the volume individually (both inputs and produce) to get the benefit of economies of scale.
- Besides, in agricultural marketing, there is a long chain of intermediaries who very often work non-transparently leading to the situation where the producer receives only a small part of the value that the ultimate consumer pays.
- Through aggregation, the primary producers can avail the benefit of economies of scale.
- They will also have better bargaining power vis-à-vis the bulk buyers of produce and bulk suppliers of inputs.

### What is a "Farmers Producer Organisation" (FPO)?

- It is one type of PO where the members are farmers.
- Small Farmers' Agribusiness Consortium (SFAC) is providing support for promotion of FPOs.
- PO is a generic name for an organization of producers of any produce, e.g., agricultural, non-farm products, artisan products, etc.

### Can there be a PO for non-farmers?

- Yes. The PO is an organization of the primary producers.
- If the produce in question is a nonfarm item (for example, handloom or handicraft), then the PO will be that of non-farmers.
- The objective of the PO is to ensure better income realization to its members (who are producers) through aggregation and, if feasible, value addition.

### What are the essential features of a PO?

- It is formed by a group of producers for either farm or non-farm activities.
- It is a registered body and a legal entity.
- Producers are shareholders in the organization.
- It deals with business activities related to the primary produce/product.
- It works for the benefit of the member producers.
- A part of the profit is shared amongst the producers.
- Rest of the surplus is added to its owned funds for business expansion.

### Who owns the PO?

- The ownership of the PO is with its members. It is an organization of the producers, by the producers and for the producers.

### Agrarian Crisis

- One of the reasons for agrarian distress is the **declining average size of farm holdings**.
- Small farmers face several **challenges in getting access to inputs and marketing facilities**.
- A number of **innovative institutional models** are emerging and there are many opportunities for small and marginal farmers in India.
- A **group or collective** is one of the main institutional mechanisms to help the country's marginal and small farmers.

- The average farm size declined from 2.3 hectares (ha) in 1970-71 to 1.08 ha in 2015-16.
- The share of small and marginal farmers increased from 70 per cent in 1980-81 to 86 per cent in 2015-16.
- At the state level, the average size of farm holdings in 2015-16 ranged from 3.62 ha in Punjab, 2.73 in Rajasthan and 2.22 in Haryana to 0.75 in Tamil Nadu, 0.73 in Uttar Pradesh, 0.39 in Bihar and 0.18 in Kerala.

### Background of FPOs

- In the last decade, the Centre has encouraged **farmer producer organisations (FPOs) to help farmers**.
- Since 2011, it has intensively promoted FPOs under the **Small Farmers' Agri-Business Consortium (SFAC), NABARD, state governments and NGOs**.
- The membership of an FPO ranges from **100 to over 1,000 farmers**. Most of these farmers have small holdings.
- The ongoing support for FPOs is mainly in the form of, one, a **grant of matching equity** (cash infusion of up to Rs 10 lakh) to registered FPOs, and two, a **credit guarantee cover to lending institutions** (maximum guarantee cover 85 percent of loans not exceeding Rs 100 lakh).
- India has 5,000 to 7,500 such entities as per different estimates and a majority of them are farmer producer companies.
- The budget for 2018-19 announced supporting measures for FPOs including a **five-year tax exemption** while the budget for 2019-20 talked of setting up **10,000 more FPOs in the next five years**.

### Performance of FPOs

- Experience shows a mixed performance of FPOs in the last decade. Some estimates show that 30 percent of these are operating viably while 20 per cent are struggling to survive.
- The remaining 50 per cent are still in the initial phase of mobilisation and business planning.
- FPOs in Gujarat, Maharashtra and Madhya Pradesh, Rajasthan and some other states have shown encouraging results and have been able to realise higher returns for their produce.
- For example, tribal women in the Pali district of Rajasthan formed a producer company and they are getting higher prices for custard apples.
- NABARD has undertaken a field study on the benefits of FPOs in Punjab and Madhya Pradesh. The study shows that in nascent FPOs, the proportion of farmer members contributing to FPOs activities is 20-30 per cent while for the emerging and mature FPOs it is higher at about 40-50 percent.
- In Maharashtra, some of the FPOs have organically evolved (OFPOs) when farmers have taken the lead to adopt market-oriented practices, develop cost-effective solutions in production and marketing.

### Challenges

- Studies of NABARD show that there are some important challenges for building sustainable FPOs.
- Some of these are:
  - lack of technical skills,
  - inadequate professional management,
  - weak financials,
  - inadequate access to credit,
  - lack of risk mitigation mechanism and
  - inadequate access to market and infrastructure.

### Way Forward

- Among other things, we emphasise on three issues for the improvement of FPOs in order to help the small farmers.
- The above issues such as **working capital, marketing, infrastructure** have to be addressed while scaling up FPOs.
- Getting credit is the biggest problem. Banks must have structured products for lending to FPOs. These organisations lack professional management and, therefore, need capacity building.
- They have to be **linked with input companies, technical service providers, marketing/processing companies, retailers** etc. They need a lot of **data on markets** and prices and other information and competency in information technology.
- FPOs can be used to **augment the size of the land** by focusing on **grouping contiguous tracts of land** as far as possible – they should **not be a mere grouping of individuals**. **Women farmers** also can be encouraged to group cultivate for getting better returns. FPOs can also encourage **consolidation of holdings**.

### Conclusion

- To conclude, FPO seems to be an **important institutional mechanism** to organise small and marginal farmers. **Aggregation** can overcome the constraint of small size.
- The real hope is in farmer producer organisations (FPOs) that **allow members to negotiate as a group** and can **help small farmers in both input and output markets**.
- The FPOs have to be **encouraged by policy makers** and other stakeholders apart from scaling up throughout the country to benefit particularly the small holders.
- While **small farmers gain greater bargaining power through FPOs** in relation to the purchase of inputs, obtaining credit and selling the produce, the fundamental problem of the small size of holdings giving only a limited income is not resolved.
- While incomes will rise because of the benefits flowing from FPOs, they **may not still be adequate to give a reasonable income** to small and marginal farmers. That **issue has to be handled separately**.

## PULSES IN INDIA

## GS-III AGRICULTURE

### Context

- The production of pulses has been increasing during the last 3 year i.e. 2018-19 to 2020-21.

### Initiatives taken

#### State/UT-wise Production of Pulses during in 2020-21

State/UT	Production (Tonnes)	State/UT	Production (Tonnes)
Andhra Pradesh	1185.43	Maharashtra	4224.87
Assam	119.03	Odisha	415.94
Bihar	412.37	Punjab	39.87
Chhattisgarh	530.93	Rajasthan	4821.84
Gujarat	1759.93	Tamil Nadu	549.02
Haryana	77.68	Telangana	664.14
Himachal Pradesh	46.24	Uttar Pradesh	2621.15
Jharkhand	908.93	Uttarakhand	63.31
Karnataka	2170.89	West Bengal	412.84
Kerala	1.70	Others	184.81
Madhya Pradesh	4364.74	All India	25575.69

- To increase the production of pulses the National Food Security Mission Pulses programme is being implemented.
- Under NFSM-Pulses, incentives are given to the farmer for cluster demonstration, seeds distribution & production of certified seeds of High Yielding Varieties (HYVs), farm machineries/tools, efficient water saving devices, plant protection chemicals, nutrient management, soil ameliorants and training to the farmers.
- A new scheme **"Intercropping of pulses with sugarcane"** was implemented in 12 States during 2018-19 and 2019-20.
- Special Action Plan for increasing pulses productivity was implemented during 2019-20.
- Launched Targeting Rice fallow Area (TRFA) programme under NFSM in 11 states
- Price Support:** Minimum Support Prices (MSP) to the farmers through National Agricultural Cooperative Marketing Federation of India (NAFED) and more recently through Small Farmers Agri Consortium (SFAC).
- Other Government initiatives:** All India coordinated the pulses Research Project [1965], intensive pulses development project [1969], central sector national pulses development project [1985], the integrated scheme of oilseeds, pulses & maize [2002] and national food security mission [2007].
- Despite all these programs India is the largest importer of pulses.

#### India and Pulses

- Pulses are the important sources of proteins, vitamins and minerals and are popularly known as **"Poor man's meat" and "rich man's vegetable"**, contribute significantly to the nutritional security of the country.
- Currently, India is the largest producer (25% of global production), consumer (27% of world consumption) and importer (14%) of pulses in the world.
- Pulses account for around 20 per cent of the area under foodgrains and contribute around 7-10 per cent of the total foodgrains production in the country.
- Though pulses are grown in both Kharif and Rabi seasons, **Rabi pulses contribute more than 60 per cent of the total production.**
- Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the largest five pulses producing States.
- India majorly produces Chickpea with the contribution of 48 per cent followed by Pigeon Pea 14 per cent, Black Gram 12 per cent, Green Gram 8 per cent and Lentil 7 per cent.
- During 2020-21, **chickpea had a lion's share of 49.3% in the total pulses production.**
- Among remaining pulses, pigeonpea contributed 16.2%, mungbean 10.3%, urdbean 9.3%, lentil 4.9% and other pulses 9.9%.
- During the past 15 years, the highest growth in production was observed for mungbean (178%), followed by chickpea (125%).

#### Bottlenecks in India's Pulse production

- The stagnation in pulses production and continuous increase in population has led to significant **decline in the per capita availability of pulses** which in 1951 was 60 g and has dwindled down to about of 56 g in the year 2018.

#### Weather

- Pulses are under rainfed regions, therefore, their productivity is governed by amount and distribution of rainfall.
- Rainfall intensity and distribution leads to vulnerability of kharif pulses to water stagnation (oxygen stress) and rabi pulses, subjected to water deficit.
- The variability in climatic situations such as high temperature and poor or no rainfall special variation during winter season drastically affected the yield.

### Edaphic factors

- During kharif, the edaphic factors play a major role.
- Pulses are most sensitive to water logging condition.
- In black cotton soil in kharif season water logging situation results in poor aeration and failure of crop, especially pigeonpea.

### Insects and diseases

- National Centre for Integrated Pest Management (NCIPM) study has recorded pod borers (*Helicoverpa armigera*), fusarium wilt, root rots, and ascochyta blight in gram to cause 10-90 % loss in MP, Karnataka, Rajasthan, Maharashtra, UP, Gujarat & Telangana.
- Similarly, pod borer, aphids, cutworm, powdery mildew, rust and wilt are the major pests and diseases affecting lentil production.

### Other issues

- Lower productivity and low yield potential, under pulses as compared to cereals besides allocation of poor, marginal lands and improper nutrition.
- Poor or no critical irrigation, especially in rainfed rabi season, further limits the yield.
- Poor seed and varietal replacement in pulses is one of the major issues related to low yield and exploit the potential.
- Inadequate Warehousing Facilities & Collateral Finance.
- Unavailability of quality seeds (replacement of seed/variety), low level of mechanisation, unavailability of irrigation in major growing areas, acute abiotic stress (terminal drought), low marketable surplus, uncontrolled incidence of biotic stresses (pests & diseases) and lack of awareness towards diagnosis and control.

### Prospects and Way ahead

- Improvement is much needed in field of better enforcement of regulated markets, strengthening the appropriate market institutions, introduction of forward marketing, contract farming and promotion of market forward and backward market integration.
- The **strength** in the Indian agricultural production system is that it has huge rice fallow acreage (> 11.7 m ha) which could be utilised for pulses cultivation.
- The other strengths are availability of labour, possibility of higher yield realization and untapped yield potential in most of the pulses that are unexploited and unexplored and soil fertility for successful pulses cultivation and large quantum on monsoon rains.
- According to **Indian Institute for Pulse Research**, by 2030 and 2050 demand for pulses would be around 32 MT and 50 MT to meet the country's rising population, urbanization and income of middle class.
- Thus, the opportunities in this sector are huge. One can work to motivate farmers to grow more pulses leading to augmentation in farm income, generation of additional employment and leading the country to self-sufficient in pulses production.
- **The potential of markets should be harnessed through:**
  1. Value chain approach right from the production at farm level [and encompassing post-harvest, processing, packaging, transportation] to marketing for small and marginal farmers to reduce losses/wastages and increase income.
  2. Better price discovery and transparency for which facilities have been created for electronic trading of pulses in a few APMCs in Karnataka, AP and Telangana.
  3. Quickly launching the recently envisioned National Common Market.
- **R&D in crop improvement programs:** Genomics resources for achieving high precision and efficiency in breeding; rapid generation advancement methods for speed breeding; novel crossing methods, such as multi-parent advanced generation intercross (MAGIC) method for enhancing genetic recombination etc
- Some of the areas which need greater attention in development of varieties/hybrids include
  1. improved resilience to climate change and adaptability to new niches (early maturity, heat tolerance, etc.),
  2. region specific hybrids of pigeonpea with suitable maturity duration and efficient seed production and genetic purity assessment system,
  3. traits that facilitate mechanization (suitability to machine harvesting, herbicide tolerance),
  4. further enhanced nutritional quality (protein, iron and zinc contents), and
  5. traits needed by the industries.
- Concerted efforts need to continue on expanding area of pulses in rice-fallows available in eastern and southern states and promoting spring/summer cultivation of mungbean and urbean in areas with assured irrigation.
- Crop production technologies which are expected to have high potential impacts on production of pulses need to be given special attention. These include -
  - (1) planting methods, such as raised bed and ridge and furrow methods, to avoid water logging in rainy season pulses,



- (2) integrated water management and efficient irrigations systems to ensure need-based supplemental irrigations to post-rainy season pulses,
  - (3) soil-test based application of fertilizers to meet the requirements of both macro and micronutrients,
  - (4) enhanced mechanization in pulses cultivation, and
  - (5) promoting conservation agriculture.
- There is a need to map yield gaps for each pulse crop in major growing geographies, identify the major contributing factors to yield gaps, and develop suitable strategies for bridging the yield gaps.
  - This will involve targeted development of improved varieties and production technologies and enhancing their adoption by empowering the farmers with required knowledge and inputs supply.

### Case Study

#### Andhra Pradesh Shows the Way

- Farmers in southern India started growing short-duration and wilt resistant chickpea varieties in rain-fed rice-fallow lands.
- Andhra Pradesh, a state once considered unsuited for chickpea cultivation due to its warm and short-season environment, has now ushered in a chickpea revolution because of growing early maturing chickpea varieties.
- Between 1991 and 2010 average increase in yield of two major pulse crops viz. chickpea and pigeon pea were as high as 81% to 100% in Andhra Pradesh recording a substantially higher increase in yield than the national average yield increase.
- The attributes to such a phenomenal rise in the output included:
  - o development and on-time availability of high-yielding, short-duration, Fusarium wilt resistant varieties suited to short-season and warmer environments of southern India
  - o motivation and willingness of a large number of farmers to adopt improved varieties and easy access to production technologies
  - o successful commercial cultivation by mechanizing field operations and efficient management to minimize the incidence of pod-borer infestation
  - o availability of grain storage facilities to farmers at the local level at an affordable cost.

## PM KISAN

## GS-III AGRICULTURE

### Context

- The Union government will disburse the next installment of PM-KISAN, its cash transfer scheme for farmers, on 9 August.

### About

- Under the PM-KISAN scheme, the government is providing **Rs 6,000 in three equal installments to 14 crore farmers annually.**
- The amount is **directly transferred into the bank accounts of the beneficiaries through direct benefit transfer (DBT) mode.**
- An amount of over Rs 1.15 lakh crore has been transferred to farmer beneficiaries so far under the PM-KISAN scheme, launched in 2019.
- The scheme defines **family as husband, wife and minor children. The fund of Rs 2,000 is directly transferred to the bank accounts of the farmers/farmer's family.**

### Who is eligible for PM KISAN scheme?

- Landholding farmers' families with cultivable landholding in their names can apply under this scheme
- Farmers from **both the urban and rural areas**
- Small and marginal farmers families

### Who is not eligible for PM KISAN scheme?

- Institutional landholders
- Present or retired officers and employees of state/central government as well as PSUs and government autonomous bodies.
- Beneficiaries with higher economic status are not eligible.
- Those who pay income tax
- Farmer families holding constitutional posts
- Professionals like doctors, engineers and lawyers
- Retired pensioners with a monthly pension of over Rs 10,000

**Note:** Aadhaar card is mandatory for registration. Landholding papers and bank account details must also be submitted along with Aadhaar. Special provisions have been made in the scheme for the north-eastern states where land ownership rights are community-based and in Jharkhand, which does not have updated land records and restrictions on the transfer of land.

## PM KISAN: performance and challenges

- PM Kisan scheme saw 61,04,877 failed transactions between February 1, 2019 and June 30, 2021.
- Of these, only 34 per cent transactions out of these failed transactions have been successfully reprocessed back to the beneficiaries during the stated period - **Agriculture Ministry**
- According to the provisional numbers of the 10th agriculture census 2015-16, Uttar Pradesh and Bihar are the two states that have the largest number of small and marginal farmers. And these states have the highest number of failed transactions too.
- The scheme has been to some extent successful in its objective to provide direct help to farmers and when needed. However, it has much issues.

## Implementation issues

- In a country where a majority of the States have incomplete tenancy records and land data are not digitised, identification of beneficiaries is daunting.
- In the **absence of updated land records and complete databases**, the scheme may end up benefitting only those who hold land titles and not the small, marginal or tenant farmers who are the most vulnerable.
- Improper records could lead to large-scale leakages and pilferage and benefits going to ineligible people.
- According to Department of Land Resources, over 95 per cent digitisation of land records is complete in 15 states and UTs, **while in 17 states and UTs less than 95 per cent of the work is complete.**
- The states with less than 95 per cent of the work done include **Assam, Bihar, UP and Punjab.**
- In Northeast, the process has not started. Land there is owned by communities and not maintained by state governments.
- Integrating land records and property registration, has not started in 15 states and UTs.
- Another big problem is linking land records with Aadhaar, **which is almost nil in most states** - Commission for Agriculture Costs and Prices
- Besides, the scheme **does not provide a clear design of transfers and a framework for effective grievance redress.**
- In the Mahatma Gandhi National Rural Employment Guarantee Scheme, for instance, State governments still struggle to resolve complaints and curb corruption.

<b>AT A GLANCE</b> Progress of Land Record Digitisation and Registration as on December 2018 in 36 states and Union Territories			
Component	Over 95% complete	Less than 95% complete	Not started
Computerisation of land records	15	17	4
Computerisation of Registration	19	12	5
Integration of Cadastral Maps with Record of Right	3	15	18
Integration of land records and property registration	11	10	15

SOURCE: DEPARTMENT OF LAND RESOURCES

## Making PM KISAN effective - The Way Ahead

- Updated, digitized land records in states key for PM-KISAN scheme.
- Given that India's poverty line is Rs 32 per person per day in rural areas and Rs 47 in urban areas, **according to the Rangarajan Committee**, the income support of Rs 17 a day for a household, which is the amount offered by PM-KISAN, is largely insufficient for even bare minimum sustenance of vulnerable farmers.
- Therefore, **to be effective**, any cash transfer scheme should first ensure that there is enough cash provided to help bring an affected community out of poverty.
- For instance, the **Rythu Bandhu in Telangana**, that the Centre is said to have replicated, provides Rs 4,000 per acre to each farmer in each season, and the **Krushak Assistance for Livelihood and Income Augmentation scheme in Odisha** offers a direct cash transfer of Rs 5,000 for a farm family over five seasons, among other benefits.
- Moreover, given the volatile market and price fluctuations in different regions, **it is important to index the cash transfers to local inflation.**
- The failure of an ambitious plan of Direct Benefit Transfer in kerosene in Rajasthan is a case in point, where the cash transferred to families has been insufficient to purchase kerosene, as the market price increased substantially.
- PM-KISAN is an ambitious scheme that has the potential to deliver significant welfare outcomes.
- An **alternative bottom-up strategy and well-planned implementation mechanism** would allow weaknesses to be identified and rectified at the local level.
- The most effective modalities can then be scaled nationally and ensure success.

## NATIONAL INNOVATION ON CLIMATE RESILIENT AGRICULTURE

## GS-III AGRICULTURE

### Context

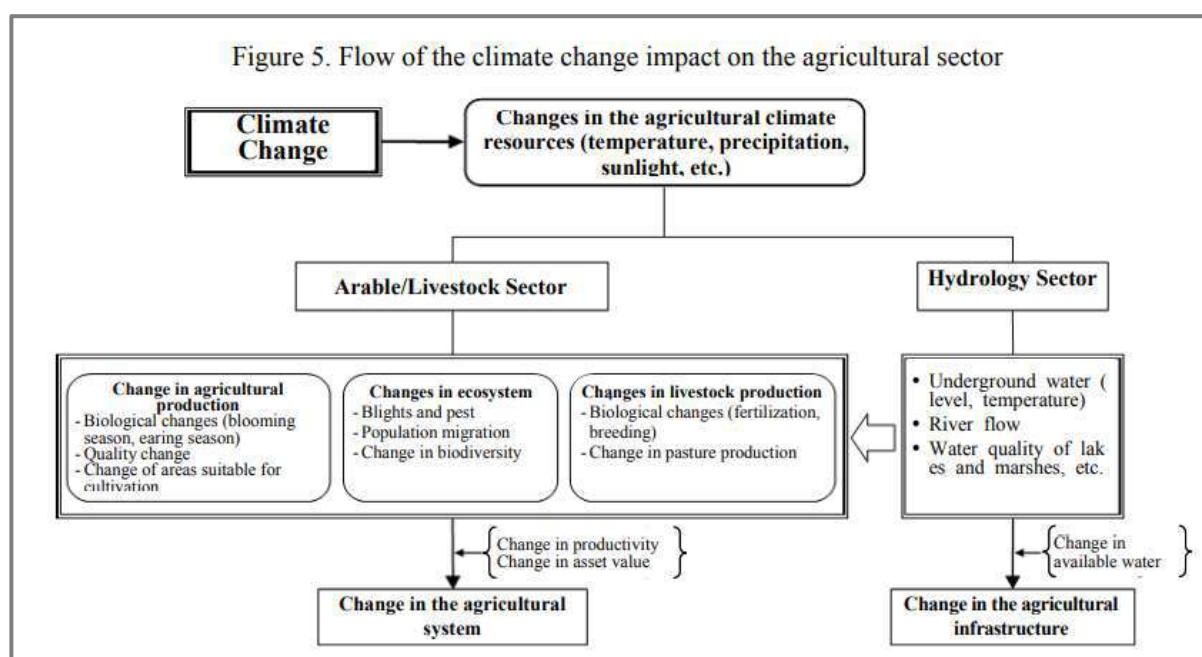
- Information given in a written reply by the Union Minister of Agriculture and Farmers Welfare in Rajya Sabha.

## About

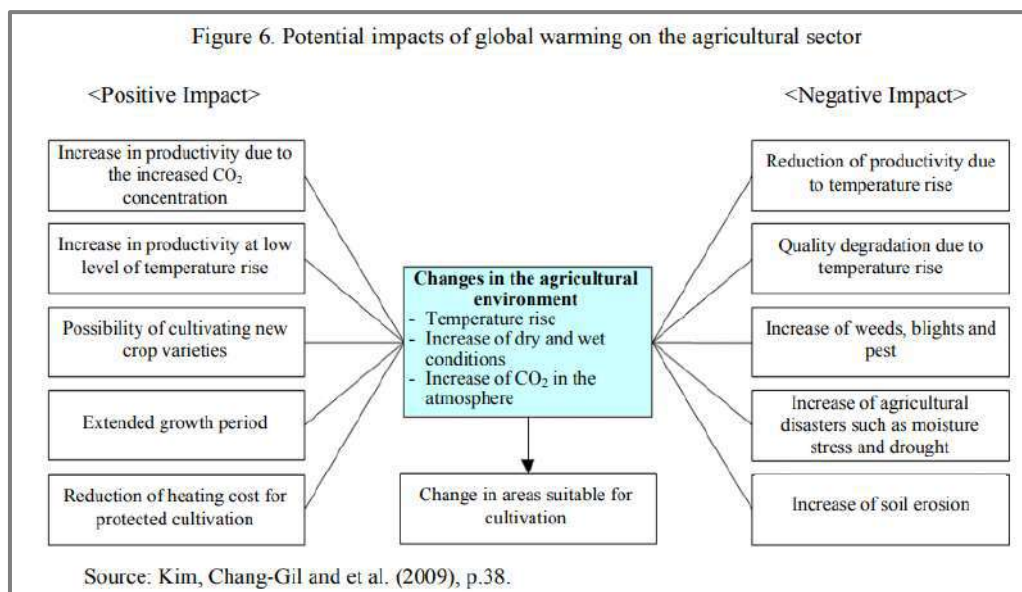
- Indian Council of Agricultural Research (ICAR), Ministry of Agriculture and Farmers Welfare, launched a flagship network project 'National Innovations in Climate Resilient Agriculture' (NICRA) in **2011**.
- The project aims at strategic research on adaptation and mitigation, demonstration of technologies on farmers' fields and creating awareness among farmers and other stakeholders to minimize the climatic change impacts on agriculture.
- In the strategic research, the main thrust areas covered are
  - identifying most vulnerable districts/regions,
  - evolving crop varieties and management practices for adaptation and mitigation,
  - Assessing climate change impacts on livestock, fisheries and poultry and identifying adaptation strategies.

## Impact of Climate change on Agriculture

- The unimpeded growth of greenhouse gas emissions is raising the earth's temperature.
- The consequences include melting glaciers, more precipitation, more and more extreme weather events, and shifting seasons.
- The accelerating pace of climate change, combined with global population and income growth, **threatens food security everywhere. Agriculture is extremely vulnerable to climate change.**
- Higher temperatures eventually **reduce yields of desirable crops** while **encouraging weed and pest proliferation.**
- It can lead to **shift in the geographical distribution of certain pests.**
- Changes in precipitation patterns increase the likelihood of **short-run crop failures and long-run production declines.**
- Food may become more expensive as climate change mitigation efforts increase energy prices.**
- For example,** heat waves in the summer of 2010 led to yield losses in key production areas including: Russia, Ukraine and Kazakhstan, and contributed to a dramatic increase in the price of staple foods.
- These **rising prices forced growing numbers of local people into poverty,** demonstrating how the influence of climate change can result in food insecurity.
- Agriculture is already a major source of greenhouse gas emissions.
- Future intensification of agriculture to compensate for reduced production (partly caused by climate change) could further increase these emissions.
- Heat waves are likely to become more frequent in the future and represent a major challenge for agriculture.
- Extreme periods of high temperature are particularly harmful for crop production if they occur when the plants are flowering.
- If this single, critical stage is disrupted, **there may be no seeds at all.**
- In coastal areas,** rising sea levels may result in **complete loss of agricultural land.**
- In a nutshell, negative impacts of climate change include **reduced crop quantity; reduced sugar content, bad coloration, and reduced storage stability in fruits; increase of weeds, blights, and harmful insects in agricultural crops; reduced land fertility due to the accelerated decomposition of organic substances; and increased soil erosion due the increased rainfall.**







**Note:** While there are some positives, the negatives (if not mitigated/adapted with) will outweigh the positive impacts damaging agriculture permanently.

### Mitigation and Adaptation

- Mitigation measures for the agricultural sector include the improvement of cultivation method through improved irrigation and fertilization control for the arable sector to suppress major greenhouse gases such as methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), improvement of animal excretion treatment technologies in the livestock sector, and carbon fixing for the farmland soil.

### Roadmap for adaptation Measures in Agricultural Sector

R&D	<ul style="list-style-type: none"> <li>- Develop new breeds that are in great demand and resistant to heat.</li> <li>- Popularize new cultivation technologies for fertilization and sowing.</li> <li>- Prepare the maps for suitable places for cultivation and crop distribution.</li> <li>- Researches to identify physiological effects of global warming.</li> <li>- Develop forecast models to prevent blights, pest and weeds.</li> <li>- Develop and utilize early warning systems.</li> <li>- Develop water resource management systems to prevent natural disasters including drought and flood.</li> </ul>	<ul style="list-style-type: none"> <li>- Popularize the breeds adapted to global warming.</li> <li>- Provide the information about adaptation to global warming and build up the training system.</li> <li>- Promote the crop transformation evaluation studies.</li> <li>- Sophisticate the early warning system.</li> <li>- Promote the facilities to optimize the efficiency of water utilization.</li> <li>- Promote the water resource management system in prevention against natural disasters such as drought and flood.</li> </ul>	<ul style="list-style-type: none"> <li>- Build up the adaptation system to global warming.</li> <li>- Convert to the agricultural production system that makes the most of global warming.</li> <li>- Build up the crop transformation evaluation system.</li> <li>- Build up the early warning system</li> <li>- Popularize the farming simulator</li> <li>- Promote the water resource management system in prevention against natural disasters such as drought and flood.</li> </ul>
Infrastructure management	<ul style="list-style-type: none"> <li>- Popularize the technologies to reduce carbon emission from rice fields and dry fields.</li> <li>- Popularize the no-tillage farming methods.</li> <li>- Establish the standard for water-saving irrigation.</li> <li>- Modernize the agricultural infrastructure.</li> <li>- Popularize the energy-saving technology for the protected horticulture.</li> </ul>	<ul style="list-style-type: none"> <li>- Promote the reduction of carbon emission from rice fields and dry fields.</li> <li>- Expand the no-tillage farming methods.</li> <li>- Popularize the standard for water-saving irrigation.</li> <li>- Build up the automated agricultural water management.</li> <li>- Expand the energy-saving technology for the protected horticulture.</li> </ul>	<ul style="list-style-type: none"> <li>- Promote the reduction of carbon emission from rice fields and dry fields.</li> <li>- Settle the no-tillage farming methods.</li> <li>- Build up TMTC system.</li> <li>- Expand the energy-saving fusion technology for the protected horticulture.</li> </ul>
Economic means	<ul style="list-style-type: none"> <li>- Consider paying the carbon grant to the agricultural people who practice low-carbon farming methods.</li> <li>- Introduce the investment incentive for water saving.</li> <li>- Support high-efficiency irrigation system</li> </ul>	<ul style="list-style-type: none"> <li>- Expand the carbon grant for the low-carbon adaptation menu methods.</li> <li>- Promote the investment incentive for water saving.</li> <li>- Consider charging the use of agricultural water</li> </ul>	<ul style="list-style-type: none"> <li>- Promote the carbon grant for the low-carbon farming methods.</li> </ul>



Legal & institutional improvement	<ul style="list-style-type: none"> <li>- Expand the insurance system for agricultural disasters.</li> <li>- Expand the insurance system for damages by flood and storm.</li> <li>- Operate the farm household income stabilization program.</li> <li>- Establish the global warming adaptation committee.</li> <li>- Introduce the system for calculating the crop damage.</li> <li>- Formulate the long-term development plan for rural villages.</li> <li>- Operate the special task force team for main areas of production.</li> </ul>	<ul style="list-style-type: none"> <li>- Promote the insurance system for agricultural disasters.</li> <li>- Promote the insurance system for damages by flood and storm.</li> <li>- Settle down the programs to help farm households have stable income.</li> <li>- Operate the global warming adaptation committee.</li> <li>- Build up the system for calculating the crop damage.</li> <li>- Settle down the long-term development plan for rural villages.</li> </ul>	<ul style="list-style-type: none"> <li>- Promote the insurance system for agricultural disasters.</li> <li>- Promote the insurance system for damages by flood and storm.</li> <li>- Settle down the programs to help farm households have stable income.</li> <li>- Operate the global warming adaptation committee.</li> <li>- Settle down the system for calculating the crop damage and the support system.</li> </ul>
Public relations & education	<ul style="list-style-type: none"> <li>- Train the agricultural people specialized in risk management.</li> <li>- Train the consultants specialized in risk management.</li> <li>- Expand the education of farm households in the insurance for crop disasters and the risk management.</li> </ul>	<ul style="list-style-type: none"> <li>- Train the agricultural people specialized in risk management.</li> <li>- Utilize the consultants specialized in risk management.</li> <li>- Popularize the manual about adaptation to global warming.</li> <li>- Build up the adaptation education system.</li> </ul>	<ul style="list-style-type: none"> <li>- Train the agricultural people specialized in risk management.</li> <li>- Complement the manual about adaptation to global warming.</li> <li>- Build up a systematic education system for each subject related, for their adaptation to global warming.</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>- Introduce the impact assessment model for productivity forecast and biological changes.</li> <li>- Build up the agricultural ecosystem monitoring system.</li> </ul>	<ul style="list-style-type: none"> <li>- Utilize the impact assessment model for productivity forecast and biological changes.</li> <li>- Operate the system for assessing the environmental impact on crop growth.</li> <li>- Make mid/long-term forecasts of the world food demand and supply.</li> </ul>	<ul style="list-style-type: none"> <li>- Build up the system for assessing the environmental impact of alternative water use on crop growth.</li> <li>- Make mid/long-term forecasts of the world food demand and supply.</li> </ul>
Technology & management applicable to farm households	<ul style="list-style-type: none"> <li>- Control the crop growth rate, greenhouse cultivation, agricultural chemicals, and weeds.</li> <li>- Cultivate the crops adapted to climate change.</li> <li>- Fertilize the soil by improving the alkali soil.</li> <li>- Install the water management for individual farm households.</li> <li>- Utilize the risk avoidance crop insurance.</li> </ul>	<ul style="list-style-type: none"> <li>- Fertilize the soil by improving the alkali soil.</li> <li>- Prepare the irrigation schedule to enhance the efficiency of water use.</li> <li>- Participate in the income stabilization program.</li> <li>- Diversify the farm household revenues through crop diversification.</li> </ul>	<ul style="list-style-type: none"> <li>- Change the places of cultivation to proper climate.</li> <li>- Fertilize the soil by improving the alkali soil.</li> <li>- Prepare the irrigation schedule to enhance the efficiency of water use.</li> </ul>

- Crop-level adaptation to climate change is expected to be the key in minimizing future yield losses and may involve: **changing crop cultivars, sowing time, cultivation techniques, and/or irrigation practices.**
- Last but not the least; **IPCC says limiting global warming to 1.5 °C will require drastic action.**
- The world would have to **curb its carbon emissions by at least 49% of 2017 levels by 2030** and then achieve carbon neutrality by 2050 to meet this target- IPCC.
- Humanity has a limited window in which it can hope to avoid the worst effects of climate change.

# सक्षम

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## SEMICONDUCTORS

## GS-III SCIENCE & TECHNOLOGY

### Context

- Mumbai-based conglomerate Tata Group, is now planning to get into semiconductor manufacturing.

### About

- Currently, the world is experiencing a shortage of chips and semiconductors due to COVID-19.
- In places like South Korea and Taiwan being shut down. This has pent-up demand for semiconductors.

### Semiconductors in India

- India imports 100% of its semiconductors** while also enjoying the distinct advantage as a leading global semiconductor chip designer.
- There have been challenges in setting up of Semiconductor Wafer Fabrication (FAB) units in India.
- India is still not at par in terms of the basic infrastructure needed.
- There is also constant price pressure from other global players, particularly China.

### Prospects

- With the newly heralded era of Internet of Things (IoT) Indian semiconductor industry is set for bright prospects provided India's generic **obstacles like redtape-ism, fund crunch and infrastructural deficits are adequately addressed**.
- In 2016, **the government allowed 100% FDI in the Electronics System Development and Maintenance (ESDM) sector** through an automatic route to attract investments including from Original Equipment Manufacturers (OEMs) and Integrated Device Manufacturers (IDMs).
- The Department of Electronics and Information Technology (DeitY) has established an **Electronics Development Fund (EDF)** managed by Canara Bank to provide risk capital and to attract venture funds, angel funds and seed funds for incubating R&D and fostering the innovative environment in the sector.
- Some of the initiatives outlined in the National Electronics policy and the National Telecom policy are already in the process of implementation, such as Preferential Market Access (PMS), Electronics Manufacturing Clusters (EMC) and Modified Special Incentive Package Scheme (M-SIPS).
- With the implementation of fabrication capabilities in India, the country could achieve a degree of self-sufficiency in the sector of semiconductors.

## INDIGAU

## GS-III SCIENCE & TECHNOLOGY

### Context

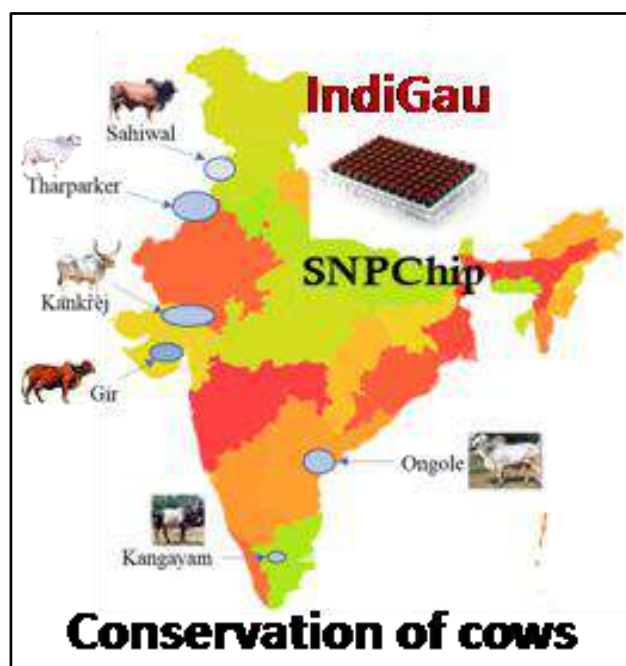
- Union Minister of Science & Technology released "IndiGau"

### About

- IndiGau is India's first Cattle Genomic Chip for the conservation of pure varieties of indigenous cattle breeds like, Gir, Kankrej, Sahiwal, Ongole etc.
- This chip will have practical utility in the Governments schemes to achieve the goal of conservation of our own breeds with better characters and help towards doubling of farmers' income by 2022.
- The manufacturing of this chip is in synergy with RashtriyaGokul Mission.
- This indigenous chip was developed by the concerted efforts of scientists of National Institute of Animal Biotechnology (NAIB), Hyderabad, and an **autonomous institution under the aegis of the Department of Biotechnology**.

### Importance of conserving Indigenous Breeds

- Crossbreds are more productive** but their tendency to wilt under Indian conditions of low input and harsh climate and susceptibility to tropical diseases warrants the conservation and development of indigenous breeds.



- The annual loss in milk production of cattle and buffaloes due to thermal stress in 2020 is about 3.2 million tonnes of milk.
- Indigenous cattle are well known for their quality of heat tolerance and ability to withstand extreme climatic conditions.
- So, the urgency for protection and conservation of indigenous breeds cannot be over emphasised.
- For instance breeds like **Punganur, Vechur and Krishna Valley** are rapidly declining and require immediate attention.

### Rashtriya Gokul Mission

- Rashtriya Gokul Mission (RGM) was launched in December 2014 for development and conservation of indigenous breeds through selective breeding in the breeding tract and genetic up-gradation of nondescript bovine population.
- Rashtriya Gokul Mission will be implemented through the "State Implementing Agency (SIA viz Livestock Development Boards).
- The scheme comprises of two components namely National Programme for Bovine Breeding (NPBB) and National Mission on Bovine Productivity (NMBP).

### Objectives

- The RashtriyaGokul Mission has the following objectives:
  - o To undertake breed improvement programme for indigenous cattle breeds so as to improve the genetic make-up and increase the stock.
  - o To enhance milk production and productivity of indigenous bovines.
  - o To upgrade nondescript cattle using elite indigenous breeds like Gir, Sahiwal, Rath, Deoni, Tharparkar, Red Sindhi.
  - o To distribute disease-free high genetic merit bulls of indigenous breeds for natural service.

### Initiatives under RashtriyaGokul Mission

- **Awards** for encouraging farmers/breeder societies to rear Indigenous breeds of bovines:
- **GopalRatna awards:** for farmers maintaining the best herd of Indigenous Breed and practicing best management practices.
- **Kamdhenu awards:** for best managed Indigenous herd by Institutions/Trusts/ NGOs/ Gaushalas or best-managed Breeders' societies.
- **National Kamdhenu Breeding Centre:** to develop and conserve Indigenous Breeds in a holistic and scientific manner.
- **Gokul Gram:** These are integrated cattle development centers, 'Gokul Grams' to develop indigenous breeds including up to 40% nondescript breeds (belonging or appearing to belong to no particular class or kind).
- **E-PashuHaat:** An e-market portal connecting breeders and farmers, for quality- disease-free bovine germplasm.
- **National Bovine Genomic Center for Indigenous Breeds (NBGC-IB)** for selection of breeding bulls of high genetic merit at a young age using highly precise gene-based technology.
- **Advanced Reproductive Technology:** In-vitro Fertilization (IVF)/ Multiple Ovulation Embryo Transfer (MOET) and sex-sorted semen technique to improve the availability of disease-free female bovines.
- **Pashu Sanjivni:** to estimate bovine productivity by registration of bovine animals in milk production.

## NUCLEAR FUSION AND FISSION

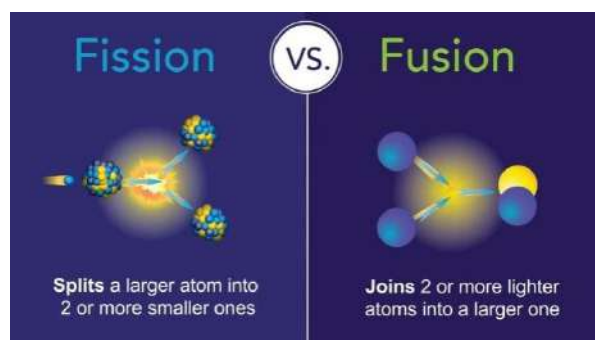
## GS-III SCIENCE & TECHNOLOGY

### Context

- Lawrence Livermore National Laboratory in California announced that an experiment carried out in its National Ignition Facility has made a breakthrough in nuclear fusion research.

### About the Experiment

- In the experiment, lasers were used to heat a small target or fuel pellets.
- These pellets containing deuterium and tritium fused and produced more energy.
- The team noted that they were able to achieve a yield of more than 1.3 megajoules.
- The megajoule of energy released in the experiment is indeed impressive in fusion terms, but in practice, this is equivalent to the energy required to boil a kettle.



### Nuclear Fusion

- Nuclear fusion is defined as the combining of several small nuclei into one large nucleus with the subsequent release of huge amounts of energy.
- Nuclear fusion powers our sun and harnessing this fusion energy could provide an unlimited amount of renewable energy.



## Nuclear Fission

- Fission is the process of **splitting a nucleus in two**.
- Inside each uranium fuel pellet, there are millions of uranium nuclei.
- When these nuclei are split, a huge amount of energy is released.
- Some of this energy is from radiation, but the biggest source is kinetic energy.
- This is the energy that produces heat inside a reactor, which in turn is used to generate steam, and ultimately creates electricity.

## Why is fusion a better option than fission to generate power?

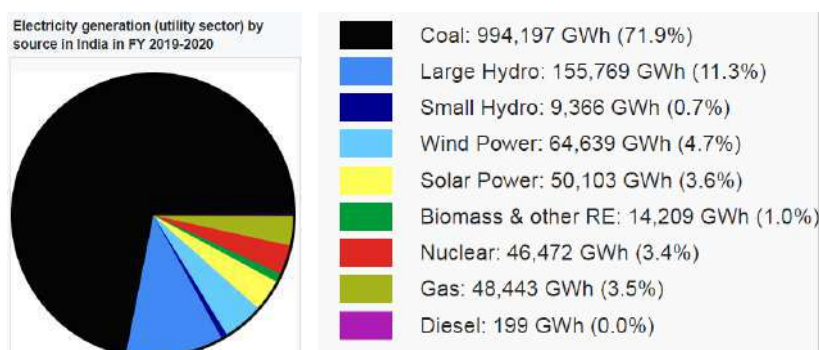
- Fusion is much better than fission in a number of ways. Firstly, nuclear fusion **requires less fuel than fission**.
- On top of that, fusion is carried out by using deuterium (an isotope of hydrogen) as fuel, which is quite abundant in nature.
- In contrast, the fuel necessary for fission (uranium, plutonium or thorium) is very hard to get – and highly expensive.
- Furthermore, unlike fission, nuclear fusion **does not produce any radioactive waste**; it only produces helium atoms as a byproduct, which we can actually use to our benefit in various ways.
- Since fusion doesn't produce runaway chain reactions the way fission can, there's practically no risk of a meltdown in the case of nuclear fusion.

## Why don't we use Nuclear Fusion then?

- For fusion to occur on Earth, we need a temperature of at least 100 million degrees Celsius – six times hotter than the core of the sun.
- The sun is a natural fusion reactor which makes up for its measly 15 million degrees with the intense pressure created by its core's gravity.
- Experimental fusion reactors do exist -- but they consume way more power than they produce, which basically defeats the purpose of generating power using fusion.
- It's also quite difficult to find materials that can withstand the reaction.
- It requires a lot of excess energy in order to keep the fusion reaction going once it has started.
- Today, we conduct fusion reactions in a machine called the **tokamak**.
- Recently, China's "artificial sun" set a new record after it ran at 120 million degrees Celsius for 101 seconds, according to the state media.
- The Experimental Advanced Superconducting Tokamak (EAST) device designed by China replicates the nuclear fusion process carried out by the sun.

## India's Nuclear Share

- The share of nuclear power in the total electricity generation in the country is about **3.1 per cent in 2020-21** – Ministry of Science and Technology.

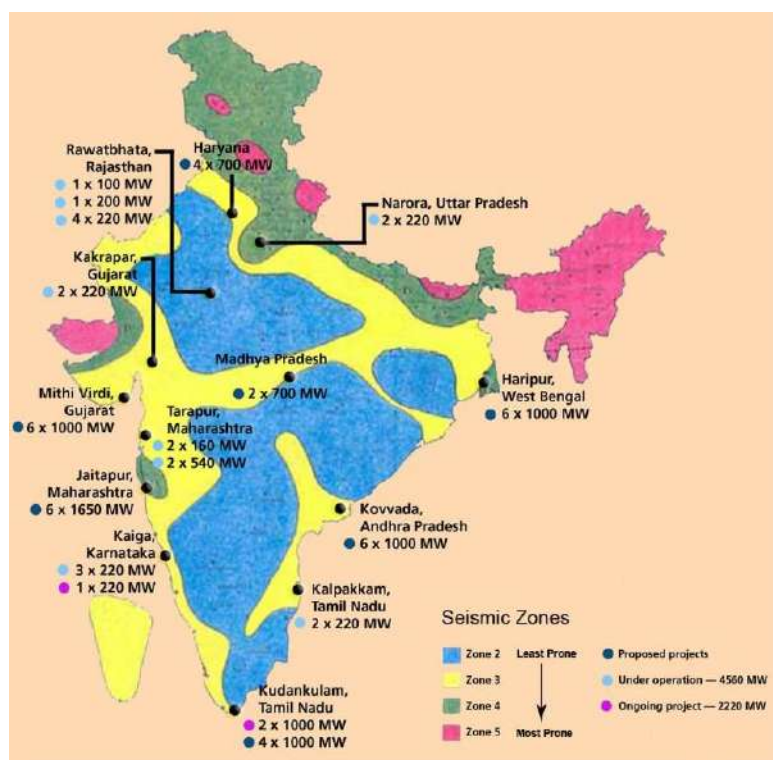


Nuclear Fission vs Nuclear Fusion	
A heavy nucleus breaks up to form two lighter nuclei.	Two nuclei combine to form a heavy nucleus.
It involves a chain reaction.	Chain reaction is not involved.
The heavy nucleus is bombarded with neutrons.	Light nuclei are heated to an extremely high temperature.
We have proper mechanisms to control fission reaction for generating electricity.	Proper mechanisms to control fusion reaction are yet to be developed.
Disposal of nuclear waste is a great environmental problem.	Disposal of nuclear waste is not involved.
Raw material is not easily available and is costly.	Raw material is comparatively cheap and easily available.



## Nuclear Power in India

- **Genesis:** India's nuclear programme can trace its origins to 1944 and its efforts in 3 stage technology were established by HomiJehangirBhabha when he founded the nuclear research centre, the Tata Institute of Fundamental Research.
- Today, India has 23 nuclear reactors in operation in 7 nuclear power plants, with a total installed capacity of 7,480 MW.
- Nuclear power produced a total of 43 TWh in 2020-21, contributing 3.11% of total power generation in India (1,382 TWh).
- **Kudankulam Nuclear Power Plant is the largest nuclear power station in India,** situated in Tamil Nadu.



- A pressurized heavy-water reactor (PHWR) is a nuclear reactor that uses heavy water (deuterium oxide D<sub>2</sub>O) as its coolant and neutron moderator. PHWRs frequently use natural uranium as fuel, but sometimes also use very low enriched uranium.
- The PHWRs are also more efficient than comparable Light Water Reactor as they produce more energy per kilogram of mined uranium. These advantages make PHWRs ideal for India's nuclear energy programme. Opponents of PHWRs cite the high cost of heavy water as a drawback. Heavy water does occur naturally, however in much smaller quantities than regular water.

Heavy Water vs Light Water		
More Information Online <a href="http://WWW.DIFFERENCEBETWEEN.COM">WWW.DIFFERENCEBETWEEN.COM</a>		
	Heavy Water	Light Water
<b>DEFINITION</b>	Heavy water is a form of water which has its two hydrogen atoms of H <sub>2</sub> O replaced by deuterium atoms	Soft water is ordinary water which has two hydrogen atoms and an oxygen atom in its molecule
<b>CHEMICAL COMPOSITION</b>	Contains deuterium and oxygen atoms	Contains hydrogen and oxygen atoms
<b>MOLAR MASS</b>	20.0276 g/mol	18 g/mol
<b>CHEMICAL FORMULA</b>	D <sub>2</sub> O	H <sub>2</sub> O
<b>USES</b>	Useful in nuclear reactors and studies of chemical and biochemical processes (used as an isotropic tracer)	Essential for drinking, as a component in our body (for proper functioning of cells), for cleaning purposes, etc.

## Nuclear Fuel Reserves

### Uranium

- Found in Singhbhum and Hazaribagh districts of Jharkhand, and Gaya District of Bihar, and in sedimentary rocks of Saharanpur District of Uttar Pradesh.
- The largest source of uranium comprise the monazite sands, both beach and alluvial.
- Monazite sand rich in uranium is found in Kerala.
- Some uranium is found in the copper and zinc mines of Udaipur (Rajasthan).
- In 2011 large deposits of uranium were discovered in the Tummalapalle belt in Andhra Pradesh and in the Bhima basin in Karnataka.
- The Tummalapalle belt uranium reserves promises to be one of the world's top 20 uranium reserves discoveries.
- The total reserves of uranium as estimated by the Department of Atomic Energy, are about 31,000 tonnes.
- **Kazakhstan is the largest supplier of uranium to India providing 5,000 tonnes during 2015-19.**
- India also imports uranium fuel from Russia, Kazakhstan, Uzbekistan, France and Canada.
- **Kazakhstan is the world's largest producer of uranium.**
- In recent years, India has shown increased interest in thorium fuels

### Thorium

- It is derived from monazite. It is produced in Kerala, Jharkhand, Bihar, Tamil Nadu, and Rajasthan.
- In addition to uranium and thorium, beryllium and lithium are also the atomic minerals found mainly in Jharkhand, Madhya Pradesh, and Rajasthan.
- India has vast thorium reserves and quite limited uranium reserves.
- **Australia has the highest thorium resources** followed by the US, Turkey and India.

#### Other Atomic Minerals found in India

**Beryllium:** Its reserves are in the states of Rajasthan, Jharkhand, Andhra Pradesh and Tamil Nadu.

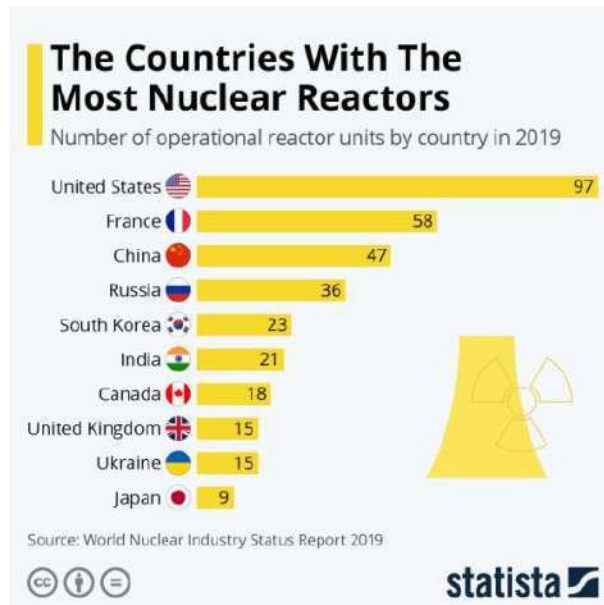
**Zircon:** It is found mainly in the coastal sand of Kerala.

**Antimony:** It is found Himachal Pradesh and Madhya Pradesh.

**Graphite:** Odisha is the largest producer of graphite. Its largest reserve is in Ramanathapuram in Tamil Nadu. Its reserves are also in Jharkhand, Rajasthan and Andhra Pradesh.

## Nuclear Energy around the world

- The **USA is the world's largest producer of nuclear power**, accounting for more than 30% of worldwide nuclear generation of electricity.
- The country's nuclear reactors produced 843 billion kWh in 2019, about 19% of total electrical output.
- Tokyo Electric Power Co.'s (TEPCO) **Kashiwazaki-Kariwa plant in Japan is currently the world's largest nuclear power plant**, with a net capacity of 7,965MW.



## GLOBAL CYBER SECURITY INDEX (GCI) 2020

## GS-III SECURITY & DEFENSE

### Context

- According to a United Nations report, **India has jumped 37 places to 10th position in the Global Cyber Security Index (GCI) 2020.** Meanwhile at UNSC India has also flagged sophisticated use of cyberspace by terrorists and reiterated its committed to open, secure, free, accessible & stable cyberspace.

### About the Global Cyber Security Index (GCI) 2020

- The GCI is a **composite index created, analyzed and published by the International Telecommunication Union**, a specialized agency of the United Nations.
- The latest report is the **fourth GCI edition**, the first version of which was launched six years ago.
- Breaking into the top 10 in the list, India also **ranks fourth in the Asia-Pacific region.**
- GCI measures countries' commitment to cybersecurity on a global scale, to raise awareness of the importance and various dimensions of the issue.
- The **top rank** in the GCI was achieved by **the US** with a score of 100. The **UK and Saudi Arabia finished second.**
- Other countries at the top of the index include South Korea and Singapore rank fourth globally, Russia, the United Arab Emirates and Malaysia at fifth place, Lithuania at sixth, Japan at seventh and Canada, France and India at the subsequent positions.
- Each country's development or engagement is assessed along **five pillars**:
  1. Legal measures
  2. Technical measures
  3. Organizational measures
  4. Capacity development, and
  5. Cooperation- and then aggregated into a composite score

### Flagging Cyber security concerns at UNSC

- India raised **concerns about cross-border state-sponsored cyber-attacks** during the UNSC Open Debate on "Maintenance of International Peace and Security: Cyber Security".
- The world is already witnessing the use of cyber tools to compromise state security through **attacking critical national infrastructure**, even **disrupting social harmony through radicalization.**
- "Open societies" have been "particularly vulnerable" to cyber-attacks and "disinformation" campaigns, as opposed to states like China that control all forms of online communication.
- The **borderless nature of cyberspace and more importantly, the anonymity of actors** involved have challenged the traditionally accepted concepts of sovereignty, jurisdiction and privacy.
- Countries cannot work in "isolation" and member states have to **adopt a "collaborative" rules-based approach** in cyberspace and work towards ensuring its openness, stability and security.
- Fostering **equitable access to cyberspace and its benefits** should also form an important component of this international co-operation.
- There is a need to **bridge fissures in digital inequalities through "capacity building".**

### What is cyberspace?

- A global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the internet, telecommunications networks, computer systems, and embedded processors and controllers.

### Need for Cyber security

#### Global Scenario

- The countries which are believed to have the most **developed cyber warfare capabilities** are the United States, China, Russia, Israel and the United Kingdom.
- Increased Digital usage Post-Covid:** Critical infrastructure is getting digitised in a very fast way — this includes financial services, banks, power, manufacturing, nuclear power plants, etc.
- Cyber-attacks continue to pose **risks to critical infrastructure** as can be seen with the July 2018 incident in the U.S., when hackers gained access to the control rooms of utility companies, as well as the September 2019 drone attacks on the Saudi Aramco refineries.
- WEF Global Risks Report 2019 notes that malicious cyber-attacks and lax cyber security protocols led to massive breaches of personal information in 2018.



## Indian Scenario

- Various programs of government such as Aadhaar, MyGov, Government e-Market, DigiLocker, Bharat Net etc. prompt users to transact online.
- Start-ups digital push
- India the **fifth most vulnerable country in the world** in terms of cyber security breaches.
- India saw at least **one cybercrime every 10 minutes** during the first half of 2017 including more sophisticated cyber threats such as the Wanna Cry and Petya ransomware.
- India **accounted for 5.09 per cent of all cyber attacks** such as malware, spam and phishing attacks detected globally in 2017.
- The **estimated cost of cyber-attacks in India stands at four billion dollars which is expected to reach \$20 billion in the next 10 years.**
- India **ranks 3rd in terms of number of internet users after USA and China.**
- India secures a spot amongst the top 10 spam-sending countries in the world alongside USA
- In February 2019, India's Ministry of Electronics and IT (MeitY) outlined **India's digital vision of unlocking the potential of a \$1 trillion digital economy by 2025 from its current value of around \$200 billion.** To realize this potential and build a stable digital economy, it is imperative that all government and private digital systems are safe, secure and resilient.

## Challenges in ensuring cyber security

- **Digital illiteracy** makes Indian citizens highly susceptible to cyber fraud, cyber theft, etc.
- In India, majority of devices used to access internet have **inadequate security infrastructure** making them susceptible to malwares
- **Rampant use of unlicensed software and underpaid licenses** also make them vulnerable.
- **Lack of adoption of new technology**
- There are variety of devices used with **non-uniform standards** which makes it difficult to provide for a uniform security protocol.
- **Import dependence** for majority of electronic devices put India into a vulnerable situation.
- There are currently around 30,000 cyber security vacancies in India but **demand far outstrips supply of people with required skills.**
- Even advanced precision threats carried out by hackers is **difficult to attribute to specific actors, state or non- state.**
- **Lack of coordination** among various agencies working for cyber security.
- **Absence of geographical barriers, majority of servers located outside India** are other factors.

## Cyber threats and sources

### Sources

- Nation States
- Cyber Criminal Organisations
- Terrorists, DTOs, etc.
- Hackers / Hacktivists

### Threats

- Malware – Malicious software to disrupt computers
- Viruses, worms
- Theft of Intellectual Property or Data
- Hactivism – Cyber protests that are socially or politically motivated
- Mobile Devices and applications and their associated Cyber Attacks
- Social Engineering – Entice Users to click on malicious links
- Spear Phishing – Deceptive Communications (e-mails, texts, tweets)
- Domain Name System (DNS) Attacks
- Router Security – Border Gateway Protocol (BGP) Hijacking
- Denial of Service (DoS) – blocking access to websites
- AI and machine learning, IoT, 5G offer number of threats

## Main Cyber Players and their Motives

- **Cyber Criminals:** Seeking commercial gain from hacking banks & financial institutions as well as phishing scams & computer ransom ware
- **Cyber Terrorists:** Mission to penetrate & attack critical assets, and national infrastructure for aims relating to political power & "branding"
- **Cyber Espionage:** Using stealthy IT Malware to penetrate both corporate & military data servers in order to obtain plans & intelligence
- **Cyber Hacktivists:** Groups such as "Anonymous" with Political Agendas that hack sites & servers to virally communicate the "message" for specific campaigns

## Institutional framework: Policies, Acts, Schemes

- **INFORMATION TECHNOLOGY ACT 2000** continues to be the omnibus legislation that governs cyber security policy and it includes provisions for e-governance, e-commerce, data protection, cyber offences, critical information infrastructure, interception, monitoring and cyber terrorism.
- **REGULATORY GUIDELINES** are issued by sectoral regulators such as RBI, TRAI, SEBI, IRDA for organizations under their



purview.

- **NATIONAL CYBER SECURITY POLICY (NCSP) 2013** document was prepared by the Ministry of Communications and Information Technology to facilitate the creation of a secure cyberspace ecosystem and strengthen the existing regulatory frameworks.
- **CERT-In Rules 2013** outline proactive measures for protecting cyber security, including forecasts and alerts on security incidents, and the prediction and prevention of future incidents.
- The Ministry of Home Affairs developed the **NATIONAL INFORMATION SECURITY POLICY AND RELATED GUIDELINES** in 2014 for securing classified information in all government organizations.
- **Draft IoT Policy** was released by MeitY in 2014-15 with a view to solicit inputs from the industry and others on cyber security concerns in the IoT ecosystem.
- **DRAFT M2M (MACHINE-TO-MACHINE) TELECOM ROADMAP:** Developed by DoT, discusses cyber security issues in M2M interactions.
- **NATIONAL DIGITAL COMMUNICATIONS POLICY 2018:** outlines a focus on ensuring individual autonomy and choice, data ownership, privacy and security; while recognizing data as a crucial economic resource.
- MeitY has engaged with the Data Security Council of India for creating cybercrime awareness among law enforcement authorities through workshops at different cities across India.
- A **NATIONAL CYBER SECURITY STRATEGY 2020** is being formulated by the Office of National Cyber Security Coordinator at the National Security Council Secretariat. Aim is to improve cyber awareness and cybersecurity through more stringent audits.

#### Offices

- **INDIAN COMPUTER EMERGENCY RESPONSE TEAM (CERT-IN)**, established within the Ministry of Electronics and Information Technology (MeitY), issues alerts and advisories regarding the latest cyber threats and countermeasures on a regular basis. Power sector CERTs have been created.
- PMO includes within it several cyber portfolios. Among these are the **NATIONAL SECURITY COUNCIL**, usually chaired by NSA, and NSA also chairs the **NATIONAL INFORMATION BOARD**, which is meant to be the apex body for cross-ministry coordination on cybersecurity policymaking.
- Office of the **NATIONAL CYBER SECURITY COORDINATOR** was established under the National Security Council Secretariat as the nodal agency for cyber security established for the purpose.
- **NATIONAL CRITICAL INFORMATION INFRASTRUCTURE PROTECTION CENTER** was established for the protection of critical information infrastructure in the country, as per the provisions of section 70A of the Information Technology (IT) Act, 2000.
- **Proposed CERT-Fin:** creation of a separate CERT for the financial services sector.
- **IB-CART** at IDRBT: CERT-IN has created a Centre of Excellence (CoE) for cyber security within IDRBT in Hyderabad.
- **NATIONAL CYBER COORDINATION CENTRE** was set up to generate necessary situational awareness of existing and potential cyber security threats and enable timely information sharing for proactive, preventive and protective actions by individual entities.
- **84 SECURITY AUDITING AGENCIES** have been empaneled to support and audit implementation of Information Security Best Practices.
- The government has launched the '**CYBER SWACHHTA KENDRA**' (Botnet Cleaning and Malware Analysis Centre) that provides detection of malicious programs and free tools to remove them.

#### Global cyber security norms and frameworks

- There have been multiple global forums such as **Global Commission on the Stability of Cyberspace**.
- **ITU Global Cyber Security Agenda & Global Cyber Security Index:** goal is to foster a global culture of cyber security and its integration at the core of information and communication technologies.
- **Tallinn Manual 2.0:** is an influential resource for legal frameworks around cyber issues and details four sections comprising general legal principles in the cyber domain as well as specific specialized legal regimes.
- **UN Group of Governmental Experts (UN GGE):** comprises 20 nations equitably distributed based on geography and includes nation states regarded as leaders in cyber areas.
- The UN General Assembly adopted two resolutions on cyber, one creating a **working group to study cyber norms and possible dialogues**, and another setting up a **working group of government experts to study applicability of international law to states in cyberspace**.
- **Paris Call for Trust and Security In Cyberspace:** launched by French President in 2018, as a high-level declaration for cooperation.
- **Open Ended Working Group at UN:** developing norms of responsible state behaviour in cyber space.
- **Cyber security Tech Accord:** Around 34 global technology and security companies came together in 2018 to sign a Cyber security Tech Accord with a pledge to "protect and empower civilians online and to improve the security, stability and

resilience of cyberspace.”

- **Budapest convention on cybercrime:** This convention of the council of Europe is the only binding international instrument on this issue that addresses Internet and computer crime by harmonizing national laws, improving legal authorities for investigative techniques, and increasing cooperation among nations.

### Way forward

- Much-needed **SYNERGY** among various institutions and work out a coordinated approach to cyber security, including cyber deterrence.
- India needs to make a proper assessment of an **OFFENSIVE CYBER DOCTRINE** adopted by many countries where they are acquiring offensive capabilities by building ‘cyberweapons’ to do enormous damage to the adversary’s networks.
- **DOCTRINE ON CYBER CONFLICTS** that holistically captures India’s approach to cyber conflict, either for conducting offensive cyber operations, or the extent and scope of countermeasures against cyber-attacks.
- Currently the average cost of a **CYBER INSURANCE** in India is around \$7.5 million which in comparison to developed countries is about 20-25% lesser.
- **INVESTMENT IN IT SECURITY** has to be increased with adoption of a cybersecurity plan, purchase of cyber-insurance as well as appointment of a data security officer.
- The regulations need to keep pace with the changing cyber scenario to ensure penalties serves as deterrence for crimes.
- **SKILL DEVELOPMENT:** By 2025, the cybersecurity space is expected to generate around a million jobs in India.
- **SECURITY AUDIT** adhering to international standards may be made applicable for all govt. websites, applications before hosting and publishing.
- Establishing cybersecurity framework at state level.

## INS VIKRANT

## GS-III SECURITY & DEFENSE

### Context

- The country’s **maiden indigenous aircraft carrier (IAC-1)**, built by **Cochin Shipyard Ltd.**, sets off for sea trials off Kochi.
- Like Vikramaditya, IAC-1 has a **STOBAR** (short take off but arrested recovery) system of aircraft launch and recovery on the flight deck.
- The carrier is armed with the **Barak LR-SAM** (long range surface-to-air missile) air defence and **AK-630** close-in weapon system besides a slew of advanced sensors and an electronic warfare suite.
- The IAC-1 construction catapulted India into an elite league of countries capable of building complex aircraft carriers.

### Italian, Russian help

- While the **design was done with help from the Italian firm Fincantieri**, the Russians collaborated in designing and developing the aviation complex.

### INS Vikrant

- The IAC would be commissioned as **INS Vikrant in the first half of 2022**, which would be the most potent sea-based asset.
- It is expected to have a top speed of 30 knots (approximately 55 kmph) and is propelled by four gas turbines.
- Its endurance is 7,500 nautical miles at 18 knots (32 kmph) speed.
- The vessel can carry up to 1,500 personnel and has 2,300 compartments.
- The ship shall operate MiG-29K fighter aircraft, Kamov-31 Air Early Warning Helicopters, the soon to be inducted MH-60R multi-role helicopter and the indigenously manufactured Advanced Light Helicopters.
- With an overall length of 263 metre and a breadth of 63 metre, it is **the largest vessel made in India** and carries a **price tag of about 20,000 crore**.
- It has ability to project Air Power over long distances, including Air Interdiction, Anti-Surface Warfare, offensive and defensive Counter-Air, Airborne Anti-Submarine Warfare and Airborne Early Warning.



### Significance of IAC

- IAC is a shining example of ‘AatmaNirbhar Bharat’ as it has nearly **75 per cent indigenous content - from design to steel used in construction to key weapons and sensors**.
- It help secure India's interests in maritime domain.
- It will help to realize the **vision of SAGAR** (Security and Growth for All in the Region) and the wider goal of a **free, open and inclusive Indo-Pacific to ensure peace and stability** in the region.

## THE MALABAR EXERCISE OF QUAD NATIONS

## GS-III SECURITY & DEFENSE

### Context

- Malabar, which began as a bilateral exercise, is now one of the cornerstones of military interoperability of the Quad forces.

### What is Malabar?

- It is a **multilateral war-gaming naval exercise** that was started in 1992.
- It began as a **bilateral exercise between the navies of India and the United States**.
- Navies of the four member nations of the Quadrilateral Security Dialogue, or the Quad – India, the United States, Japan, and Australia – are participating in the **25th edition of the Malabar Exercise 2021**.
- From 2002 onward, the exercise has been conducted every year.
- Japan and Australia first participated in 2007**, and since 2014, India, the US and Japan have participated in the exercise every year.

### How did it the exercise expand from a bilateral exercise?

- Japan joined the naval exercise in 2015 as a permanent member, and Malabar became a trilateral exercise.
- Last year, for the first time in over a decade, the exercise saw the **participation of all four Quad members**.
- It was the **second time that Australia participated in the Malabar series of Naval exercises**.

### Why did Australia return, and why is its participation important?

- The main reason is **China**.
- As a grouping of four powerful navies in the Indo-Pacific region, the Quad has irked China, which is flexing its military power globally.
- Earlier, it was due to the possibility of riling China that India had not expanded Malabar and, to an extent, why Australia had pulled out after 2007.
- But with China's relations vexed with all four participating nations – and with an ongoing military standoff in eastern Ladakh for more than 15 months – the Malabar sends a strong message.

### Does India conduct any other naval exercises with these countries?

- India has several kinds of **bilateral and multilateral military exercises** with all these nations.
- Last year, the Indian Navy conducted a number of **Passage Exercises (PASSEX)** with the navies of Japan, Australia, and the US.

# CSE PRELIMS 2021

# ECONOMY TEST



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## GLOBAL TEMPERATURE: UN'S CODE RED

## GS-III ENVIRONMENT & ECOLOGY

### Why in news?

- Recently, the Intergovernmental Panel on Climate Change (IPCC) released the first part of its Sixth Assessment Report (AR6) titled *Climate Change 2021: The Physical Science Basis*.

### About

- The Climate Change 2021: The Physical Science Basis report has been prepared by the IPCC's Working Group I and is the first of the three installments of the Sixth Assessment Report (AR6).
- It was prepared by 234 authors from 65 countries over three years, collating current knowledge on climate change through the review of over 14,000 studies.
- It provides clarity on the future of the planet as concentrations of greenhouse gas (GHG) emissions continue to accumulate unabated in the atmosphere.
- Scientists are now confident that almost all the observed warming of the planet since the late-1800s is human-caused.
- The two remaining parts would be released in 2022.
- It sets the stage for the Conference of Parties (CoP) 26 conference in November 2021.

### Key takeaways

#### Average Surface Temperature

- The average surface temperature of the Earth will cross 1.5 degrees Celsius in the next 20 years, and 2°C by the middle of the century without sharp reduction of emissions.
- There will be further warming in the coming decades unless there are immediate, strong and rapid reductions to global emissions.
- Thus, even if emissions are brought to net-zero by mid-century, there will be an "overshoot" of the 1.5°C limit by 0.1°C.
- The last decade was hotter than any period of time in the past 125,000 years.
- Global surface temperature was 1.09°C higher in the decade between 2011-2020 than between 1850-1900

#### Carbon dioxide (CO<sub>2</sub>) Concentrations

- CO<sub>2</sub> concentrations are the highest in at least two million years.
- Humans have emitted 2,400 billion tonnes of CO<sub>2</sub> since the late 1800s.
- In fact, emissions have grown far more rapidly than expected in 1988, when the IPCC was established.
- Most of this can be attributed to human activities, particularly the burning of fossil fuels.
- The effect of human activities has warmed the climate at a rate unprecedented in 2,000 years.
- Carbon budget for a 66 per cent chance of keeping warming to below 1.5°C is now 400 billion tonnes of CO<sub>2</sub>. This means world has depleted 86 per cent of available budget.

#### Sea- Level Rise

- Sea-level rise has tripled compared with 1901-1971.
- The Arctic Sea ice is the lowest it has been in 1,000 years.
- Many of the impacts such as sea level rise and melting of glaciers will continue for many years
- About 50% of the sea level rise is due to thermal expansion.

#### Precipitation & Drought

- Every additional 0.5 °C of warming will increase hot extremes, extreme precipitation and drought.
- Additional warming will also weaken the Earth's carbon sinks present in plants, soils, and the ocean.

#### Other effects

- Heat extremes have increased while cold extremes have decreased, and these trends will continue over the coming decades over Asia.
- The freezing level of mountains are likely to change and snowlines will retreat over the coming decades.
- Retreating snowlines and melting glaciers can cause a change in the water cycle, the precipitation patterns, increased floods as well as an increased scarcity of water in the future.

#### Effect on Indian Sub-continent

- Heat waves and humid heat stress will be more intense and frequent during the 21st century over South Asia.
- Both annual and summer monsoon precipitation projected to increase.
- The sea surface temperature over Indian ocean is likely to increase by 1 to 2 °C when there is 1.5°C to 2°C global warming.



### ABOUT INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

- It is the international body for assessing the science related to climate change.
- It was **set up in 1988** by the **World Meteorological Organization (WMO)** and **United Nations Environment Programme (UNEP)** to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
- IPCC assessments provide a scientific basis for governments at all levels to develop climate related policies, and they underlie negotiations at the UN Climate Conference – the United Nations Framework Convention on Climate Change (UNFCCC).
- IPCC **does not itself engage in scientific research**.
- Instead, it asks scientists from around the world to go through all the relevant scientific literature related to climate change and draw up the logical conclusions.

### About Assessment reports

- The assessment reports are the **most widely-accepted scientific opinion about climate change**.
- They **form the basis for government policies to tackle climate change**, and also provide the scientific foundation for the **international climate change negotiations**.
- So far, **five assessment reports have been produced**, the first one being released in 1990.
- The fifth assessment report had come out in 2014 in the run up to the climate change conference in Paris
- The IPCC reports are created by **three working groups of scientists**.
  1. **Working Group-I**, whose report has been released recently, deals with the scientific basis for climate change.
  2. **Working Group-II** looks at the likely impacts, vulnerabilities and adaptation issues
  3. **Working Group-III** deals with actions that can be taken to combat climate change.

### Summary of previous assessments reports

PREVIOUS IPCC ASSESSMENT REPORTS: HIGHLIGHTS	
<p><b>FIRST REPORT, 1990</b></p> <ul style="list-style-type: none"> <li>■ Emissions resulting from human activities are increasing atmospheric concentrations of greenhouse gases</li> <li>■ Global temperatures have risen by 0.3°–0.6°C in 100 years. In business-as-usual scenario, likely to increase by 2°C compared to pre-industrial levels by 2025, and 4°C by 2100</li> <li>■ Sea-level likely to rise 65 cm by 2100</li> <li>■ Report formed basis for negotiation of UN Framework Convention on Climate Change in 1992</li> </ul> <p><b>SECOND REPORT, 1995</b></p> <ul style="list-style-type: none"> <li>■ Revises projected rise in global temperatures to 3°C by 2100, and sea-level rise to 50 cm</li> <li>■ The scientific underpinning for Kyoto Protocol in 1997</li> </ul> <p><b>THIRD REPORT, 2001</b></p> <ul style="list-style-type: none"> <li>■ Revises predicted temperature rise to 1.4°–5.8°C by 2100 compared to 1990</li> <li>■ Rainfall to increase; sea-level likely to rise by 80 cm from 1990 by 2100.</li> <li>■ Frequency, intensity and duration of extreme weather events to increase</li> <li>■ Presents new and stronger evidence</li> </ul>	<p>to suggest most of warming attributable to human activities</p> <p><b>FOURTH REPORT, 2007</b></p> <ul style="list-style-type: none"> <li>■ Greenhouse gas emissions rose by 70% between 1970 and 2004</li> <li>■ Atmospheric concentrations of CO<sub>2</sub> in 2005 (379 ppm) the highest in 650,000 years</li> <li>■ In worst-case scenario, global temperatures could rise 4.5°C by 2100 from pre-industrial levels; sea-levels could be 60 cm higher than in 1990</li> <li>■ Wins 2007 Peace Nobel for IPCC</li> <li>■ Report is the scientific input for the 2009 Copenhagen climate meeting</li> </ul> <p><b>FIFTH REPORT, 2014</b></p> <ul style="list-style-type: none"> <li>■ Temperature rise by 2100 could be 4.8°C from pre-industrial times</li> <li>■ Atmospheric concentrations of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O “unprecedented” in last 800,000 years</li> <li>■ More frequent and longer heat waves “virtually certain”</li> <li>■ “Large fraction of species” face extinction</li> <li>■ Forms scientific basis for negotiations of Paris Agreement in 2015</li> </ul>

### Way forward

- This report must sound a death knell for coal and fossil fuels, before they destroy the planet. But the report also says that there is still a chance to stop the negative climate trends by mid-century by stopping the use of fossil fuels and stopping deforestation.

- **Reduce carbon emission:** There is a need for a drastic and immediate cut in carbon emissions, given that the changes to the climate already made are not reversible.
- All nations, especially the G20 and other major emitters, need to **join the net-zero emissions coalition and reinforce their commitments.**
- There is a need to **make vulnerability assessment central to long-term planning** for developing adaptation and mitigation strategies.
- **Regional-scale climate change risk assessments:** Inclusion of detailed, regional-scale climate change risk assessments would help develop region and sector-specific mitigation and adaptation measures to reduce vulnerability to climate change.
- **Robust observational networks:** Greater emphasis on widening observational networks, sustained monitoring, expanding research on regional changes in climate and their impacts.
- **Afforestation efforts:** It helps to mitigate climate change through carbon sequestration. It also enhance resilience to flash floods and landslides, improve resilience to droughts, improve resilience of coastal infrastructure and habitation rise, reduce vulnerability to extreme heat, and support native wildlife and biodiversity.
- **Equity and social justice** for building climate resilience since the most vulnerable people such as the poor, the disabled, outdoor labourers and farmers will bear the brunt of climate change impacts.

## CARBON BORDER TAX

## GS-III ENVIRONMENT & ECOLOGY

### Context

- At the two-day G-20 ministerial meeting on environment and climate change in Italy, **developing countries, including India, raised their concerns over the European Union's recent proposal on the first of its kind carbon border tax.**
- **Indian environment minister had opposed the plan to levy an additional 'carbon border tax' on imports from countries.**
- **India does not have strict norms for controlling industrial GHG emissions.**

### Background

- **EU Parliament had adopted a resolution to implement a 'Carbon Border Adjusted Mechanism' (CBAM).**
- EU's June 2021 draft regulation proposed that goods entering the EU would be taxed at the borders.
- Such a tax **would promote "low-carbon, resource-efficient manufacturing".**
- The UK and the US are also considering such proposals.

### What is it?

- A **carbon border tax is a tax on carbon emissions attributed to imported goods that have not been carbon-taxed at source.**
- This proposal is **part of the European Commission's European Green Deal that endeavours to make Europe the first climate-neutral continent by 2050.**
- A **national carbon tax is a fee that a government imposes on any company within the country that burns fossil fuels.**
- However, this often results in an increase of electricity costs in households and industry, which may lead to local business closures and other economic hardships for businesses and citizens.
- In contrast, a **carbon border tax is able to protect a country's local manufacturers, motivating them to adhere to green regulations.**
- Many EU companies are at a cost disadvantage as they have been paying a carbon border tax and for carbon emissions since 2005 under the EU's Emissions Trading System.
- The new carbon border tax can therefore **lead to a more level playing field against importers, especially those from nations with more lax environmental standards.**
- The border tax **would not take effect until 2026.**

### The CBAM proposal

- **Geographical Scope:** The CBAM is expected to apply to a limited category of goods that are imported from all third non-EU countries.
- **Product Scope:** To begin with, by 2023, the CBAM would cover energy-intensive sectors. These may include cement, steel, aluminum, oil refinery, paper, glass, chemicals as well as the power sector. The Commission would have the power to increase or reduce the sectors covered.
- **Authorized Declarants:** Only persons authorized as declarants by a CBAM Authority to be created by the European Commission **would be able to import goods falling within the scope of the CBAM into the EU.**
- **CBAM Declarations and Certificates:** Every year, by May 31, authorized declarants would be required to submit to the CBAM Authority a CBAM declaration reflecting the emissions embedded in the covered goods they imported and the number of CBAM certificates corresponding to the total embedded emissions in the imported goods that the declarant is surrendering.

- One CBAM certificate will correspond to one tonnes of CO<sub>2</sub> or its equivalent GHG emissions embedded in goods imported by an authorized declarant.

#### Why does the EU want a carbon tax?

- For two reasons: its **environmental goals and its industries' global competitiveness**.
- Recently, the EU declared it would **cut its carbon emissions by at least 55% by 2030 compared to 1990 levels**.
- But imports from emissions--which contribute 20% of the EU's carbon dioxide emissions--are increasing.
- Second, the 27 EU member states have **much stricter laws to control GHG emissions. It has an 'Emissions Trading System'** that caps how much GHG individual industrial units can emit; those that fail to cap their emissions can buy 'allowances' from those who have made deeper cuts.
- This makes operating within the EU expensive for certain businesses, which might prefer to relocate to countries that have more relaxed or no emission limits. This is known as '**carbon leakage**' and it increases the total emissions in the world.

#### Who all have opposed it?

- The **BASIC (Brazil, South Africa, India, and China) countries'** grouping had opposed the EU's proposal, terming it "**discriminatory.**"
- It is said to be **against the principles of equity and 'common but differentiated responsibilities and respective capabilities' (CBDR-RC).**
- These principles acknowledge that richer countries have a responsibility of providing financial and technological assistance to developing and vulnerable countries to fight climate change.
- **Developing nations feel that the developed nations have failed to fulfil the Green Climate Fund commitments.**
- Under this, developing nations were to receive \$100 billion for green development by 2020. This has now been delayed to 2025.

#### How does this impact India?

- **As India's third largest trading partner, the EU accounted for \$74.5 billion worth of trade in goods in 2020, or 11.1% of India's total global trade.** India's exports to the EU were worth \$41.36 billion in 2020-21, as per data from the commerce ministry.
- By increasing the prices of Indian-made goods in the EU, this tax **would make Indian goods less attractive for buyers and could shrink demand.**
- The tax **would create serious near-term challenges for companies with a large greenhouse gas footprint--and a new source of disruption to a global trading system already roiled by tariff wars, renegotiated treaties, and rising protectionism.**
- A levy of \$30 per metric ton of CO<sub>2</sub> emissions **could reduce the profit pool for foreign producers by about 20% if the price for crude oil remained at \$30-40 per barrel.**

#### Possible impacts

- Such a mechanism to charge imported goods at borders **may spur adoption of cleaner technologies.**
- But if it happens without adequate assistance for newer technologies and finance, it would amount to levying taxes on developing countries.
- There are many small businesses that will face difficulty in quantifying their emissions and **additional costs will be passed on to the consumers, eventually.**
- The **design of such a levy matters.** If it discourages sectors and industries that are already adopting cleaner technologies, and becomes another procedural and compliance hassle, it could prove counterproductive.

#### Challenges

- It is currently **unclear how the EU would assess emissions of an imported product.** Would it be from the entire value chain, upstream and downstream.
- United States, China and Russia have all objected to the border carbon tax, **raising the prospect of retaliatory tariffs and trade wars.**
- Countries may also try to mount **challenges to the border adjustment at the World Trade Organization.**
- The EU proposal still **needs to be negotiated among the 27 member countries and the European Parliament before becoming law.**
- While many EU companies support the idea, they are less keen on losing their free allowances under the current carbon-pricing program.

## GREEN ENERGY

## GS-III ENVIRONMENT & ECOLOGY

### Context

- Global moves to **reduce carbon emissions** to slow down climate change have led to oil and gas companies around the world investing in renewable energy to **reduce their carbon footprint and diversify offerings**.
- For instances:**
- State-owned Oil and Natural Gas Corporation is considering **inorganic investments to reach a target of 10 GW** of installed renewable energy capacity by 2040.
- India's top natural gas company, GAIL, is also looking at acquisitions to augment its 130 MW renewable energy portfolio. The company is aiming at reaching 1 GW of renewable capacity within 3-4 years.
- Indian Oil also has joint venture with Israel-based battery technology startup Phinergy to develop aluminum-air technology based battery systems for electric vehicles and stationary storage.
- India is **targeting 450 GW of installed renewable energy capacity by 2030** up from about 100 GW currently.

### What is Green Energy?

- Green energy is any energy type that is **generated from natural resources**, such as sunlight, wind or water.
- It often comes from **renewable energy sources**.
- The key with these energy resources are that **they don't harm the environment** through factors such as releasing greenhouse gases into the atmosphere.
- Solar energy, wind power, geothermal energy, biomass and hydroelectric power** are sources of green energy.

### Why It Is Important?

- Green energy is **important for the environment** as it **replaces the negative effects of fossil fuels** with more environmentally-friendly alternatives.
- It is better for the **health of people and animals** that have to breathe the air.
- Green energy can also lead to **stable energy prices** as these sources are often produced locally and are not as affected by geopolitical crisis, price spikes or supply chain disruptions.
- The **economic benefits** also include job creation in building the facilities that often serve the communities where the workers are employed.
- Renewable energy saw the **creation of 11 million jobs** worldwide in 2018, with this number set to grow as we strive to meet targets such as net zero.
- Due to the local nature of energy production through sources like solar and wind power, the energy infrastructure is more flexible and less dependent on centralised sources that can lead to disruption as well as being less resilient to weather related climate change.

## SMOG TOWERS

## GS-III ENVIRONMENT & ECOLOGY

### Context

- Delhi CM Arvind Kejriwal inaugurated the first smog tower in the national capital.

### More about news

- If the pilot project is successful, it will be replicated across the capital.
- It can help **clean air within one-kilometer range**.
- The smog tower is a 24 metre-high structure fitted with fans and air filters and it will draw in polluted air from the top and release purified air near the ground through fans fitted on sides.
- The tower has 40 big fans and 5,000 filters to clean the air.

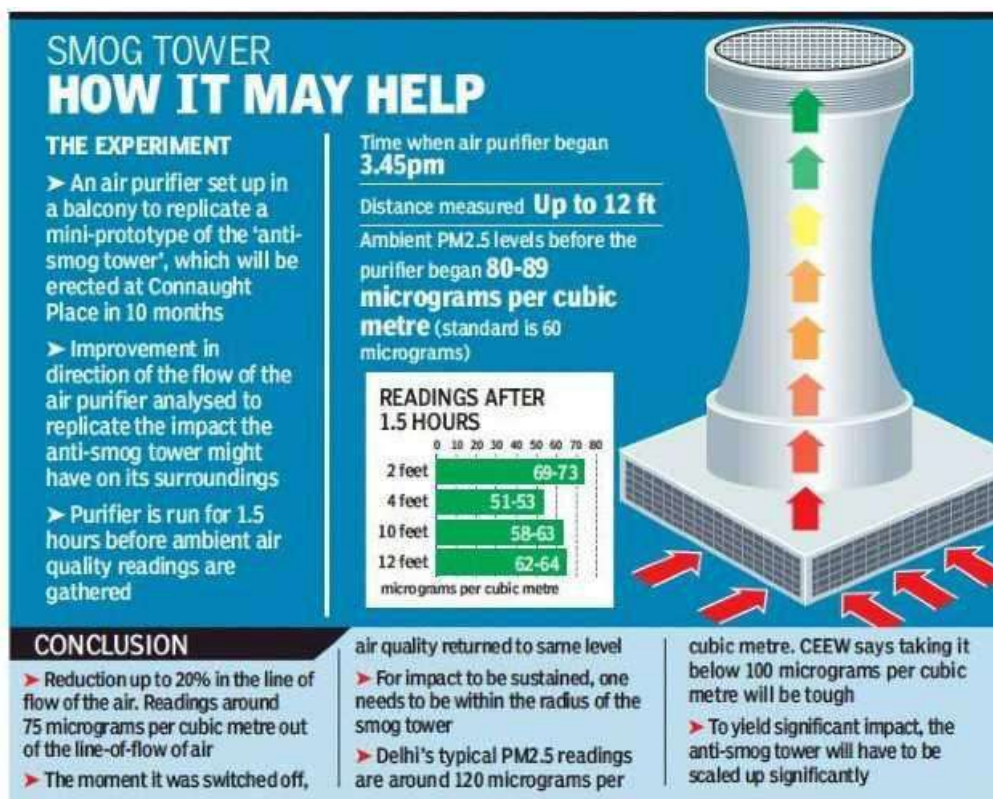
### What is a 'smog tower'?

- A smog tower is a structure designed to work as a **large-scale air purifier, fitted with multiple layers of filters, which trap fine dust particles suspended in the air** as it passes through them.
- Air is drawn through fans installed at the top of the tower, passed through filters, and then released near the ground.
- The large-scale filters expected to be installed in the towers in Delhi would use **carbon nanofibres as a major component**, and would be fitted along the peripheries of the towers, project experts had said, adding that the height of the towers would be 20 meters.



### How effective are smog towers?

- Towers would create “clean air zones” in the city. An estimate made of their impact on air quality shows a tower would reduce 50% of the particulate matter load.
- These smog towers may not be useful for the whole city, but they can be useful in creating ‘clean air area’ zones in different parts of the city.



### How does it work?



## OZONE PACT

## GS-III ENVIRONMENT & ECOLOGY

### Context

- India has ratified the Kigali Amendment to the 1989 Montreal Protocol for protection of the ozone layer.
- Montreal Protocol, 1989 is a **ozone-saving agreement** that works an **extremely potent weapon in the fight against ozone depletion and climate change**.
- This is for phasing out compounds called HFCs, which happen to be powerful greenhouse gases.

### Montreal Protocol

- The Montreal Protocol on Substances that Deplete the Ozone Layer, is an **international environmental treaty for protection of the Ozone Layer** by phasing out the production and consumption of man-made chemicals referred to as ozone depleting substances (ODS).
- The **stratospheric ozone\ layer protects humans**: and the environment from harmful levels of ultraviolet radiation from the sun.
- **India became a Party** to the Montreal Protocol on Substances that Deplete the Ozone Layer on 19 June 1992 and since then has ratified the amendments to the Montreal Protocol.
- Though the present approval of the Cabinet, India will be ratifying the Kigali Amendment to the Montreal Protocol for phase down of Hydrofluorocarbons.
- India has successfully met the phase out targets of all the Ozone Depleting Substances as per the Montreal Protocol Schedule

### The Kigali Amendment

- It was negotiated in the **Rwandan capital in October 2016**.
- It enables the **gradual phase-down of hydrofluorocarbons, or HFCs**, a family of chemicals used extensively in the air-conditioning, refrigeration and furnishing foam industry.
- HFCs are known to be **much worse than carbon dioxide in causing global warming**.
- According to the UN Environment Programme (UNEP), the average global warming potential of 22 of the most used HFCs is about 2,500 times that of carbon dioxide.
- The amendment has **already come into force from the start of 2019**.

### Ozone and climate

- A set of chemicals, mainly the **chlorofluorocarbons** or CFCs, which were being used in the air-conditioning and refrigeration industry earlier, were found to be damaging the ozone layer of the upper atmosphere.
- Their extensive use had led to **depletion of the ozone layer**, and formation of an “**ozone hole**” over the Antarctic region.
- The Montreal Protocol **mandated the complete phase-out of CFCs and other ozone-depleting substances (ODS), which it has successfully managed to do in the last three decades**.
- CFCs were gradually replaced, first by HCFCs, or hydrochlorofluorocarbons and eventually by HFCs which have minimal impact on the ozone layer.
- The transition from HCFCs to HFCs is still happening, particularly in the developing world.
- HFCs, though benign to the ozone layer, were **powerful greenhouse gases**.
- With global warming emerging as one of the biggest global challenges in the new millennium, the use of HFCs came under the scanner.
- Because HFCs were **not ozone-depleting**, they were **not controlled substances** under the Montreal Protocol.
- They were part of the problematic greenhouse gases whose emissions are sought to be curtailed through climate change instruments such as the **Kyoto Protocol of 1997 and the 2015 Paris Agreement**.
- Montreal Protocol has already resulted in the phase-out of 98.6% of ozone-depleting substances.
- The remaining 1.4% are the HCFCs that are in the process of being transitioned.
- Accordingly, it was decided an amendment to the Montreal Protocol was required to phase out HFCs.

### The Kigali Agreement

- In 2016, countries agreed to **include HFCs in the list of controlled substances** under Montreal Protocol and decided on a schedule for its phase-down.
- Before the middle of this century, current HFC use has to be curtailed by at least 85 per cent.
- Countries have different timelines to do this.
- India has to **achieve this target by 2047** while the **developed countries have to do it by 2036**. China and some other countries have a target of 2045.
- While the reductions for the rich countries have to begin immediately, India, and some other countries, have to begin cutting their HFC use only from 2031.
- If implemented successfully, the Kigali Amendment is expected to **prevent about 0.5°C rise in global warming** by the end of this century.
- No other single intervention to cut greenhouse gas emissions comes even close to this in terms of returns offered and the ease of implementation.
- It is thus **considered crucial to achieving the Paris Agreement target of restricting temperature rise to within 2°C from pre-industrial times**.
- And the Montreal Protocol has a fairly good track record on ensuring climate benefits as well.
- CFCs, the predecessors to HFCs, **were also greenhouse gases**, apart from being ozone-depleting.

- Their phase-out has already avoided an estimated 135 billion tonnes of carbon dioxide equivalent emissions between 1990 and 2010.
- The UNEP estimates that, with Kigali Amendment, the avoided emissions could touch 420 billion tonnes of carbon dioxide equivalent by the end of the century.

#### India's efforts

- India had played a key role in negotiating the Kigali Amendment.
- It had fought hard to get an extended timeline for itself, and some other countries, for the reduction of HFC use.
- This was considered important for the domestic industry which was still in the process of transitioning from HCFCs to HFCs.
- Despite being one of the main architects of the Kigali Amendment, India was the last major country to announce its decision to ratify it.
- There wasn't ever any doubt over its ratification, and it was more like a waiting game to see what China or the United States did.
- In the meanwhile, however, India had unveiled an ambitious action plan for the cooling industry which accounts for the phase-out of HFCs.
- The 20-year 'India Cooling Action Plan', or ICAP, released in 2019, describes cooling as a "developmental need" and seeks to address the rising demand in cooling, from buildings to transport to cold-chains, through sustainable actions.
- The plan estimates that the national cooling demand would grow eight times in the next 20 years, which would result in a corresponding five to eight-fold rise in the demand for refrigerants that involve the use of HFCs.
- The ICAP aims to bring down the refrigerant demand by 25 to 30 per cent in the next 20 years.
- As part of the ICAP, the government has also announced targeted R&D efforts aimed at developing low-cost alternatives to HFCs. Such efforts are already underway at the Hyderabad-based Indian Institute of Chemical Technology and IIT Bombay.

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## INDIA-BANGLADESH MOU ON DISASTER MANAGEMENT / GS-III DISASTER MANAGEMENT

### Context

- Union Cabinet has approved a MoU between National Disaster Management Authority (NDMA), India and Bangladesh on cooperation in the field of Disaster Management, Resilience and Mitigation.

### Salient features of the MoU

- Extend mutual support on the request of either Parties at the time of large scale disaster (Natural or human induced) occurring within their respective territories, in the field of relief, response, reconstruction and recovery.
- Exchange relevant information, remote sensing data and other scientific data and share experience/best practices of disaster response, recovery, mitigation, capacity building for ensuring resilience, etc.
- Extend cooperation in the field of advanced information technology, early warning systems, remote sensing & navigation services and expertise for disaster preparedness, response and mitigation and more towards real time data sharing.
- Support training of officials in the field of Disaster management.
- Conduct Joint Disaster Management Exercises bilaterally between both the countries.
- Share standards, latest technologies and tools for creating Disaster Resilient Communities.
- Exchange publications and materials as textbooks, guidelines in the field of Disaster Management and may conduct joint research activities in the field of Disaster management, Risk Reduction and Recovery.

### National Disaster Management Authority (NDMA)

- NDMA, is an apex Body to lay down policies for disaster management. It is the apex **statutory body** for disaster management in India.
- NDMA was established through the Disaster Management Act enacted by the Government of India on 23 December 2005.
- NDMA is responsible for framing policies, laying down guidelines and best-practices for coordinating with the State Disaster Management Authorities (SDMAs) to ensure a holistic and distributed approach to disaster management.
- It is **headed by the Prime Minister of India** and can have up to nine other members. Since 2020, there have been five other members.

### Functions and Responsibilities

- Lay down policies on disaster management.
- Approve the National Plan.
- Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan.
- Lay down guidelines to be followed by the State Authorities in drawing up the State Plan.
- Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the Purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects.
- Coordinate the enforcement and implementation of the policy and plans for disaster management.
- Recommend provision of funds for the purpose of mitigation.
- Provide such support to other countries affected by major disasters as may be determined by the Central Government.
- Take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as it may consider necessary.
- Lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management.

## EARTHQUAKE

## GS-III DISASTER MANAGEMENT

### Context

- Researchers at IIT Roorkee have found that thermocol or Expanded Polystyrene (EPS) is used as a composite material in core of reinforced concrete sandwich, could resist earthquake forces on up to four-storey buildings.

### Details

- The earthquake resistance capability is attributed to the fact that the EPS layer is sandwiched between two layers of concrete having reinforcement in the form of welded wire mesh.
- The researchers said that the force being applied on a building during an earthquake arises due to the inertia effect and hence depends on the mass of the building.
- Thermocol resists earthquakes by reducing the mass of the building.

\*\*\*Read about earthquake from Mains perspective in detail from June 2021 edition.



## GENERAL STUDIES - IV

### THE ETHICS OF AUTOMATED ADMINISTRATIVE STATE

### GS-IV ETHICS

#### Introduction

- The proliferation of artificial intelligence and algorithmic decision-making has helped shape myriad aspects of our society: From facial recognition to deep fake technology to criminal justice and health care, their applications are endless.
- Artificial intelligence, is gradually replacing bureaucratic agency in making important executive decisions and government functions.
- But the story of applied algorithmic decision-making is one of both promise and peril.

#### The Indian context

- 2018-19 Economic Survey lays out an ambitious roadmap for the government of India to use data 'of the people, by the people, and for the people'.
- Part of the report is dedicated to praising the Samagra Vedika initiative of the government of Telangana, described as a scheme which integrates data across government databases.
- SamagraVedika system utilises 'artificial intelligence' or AI—to make predictions about people's behavior, and uses these predictive analytics to ultimately process applications for welfare schemes.
- More specifically, SamagraVedika has been used to identify the eligibility of welfare beneficiaries and remove potentially fraudulent or duplicate beneficiaries.

#### Ethical Issues associated with Algorithmic Decision Making in Public Administration

##### Not in line with Public Values in Administration

- Administrative decision-making is governed by principles of transparency and accountability, intended to keep a check on arbitrary executive actions.
- Transparency, accountability and democratic participation form the core values in administration.
- However, when administrative decisions are usurped by systems that use data and complex algorithmic analysis, the system uses logic of reasoning for making policy decisions.
- This cannot easily be interrogated to analyse its reasonableness or fairness.
- In Machine learning the system's logic is constantly changing, and the use of multiple data points from various sources obscures whether the use of a particular kind of data was relevant, reasonable or fair.

**For example**, in using 'data-based' systems for deciding how to allocate policing resources,

By its own description, in 2016, the use of the SamagraVedika system for removing so-called fraudulent ration cards led to the cancellation of 100,000 cards.

Subsequently, 'public resistance' to the cancellation, led to the re-addition of 14,000 cards.

##### Unaccountable process

- The concept of 'natural justice' and due process establishes specific procedural safeguards to ensure that decisions made are fair and accountable.
- These include the requirement to give notice, the duty to provide an explanation and justification for a decision.
- However, the use of AI in decision-making processes again fundamentally alters how natural justice and procedural safeguards should be applied.
- Decisions made with the use of AI are not always interpretable or explainable in a way that can allow affected individuals to understand and contest them.

##### Lack of objectivity

- Amazon's failed attempt to develop a hiring algorithm driven by machine learning: Amazon scrapped its internal recruitment AI once it came to light that it was biased against women
- International Baccalaureate's and UK's A-Level exams: The AI did not actually correct any papers; it only produced final grades based on the data it was fed, which included teacher-corrected coursework and the predicted grades.
- In all of those cases, the algorithms introduced to automate decisions kept identifying patterns of bias in the data used to train them and attempted to reproduce them.
- A recent study by American Association for the Advancement of Science found racial bias in a widely used machine learning algorithm intended to improve access to care for high-risk patients with chronic health problems.
- Researchers estimated that as a result of this embedded bias of 84%, the number of Black patients identified for extra care was reduced by more than half.

### Lack of appeal in absence of specific law

- In the absence of any specific law and policy on automated decisions in India, there is **no structural manner in which obligations in policy making can be enforced.**
- Failures of such protections have been observed in a number of cases where government agencies are using AI or algorithmic systems, from the **denial of benefits using Aadhaar to the cancellation of voter ID cards using the NERPA algorithmic system by the Election Commission of India.**

### No Emotions

- There is no doubt that machines are much better when it comes to working efficiently but they cannot replace the human connection.
- Machines cannot develop a bond with human beings which is an essential attribute of public administration.
- As Dan Goleman said '**Emotional Intelligence Matter More Than IQ**'. Empathy, self awareness and other emotions are of utmost importance for better policy targeting.

### Outsourcing of public welfare polices

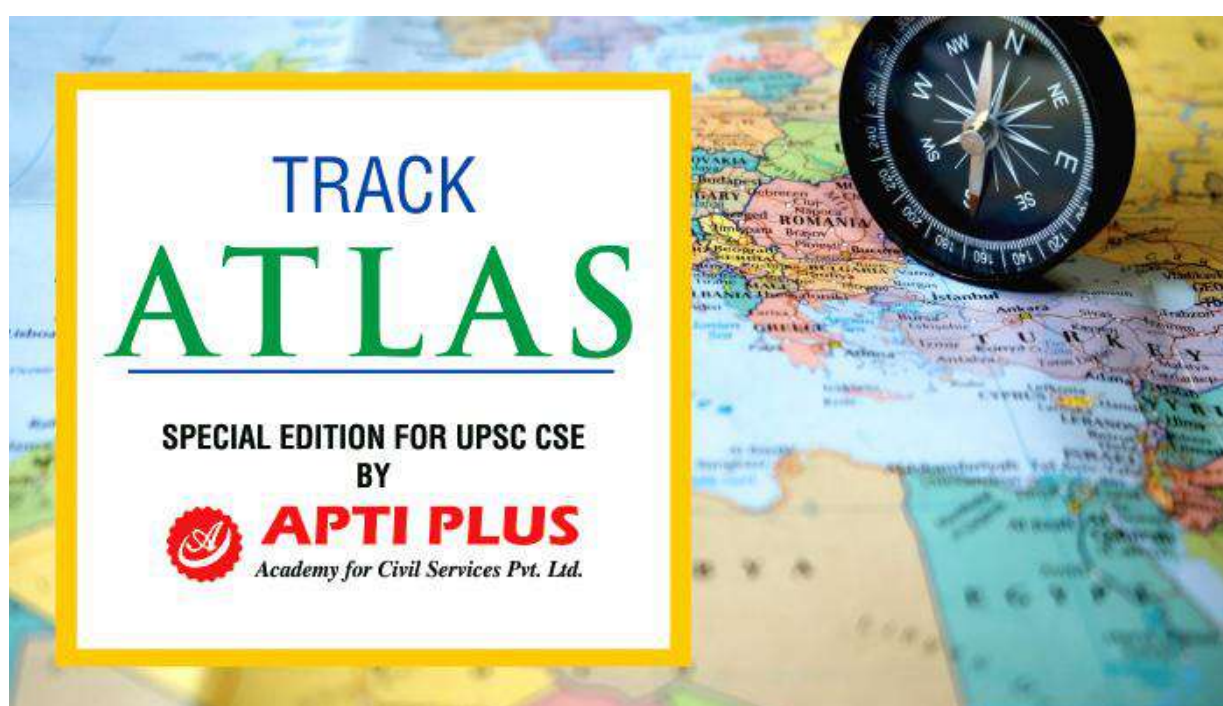
- Most applications of AI in administration are through the procurement of AI technologies from private vendors – whether the data that is used or the algorithmic processes and software.
- In doing so, government agencies are outsourcing not only the creation of technologies, but also the process of making policy decisions from private vendors.
- These private vendors are currently not guided by any obligations to make technologies whose outcomes are fair, transparent, accountable and participatory in ways that conform to democratic values.

### Lacking Out of Box Thinking

- Machines can perform only those tasks which they are designed or programmed to do, anything out of that they tend to crash or give irrelevant outputs which could be a major backdrop.

### Way Ahead

- Government should tread carefully when considering the application of AI, Big Data and predictive analytics for making consequential decisions, and is attuned to the limitations and consequences of the use of these systems.
- There is an urgent need to revisit and reframe the application of principles of fair and reasonable decision-making under Indian administrative law, both by courts, as well as through regulatory mechanisms, such as creating notice and due process requirements for the use of AI-based decision-making
- For example, the EU's General Data Protection Regulation, or by creating processes for intervening in the procurement of AI systems (as attempted by the Tamil Nadu Safe and Ethical AI Policy).
- As the government goes forward with developing its **policies for 'ethical AI'**, it must keep in view how the use of AI in this crucial context of the administrative state can ensure that important democratic values are not compromised.



## SHORT NEWS ARTICLES

### GS-I

## CULTURE & HISTORY

#### Ujjwal Abahan

##### Context

- Minister of Petroleum & Natural Gas launched ONGC-supported Assam Handloom project 'Ujjwal Abahan' through virtual platform.

##### About

- The project will support and train over a hundred artisans of Bhatiapar of Sivasagar, Assam in Hathkharga handicraft.
- This project is in line with the government's observance of "Azadi Ka Amrit Mahotsav".

#### Rana Punja Bhil

##### Context

- A dispute in Rajasthan's Udaipur district over hoisting of a flag on the statue of Rana Punja Bhil, has triggered tensions between Adivasi groups and BJP members.

##### Who was Rana Punja Bhil?

- Punja Bhil was a contemporary of 16th century ruler of Mewar, Maharana Pratap.
- Punja is considered to be a significant character who bolstered the strength of Pratap during his battles with Mughal emperor Akbar.
- When Maharana Pratap was readying for the battle with Akbar, the tribal Bhil community voluntarily came to his assistance and at the time the Bhil army was commanded by Punja.
- The Bhil community-classified as a scheduled tribe in Rajasthan-, is a forest dweller group has exercised significant influence in the Mewar region and throughout the past.
- The Rajput rulers of the region have forged alliances with the tribal group.

#### India's Flag Code

##### In News

- The Indian flag was adopted in its present form during a meeting of the Constituent Assembly held on July 22, 1947.
- The first national flag, which consisted of three horizontal stripes of red, yellow and green, is said to have been **hoisted on August 7, 1906, at the Parsee Bagan Square, near Lower Circular Road, in Calcutta.**
- Later, in 1921, freedom fighter Pingali Venkayya met Mahatma Gandhi and proposed a basic design of the flag, consisting of two red and green bands.
- After undergoing several changes, the Tricolour was adopted as our national flag at a Congress Committee meeting in Karachi in 1931.
- The earliest rules for the display of the national flag were originally governed by the provisions of The **Emblems and Names (Prevention of Improper Use) Act, 1950** and **The Prevention of Insults to National Honour Act, 1971.**
- In 2002, the Flag Code of India came into effect.

##### Flag Code of India

- The Flag Code of 2002 is divided into three parts – a general description of the tricolour, rules on display of the flag by public and private bodies and educational institutions, and rules for display of the flag by governments and government bodies.
- It states that there will be no restriction on the display of the flag by public and private bodies and educational institutions except to the extent as laid down in the Emblems and Names (Prevention of Improper Use) Act, 1950 and the Prevention of Insults to National Honour Act, 1971.
- It mentions that the tricolour **cannot be used for commercial purposes**, and cannot be dipped in salute to any person or thing.
- Whenever the flag is displayed, it should be distinctly placed and should "occupy the position of honour".
- No other object, including flowers or garlands, or flag should be placed on the same height beside the tricolour or above it.
- The flag should not be used as a festoon, or for any kind of decoration purposes.
- Any tricolour which is damaged **should be destroyed in private, preferably by burning** or by any other method consistent

with the dignity of the Flag”.

- For official display, only flags that conform to the specifications as laid down by the Bureau of Indian Standards and bearing their mark can be used.
- Dignitaries should remove their headgears before saluting the flag.
- The flag code states that the tricolour can be of nine standard dimensions.
- Also, the tricolour should be rectangular in shape and the length-to-width ratio should always be 3:2.
- The national flag should always be made of hand-spun and hand-woven wool or cotton or silk khadi bunting.
- The Prevention of Insults to National Honour Act, 1971 states that the flag cannot be used as a drapery in any form whatsoever except in State funerals or armed forces or other para-military forces funerals.

## Subhadra Kumari Chouhan

### Context

- Google marked famous poet Subhadra Kumari Chouhan, the Indian poet who wrote the famous poem Jhansi ki Rani, on her 117th birth anniversary with a doodle.

### About

- Subhadra Kumari Chauhan was an Indian poet.
- She wrote in the Khariboli dialect of Hindi, in a simple, clear style.
- One of her most popular poems is "Jhansi ki Rani" (about the courageous Queen of Jhansi).
- This and her other poems, Jallianwala Bagh mein Vasant, Veeron Ka Kaisa Ho Basant, Rakhi Ki Chunauti, and Vida, openly talk about the freedom movement.
- They are said to have inspired great numbers of Indian youth to participate in the Indian Freedom Movement.
- The ICGS Subhadra Kumari Chauhan, an Indian Coast Guard ship, was named for the poet.

## Maharaja Ranjit Singh

### Context

- A nine-foot-tall bronze equestrian statue of Maharaja Ranjit Singh, the founder of the Sikh Empire, was vandalised in Lahore Fort.

### About

- Maharaja Ranjit Singh (1780 –1839), popularly known as Sher-e-Punjab or "Lion of Punjab", was the first Maharaja of the Sikh Empire, which ruled the northwest Indian subcontinent in the early half of the 19th century.
- Prior to his rise, the Punjab region had numerous warring misls (confederacies).
- Ranjit Singh successfully absorbed and united the Sikh misls and took over other local kingdoms to create the Sikh Empire.
- He repeatedly defeated invasions by outside armies, particularly those arriving from Afghanistan, and established friendly relations with the British.
- Ranjit Singh's reign introduced reforms, modernisation, investment into infrastructure and general prosperity.
- His Khalsa army and government included Sikhs, Hindus, Muslims and Europeans.
- His legacy includes the rebuilding of the Harmandir Sahib in Amritsar as well as other major gurudwaras, including Takht Sri Patna Sahib, Bihar and Hazur Sahib Nanded, Maharashtra under his sponsorship.
- Ranjit Singh brought peace and security to Lahore and revived its economic and cultural glory.



## Somnath Temple

### Context

- Prime Minister Modi inaugurated and laid the foundation stone of multiple projects in Somnath, Gujarat.

### About

- The Somnath temple (also known as the Deo Patan) located in Veraval in Saurashtra on the western coast of Gujarat, is the first among the twelve Jyotirlinga shrines of Shiva.
- As documented by J. Gordon Melton, the first Shiva temple at Somnath is said to have been built at some unknown time in the past.
- The second temple is said to have been built at the same site by the "Yadava kings" of Vallabhi around 649 CE



- The Gurjara-Pratihara king Nagabhata II constructed the third temple in 815 CE, a large structure of red sandstone.
- The present temple was reconstructed in the **Chaulukya style of Hindu temple architecture** and completed in 1951.
- Presently the **Prime Minister of India Narendra Modi is the chairman of Somnath Mandir trust.**

## Wanchuwa Festival

### Context

- Tiwa tribesmen perform their traditional dances as they take part in Wanchuwa Festival in Assam.

### About Tiwa Tribe

- Tiwa also known as Lalung is indigenous community inhabiting the states of **Assam and Meghalaya** and are also found in some parts of **Arunachal Pradesh and Manipur**.
- They are recognized as a Scheduled tribe within the state of Assam.
- They practice Jhum or shifting cultivation.

### Wanchuwa festival

- This festival is celebrated by Tiwa tribesmen to mark their good harvest.
- It comes with songs, dances, a bunch of rituals and people clad in their native attires.

## SAROOP

### Context

- Among the most striking images emerging from the flight of Sikhs from Afghanistan have been those of Union Minister Hardeep Singh Puri carrying on his head, one of the saroops of the holy Guru Granth Sahib flown in from that country.

### About

- Saroop is a **physical copy of Sri Guru Granth Sahib**, also called Bir in Punjabi.
- Every Bir has 1,430 pages, which are referred to as Ang. The verses on every page remain the same.
- The Sikhs consider the saroop of Guru Granth Sahib a living guru and treat it with utmost respect.
- They believe that all the 10 Gurus were the same spirit in different bodies, and the Guru Granth Sahib is their eternal physical and spiritual form.
- It was the fifth Sikh master, **Guru Arjan Dev, who compiled the first Bir of the Guru Granth Sahib in 1604**, and installed it at the Golden Temple in Amritsar.
- Later, the tenth Sikh master, Guru Gobind Singh, added verses penned by the ninth master, his father Guru Tegh Bahadur, and compiled the Bir for the second and last time.
- It was in 1708 that Guru Gobind Singh declared the Guru Granth Sahib the living Guru of the Sikhs.
- Guru Granth Sahib is a compendium of hymns written by **six Sikh gurus, 15 saints, including Bhagat Kabir, Bhagat Ravidas, Sheikh Farid and Bhagat Namdev, 11 Bhattas (balladeers) and four Sikhs.**
- The verses are composed in 31 ragas.

## Dara Shikoh

### Context

- At a time when incidents of intolerance in the name of faith are being reported from Afghanistan, Dara Shikoh, one of India's most enlightened thinkers, needs to be remembered.
- The Ministry of Culture recently set up a seven-member panel of the Archaeological Survey of India (ASI) to locate the grave of the Mughal prince Dara Shikoh (1615-59).

### Who was Dara Shikoh?

- Elder son of Mughal Emperor Shah Jehan, Dara Shikoh had three younger brothers, and Aurangzeb was one of them.
- Dara Shikoh was killed after losing the war of succession against his brother Aurangzeb.
- Dara Shikoh is said to have **revered all the religions, and took a special interest in Hindu religion and philosophy, along with Christianity.**
- Dara Shikoh tried to find commonalities between Hindu and Islamic traditions.
- He **translated into Persian the Bhagavad Gita as well as 52 Upanishads.**
- Important works: Majma-ul-Bahrain and Sirr-i-Akbar.



## Gurdwara Thala Sahib

### Context

- India has condemned the act of removal of Nishan Sahib, a Sikh religious flag atop the roof of Gurdwara Thala Sahib, Chamkani in Paktia province of Afghanistan.

### About

- The historical Gurdwara was visited by Sri Guru Nanak Dev.
- Afghanistan has been witnessing Taliban-driven violence in light of the ongoing withdrawal of troops by the US.

## Vrushka Bandhan Project

### Context

- Ministry of Tribal Affairs in partnership with The Art of Living Foundation, Maharashtra launched Vrushka Bandhan Project.

### Details

- Under this project, 1100 tribal women created Rakhis for Raksha Bandhan with seeds of indigenous trees, which is a unique contribution to increasing forest cover & combating climate change.
- The Rakhis are made of indigenous seeds stuck on naturally dyed, soft indigenous, non-toxic, biodegradable cotton.
- The initiative was part of project sanctioned by Ministry of Tribal Affairs to the Art of Living in October 2020 under which 10000 tribal farmers of 10 tribal villages in Aurangabad are being trained on sustainable natural farming based on Go-Adharith farming techniques.

## Madur Mats

### Context

- Recently, the National Handicraft Award was given to two women from West Bengal in recognition of their outstanding contribution to the development of crafts, 'Madur floor mats'.

### About

- Madurkathi mats, or madur, are mats woven in West Bengal from a reed called madur kottir, or madurkathi, a sedge of the family Cyperaceae.
- Madur (mat) weaving is an age-old cottage industry of Medinipur, West Bengal.
- Warp is of cotton thread and weft is thin soft reed of Madurkathi, a grass weed. Artisans make various diversified products with madurkathi including table runners, curtains, floor mats and other lifestyle items.
- The mats are woven mainly by weavers of the Mahishya caste, and predominantly by women.
- This cottage industry contributes significantly to village household income.
- In 2018, Indian Patent Office granted the Government of West Bengal a Geographical Indication (GI) Tag for madurkathi.
- Some other Items with GI Tags From Bengal: Wooden Mask of Kushmandi, Purulia Chau Mask, Gobindobhog Rice, Tulapanji Rice, Bengal Patachitra, Darjeeling Tea, etc

# GEOGRAPHY

## Kuthiran Tunnel

### Context

- Union Minister for Road Transport and Highways instructed to open one side of the 1.6-km-long Kuthiran Tunnel in Kerala.

### About

- This is the first road tunnel in the state and will drastically improve connectivity to Tamil Nadu and Karnataka.
- The 1.6-km-long tunnel is designed through Peechi-Vazhani Wildlife Sanctuary.
- The road will improve connectivity to important ports and towns in North-South Corridor without endangering wildlife.

## Yarlung-Lamang Road

### Context

- Border Roads Organisation (BRO) has restored connectivity at Yarlung-Lamang road in Arunachal Pradesh.

### About

- The road under Project Brahmaputra of BRO was inaugurated on June 17, 2021. The strategically important road is crucial for the Armed Forces personnel posted in forward areas as well as the villages.

## Santorini volcano

### Context

- Greece's Santorini volcano erupts more often when sea level drops- New Findings.
- Lower sea levels over the last 360,000 years are linked with more eruptions.

### About

- Santorini is an island in the southern Aegean Sea, about 200 km southeast from the Greek mainland.
- It is the largest island of a small, circular archipelago, which bears the same name and is the remnant of a volcanic caldera.

- It is the most active volcanic centre in the South Aegean Volcanic Arc.
- It forms the southernmost member of the Cyclades group of islands.
- The island was the site of one of the largest volcanic eruptions in recorded history: the Minoan eruption (sometimes called the Thera eruption), which occurred about 3,600 years ago at the height of the Minoan civilization and led to its collapse.

#### Findings

- When the sea level dropped at least 40 meters below the present-day level, the crust above the magma chamber splintered.
- That gives an opportunity for the magma that's stored under the volcano to move up through these fractures and make its way to the surface.

## Gopalpur

#### Context

- Indian Naval Ship (INS) Khanjar becomes the first Indian Navy ship to call at the heritage coastal port of Gopalpur in Odisha.

#### About

- Gopalpur is a natural, deep sea port on the east coast of India.
- It is 160 km south of Paradip and 260 km north of Visakhapatnam.
- Gopalpur has an ancient sea port which was operational during the heyday of maritime Kalinga region.
- It is identified with the site Mansurkota located near Gopalpur, just below the mouth of the river Rushikulya.
- Gopalpur lies on a 4 km stretch of barren coast line, with no mangrove or tropical forests.
- The coast line falls in the rain-shadow of the region. The climate in the region is tropical wet and dry.
- The region receives rainfall in both advance and retreat of the Southwest monsoon.

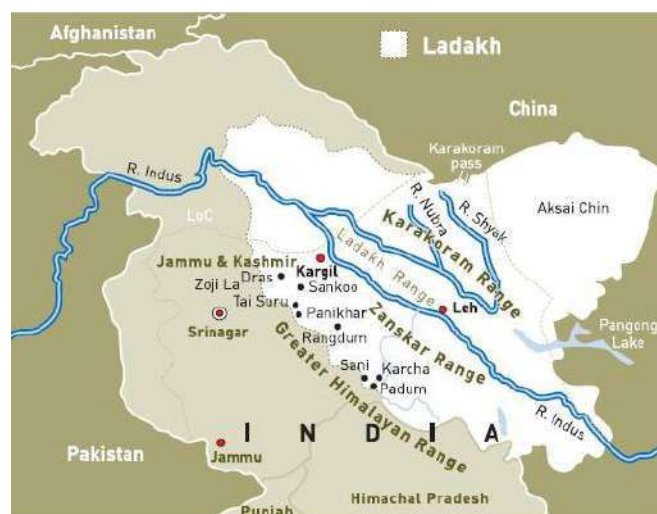
## Pensilungpa Glacier

#### Context

- The Pensilungpa Glacier is retreating, and a recent study has attributed the retreat to an increase in the temperature and decrease in precipitation during winters.

#### Location

- The Pensilungpa Glacier is located in Zaskar Range, Ladakh.
- The Zaskar Range is a mountain range in the union territory of Ladakh that separates Zaskar from Ladakh.
- Geologically, the Zaskar Range is part of the Tethys Himalaya.
- The average height of the Zaskar Range is about 6,000 m. Its eastern part is known as Rupshu.
- 23000 feet high peak Nunkun is within this range.
- Marbal Pass and many other passes which connect Ladakh with Kashmir are in this area.
- 13000 feet high Zojila Pass is in the extreme northwest of Zaskar range.
- This range, is a branch of the Great Himalayan range of mountains.
- Many rivers start in different branches of this range flow northward, and join the great Indus River.
- These rivers include Hanle River, Khurna River, Zaskar River, Suru River (Indus), and Shingo River.
- It also separates Kinnaur from Spiti in Himachal Pradesh.
  - The highest peaks of Himachal are in Zaskar range.



## Maize

#### Context

- North Eastern Regional Agricultural Marketing Corporation Limited (NERAMC) has initiated its first ever export consignment of Maize to Bangladesh.

#### About Maize

- The predominant maize growing states that contributes more than 80 % of the total maize production are:  
Andhra Pradesh (20.9 %) > Karnataka (16.5 %) > Rajasthan (9.9 %) > Maharashtra (9.1 %) > Bihar (8.9 %) > Uttar Pradesh (6.1 %) > Madhya Pradesh (5.7 %) > Himachal Pradesh (4.4 %)
- **Temperature:** Between 21-27°C
- **Rainfall:** High rainfall.



- **Soil Type:** Old alluvial soil.
- Maize is used both as **food and fodder**.
- The **United States of America (USA)** is the **largest producer of maize** contributes nearly 36% of the total production in the world.
- India is the **seventh largest producer of Maize** representing around 4% of world maize area and 2% of total production.

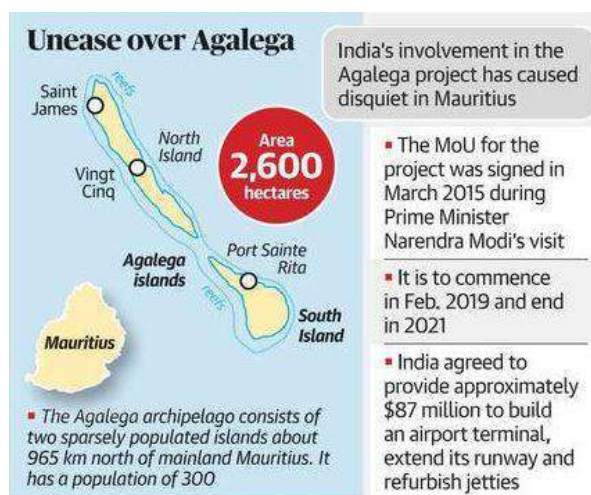
## Agalega Island

### Context

- Mauritius has denied a report that it has allowed India to build a military base on the remote island of Agalega, with a government official telling AFP that no such agreement exists between the two nations.

### About

- Agaléga are two outer islands of Mauritius located in the Indian Ocean, about 1,000 kilometres north of Mauritius island.
- The islands have a total area of 2,600 ha (6,400 acres).
- The islands are known for their coconuts.



## Red Tide

### Context

- Red tides return to Florida, leaving beaches covered in dead fish.

### About

- A red tide is an event that occurs on the coastline **when algae – a plant-like organism – grows out of control**.
- The name “red tide” comes from the fact that overgrown algae can cause the water to change color.
- Red tides can be hazardous to human health and sea life.
- This happens when nutrient-rich deep water wells up to the surface or is mixed up in storms, and the normally scarce nitrogen and phosphorus become plentiful and enable the algae to bloom out of control.
- The culprit behind Florida’s red tide is a species called *Karenia brevis*, a single-celled photosynthetic dinoflagellate.
- It has reddish-brown photosynthetic pigments that really do turn the water red in high enough concentrations.
- *Karenia brevis* produces powerful neurotoxins **called brevetoxins**.

## Evia Island

### Context

- Wildfires are continuing to rip through the Greek island of Evia with strong winds driving flames towards villages.
- Greece is experiencing its most severe heatwave in 30 years in which temperatures have spiked to 45°C.

### About

- Euboea or Evia is the second-largest Greek island in area and population, after Crete.
- It is separated from Boeotia in mainland Greece by the **narrow Euripus Strait**.





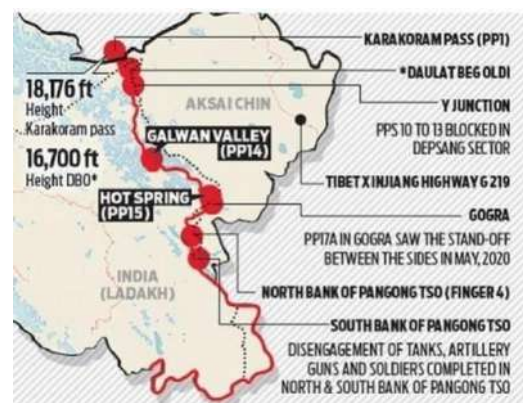
## GOGRA

### Context

- After the talks on July 31, India and China have taken one more step towards restoring peace and normalcy on the LAC by disengaging at Gogra.

### Location

- Gogra is actually in a branch valley of the Changchenmo watered by the Khugrang River, northwest of Hot Springs.
- The Changlung River flows in from the northeast to join Khugrang at this location.



## Serengeti

### Context

- Monterey Bay in California is the Serengeti of marine life.

### About

- Serengeti ecosystem is a geographical region in Africa, **spanning northern Tanzania**.
- The protected area within the region the Serengeti National Park and several game reserves.
- The Serengeti hosts the **second largest terrestrial mammal migration in the world**.
- It is partly adjacent to the Kenya border and is northwest of the adjoining Ngorongoro Conservation Area.
- The park, an international tourist attraction, was added to the **UNESCO World Heritage List in 1981**.
- It is along the "western corridor" to Lake Victoria.



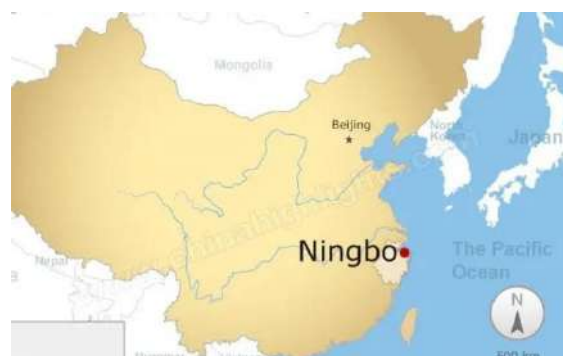
## Ningbo-Zhoushan port

### Context

- The Meishan terminal at Ningbo-Zhoushan port has halted operations after a worker tested positive for Covid-19.

### About

- The Port of Ningbo-Zhoushan is a port that is the busiest in the world in terms of cargo tonnage.
- The port is located in Ningbo and Zhoushan, **on the coast of the East China Sea**, in Zhejiang province on the southeast end of Hangzhou Bay, across which it faces the municipality of Shanghai.
- Meishan terminal mainly services trade destinations in North America and Europe.



## Colorado River

### Context

- For the first time, the federal government in the US declared a water shortage for the Colorado River basin due to a historic drought, which will lead to water cuts in some southwestern states starting October 2021.

### About

- The Colorado River is one of the principal rivers in the Southwestern United States and northern Mexico.
- The 2,330 km river starts at **La Poudre Pass in the central Rocky Mountains of Colorado in Grand Lake, Colorado**.
- It flows through the southwest across the Colorado Plateau and through the Grand Canyon before reaching Lake Mead on the Arizona-Nevada border.
- After entering Mexico, the Colorado approaches the mostly dry Colorado River Delta at the tip of the Gulf of California between Baja California and Sonora.
- In the Lower Basin, the **Hoover Dam** controls floods and regulates water delivery and storage.
- Apart from the Hoover dam, there is the **Davis Dam, Parker Dam and the Imperial Dam** that regulate the release of water



from the Hoover Dam.

## Mt Manirang

### Context

- As a part of commemorative activities for 'Azadi Ka Amrut Mahotsav', Indian Air Force had flagged off an All Women Tri-Services Mountaineering Team.
- The team successfully summited Mt Manirang (21,625 ft) on 15 August 2021.

### About

- Manirang is **one of the highest mountains in Himachal Pradesh**.
- It lies on the border between Kinnaur district and Lahaul and Spiti district.
- Close to the peak is the high Manirang pass, which was one of the early trade routes between Spiti and Kinnaur, before the motorable road was built.

### Some Important Passes



### Some Important Mountains



## Cattle Island

### Context

- The Odisha Forest and Environment Department is all set to begin 'Island Odyssey' and 'Hirakud Cruise' ecotourism packages for tourists to islands inside the reservoir.

### Cattle Island

- Cattle Island is a submerged hill in the Hirakud reservoir.
- The island was a developed village prior to the construction of the Hirakud Dam.

### Hirakud Dam

- Hirakud Dam is **built across the Mahanadi River**, in Odisha.
- It is the **longest dam in the world**.
- It is one of the first major multipurpose river valley projects started after India's independence.

## Panjshir Valley

### In News

- The Panjshir Valley is Afghanistan's last remaining holdout where anti-Taliban forces seem to be working on forming a guerrilla movement to take on the Islamic fundamentalist group.

### Afghanistan: Panjshir, stronghold of Taliban





## Istanbul Canal

### Context

- The Istanbul Canal, an under-construction shipping route running parallel to the strategically critical Bosphorus Strait, is fast gaining prominence as a major divisive issue in Turkey.

### About

- The Istanbul Canal is a project for the artificial sea-level waterway, which is planned by Turkey on East Thrace, connecting the Black Sea to the Sea of Marmara, and thus to the Aegean and Mediterranean seas.
- Istanbul Canal would bisect the current European side of Istanbul and thus form an island between Asia and Europe. The new waterway would bypass the current Bosphorus.
- The canal aims to minimize shipping traffic in the Bosphorus.
- It is projected to have a capacity of 160 vessel transits a day.



## Tungabhadra Dam

### Context

- Recently, the Vice President visited the Tungabhadra Dam.

### About

- The Tungabhadra Dam also known as Pampa Sagar is constructed across the Tungabhadra River, a tributary of the Krishna River.
- The dam is in Hosapete, Vijayanagara district of Karnataka.
- It is a multipurpose dam serving irrigation, electricity generation, flood control, etc.
- It is a joint project of Karnataka and Andhra Pradesh after its completion in 1953.

## Hurricane Ida

### Context

- Ida made landfall on Sunday with 150mph (240km/h) winds, the fifth strongest to ever hit the US mainland.

### Tropical Storms

- Hurricanes, cyclones and typhoons are all types of tropical storms. But are given different names depending on where they appear.
- Hurricanes are tropical storms that form over the North Atlantic Ocean and Northeast Pacific.
- Cyclones are formed over the South Pacific and Indian Ocean.
- Typhoons are formed over the Northwest Pacific Ocean.

## Yemen

### Context

- A missile and drone attack on al-Anad airbase in the province of Lahj in south Yemen has killed at least 30 troops.

Saffir-Simpson Hurricane Category Chart

Category	Wind Speed
Category 1	74-95 mph 33-42 m/s, 64-82 knots, 119-153 km/h
Category 2	96-110 mph 43-49 m/s, 83-95 knots, 154-177 km/h
Category 3	111-129 mph 50-58 m/s, 96-112 knots, 178-208 km/h
Category 4	130-155 mph 58-70 m/s, 113-136 knots, 209-251 km/h
Category 5	>= 157 mph >= 70 m/s, >= 137 knots, >= 252 km/h



## Haiti

### Context

- Earthquakes have been wreaking havoc in Haiti since at least the 18th century, when the city of Port-au-Prince was destroyed twice in 19 years. Recent powerful quake killed hundreds and injured thousands more.

### Details

- Haiti sits near the intersection of two tectonic plates that make up the Earth's crust - **the North American plate and the Caribbean plate.**
- Earthquakes can occur when those plates move against each other and create friction.
- Haiti lies to the east of Cuba and Jamaica and south of The Bahamas and the Turks and Caicos Islands.
- Haiti is located on the **island of Hispaniola in the Greater Antilles archipelago of the Caribbean Sea,** to the east of Cuba and Jamaica and south of The Bahamas and the Turks and Caicos Islands.
- It occupies the western three-eighths of the island **which it shares with the Dominican Republic.**
- To its south-west lies the small island of **Navassa Island, which is claimed by Haiti but is disputed as a United States territory under federal administration.**
- Capital: Port-au-Prince.
  - The island was originally inhabited by the indigenous Taíno people, who originated in South America



## Afghanistan and Central Asia

### Context

- Taliban forces have swept across Afghanistan, finally capturing the capital city of Kabul. As people are desperately trying to leave Afghanistan, many will likely seek refuge in neighbouring Tajikistan.

### Location (Afghanistan)

- Afghanistan is a **mountainous landlocked country.**
- At the crossroads of Central and South Asia, it is bordered by India and Pakistan to the east and south, Iran to the west, Turkmenistan, Uzbekistan, and Tajikistan to the north, and China to the northeast.



- 



- The nine-dash line refers to the ill-defined demarcation line used by the People's Republic of China (China) for its claims of the major part of the South China Sea.

## GS-II

# POLITY

### Question Hour

#### Context

- Rajya Sabha consulted the opposition during Question Hour.

#### Background

- This is the first hour of sitting in the parliament.
- During this, MPs ask questions to ministers and hold them accountable for functioning of their ministries.
- Both Houses of the Parliament follow their own set of rules which are formulated to govern themselves.
- At the beginning of Parliament in 1952, Lok Sabha rules provided for Question Hour to be held every day.
- Rajya Sabha, on the other hand, had a provision for Question Hour for two days a week. A few months later, this was changed to four days a week.
- Then from 1964, Question Hour was taking place in Rajya Sabha on every day of the session.

#### Procedure

- Before asking a question in the parliament, the member has to give a 15-day notice to the Chairman/Speaker in a prescribed manner. Such a period can be reduced at the discretion of the Chairman/Speaker.
- The permissible limits with respect to the question are only five a day per member in Lok Sabha and seven per day in Rajya Sabha.

#### Suspension of Question hour

- Question hour was done away with in the years 1962, 1975, 1976, 1991, 2004 and 2009 for various reasons.
- Question Hour was first dispensed with due to the India-China war during the winter session of 1962.
- Similarly, in the 1971 winter session, it was suspended due to the war with Pakistan.
- During the Emergency, parliament functioned without the Question Hour for two sessions: the monsoon session of 1975 and winter session of 1976.

### Controller General of Accounts

#### Context

- Shri Deepak Das takes charge as the new Controller General of Accounts (CGA).

#### About Controller General of Accounts

#### Objective

- Controller General of Accounts (CGA), in the Department of Expenditure, Ministry of Finance, is the Principal Accounting Adviser to Government of India.
- It is responsible for establishing and maintaining a technically sound Management Accounting System.
- The goal is to provide reliable information that brings transparency in the use and reporting of public funds through an integrated government-wide financial information system.
- Accordingly the focus has been on providing client oriented, integrated applications that aim at achieving operational efficiency across streams of public financial management system.

#### Function

- The Office of CGA prepares monthly and annual analysis of expenditure, revenues, borrowings and various fiscal indicators for the Union Government.
- The Annual Appropriation Accounts (Civil) and Union Finance Accounts are submitted to Parliament under Article 150 of the Constitution. Along with these documents, an M.I.S Report titled 'Accounts at a Glance' is prepared and circulated to Hon'ble Members of Parliament.

#### Mandate

- General principles of Government accounting relating to Union or State Governments and form of accounts, and framing or revision of rules and manuals relating thereto;
- Reconciliation of cash balance of Union Government with Reserve Bank in general and, in particular, of Reserve Deposits pertaining to Civil Ministries or Departments;
- Overseeing the maintenance of adequate standards of accounting by Central Civil Accounts Offices;
- Consolidation of monthly accounts, preparation of review of trends of revenue realization and significant features of expenditure etc and preparation of annual accounts (including Summary, Civil Appropriation Accounts) showing under the respective heads, the annual receipts and disbursements for the purpose of the Union Government;
- Administration of Central Treasury Rules and Central Government Account (Receipt and Payment Rules 1983);

- Coordination and assistance in the introduction of management accounting system in Civil Ministries or Departments;
- Cadre management of Group 'A' (Indian Civil Accounts Service) and Group 'B' Officers of the Central Civil Accounts Offices;
- Matters relating to the Central Civil Accounts staff belonging to Group 'C' and 'D';
- Disbursement of Pension through Public Sector Banks (PSBs) in respect of Central Civil Pensioners, Freedom Fighters, High Court Judges, Ex-M.P.s and Ex-Presidents.

## Fast Track Courts

### Context

- The Cabinet on August 4 approved the continuation of 1,023 Fast Track Special Courts (FTSCs) for another two years, at an outlay of Rs.1,572.86 crore.

### Background for setting up of Fast Track Courts

- Disturbing incidents of rape and gang rape of minor girls below the age of twelve years and women below the age of sixteen years have shaken the conscience of the entire nation.
- The occurrence of such incidents and prolonged trials of convicts necessitated creating a dedicated court machinery which could expedite trial and provide immediate relief to the victims. To bring more stringent provisions and expeditious trial and disposal of such cases, the Central Government has already enacted "The Criminal Law (Amendment) Act, 2018". This led to the setting up of the FTSCs.

### Implementation of Fast Track Courts:

- The FTSC Scheme was started to set up 1023 Fast Track Special Courts (FTSCs) for speedy disposal of rape and POCSO Act cases with effect from 2nd Oct 2019. The Scheme was for a period of one year spread over two Financial Years 2019-20 and 2020-21.
- The Department of Justice is responsible for overlooking the setting up of FTSCs.
- For full implementation of the Scheme, this Department has created an online monitoring framework devised for monthly monitoring of case statistics.

## Amendment in ST List

### Context

- The Constitution (Scheduled Tribes) Order (Amendment) Bill, 2021, which seeks to amend the constitutional list of Scheduled Tribes as recommended by Arunachal Pradesh was passed .

### Constitutional Provisions

- Under the article 342 (1) of the Constitution of India, the President of India was empowered to specify, the castes, races, tribes or parts of groups within castes or races, which shall be deemed to be Scheduled Tribes in relation to that State or Union territory.
- Article 342 provides for specification of tribes or tribal communities or parts of or groups within tribes or tribal communities which are deemed to be for the purposes of the Constitution the Scheduled Tribes in relation to that State or Union Territory.
- In pursuance of these provisions, the list of Scheduled Tribes are notified for each State or Union Territory and are valid only within the jurisdiction of that State or Union Territory and not outside.

### Procedure of Adding Schedule Tribe

- The first specification of Scheduled Tribes in relation to a particular State/ Union Territory is by a notified order of the President, after consultation with the State governments concerned.
- These orders can be modified subsequently only through an Act of Parliament.
- The above Article also provides for listing of scheduled tribes State/Union Territory wise and not on an all India basis.
- In exercise of the powers conferred by Clause (1) of Article 342 of the Constitution of India, the President, after Consultation with the State Governments concerned have promulgated so far 9 orders specifying the Scheduled Tribes in relation to the state and union territories.

### Essential Characteristics for tribes

- The essential characteristics of these communities are:
  - o Primitive Traits
  - o Geographical isolation
  - o Distinct culture
  - o Shy of contact with community at large
  - o Economically backward

### Distribution of tribes

- The Scheduled Tribes are notified in 30 States/UTs and the number of individual ethnic groups, etc. notified as Scheduled Tribes is 705.
- The tribal population of the country, as per 2011 census, is 10.43 crore, constituting 8.6% of the total population. 89.97% of

them live in rural areas and 10.03% in urban areas.

- The decadal population growth of the tribal's from Census 2001 to 2011 has been 23.66% against the 17.69% of the entire population.
- The sex ratio for the overall population is 940 females per 1000 males and that of Scheduled Tribes 990 females per thousand males.

## Curative Petition

### Context

- Recently, Vodafone has decided to file the curative petition in supreme court with respect to the Adjusted gross revenue case.

### About Curative petition

- Curative is a rare remedy devised by a Constitution Bench of the Supreme Court in its judgment in the Rupa Ashok Hurra case in 2002.
- A party can take only two limited grounds in a curative petition:
  - o One, he was not heard by the court before the adverse judgment was passed
  - o Two, the judge was biased.
- A curative plea, which follows the dismissal of review petition, is the last legal resort.

### About Review Petition

- According to constitution, a judgment of the Supreme Court (SC) becomes the law of the land.
- Under Article-137, SC can review its own decision, which is known as review petition.
- Under review petition, Court is not allowed to take fresh stock of the case but to correct grave errors that have resulted in the miscarriage of justice.
- Any person aggrieved by a ruling can seek a review and file a review petition. However, court has its discretion to allow a review petition.

### Conditions for Review petition

- To correct a "patent error" and not "minor mistakes of inconsequential import".
- A review can be accepted "only where a glaring omission or patent mistake or like grave error has crept in earlier by judicial fallibility".
- Mistake or error apparent on the face of the record.
- Any other sufficient reason. It means a reason that is analogous to the other two grounds.
- A review is not an appeal whereby an erroneous decision is reheard and corrected but lies only for patent error.
- Possibility of two views on the subject cannot be a ground for review.

# GOVERNANCE

## Sabki Yojna Sabka Vikas

### Context

- Under Article 243 G of Constitution, Panchayats have been mandated for preparation and implementation of plans for economic development and social justice.
- Thus, Panchayats have a significant role to play in the effective and efficient implementation of flagship schemes/programmes on subjects of national importance for transforming rural India.

### Objective of the Scheme

- Convergence was sought with all Departments relating to 29 devolved subjects listed in XIth Schedule of the Constitution.
- It broadly include: strengthening of elected representatives and Self Help Groups, evidence based assessment of progress made in 2020-21 and proposals for 2021-22 in all 29 subjects of XI Schedule, public disclosure on Schemes, finances etc.
- The preparation of **inclusive, participatory and evidence based GPDP for 2021-22 through structured Gram Sabha** involving front line workers/ supervisors of all 29 sectors of XI schedule.

### Aim

- The campaign aimed to help Gram Panchayats (GPs) in preparation of convergent and holistic GPDP through **identification** of sectoral infrastructural gaps in respective areas.
- The approval of GPDP for the year 2021-22, well in advance, will provide GPs full year for implementation and effective **monitoring of works**.
- The States will, thus, be in full readiness for effectively utilising the resources available with them and other schematic interventions under GPDP during 2021-22.



## MPLAD

### Context

- According to government, virtually half of a belated ₹2,200 crore allotted for completing ongoing MPLADS projects in 2020-21 simply lapsed.

### About MPLAD scheme

- Launched in December, 1993.
- Seeks to **provide a mechanism for the Members of Parliament to recommend works of developmental nature for creation of durable community** assets and for provision of basic facilities including community infrastructure, based on locally felt needs.
- The MPLADS is a **Plan Scheme fully funded by Government of India**.
- The annual MPLADS fund entitlement per MP constituency is Rs. 5 crore.
- Special focus:
- MPs are to **recommend every year, works costing at least 15 per cent of the MPLADS entitlement for the year for areas inhabited by Scheduled Caste** population and 7.5 per cent for areas inhabited by S.T. population.
- In order to encourage trusts and societies for the betterment of tribal people, a ceiling of Rs. 75 lakh is stipulated for building assets by trusts and societies subject to conditions prescribed in the scheme guidelines.

### Release of Funds

- Funds are released in the form of grants in-aid directly to the district authorities.
- The funds released under the scheme are non-lapsable.
- The liability of funds not released in a particular year is carried forward to the subsequent years, subject to eligibility.
- The MPs have a recommendatory role under the scheme.
- The district authority is empowered to examine the eligibility of works, sanction funds and select the implementing agencies, prioritise works, supervise overall execution, and monitor the scheme at the ground level.
- At least 10% of the projects under implementation in the district are to be inspected every year by the district authority.

### Recommendation of works

- The Lok Sabha Members can recommend works in their respective constituencies.
- The elected members of the Rajya Sabha can recommend works anywhere in the state from which they are elected.
- Nominated members of the Lok Sabha and Rajya Sabha may select works for implementation anywhere in the country.

# SOCIAL JUSTICE

## Manthan-2021

### Context

- Manthan- 2021 is organized by Bureau of Police Research and Development (BPR&D) in coordination with the Innovation Cell of the Ministry of Education and AICTE.

### Process of Challenge

- MANTHAN 2021 will have two phases.

#### Phase-1

- In the first phase, participants are expected to submit their concepts against the problem statements which they wish to solve on the portal.
- These submitted ideas will be evaluated by group of experts in the field and only the innovative ideas will be selected for the Grand Finale.

#### Phase-2

- During the Grand Finale, selected participants are expected to build the solution to demonstrate their concepts and prove to the juries that their ideas are technically feasible and more importantly implementable.
- Best ideas will be declared winners.

### About the Challenge

- Selected youths from education institutions across the country and registered start-ups will participate to offer strong, safe and effective technology solutions using their technical expertise and innovative skills.
- Total Prize money worth Rs. 40 Lakh is announced for the winning teams.
- Participants are expected to develop digital solutions under 6 themes for 20 different challenge statements released today using new technologies like Artificial Intelligence, Deep Learning, Augmented reality, Machine Learning, etc. for ever-changing security related challenges, which include photo/video analysis, Fake Content Identification along with the information of creator, predictive Cyber Crime data analytics, etc.

## PMBJP

### Context

- Under the Pradhan Mantri Bhartiya Janaushadhi Pariyोजना (PMBJP), the Government has opened 8,001 Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs) as of 02.08.2021, covering all the districts of the country and aim to open about 10,500 Janaushadhi Kendras by March 2025.

### About it

- In September 2015, the 'Jan Aushadhi Scheme' was revamped as 'Pradhan Mantri Jan Aushadhi Yojana' (PMJAY).
- In November 2016, **to give further impetus to the scheme, it was again renamed as Pradhan Mantri Bhartiya Janaushadhi Pariyोजना (PMBJP).**
- The Pradhan Mantri Bhartiya Janaushadhi Pariyोजना (PMBJP) **is a campaign launched by the Department of Pharmaceuticals (Ministry of Chemicals and Fertilizers) to provide quality medicines at affordable prices to the masses.**
- PMBJP stores have **been set up to provide generic drugs, which are available at lesser prices** but are equivalent in quality and efficacy as expensive branded drugs.
- The Jan Aushadhi initiative **will make available quality drugs at affordable prices through dedicated stores selling generic medicines which are available** at lesser prices but are equivalent in quality and efficacy as expensive branded drugs.
- Promote greater awareness about cost-effective drugs** and their prescription.
- Make available unbranded quality generic medicines** at affordable prices through a public-private partnership.
- Encourage doctors, more specifically in a government hospital,** to prescribe generic medicines.
- Enable substantial savings in health care, more particularly in the case of poor patients and those suffering from chronic ailments requiring long periods of drug use.

## PM Daksh Portal

### Context

- Government has launched an online portal and a mobile application to make skill development schemes accessible to the target groups of Backward Classes, Scheduled Castes, and sanitation workers.

### About the Portal

- It has been **developed by the Ministry of Social Justice and Empowerment**, in collaboration with the National e-governance Division, to make the skill development schemes accessible to the target groups.
- Through these portals and app, the youth of the target groups will now be able to avail the benefits of skill development training programmes more easily.

## World Tribal Day

### Context

- Recently, world tribal day was celebrated across the world.

### About World Tribal day

- Every year, World Tribal Day or International Day of the World's Indigenous Peoples is observed across the globe on 9 August to promote and defend the rights of the indigenous people in the world.
- On this day, people honor the achievements and contributions of local communities towards the prosperity of a nation and celebrate indigenous cultures.
- On 9 August 1982, the first meeting of the United Nations working group on indigenous peoples took place in Geneva, Switzerland.
- The 2021 commemoration of the International Day of the World's Indigenous Peoples aimed on the theme "Leaving no one behind: Indigenous peoples and the call for a new social contract".

## Introducing Values in Government Education

### Context

- Government has highlighted the steps taken to introduce the values in education.

### Means to inculcate values

- NCERT has developed curriculum, syllabi, textbooks and other curricular materials for elementary and secondary stages, integrating different aspects of value education and at the same time providing adequate space to study the contents of different subjects.
- NCERT textbooks have integrated concerns related to environment, peace oriented values, gender, SC/ST Minority in all its textual materials and supplementary reading materials.
- The module prepared on Pedagogy on Social Sciences at the elementary and secondary stage for NISHTHA Programme also attempts to inculcate Indian values through participatory approaches in the teaching and learning of Social Sciences.
- The National Education Policy (NEP), 2020 provides to include in the curriculum ethical reasoning, traditional Indian values

and all basic human and Constitutional values (such as *seva*, *ahimsa*, *swachchhata*, *satya*, *nishkam karma*, *shanti*, sacrifice, tolerance, diversity, pluralism, righteous conduct, gender sensitivity, respect for elders, respect for all people and their inherent capabilities regardless of background, etc.

### Kala Utsav

- The Ministry of Education through NCERT organizes Kala Utsav every year to promote indigenous arts and culture in education, by nurturing and showcasing the artistic talent of school students in the country.
- Kala Utsav is a unique celebration of its kind where students get an opportunity to understand, and celebrate cultural diversity at school, district, state and national levels and helps in creating awareness of our regional cultural heritage and its vibrant diversity among different stakeholders of education.

### Ek Bharat Shrestha Bharat

- It aims to celebrate the Unity in Diversity of our Nation, promote the spirit of national integration through a deep and structured engagement between all Indian States and UTs, and showcase the rich heritage and culture, customs and traditions of either State for enabling people to understand and appreciate the diversity that is India, thus fostering a sense of common identity.

## Initiatives taken to improve the Girl Education

### Context

- Recently, government has highlighted the initiatives taken to improve the girl education in parliament.

### Initiatives:

- **Issuing of new UGC regulation for Open and Distance Learning** that allows entry of reputed institutions to offer education on the distance mode.
- **Use of ICT technology- SWAYAM portal** to take the best teaching resources to all, including the most disadvantaged.
- Opening of more centrally funded institutions.
- **Encouraging opening of institutions by State Governments through the Rashtriya Uchchatar Shiksha Abhiyan (RUSA) which aims to achieve equity**, access and excellence in higher education. The scheme supports components such as upgrading autonomous colleges to universities, clustering colleges to establish a university, setting up of new professional colleges in unserved and underserved areas as well as providing infrastructure grants to universities and colleges to scale up capacity.
- **More scholarship programmes to supplement the cost of education.**
- Additionally, as per the recommendations of National Education Policy (NEP), 2020, the following steps are being initiated by the Government to ensure equitable access to the highest quality of education for all learners, especially women, regardless of social or economic background:
  - o **A Gender Inclusion Fund will be constituted by Government of India to provide quality and equitable education to all girls.** The fund will focus on ensuring 100% enrolment of girls in Schooling and a record participation rate in higher education.
  - o **Free hostel facilities will be made available** for all women.
  - o New multi-disciplinary HEIs (including those specially for women) will be opened in or near every district.
  - o **Special scholarships for women/transgender/ divyang will be introduced.**
  - o Guidelines and advisories will be issued and monitoring mechanism will be put in place to ensure basic facilities amenities and safe, secure environment in all HEIs for women.

## Definition of Minority

### Context

- Recently, government has replied to a question on definition of minority.

### Definition of minority

- Central Government notifies minority communities at the national level in consultation with various stakeholders under Section 2 (c) of National Commission for Minorities (NCM), Act, 1992.
- The six communities notified as minority communities under Section 2(c) of the NCM Act, 1992 are Christians, Sikhs, Muslims, Buddhists, Parsis and Jains.
- Notification of any community specific to a State as minority community with in a State comes under the purview of the State concerned.

### Linguistic Minority

- The Article 29 and 30 of the Constitution provide for protection of interest of minorities which includes linguistic minorities also.
- Linguistic Minorities are group of individuals residing in the territory of India or any part thereof having a distinct language or script of their own.

- The **language of the minority group need not be one of the twenty two languages** mentioned in the Eighth Schedule of the Constitution.
- The Government has already enacted the National Commission for Minorities (NCM) Act, 1992 to constitute a National Commission for Minorities.

## Samagra Shiksha

### Context

- Cabinet approves Samagra Shiksha scheme extension till March 2026

### Background

- The Union Budget, 2018-19, has proposed to treat school education holistically without segmentation from pre-nursery to Class 12.
- Samagra Shiksha - an overarching programme for the school education sector extending from pre-school to class 12 has been, therefore, prepared with the broader goal of improving school effectiveness measured in terms of equal opportunities for schooling and equitable learning outcomes.
- It subsumes the three erstwhile Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).
- This sector-wide development programme/scheme would also help harmonise the implementation mechanisms and transaction costs at all levels, particularly in using state, district and sub-district
- level systems and resources, besides envisaging one comprehensive strategic plan for development of school education at the district level.
- The shift in the focus is from project objectives to improving systems level performance and schooling outcomes which will be the emphasis of the combined Scheme along-with incentivizing States towards improving quality of education.

### Major Features

#### Holistic approach to education

- Treat school education holistically as a continuum from Pre-school to Class 12 Inclusion of senior secondary levels and pre-school levels in support for School education for the first time
- Administrative reform
- Single and unified administrative structure leading to harmonized implementation
- Flexibility to States to prioritise their interventions under the Scheme. An integrated administration looking at 'school' as a continuum

#### Focus on Quality of Education

- Enhanced focus on improving quality of education by focus on the two T's - Teachers and Technology.
- Enhanced Capacity Building of Teachers and School Heads. Focus on strengthening Teacher Education Institutions to improve the quality of prospective teachers in the system.

#### Focus Digital Education

- Support 'Operation Digital Board' in all secondary schools over a period of 5 years, which will revolutionize education- easy to understand, technology based learning classrooms will become flipped classrooms.
- Enhanced use of digital technology in education through smart classrooms, digital boards and DTH channels.
- Digital initiatives like UDISE+, Shagun, to be strengthened Strengthening of ICT infrastructure in schools from upper primary to higher secondary level.

#### Strengthening of Schools

- Enhanced Transport facility to children across all classes from I to VIII for universal access to school.
- Composite school grant increased from Rs. 14,500-50,000 to Rs. 25,000- 1 Lakh and to be allocated on the basis of school enrolment. Specific provision for Swachhta activities - support 'Swachh Vidyalaya Improve the Quality of Infrastructure in Government Schools

#### Focus on Girl Education

- Upgradation of Kasturba Gandhi BalikaVidyalayas (KGBVs) from Class 6-8 to Class 6-12.
- Self-defence training for girls from upper primary to senior secondary stage. Enhanced Commitment to 'Beti Bachao Beti Padhao'

#### Focus on Inclusion

- Allocation for uniforms under RTE Act enhanced from Rs. 400 to Rs. 600 per child per annum. Allocation for textbooks under the RTE Act, enhanced from Rs. 150/250 to Rs. 250/400 per child per annum.
- Energized textbooks to be introduced. Allocation for Children with Special Needs (CwSN) increased from Rs. 3000 to Rs. 3500 per child per annum. Stipend of Rs. 200 per month for Girls with Special Needs from Classes 1 to 12.

#### Focus on Skill Development

- Exposure to Vocational Skills at Upper Primary Level would be extended. Vocational education for Class 9-12 as integrated



with the curriculum and to be made more practical and industry oriented.

- Reinforce emphasis on 'Kaushal Vikas'

#### **Focus on Sports and Physical Education**

- Sports Education to be an integral part of curriculum. Every school will receive sports equipment at the cost of Rs. 5000 for Primary Schools, Rs. 10,000 for upper primary schools and up to Rs. 25,000 for secondary and senior secondary schools to inculcate and emphasize relevance of sports.

#### **Focus on Regional Balance**

- Promote Balanced Educational Development. Preference to Educationally Backward Blocks (EBBs), LWE affected districts, Special Focus Districts (SFDs), Border areas and the 117 aspirational districts identified by Niti Aayog.

## **Global Hunger Index**

### **Context**

- India's ranking in the Global Hunger Index (GHI) 2015, 2016, 2017, 2018, 2019 and 2020 brought out by Concern Worldwide and Welthungerhilfe was 80, 97, 100, 103, 102 and 94 respectively.
- As per GHI Reports, the composite GHI scores of India have improved from 38.9 in 2000 to 27.2 in 2020.

### **About Global Hunger Index**

- The GHI has been brought out almost every year by Welthungerhilfe (lately in partnerships with Concern Worldwide) since 2000
- The GHI slots countries on a scale ranging from "low" hunger to "moderate", "serious", "alarming", and "extremely alarming".
- India is one of the 47 countries that have "serious" levels of hunger.
- A low score gets a country a higher ranking and implies a better performance.
- The reason for mapping hunger is to ensure that the world achieves "Zero Hunger by 2030" – one of the Sustainable Development Goals laid out by the United Nations.
- It is for this reason that GHI scores are not calculated for certain high-income countries.
- In a formal sense, GHI is calculated by mapping the level of calorie intake.

### **Calculation of Global Hunger Index**

- **Undernourishment (which reflects inadequate food availability):** calculated by the share of the population that is undernourished (that is, whose caloric intake is insufficient).
- **Child Wasting (which reflects acute under nutrition):** calculated by the share of children under the age of five who are wasted (that is, those who have low weight for their height).
- **Child Stunting (which reflects chronic under nutrition):** calculated by the share of children under the age of five who are stunted (that is, those who have low height for their age).
- **Child Mortality (which reflects both inadequate nutrition and unhealthy environment):** calculated by the mortality rate of children under the age of five (in part, a reflection of the fatal mix of inadequate nutrition).

# **INTERNATIONAL RELATIONS**

## **Community of Portuguese Language Countries**

### **Context**

- India joined Community of Portuguese Language Countries as Associate Observer in July.
- This sets a **new platform for strengthening India's historic bonds of friendship with Lusophone countries** and pursuing cooperation in areas of mutual interest.
- The move will further enrich and strengthen India's ties with the Portuguese speaking world.

### **About Community of Portuguese Language Countries**

- It is also known as the Lusophone Commonwealth.
- It is an **international organization and political association** of Lusophone nations across four continents, where **Portuguese is an official language**.
- The CPLP operates as a privileged, multilateral forum for the mutual cooperation of the governments, economies, non-governmental organizations, and peoples of the Lusofonia.



- The CPLP consists of 9 member states and 32 associate observers, located in Europe, South America, Asia, Africa and Oceania, totaling 37 countries and 4 organizations.
- CPLP is a multilateral forum created to **deepen cultural, economic, and political cooperation** among the Lusophone (Portuguese-speaking) nations of the world.

#### The prime objectives of the CPLP are

- Promotion and dissemination of the Portuguese language
- Political and diplomatic cooperation between the member states of the CPLP
- Cooperation in all areas, including education, health, science and technology, defense, agriculture, public administration, communications, justice, public safety, culture, sports and media

## Indo-Iran relations

### Context

- External Affairs minister S. Jaishankar attended Iranian President Ebrahim Raisi's swearing in ceremony in the Majlis or Parliament in Tehran.

### Why is this significant? And does this signal a new chapter in India-Iran ties?

- Mr. Jaishankar's visit to Iran carries political weight and indicates the Indian government wants to make a big beginning with the new Iranian president
- India is trying to walk a tightrope between its ties with the West (especially U.S.) and ties with Iran, as the nuclear talks on US rejoining the JCPOA agreement with Iran are also stalled.
- US, UK and Israel have come down heavily on Iran, accusing it of carrying out the attack on an Israeli owned tanker last week, the issue now being taken up at the UNSC, where India is the president.

### Afghanistan- a common cause

- Afghanistan, where US troops are expected to pull out by August 31, and the Taliban have stepped up attacks.
- While Iran and India have many differences on their outlook on the status of women, they **share a common cause in Afghanistan for several reasons:**
  1. India and Iran have faced attacks from the Taliban, Al Qaeda, Lashkar e Toiba and other sunni groups, and have a **common concern about the Taliban gaining power in Kabul.**
  2. An Islamic Emirate in Afghanistan is a **security threat for India and Iran and an existential threat for Pakistan.**
  3. While Russia, US, China have advocated power sharing arrangements involving the Taliban in Kabul, **India and Iran have upheld the legitimacy of the democratically elected government in Afghanistan**, and could cooperate in bolstering the Ghani government at this time.
  4. **India and Iran have been left out of the US Russia China- Troika and Troika plus talks with Pakistan**, thus far, despite being regional powers,
  5. **Iran and India have cooperated on connectivity projects for Afghanistan** and Central Asia, including at Chabahar and the INSTC that goes through Bandar Abbas

### Why is a restart with Iran needed at this point?

- From 2018, there have been tensions over **India's decision to cancel or zero out its imports from Iran in 2019**, after the Trump administration passed new sanctions and issued a threat.
- Prior to that India used to import more than 10% of its energy needs from Iran. For Iran, India was a major buyer.
- **Trade between the two that topped \$17 billion in 2018 has dwindled to a third**, this has had an impact on Indian traders who imported rice, fruits and other produce from Iran in return.
- The **US sanctions have severely curtailed India's ability to develop the Chabahar project**, insurance companies and freight companies don't want to engage with the project.
- As a result in 2020, **Iran decided to go ahead with its rail project, dropping India from the deal, as it was unable to participate.**
- As a **traditional partner**, Iran has rarely spoken about India's internal affairs, including sensitive areas like **Kashmir**, yet in the aftermath of government's decision on 370 in Jammu Kashmir, Iran's leadership criticized the move and the arrests of thousands that followed.
- **Iran has increased ties with China**, something that worries India, as Iran and China signed a **25 years 400 bn dollar infrastructure partnership**, which could affect Indian interests in Iran, the ports as well as oil and gas resources.
- Iran is India's **traditional, historical and cultural partner.**
- Until 1947 it was India's immediate neighbour, and is still a maritime neighbour.
- It is of immense importance to India as it provides an **alternate route of connectivity to Afghanistan, Central Asia and Europe**, given the problems with Pakistan and China's Belt and Road Initiative, which India boycotted.
- Finally, if India is able to negotiate a way around US sanctions, Iran could once again be a vital source of energy for India at a time when oil prices in India have skyrocketed.

## 'Buffer' Zone along the Line of Actual Control

### Context

- Indian and Chinese troops disengaged from Patrolling Point (PP) 17A near Gogra Post. However, the details of a temporary no-patrol zone differs from location to location.

### What is a no-patrolling zone?

- When two forces disengage from a face-off point where they had been in close proximity to each other, **one way to prevent new face-offs is to create a zone** in which troops from neither side are allowed for a certain length of time.
- It is an area or a zone where **neither side is allowed to patrol**
- Between India and China, the idea of the no-patrolling zone can be traced back to the border war of 1962.
- Recently, the concept was used by India in 2013. When Chinese troops had pitched tents in an area known as the Bottleneck in the Depsang Plains, and India was negotiating to end the face-off.

### Why is patrolling important?

- In the case of an undecided boundary like the one between India and China, forces patrol the region to assert their control over the territory.
- The patrolling points for India are decided by a body known as the China Study Group (CSG), a secretary-level official group that is the sole adviser to the central government on matters related to China.

### Is the suspension of patrolling permanent?

- Suspension of patrolling is not permanent, and India has not given up its right to patrol those areas.
- However, patrolling from both sides has been suspended till the standoff throughout eastern Ladakh is resolved. This means not only disengaging from the friction points, but also de-escalation.
- De-escalation means both sides will pull back the additional troops that have been stationed in the region since last year.

## 50 years of 1971 Indo-Soviet Pact

### Context

- The **1971 Treaty of Peace, Friendship and Cooperation** with then Soviet Union was perhaps the most consequential international pact entered into by India since Independence, said Indian envoy at an event to mark **50 years of the historic agreement**.

### More about news

- The two countries are discussing on the possible formats for India's participation in the **Eastern Economic Forum (EEF) 2021** and **St. Petersburg International Economic Forum (SPIEF) 2022**.

### Alignment of interests

- The treaty **symbolised an alignment of interests** in the face of regional and international challenges.
- It also symbolised an **"extraordinary convergence of national interest of both countries on the most critical issues of war and peace."**
- It immensely contributed to country's ability **to successfully meet one of the greatest security challenges it has faced in the past seven decades**.
- It was **not a military alliance**. But, it strengthened the **basis for India's strategic autonomy**, and its capacity for independent action.
- The 1971 India-Pakistan war led to the **creation of Bangladesh**.

## IBSA

### Context

- India organises the IBSA (India, Brazil and South Africa) Tourism Ministers' virtual meet.

### More about news

- The IBSA Tourism Ministers Meeting recognized the importance of strengthening cooperation in tourism to overcome the impact of Covid 19 pandemic on the tourism sector.

### About IBSA

- IBSA is a **trilateral, developmental initiative** between the Government of **India**, The Government of Federative Republic of **Brazil** and The Government of the Republic of **South Africa** to promote South-South cooperation and exchange.
- The **aim** of the IBSA Tripartite Agreement is **for strengthening relations between the member countries for economic development and for promoting cooperation in the field of tourism and expansion of tourism relations with a view to understand and appreciate each other's history, culture and way of life.**
- Cooperation in IBSA is on **three fronts**
  - As a **forum for consultation and coordination on global and regional political** issues, such as, the reform of the global institutions of political and economic governance, WTO/Doha Development Agenda, climate change, terrorism etc.;
  - Trilateral collaboration on concrete areas/projects**, through fourteen working groups and six People-to-People Forums,

for the common benefit of three countries; and

3. **Assisting other developing countries** by taking up projects in the latter through IBSA Fund. IBSA's success demonstrates, most vividly, the desirability and feasibility of South-South cooperation beyond the conventional areas of exchange of experts and training.

## UNWGC

### Context

- The Global Geospatial Information Community was sensitized about the second United Nations World Geospatial Information Congress (UNWGC) to be organized by India in October next year.
- It would show a glimpse of India's evolving geospatial ecosystem.
- India has liberalized geospatial policy and it strengthen the geospatial ecosystem.
- Under the "SVAMITA" scheme rural population is empowered , as digital certificate of landholding is being given to rural landowners.

### About United Nation Committee of Experts on Global Geospatial Information Management (UN-GGIM)

- It is an initiative of the United Nations to foster the global development geospatial information.
- UN-GGIM organizes the United Nations World Geospatial Information Congress (UNWGC) every four years with the objectives of enhancing international collaboration among the Member States and relevant stakeholders in Geospatial information management and capacities.
- The first UNWGC was organized by China in October 2018.
- The UNGGIM has entrusted the responsibility of organizing the second UNWGC to India during October 2022.
- India will organize the event as a part of the "Azadi Ka Amrit Mahotsav (Celebration of 75 years of Indian Independence)".

## ASEAN Consensus on Myanmar

### Context

- India chaired a closed **UN Security Council** meeting on Myanmar and welcomed the ASEAN five-point consensus.

### The ASEAN five-point consensus

- It states that there shall be an immediate cessation of violence in Myanmar.
- All parties shall exercise utmost restraint; constructive dialogue among all parties concerned shall commence to seek a peaceful solution in the interests of the people.
- A special envoy of the ASEAN Chair shall facilitate mediation of the dialogue process, with the assistance of the secretary-general of ASEAN.
- ASEAN shall provide humanitarian assistance through the AHA Centre (ASEAN Coordinating Centre for Humanitarian Assistance on disaster management); and
- The special envoy and delegation shall visit Myanmar to meet with all parties concerned.

### About ASEAN

- It is officially the Association of Southeast Asian Nations.
- It is an economic union comprising 10 member states in Southeast Asia. There are: Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Laos, Myanmar, Cambodia and Vietnam.
- It promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and socio cultural integration between its members and other countries in Asia.

### ASEAN's Objectives

- To accelerate economic growth and through that social progress and cultural development.
- To promote regional peace and stability based on the rule of law and the principle of United Nations charter.
- In 2003, ASEAN moved along the path of the European Union by agreeing to establish an ASEAN community comprising three pillars: **the ASEAN security community, the ASEAN economic community, and the ASEAN socio-cultural community.**





## Hazaras of Afghanistan

### Introduction

- Despite the Taliban promising a new era of “amnesty”, peace and security, the terrorist group’s actions since their swift ascent to power has left thousands of ordinary Afghans, **particularly ethnic minorities like the Hazaras**, scrambling to escape a potentially brutal and repressive regime.
- **The Hazaras have long faced violent persecution from the Taliban and Islamic State for their ethnicity and religious beliefs.**

### Who are the Hazaras?

- The Hazaras are **an ethnic and religious minority group** largely found in the rugged and mountainous central Afghan region of Hazarajat.
- They are believed to be **descendants of the founder of the Mongol empire, Genghis Khan**, and his army that overran the entire region during the 13th century.
- They are targeted by the Taliban because they are **primarily Shia Muslims**, as opposed to most Afghans who follow the Sunni branch of Islam.
- Their distinct Asiatic features and use of a Persian dialect called **Hazaragi** also sets them apart from the rest of the country.
- The Hazaras are one of Afghanistan’s largest ethnic minorities, accounting for about 10-12 per cent of the country’s 38-million strong population.
- But they were once even larger, constituting approximately 67 per cent of Afghanistan’s total population. Since then, primarily due to violence, oppression and targeted massacres, that number has come down drastically.
- During the country’s civil war in the 1990s and the Taliban’s first reign of terror in Afghanistan, thousands of Hazara people were massacred.
- But even after the US invaded Afghanistan and ended the Taliban’s rule in 2001, atrocities against the ethnic minority group continued.
- 2004 **Afghanistan constitution granted them equal rights** and they were even well-represented in the Afghan administration, the Hazaras have been historically denied the freedoms and rights enjoyed by other ethnic groups in the country.
- Areas such as **Bamiyan**, which are primarily occupied by this ethnic group, are some of the country’s most backward — often lacking basic facilities such as running water and power.

## BRICS-Agricultural Research Platform

### Context

- Union Minister for Agriculture and Farmers Welfare announced the operationalization of BRICS Agricultural Research Platform.
- It is set up in India for **strengthening the cooperation in the field of agricultural research & innovations** amongst the BRICS member States.

### About BRICS- Agricultural Research Platform

- It is a global platform for **science-led agriculture**.
- It will **help in addressing the issues of world hunger, under-nutrition, poverty and inequality by promoting sustainable agricultural development** through strategic cooperation in agriculture and allied sector.
- It has been operationized to **intensify cooperation in the areas of agricultural research, technology, policy, innovations and capacity building** including technologies for smallholder farming and to sustainably increase yields and farmers income in the BRICS member countries.
- The platform shall **escalate the exchange of research findings and innovation and best practices for upscaling in the respective BRICS Nations**.
- The BRICS Nations have also appointed their focal points for BRICS-ARP to interact virtually through the platform and identify the common problems and develop joint projects for finding the solutions.
- **Indian Council of Agricultural Research** is the focal organization from India.

### Key highlights of the BRICS Agriculture Ministers meet

- Agro-biodiversity has a **prime role in addressing the food security and nutrition** and developing the resilient agri-food systems.
- **Action plan 2021-24 for agricultural cooperation** among BRICS countries adopted.
- By increasing agricultural production and increasing the income of farmers, the problem of income inequality and food price volatility can be overcome.
- India is actively promoting the diversification of its agri-food systems through countrywide programs such as pulses, oilseeds, horticultural crops, National Bamboo Mission and the recently launched National Palm Oil Mission.
- The objective of these programs is to **increase the income of the farmers along with providing diversification in both farm and plate**.

- United Nations has declared the year **2023 as the International Year of Millets** and preparations are being made to celebrate the International Year of Millets at the global level.
- India is focusing on **capacity building in research, teaching, policy-making, trade and farming of nutritious cereals**, which will benefit the farmers while conserving the amazing diversity available in this group of crops.
- After the meeting a Joint declaration of the eleventh meeting of BRICS Agriculture Ministers covering a wide range of focus areas for future cooperation amongst BRICS countries was adopted.
- The Action Plan of 2021-24 for Agricultural Cooperation of BRICS Countries provides for enhanced cooperation in the field of agriculture amongst BRICS nations and focuses on the themes of food security, welfare of farmers, conservation of agro-biodiversity, resilience of food and agricultural production systems, promotion of digital agricultural solutions etc.

#### What is BRICS? How did these countries come together?

- It is an informal group of states comprising the Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South Africa.
- It is actually a forum than a traditional-type organization with rigid membership and regulations.
- Originally the first four were grouped as "BRIC" (or "the BRICs"), before the induction of South Africa in 2010.
- At the Fortaleza Summit (2014), in Brazil, the New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA) were created
- Among other areas of collaboration, matters pertaining to drug trafficking is an important area of cooperation among the BRICS member states.



## Kanal Istanbul

### Introduction

- The Kanal Istanbul, an **under-construction shipping route** running parallel to the strategically critical Bosphorus Strait, is gaining prominence as a major divisive issue in Turkey election to be held in 2023.

#### What is Kanal Istanbul?

- It is a new route through Istanbul **connecting the Black Sea and the Sea of Marmara**, for creating new source of income for the country.
- The planned canal will **run parallel to the Bosphorus Strait**, a natural waterway that **separates Europe and Asia**, which for centuries has served as a key outlet for Russian ships entering the Mediterranean Sea.
- Since 1936, passage through the Strait has been **governed by the Montreux Convention**, a multilateral treaty that allows ships to go across almost free of cost during peacetime, and which tightly restricts the movement of naval vessels.
- It is claimed that the new canal, will be **safer and faster to navigate** compared to the Bosphorus, making it a more attractive option for commercial ships.



## World Food Program

### Introduction

- 14 million people are facing severe hunger in Afghanistan says the World Food Program (The UN food agency).
- A second drought in three years, combined with fighting, had afflicted Afghanistan even before the Taliban takeover of the country.

#### The World Food Programme (WFP)

- It is the food-assistance branch of the United Nations.
- It is the world's largest humanitarian organization, the largest one focused on hunger and food security and the largest provider of school meals.
- Founded in 1961, it is headquartered in Rome and has offices in 80 countries.
- WFP offers technical assistance and development aid, such as
- building capacity for emergency preparedness and response,
- managing supply chains and logistics,

- promoting social safety programs, and
- strengthening resilience against climate change.
- The agency is also a major provider of direct cash assistance and medical supplies, and provides passenger services for humanitarian workers.
- WFP is an executive member of the United Nations Development Group, a consortium of UN entities that aims to fulfil the 17 Sustainable Development Goals (SDG), with a priority on achieving SDG 2 for "zero hunger" by 2030.

## India's 5-point agenda to enhance maritime cooperation

### Context

- Prime Minister Narendra Modi recently **presided over a UN Security Council (UNSC) Open Debate on the topic- Enhancing Maritime Security.**

### India's 5-point agenda

- The UN Security Council then adopted India's presidential statement on maritime security.
- **Five-point agenda laid down by PM to increase maritime cooperation:**
  - o Removal of barriers to legitimate maritime trade.
  - o Resolution of maritime disputes peacefully in accordance with international law.
  - o Fight threats from natural disasters, non-state actors.
  - o Conservation of marine resources.
  - o Promoting responsible maritime connectivity.

## Islamic State Khorasan

### Context:

- People were killed in several explosions at Kabul's Hamid Karzai Airport.
- The Afghan offshoot of the terror organization "Islamic State," known as ISIS-Khorasan, IS-K or ISIS-K claimed responsibility for the attacks.
- The group takes its name from the **Khorasan Province, an area that once included wide swaths of Afghanistan, Iran and central Asia in the Middle Ages.**

### Who are IS-K?

- IS-K originally emerged in Pakistan as an armed student group belonging to the umbrella organization, Tehrik-i-Taliban Pakistan.
- Fearing persecution at home, they fled across the border to Afghanistan and pledged allegiance to the Islamic State and IS chief Baghdadi in 2014, who since has been killed. In the spring of 2015.
- IS officially absorbed the terrorists into their own network and announced its expansion into Central Asia as IS-K.



### Difference between IS-K and the Taliban

- They have been locked in bloody battles with one another for some time.
- An **ideological gulf separates the two militant groups.**
- While the IS belongs to the Salafist movement of Islam; the Taliban adhere to the Deobandi school.
- **Taliban** seems content themselves **with-in Afghanistan**, the **Islamic State group in Afghanistan and Pakistan strives to establish a caliphate throughout South and Central Asia** and has also embraced the Islamic State's call for a worldwide jihad against non-Muslims.
- **Sharia law interpretation:** For IS-K, the Taliban's views are not strict enough. IS fighters have called the Taliban as bad Muslims because of their willingness to negotiate a peace deal with the United States. By doing so, they betrayed the goals of the jihad.



# HEALTH

## Ashwagandha

### Context

- The Ministry of Ayush has collaborated with the U.K.'s London School of Hygiene and Tropical Medicine (LSHTM) to conduct a study on 'Ashwagandha' for promoting recovery from COVID-19.

### About

- Ashwagandha' (Withaniasomnifera), commonly known as 'Indian winter cherry', is a traditional Indian herb that **boosts energy, reduces stress and makes the immune system stronger.**
- This is the first time the Ministry of Ayush has collaborated with a foreign institution to investigate its efficacy on COVID-19 patients".
- All India Institute of Ayurveda (AIIA), is an **autonomous body under the Ministry of Ayush.**

## First Bio Bank of Ayurveda

### Context

- Union Ayush Minister assured all help for establishing the **first Bio-Bank of the world in Ayurveda** at All India Institute of Ayurveda (AIIA).

### Biobank

- It is a large collection of biological or medical data and tissue samples, amassed for research purposes.

### AIIA

- AIIA is a public Ayurveda medicine and research institution located in New Delhi. It was established in 2015.
- It is an **autonomous institute under the Ministry of AYUSH.**
- The institute would offer postgraduate and doctoral courses in various disciplines of Ayurveda and will focus on fundamental research of Ayurveda, drug development, standardization, quality control, safety evaluation and scientific validation of Ayurvedic medicine.

## Health Stats

### Context

- India is well on the path to have one doctor per thousand population by 2024, which is World Health Organisation (WHO) recommended doctor to population ratio and is increasing the number of beds from 11 lakh to 22 lakhs : Member, NITI Aayog

### About

- As of last survey in 2020, The doctor-population ratio in India is 1:1456.
- This is against the WHO recommendation of **1:1000**.

## Jan Aushadhi Sugam App

### Context

- More than 11.74 lakh users are connected with the Jan Aushadhi Sugam App.

### About

- Janaushadhi Sugam App has been developed by the Bureau of Pharma PSUs of India (BPPI) under Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers.
- It **helps people to locate nearby Janaushadhi kendras**, search Janaushadhi generic medicine and analyse product comparison of generic v/s branded medicines in the form of MRP & overall savings etc.

### Janaushadhi Kendras

- Pradhan Mantri Bharatiya Janaushadhi Pariyojana (PMBJP) is a campaign launched by the Department of Pharmaceuticals, to provide quality medicines at affordable prices to the masses through special kendras known as Pradhan Mantri Bharatiya Janaushadhi Pariyojana Kendra.
- Pradhan Mantri Bharatiya Janaushadhi Pariyojana Kendra (PMBJP) have been set **up to provide generic drugs, which are available at lesser prices but are equivalent in quality and efficacy as expensive branded drugs.**
- BPPI (Bureau of Pharma Public Sector Undertakings of India) has been established under the Department of Pharmaceuticals, with the support of all the CPSUs for co-ordinating procurement, supply and marketing of generic drugs through Pradhan Mantri Bharatiya Janaushadhi Pariyojana Kendra.
- Generic medicines are sold at 50% to 90% lesser prices as compared to the market prices of branded medicines.



## Marburg virus

### Context

- Recently, West Africa's first case of the Marburg virus was confirmed in Guinea.

### About

- Marburg virus disease is a highly virulent disease that causes hemorrhagic fever.
- It is in the **same family as the virus that causes Ebola virus disease**.
- The virus was initially detected in 1967 after simultaneous outbreaks in Marburg and Frankfurt in Germany; and in Belgrade, Serbia.
- The common symptoms of a virus are **fever, headache, fatigue, abdominal pain and gingival haemorrhage**.
- Marburg is **transmitted to people from fruit bats**.
- The virus spreads among humans through direct contact with the bodily fluids of the patient, surfaces and materials
- The case fatality rate is around 50%.
- There are **no approved vaccines** or antiviral treatments for the virus yet.
- Early supportive care with rehydration and symptomatic treatment improves survival rates.



## ZyCoV-D

### Context

- ZyCoV-D has received approval for Emergency Use Authorization (EUA) from the Drug Controller General of India (DCGI) for ZyCoV-D on 20/08/2021.

### About

- It is the **world's first and India's indigenously developed DNA based vaccine for COVID-19** to be administered in humans including Children and adults 12 years and above.
- Developed in partnership with the Department of Biotechnology, under the **'Mission COVID Suraksha'** and implemented by BIRAC, ZyCoV-D has been supported under COVID-19 Research Consortia through National Biopharma Mission for Preclinical studies.
- This 3 dose vaccine which when injected produces the spike protein of the SARS-CoV-2 virus and elicits an immune response, which plays a vital role in protection from disease as well as viral clearance.
- The plug-and-play technology on which the plasmid DNA platform is based can be easily adapted to deal with mutations in the virus, such as those already occurring.

### About DBT

- The Department of Biotechnology (DBT), under the Ministry of Science and Technology, promotes and improves biotechnology development in India through its development and implementation in agriculture, healthcare, animal sciences, the environment, and industry.

### About BIRAC

- A non-for-profit Public Sector Enterprise, Biotechnology Industry Research Assistance Council (BIRAC), has been set up by the Department of Biotechnology (DBT)
- It acts as an interface agency to enhance and encourage the evolving biotechnology industry to implement strategic research and development activities in regards to the product development needs of the Nation.

## Piperine

### Context

- Researchers point out that there is another molecule in turmeric called piperine apart from Curcumin

### About

- Turmeric has about **3% of the active component molecule called curcumin**, a polyphenol diketone (and not a steroid).
- Piperine, is an alkaloid, that is responsible for the pungency of pepper that we use every day in our cooking, along with turmeric.
- Piperine enhances curcumin absorption in the body. It gives turmeric its multivariate healing and protective power.

## Y-BREAK APP

### Context

- Union Ayush Minister launched the Y-Break App.

### About

- The Y-Break mobile application has been developed by MDNIY (Morarji Desai National Institute of Yoga).

- Through this app, yoga and meditation can be done anywhere in just 5 minutes.

## Visceral Leishmaniasis

### Context

- Indian researchers have developed a non-invasive, easy to administer, cost-effective, and patient compliant potential therapeutic strategy against Visceral Leishmaniasis.

### About

- Leishmaniasis is a wide array of clinical manifestations caused by parasites of the trypanosome genus Leishmania.
- It is caused by *Leishmania donovani* (India and Eastern Africa), *L. infantum* (Mediterranean area), and *L. chagasi*, which is transmitted by the bite of small blood-sucking sandflies.
- The disease can present in three main ways: cutaneous, mucocutaneous, or visceral. Visceral leishmaniasis (VL).
- VL is the second-largest parasitic killer in the world (after malaria).
- Signs and symptoms include fever, weight loss, fatigue, anemia, and substantial swelling of the liver and spleen.
- There is no perfect vaccine or suitable drug to eradicate leishmaniasis completely.



## GS-III ECONOMY

### Amendment of the Insurance Act

#### Context

- The Lok Sabha passed a law to amend the general insurance business Act without a debate.

#### Objective of the bill

- It will allow the government to bring down its stake in State-owned general insurance companies.
- It will generate required resources.
- It will help public sector general insurers design innovative products.
- It seeks to remove the mandatory requirement of the Central government holding not less than 51 percent of the equity capital in a specified insurer.

#### Benefits arising out the bill

- It will provide for greater private participation in public sector insurance companies.
- It will enhance the penetration of the insurance sector.
- It will provide social protection by securing the interests of the policyholders better.
- It will contribute to faster pace of the economic growth.

#### Provisions of the Bill

- The bill will allow the government **to bring down its stake in State-owned general insurance companies**, generate required resources and help public sector general insurers design innovative products.
- It allows the **government to privatize state-run general insurance companies**.
- It seeks to **remove the mandatory requirement of the Central government holding** not less than 51% of the equity capital in a specified insurer.
- It also provides for cessation of application of the existing general insurance law to those insurers in which the government ceases to have control.
- Control **refers to the government's right to appoint a majority of directors or to have** the power to influence management or policy decisions.
- It increases **the liability of a director, who may not be a whole-time director**, in case the insurance firm commits certain acts of omission which he was aware of or party to.
- It seeks to include capital redemption and annuity certain within the general insurance business.

## National Industrial Corridor Programme (NICP)

### Context

- 11 Industrial Corridors with 32 Projects to be developed in 4 phases in the country as part of National Industrial Corridor Programme (NICP).

### About the National Industrial Corridor Programme (NICP)

- The National Industrial Corridor Programme (NICP) has been conceived to promote world class manufacturing facilities and develop futuristic industrial cities in India.
- It is under the Department for Promotion of Industry and Internal Trade (DPIIT).
- The broad objective of NICP is to provide plug and play infrastructural facilities for setting up large scale manufacturing units.
- The National Industrial Corridor Development and Implementation Trust (NICDIT) under the DPIIT is the overarching institutional framework to implement the programme.
- Under the programme, land parcels are developed for immediate allotment to manufacturing units.
- The programme aims to develop new industrial cities as "Smart Cities" and converge next generation technologies across infrastructure sectors.
  - The 11 Industrial Corridors being developed are:
    - Delhi Mumbai Industrial Corridor (DMIC)
    - Chennai Bengaluru Industrial Corridor (CBIC)
    - Amritsar Kolkata Industrial Corridor (AKIC)
    - East Coast Industrial Corridor (ECIC) with Vizag
    - Chennai Industrial Corridor (VCIC) as Phase 1
    - Bengaluru Mumbai Industrial Corridor (BMIC)
    - Extension of CBIC to Kochi via Coimbatore
    - Hyderabad Nagpur Industrial Corridor (HNIC)
    - Hyderabad Warangal Industrial Corridor (HWIC)
    - Hyderabad Bengaluru Industrial Corridor (HBIC)
    - Odisha Economic Corridor (OEC)
    - Delhi Nagpur Industrial Corridor (DNIC)

### Need for such a programme

- Industrial corridors are conceived to foster global manufacturing, investment destination hubs and smart cities with the best in-class infrastructure.
- They have the potential to unleash the manufacturing potential in the country and raise its contribution to GDP by creating quality infrastructure ahead of demand.

## Vivad se Viswaas Scheme

### Context

- Rs 99,756 crore disputed tax amount settled under Vivad Se Vishwas scheme.

### About the Scheme

- The scheme provides for **settlement of disputed tax, disputed interests, disputed penalty or disputed fees in relation to an assessment or reassessment order** on payment of 100 per cent of the disputed tax and 25 per cent of the disputed penalty or interest or fee.
- The taxpayer is **granted immunity from levy of interest, penalty and the institution of any proceeding for prosecution for any offence under** the Income-tax Act in respect of matters covered in the declaration.
- The Direct Tax Vivad se Vishwas Act, 2020 was enacted on March 17, 2020, to settle direct tax disputes locked up in various appellate forums.
- No targets were fixed by **the Government under the 'Vivad Se Vishwas' scheme**.
- The scheme was a voluntary scheme for resolving pending direct tax disputes amicably with the taxpayers.

## Pradhan Mantri Suraksha Bima Yojana

### Context

- 23.88 crore cumulative enrolments in Pradhan Mantri Suraksha Bima Yojana since its launch.

### About the Scheme

- Pradhan Mantri Suraksha Bima Yojana (PMSBY) was launched on 9th May, 2015 with a view to enhance the level of insurance penetration in the country and to provide insurance cover to common people, especially poor and the under-privileged sections of the society.

### Provisions

- Pradhan Mantri Suraksha Bima Yojana is available to people (Indian Resident or NRI) between 18 and 70 years of age with bank accounts. It has an annual premium of Rs.12 (17¢ US) exclusive of taxes.
- The GST is exempted on Pradhan Mantri Suraksha Bima Yojana.
- The amount is automatically debited from the account.
- This insurance scheme can have one year cover from 1 June to 31 May and would be offered through banks and administered through public sector general insurance companies.



- In case of unexpected death or full disability, the payment to the nominee will be ₹2 lakh (US\$2,800) and in case of partial Permanent disability ₹1 lakh (US\$1,400).
- Full disability has been defined as loss of use in both eyes, hands or feet. Partial Permanent disability has been defined as loss of use in one eye, hand or foot.

## National Cooperative Development Corporation

### Context

- Recently, government has highlighted the work done by the national cooperative development cooperation.

### Developments

- National Cooperative Development Corporation Act, 1962 Provides for planning and promoting programmes for the production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock, certain other commodities and services on co-operative principles and for matters connected therewith or incidental thereto.
- Since inception and till 31.03.2021, **NCDC has disbursed Rs.1.77 lakh crore to cooperatives** for their development. It includes assistance to agricultural and horticulture cooperative societies.
- The “**Central Sector Integrated Scheme on Agricultural Cooperation (CSISAC)**” is a Central Sector Scheme for assistance to **NCDC programmes for development** of Cooperatives.
- Under the scheme, loan is extended by NCDC from its own resources and subsidy is provided by the Government of India.

### Working of the NCDC

- NCDC plans and promotes programmes on co-operative principles.
- It assists cooperatives only. NCDC financial assistance schemes encourage and attract people to form new cooperatives for carrying out business activities.
- Finance schemes of NCDC cover **activities such as agro-processing, horti-processing, credit, inputs, computerization, storage, cold chain, textile, handloom, sugar, ethanol, dairy, fisheries, livestock, piggery, poultry, renewable energy, rural housing, scheduled caste & scheduled tribes, women cooperatives, animal care/health, hospitality & transport, electricity & power, hospitals, healthcare and education etc.**
- Under its **SAHAKAR-22 initiatives**, NCDC has in the last two years, has reached out to over 10000 primary level cooperative societies.
- To **encourage youth towards cooperatives**, NCDC has launched its **YUVA SAHAKAR Cooperative Enterprise Support and Innovation Scheme** which aims at enabling Start-Ups in cooperative sector different types of business activities.
- Under its **SAHAKAR MITRA scheme**, NCDC offers **internship opportunities to students** get experience in areas of functioning of NCDC and related aspects of cooperatives.
- Under its **AYUSHMAN SAHAKAR scheme**, NCDC offers **finance to cooperatives set up healthcare infrastructure** and provide services.
- Government of India schemes such as **the Formation and Promotion of 10,000 Farmers Producer Organizations (FPO)** **provide for registration and support** of new cooperatives as FPOs. NCDC is one of the implementing agencies promoting such FPOs.

### National Cooperative Development Corporation (NCDC)

- NCDC is a statutory corporation set up under National Cooperative Development Corporation Act, 1962.
- The objectives of NCDC are planning and promoting programmes for production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, livestock and certain other notified commodities and services on cooperative principles.
- NCDC functions through its Head Office at New Delhi and multiple Regional Offices.
- The NCDC has the unique distinction of being the sole statutory organisation functioning as an apex financial and developmental institution exclusively devoted to cooperative sector.
- NCDC is a major financial institution for cooperatives, and has recently started Mission Sahakar 22, which aims to double farmers' income by 2022.

## Measures taken to curb food inflation

### Context

- Recently, government has highlighted the steps taken to curb food inflation in parliament.

### Steps taken

- Buffer stock of pulses have been used to tackle price volatility of these commodities. Pulses from the buffer were used very effectively during the COVID-19 pandemic for supplying @ 1 kg per household per month free of cost to approx. 19 crore National Food Security Act (NFSA) beneficiary households between April and November 2020.
- Government imposed stock limits on some pulses under the Essential Commodities Act, 1955 in July 2021, which has had a salutary effect in terms of softening of prices.



- Government eased import restrictions to enhance domestic availability of Tur, Urad and Moong and have also entered into MoUs with Myanmar, Malawi, Mozambique for pulses import.
- Basic import duty and Agriculture Infrastructure and Development Cess on Masur have been brought down to zero and 10% respectively.
- steps were taken to soften the prices of edible oils and the duty on Crude Palm Oil (CPO) has been cut, bringing down the effective tax rate on CPO to 30.25% from the earlier 35.75%.

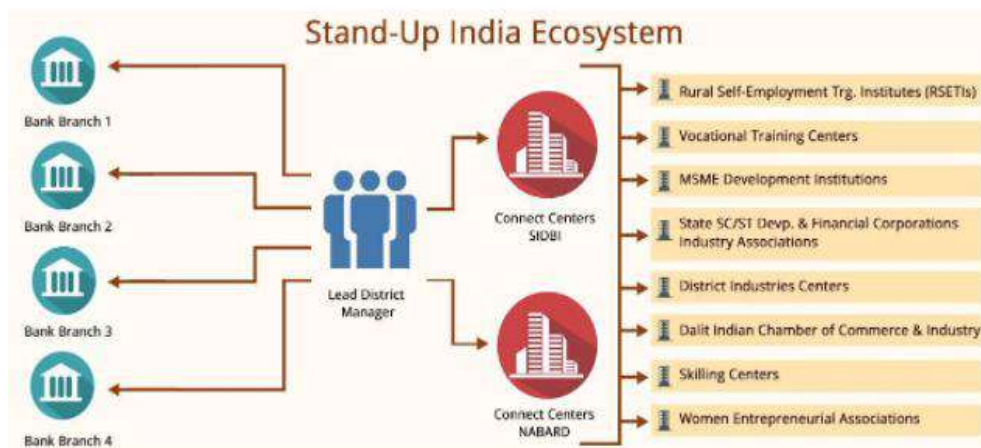
## Stand Up India Scheme

### Context

- More than 1.17 lakh loans amounting to more than Rs. 26,391 crore have been sanctioned to SC/ST and woman borrowers under the Stand Up India Scheme (SUPI).

### About the Scheme

- The Stand up India scheme aims at promoting entrepreneurship among women and scheduled castes and tribes.
- The scheme is anchored by Department of Financial Services (DFS), Ministry of Finance, Government of India.
- Stand-Up India Scheme facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise.
- This enterprise may be in manufacturing, services or the trading sector.
- In case of non-individual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or woman entrepreneur.



### Monitoring of Scheme

- Scheme is monitored and its performance is reviewed periodically at various levels such as District Level Consultative Committee (DLCC), State Level Implementation Committee (SLIC), State Level Bankers' Committee (SLBC), through video conference with banks, etc.

### Impact of the Scheme

- Scheme has helped nurture entrepreneurship amongst marginalised sections of the population such as Scheduled Castes (SCs), Scheduled Tribes (STs) and women facing significant hurdles due to lack of advice/mentorship as well as inadequate and delayed credit for setting up greenfield enterprises.

## Revenue Deficit

### Context

- The Department of Expenditure, Ministry of Finance has released 5th monthly installment of Post Devolution Revenue Deficit (PDRD) Grant of Rs. 9,871 crore to the States on 9th August, 2021.
- Post Devolution Revenue Deficit Grant
- The Post Devolution Revenue Deficit Grant is provided to the States under Article 275 of the Constitution.
- The grants are released as per the recommendations of the Fifteenth Finance Commission in monthly installments to meet the gap in Revenue Accounts of the States post devolution.
- The Commission has recommended PDRD grants to 17 States during 2021-22.

### About Revenue Deficit

- Revenue deficit arises when the government's revenue expenditure exceeds the total revenue receipts.
- This represents that the government's own earnings are not sufficient to meet the day-to-day operations of its departments.
- Revenue deficit turns into borrowings when the government spends more than what it earns and has to resort to the external borrowings.

### About Revenue Receipts

- revenue receipts are receipts which neither create liability nor lead to a reduction in assets.

- It is further divided into two heads:
- Receipt from Tax (Direct Tax, Indirect Tax)
- Receipts from Non-Tax Revenue

#### About Revenue Expenditure

- Revenue Expenditure is referred to as the expenditure that does not result in the creation of assets reduction of liabilities. It is further divided into two types
  - o Plan revenue expenditure
  - o Non-plan revenue expenditure

#### Meeting of Revenue deficit

- Through the borrowings or sale of existing assets, the deficit could be met from the capital receipts.
- The government can increase its non-tax or tax receipts.
- The government could try to reduce unnecessary expenditures.

#### Implications of Revenue Deficit

- The Revenue Deficit of the government has several implications, such as, it has to be met from the capital receipts, because of which a government either borrows or sells its existing assets. This brings in a reduction in assets.
- Also, to meet its consumption expenditure, since the government uses capital receipts, it leads to an inflationary situation in the economy.
- With more and more such borrowings, along with interest, the burden to repay the liability also increases which, in the future, results in huge revenue deficits.

## PMEGP

#### Context

- The number of people who received loans to set up micro units and the subsequent employment generation under Prime Minister Employment Generation Programme (PMEGP) is at an all-time high during 2020-21 despite the COVID-19 pandemic.

#### About it

- The Prime Minister's Employment Generation Programme (PMEGP) was introduced as a credit-linked subsidy programme by merging the two schemes that were in operation till 31.03.2008, namely Prime Minister's Rojgar Yojana (PMRY) and Rural Employment Generation Programme (REGP) for generation of employment opportunities through establishment of micro-enterprises in rural as well as urban areas.
- The PMEGP is a central sector scheme administered by the Ministry of Micro, Small and Medium Enterprises (MSME).
- At the national level, the scheme is being implemented by the Khadi and Village Industries Commission (KVIC), a statutory organization under the administrative control of the Ministry of MSME as the single nodal agency.
- At the State level, the scheme will be implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centres (DICs) and banks.

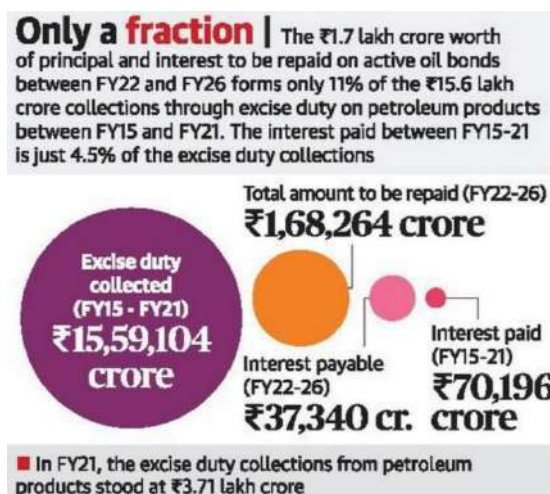
## Oil Bonds

#### Context

- Government has clearly stated that there will be no cut in excise duty on fuel as of now as government has to pay for the oil bonds issued by the UPA government in the past.

#### About Oil Bonds

- Oil bonds were issued in lieu of cash subsidy to oil marketing companies (OMCs) in former Prime Minister Manmohan Singh's UPA era, and also Atal Bihari Vajpayee's NDA rule.
- These **sovereign oil bonds, issued in favour of oil companies Indian Oil Corporation, HPCL and BPCL, were transferable, allowing these companies to raise immediate cash at the time.**
- The **government, being the issuer, would bear the interest payments and redemption at maturity.**
- The **government has a liability to pay Rs 20,000 crore in the current fiscal year 2021-22 in the form of bond repayment and interest on the outstanding oil bonds.**



## P2P lending

#### Context

- Many Fintech companies are entering P2P lending business.

### About P2P Lending

- In 2017, the Reserve Bank of India had brought this service under its regulatory purview.
- Even at the time, there were more than 20 P2P lending players in the market but RBI's regulations ensured only the serious ones with watertight business models remained in the sector.
- In P2P lending, users sitting on idle money provide loans to potential borrowers identified by the service provider.
- These lenders then receive payments from the borrowers on a set basis – either one time, or in equated monthly installments.

### Players in P2P lending

- Some of the major companies operating in this space include RupeeCircle, Finzy, IndiaMoneyMart, etc.
- For its P2P lending feature, CRED has tied up with RBI-approved non-banking financial company Liquiloans.

### Associated risks in P2P lending

- One of the biggest risks associated with this kind of lending is the non-repayment of loans. Given that P2P lending is a form of unsecured loan, there is no guarantee put up by the borrower for the lender to redeem in case of a default.
- While the lenders seek to reduce the dangers related to giving high-risk loans, the platforms are more attuned to attracting borrowers. As such, they do not consider the purpose of the loan, and often encourage expensive – even risky – loans.

### RBI regulations on P2P lending

- P2P companies would be structured as NBFCs so that they can be regulated by the Reserve Bank of India.
- **P2P companies are to operate only as intermediaries i.e. they would not encroach on functions of traditional banks or NBFCs.**
- The fund **transfer should be made directly into the borrower's account** from the lender's.
- Minimum capital requirement to set up a P2P platform would be fixed at **Rs. 2 Crores and the companies cannot assure returns to the lenders**
- The P2P platform **must adhere to existing customer data confidentiality, requirements and loan recovery procedures similar** to those used by NBFCs and traditional banks.
- A number of limitations regarding physical presence, board structure, leverage ratio, lender limits, have also been proposed by RBI with regard to the P2P business.

## Bharat Series (BH-Series)

### Context

- The Ministry of Road Transport & Highways has introduced a new registration mark for new vehicles i.e. "Bharat series (BH-series)".
- A vehicle bearing **this registration mark shall not require assignment of a new registration mark when the owner of the vehicle shifts from one State to another.**

### Current Situation for Vehicle Registration

- There is a complexity with **regard to transfer of registration from the parent state to another state as, under section 47 of the Motor Vehicles Act, 1988**, a person is allowed to keep the vehicle for not more than 12 months in any state other than the state where the vehicle is registered, but a new registration with the new state- registering authority has to be made within the stipulated time of 12 months.

### Procedure for re-registration

- passenger vehicle user takes the following steps to re-register a vehicle:
  - o No Objection Certificate from the Parent State for assignment of a new registration mark in another state.
  - o Assignment of new registration mark after the road tax on prorata basis is paid in the new State
  - o Application for refund of the road tax in the parent State on pro rata basis.

### About the series

- This vehicle registration facility under "Bharat series (BH-series)" will be available on voluntary basis to Defense personnel, employees of Central Government/ State Government/ Central/ State Public Sector Undertakings and private sector companies/organizations, which have their offices in four or more States/Union territories.
- The motor vehicle tax will be levied for two years or in multiple of two.
- This scheme will facilitate free movement of personal vehicles across States/UTs of India upon relocation to a new State/UT.
- After completion of the fourteenth year, the motor vehicle tax shall be levied annually which shall be half of the amount which was charged earlier for that vehicle.

# AGRICULTURE

## APEDA

### Context

- In a bid to boost exports of agricultural produce from Ladakh and enhance farmers' incomes, the Agricultural and Processed Food Products Export Development Authority, or Apeda, has decided to promote and brand organic items from the region.

### About

- Agriculture and processed food production export Development Authority (APEDA) is an apex body that promotes export trade of agricultural products in India.
- Set-up by the **Ministry of Commerce and Industry**, APEDA was formed under the act passed by parliament in 1985.
- APEDA is mandated with the responsibility of export promotion and development of the following scheduled products:
  - Fruits, vegetables and their products
  - Meat and meat products
  - Poultry and poultry products
  - Dairy products
  - Confectionery biscuits and Bakery products
  - Honey, jaggery and sugar products
  - Cocoa and its products, Chocolates of all kinds.
  - Alcoholic and non-alcoholic beverages
  - Cereal and cereal products
  - Groundnuts peanuts and walnuts
  - Pickles, papads and chutney
  - Guar gum
  - Floriculture and its products
  - Herbal and Medicinal plants
- The above product categories are almost covered 50% of all Agriculture products exported from India.
- APEDA has also been entrusted with the responsibility to **monitor import of sugar**.

## Agriculture Infrastructure Fund

### Context

- Strengthening APMCS through Agriculture Infrastructure Fund (AIF) Scheme – Government

### About

- The Union Cabinet in July 2020 has approved a new pan India **Central Sector Scheme called Agriculture Infrastructure Fund**.
- The scheme shall provide a **medium - long term debt financing facility** for investment in viable projects **for post-harvest management Infrastructure and community farming assets through interest subvention and financial support**.
- The duration of the Scheme shall be from **FY2020 to FY2032 (10 years)**.
- Moratorium for repayment** under this financing facility may vary subject to minimum of **6 months and maximum of 2 years**.

### Intended beneficiaries

- Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups, Aggregation Infrastructure Providers and Central/State agency or Local Body sponsored Public Private Partnership Project.


### The following community farming assets projects are eligible under the scheme

- Organic inputs production
- Bio stimulant production units
- Infrastructure for smart and precision agriculture.
- Projects identified for providing supply chain infrastructure for clusters of crops including export clusters.
- Projects promoted by Central/State/Local Governments or their agencies under PPP for building community farming assets or post-harvest management projects.

**Financing Facility**

₹ 1,00,000 crore will be provided for financing Agriculture Infrastructure Projects at farm-gate and aggregation points for following activities:-

- (i) Supply chain services including e-marketing platforms
- (ii) Warehouses
- (iii) Silos
- (iv) Pack houses
- (v) Assaying units
- (vi) Sorting and grading units
- (vii) Cold chains
- (viii) Logistics facilities
- (ix) Primary processing centers
- (x) Ripening Chambers



**Pattern of Financing and Participating Institutions**

- All loans to have interest subvention of 3% per annum up to a limit of ₹2 crore for a maximum period of 7 years.
- Credit guarantee coverage for a loan upto ₹2 crores. The fee for this coverage will be paid by the Government.
- In case of FPOs, the credit guarantee may be availed from the facility created under FPO Promotion Scheme of DAC&FW.
- All Scheduled Commercial Banks, Scheduled Co-operative Banks, Regional Rural Banks (RRBs), Small Finance Banks, Non-Banking Financial Companies (NBFCs) and National Co-operative Development Corporation (NCDC).

Note : This Financing Facility and Interest Subvention is available in addition to capital subsidy under NHB Schemes.

## Agri Stats

### In News

- As per Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation (MoSPI), the percentage of Gross Domestic Product (GDP) share of animal husbandry, dairying and fishery sector during the last four years is :



Highest share State/UT	GDP % Share of animal husbandry, dairy and Fisheries			
	2016-17	2017-18	2018-19	2019-20
Andhra Pradesh	13.50	14.86	15.90	15.65
All India	4.65	4.72	4.81	4.84

## Krishi Vigyan Kendras

### Context

- The Government has made a provision for opening of KrishiVigyan Kendra (KVK) in each of the rural districts across the country.

### About

- A KrishiVigyan Kendra (KVK) is an **agricultural extension center in India**.
- Associated with a local agricultural university, these centers serve as the ultimate link between the Indian Council of Agricultural Research and farmers, and aim to apply agricultural research in a practical, localized setting.
- All KVKs fall under the jurisdiction of one of the 11 Agricultural Technology Application Research Institutes (ATARIs) throughout India.
- The first KVK was established in 1974 in Pondicherry.**

### Responsibilities

- On-Farm Testing:** Each KVK operates a small farm to test new technologies, such as seed varieties or innovative farming methods, developed by ICAR institutes. This allows new technologies to be tested at the local level before being transferred to farmers.
- Front-line Demonstration:** Due to the KVK's farm and its proximity to nearby villages, it organizes programs to show the efficacy of new technologies on farmer fields.
- Capacity Building:** In addition to demonstrating new technologies, the KVK also hosts capacity building exercises and workshops to discuss modern farming techniques with groups of farmers.
- Multi-sector Support:** Offer support to various private and public initiatives through its local network and expertise. It is very common for government research institutes to leverage the network of KVKs when performing surveys with a wide range of farmers.
- Advisory Services:** Due to the growing use of ICT, KVKs have implemented technologies to provide farmers information, such as weather advisories or market pricing, through radio and mobile phones.

## Agri Stats

### In News

- The agriculture sector recorded the **highest 103 per cent growth in new business registrations at 12,368 in FY2021**, compared to 6,107 in the previous fiscal, according to a paper released by Dun & Bradstreet.
- The birth rate of new businesses showed a healthy pace of growth from 7.8 per cent in FY16 to 10.2 per cent in FY20 and further to 11.6 per cent in FY21, despite the pandemic and subsequent waves of lockdown.
- The top 10 cities accounted only for 42 per cent of new business registrations in FY21 compared to 55 per cent in FY17.

## Black Rice- Chak Hao

### Context

- Manipur sends consignment of black rice to Europe

### About

- Chak-Hao is a scented **glutinous (sticky) rice which has been in cultivation in Manipur** over centuries.
- It is characterised by its special aroma.
- The rice is black in colour and takes the longest cooking time of 40-45 minutes due to the presence of a fibrous bran layer and higher crude fibre content.
- Chak-Hao has also been used by traditional medical practitioners as part of traditional medicine.
- ChakHao bagged the Geographical Indication (GI) tag in 2020.



## ToLCNDV

### In News

- Scientists from DBT Autonomous Institution, National Institute of Plant Genomics Research (NIPGR) have reported an effective defense strategy deployed by a resistant tomato cultivar against ToLCNDV.
- It employs Sw5a (R gene) that recognizes AC4 protein (viral effector) of ToLCNDV to restrict virus spread.

### About

- Tomato leaf curl New Delhi virus (ToLCNDV) is a bipartite begomovirus.
- It is widespread, with a geographical range also including the Far East, Middle East, North Africa and Europe.
- Tomato leaf curl New Delhi virus (ToLCNDV) infection causes severe losses in tomato yield worldwide.
- Host range:** The primary cultivated host of ToLCNDV is tomato (*Solanum lycopersicum*), but the virus is also known to infect 43 other plant species from a range of families, including Cucurbitaceae, Euphorbiaceae, Solanaceae, Malvaceae and Fabaceae.
- Disease symptoms:** Typical symptoms of ToLCNDV infection in its various hosts include leaf curling, vein thickening, puckering, purpling/ darkening of leaf margins, leaf area reduction, internode shortening and severe stunting.



## Pineapple-based Agroforestry

### Context

- According to a study, Pineapple-based agroforestry can be a sustainable alternative to jhum cultivation for North East India.

### Agroforestry

- Agroforestry is a land use management system in which trees or shrubs are grown around or among crops or pastureland.
- This diversification of the farming system initiates an agroecological succession, like that in natural ecosystems, and so starts a chain of events that enhance the functionality and sustainability of the farming system.

### Jhum Cultivation

- Jhum is a local name for **slash and burn agriculture** practiced by the tribal groups in the northeastern states of India like Arunachal Pradesh, Meghalaya, Mizoram and Nagaland and also in the districts of Bangladesh like Khagrachari and Sylhet.
- It is an agricultural system in which plot of land are cultivated temporarily, then abandoned while post-disturbance fallow vegetation is allowed to freely grow while the cultivator moves on to another plot.
- This practise has become unsustainable due to the reduced fallow cycle resulting in **depletion in soil fertility, severe soil erosion and low agronomic productivity**.

### Alternative

- North East India and many south Asian countries are shifting to agroforestry and high-value cropping systems from traditional jhum practices.
- Researchers have found that the Pineapple-based agroforestry (PAFS) can be a sustainable alternative to jhum cultivation for North East India.
- This traditional practice can provide twin solutions for climate change and biodiversity loss.
- The **ethnic 'Hear' Tribe in southern Assam** have been cultivating pineapples for centuries. At present, they practice the indigenous Pineapple agroforestry systems for both home consumption and boosting economic benefit.

## BRICS-Agricultural Research Platform

### Context

- Union Minister for Agriculture and Farmers Welfare Shri Narendra Singh Tomar today announced the operationalization of BRICS Agricultural Research Platform.

### Details

- The BRICS- Agricultural Research Platform, as a **global platform for science-led agriculture** will help in addressing the issues of world hunger, under nutrition, poverty and inequality by promoting sustainable agricultural development through strategic cooperation in agriculture and allied sector.
- The platform has been set up in India for strengthening the cooperation in the field of agricultural research & innovations amongst the BRICS member States.
- The BRICS-ARP has been operationized to intensify cooperation in the areas of agricultural research, technology, policy, innovations and capacity building including technologies for smallholder farming and to sustainably increase yields and farmers income in the BRICS member countries.
- The platform shall escalate the exchange of research findings and innovation and best practices for upscaling in the respective BRICS Nations.

### Coordinating Centre

- The Coordinating Centre of the BRICS Agricultural Research Platform is housed at NASC Complex, Pusa under the governance of Department of Agricultural Research & Education/ICAR, Ministry of Agriculture & Farmers Welfare.
- The BRICS Nations have also appointed their focal points for BRICS-ARP to interact virtually through the platform and identify the common problems and develop joint projects for finding the solutions.
- Indian Council of Agricultural Research is the focal organization from India.

## e - GOPALA Application

### Context

- The web version of e-GOPALA application developed by National Dairy Development Board (NDDB) has been launched on Saturday to aid dairy farmers.

### About

- The App provides **real-time information to dairy farmers for better productivity of dairy animals.**
- The e-GOPALA platform will help farmers to manage their livestock including buying and selling of disease-free germplasm in all forms (semen, embryos, etc); informs about availability of quality breeding services and guides farmers for animal nutrition, treatment of animals using appropriate Ayurvedic ethno veterinary medicine.
- There is a mechanism to send alert (on due date for vaccination, pregnancy diagnosis, calving etc) and inform farmers about various government schemes.
- This portal will also facilitate real time checking of coverage and progress of various projects and government schemes.
- Web portal was launched in line with Prime Minister Narendra Modi's dream of 'Digital India'.

### The National Dairy Development Board (NDDB)

- It is a statutory body set up by an Act of Parliament of India.
- It is under the jurisdiction of Ministry of Fisheries, Animal Husbandry and Dairying, Government of India.
- The Board was created in 1965 to finance, support and support producer-owned and controlled organisations.
- Its programmes and activities seek to strengthen farmer cooperatives and support national policies that are favourable to the growth of such institutions. Cooperative principles and cooperative strategies are fundamental to the board's efforts.

# SCIENCE & TECHNOLOGY

## CST-100 Starliner

### Context

- The launch of Boeing's uncrewed Starliner Orbital Flight Test-2 (OFT-2), which was supposed to lift off has been postponed.
- The spacecraft, which is called the Crew Space Transportation-100 (CST-100), is part of an uncrewed test flight to the International Space Station (ISS).
- The mission is part of NASA's Commercial Crew Program.

### What is the CST-100 Starliner and what is its purpose?

- The Boeing CST-100[a] Starliner is a class of reusable crew capsules expected to transport crew to the International Space Station (ISS) and other low-Earth orbit destinations.
- It is manufactured by Boeing for its participation in NASA's Commercial Crew Program.
- The Boeing Starliner holds a crew of up to seven people and is being designed to be able to remain in-orbit for up to seven months with reusability of up to ten missions.
- It is designed to be compatible with the Atlas V, Delta IV, Falcon 9, and Vulcan Centaur launch vehicles.
- The Starliner, will take roughly 24 hours to reach the ISS, after which it will dock there.

### NASA's Commercial Crew Program

- NASA's commercial crew program is a partnership between SpaceX, Boeing and NASA to fly astronauts to the International Space Station.
- Unlike previous human spaceflight programs, NASA is a customer buying flights from commercial providers.
- The program is helping to lower the cost of spaceflight and create new a commercial market for humans in space.
- It will also ease NASA's burden of transporting astronauts and it would be able to focus on greater scientific research and building spacecraft and rockets meant for deep space exploration missions.

## MK BHAN FELLOWSHIP-YOUNG RESEARCHER FELLOWSHIP PROGRAMME (MKB-YRFP)

### Context

- The Department of Biotechnology (DBT), Ministry of Science and Technology, announced the results of the First MK Bhan Fellowship-Young Researcher Fellowship Programme (MKB-YRFP).

### Objective of the Programme

- MK Bhan Fellowship-Young Researcher Fellowship Programme was instituted to honour eminent scientist and Former Secretary of the DBT.
- The aim was to encourage young bright researchers below 35 years of age to continue their research in the country after Ph.D. in any branch of Life Sciences/ Biotechnology/allied areas.

### Further Details

- The scheme offers an independent research grant for three years to the young Post-Doctoral Fellows to enable them to emerge as future leaders and take up cutting edge research focused on issues of national relevance.
- This Fellowship, entails a monthly emolument of Rs 75,000; along with a generous Research/Contingency grant to carry out cutting edge research.

## INS-2B Satellite

### Context

- ISRO to send Bhutan's INS-2B satellite into space by year-end

### About

- The development of the INS-2B satellite of Bhutan is being underway by four Bhutanese engineers who were trained at ISRO's UR Rao Satellite Centre in Bengaluru from December 28 to February 25, 202

### Indo-Bhutan space cooperation

- India and Bhutan have been engaged in space cooperation with a ground Earth station for South Asia Satellite (SAS) that was inaugurated in Thimphu, Bhutan during Prime Minister Narendra Modi's visit in August 2019.
- The SAS was launched by India as a gift to the countries in the South Asia region, including Bhutan.

### SAS

- South Asia Satellite (designated GSAT-9), formerly known as SAARC Satellite, is a **geostationary communications and meteorology satellite** operated by the Indian Space Research Organisation for the South Asian Association for Regional Cooperation (SAARC) region.
- The satellite is a part of his neighbourhood first policy.
- Afghanistan, Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka are the users** of the multi-dimensional facilities provided by the satellite.
- The South Asia Satellite provides crucial information on tele-medicine, tele-education, banking and television broadcasting opportunities.
- It is also equipped with remote sensing state of the art technology which enables collection of real-time weather data and helps in observations of the geology of the South Asian nations.

## Absorption Spectroscopy

### In News

- Researchers from IIT Madras and IISER Kolkata have developed a method to detect minute quantities of chemicals in solution.
- They use a variation of absorption spectroscopy that surpasses the systemic limits imposed by conventional absorption spectroscopy.
- With this technique, they can, in principle, illuminate the insides of cells and detect minuscule quantities of substances present there.

### About

- Absorption spectroscopy is a tool to detect the presence of elements in a medium.
- Light is shone on the sample, and after it passes through the sample is examined using a spectroscope.
- Usually in absorption spectroscopy, the principle used is that light because of its wavelike nature, shows diffraction patterns, that is, dark and light fringes, when it scatters off any object.
- A related concept called **the Abbe criterion** sets a natural limit on the size of the object being studied.

## Gamma Irradiation Technology

### In News

- Union Minister Dr Jitendra Singh Says, Gamma Irradiation Technology For Food Preservation Has Already Been Shared With



Private Players.

- At present 26 Gamma Radiation Processing Plants are operational in the country in private, semi government and government sector for irradiation of various products.

#### About

- The gamma irradiation process uses Cobalt 60 radiation to kill microorganisms on a variety of different products in a specially designed cell.
- Gamma radiation is generated by the decay of the radioisotope Cobalt 60, with the resultant high energy photons being an effective sterilant.

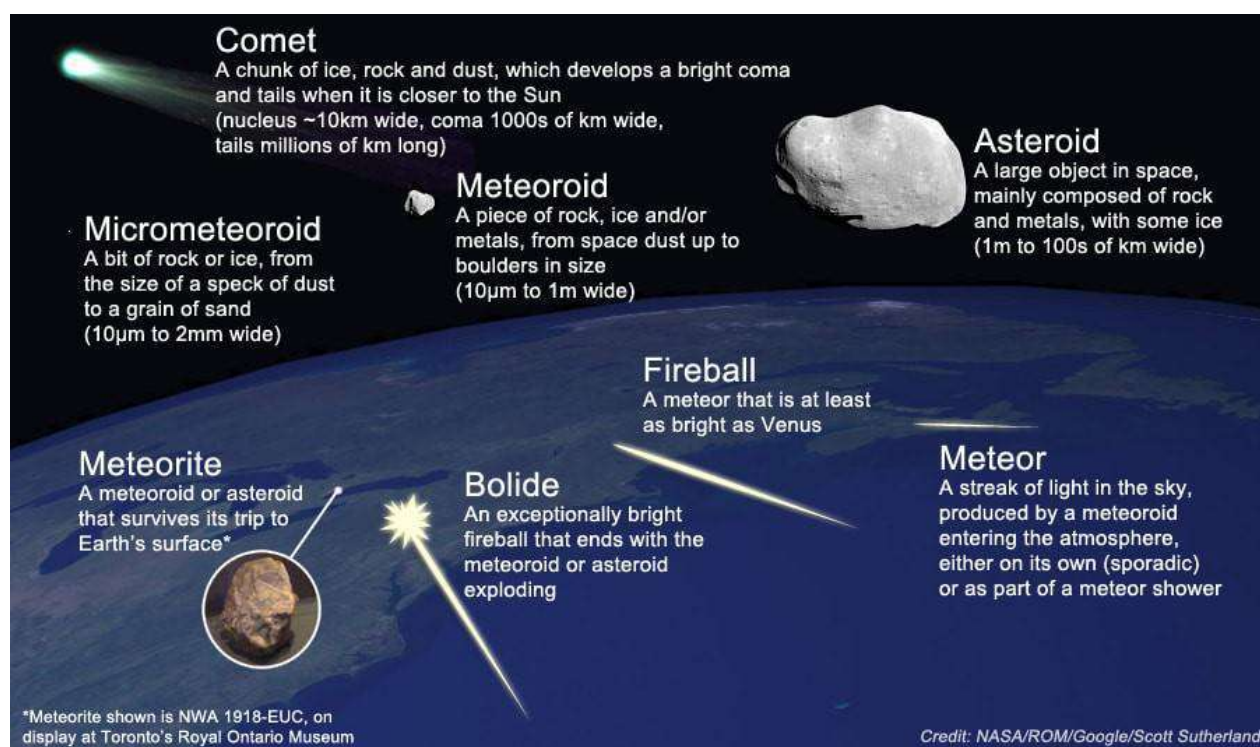
## Perseid Meteor Shower

#### Context

- Perseid Meteor shower lighted up the skies from August 11 to 13.

#### About

- Perseid meteors get its name from the point at which they appear to hail in the constellation Perseus of the northern sky.
- The meteor shower is said to be the leftover debris of the Comet Swift-Tuttle.



## Soft Robotic Actuators

#### Context

- Using porous carbon nanoparticles from waste onion peels, a team of scientists have developed soft robotic actuators.

#### Actuator

- An "actuator" can be defined as a **device that converts energy (in robotics, that energy tends to be electrical) into physical motion.**

#### About

- Soft robots or actuators consisting of rubber-like polymer with embedded nanomaterial, which convert a source of energy to mechanical motion have been gaining much interest with targeted applications in areas, including bio-medical, military, and remote space operations.
- Generation of predesigned motion facilitated by their flexibility, affordability, and easy customisation are the main reasons for such interest.
- The actuators can act as efficient traps for illuminating low-power near-infrared (NIR) light and can convert a control signal into mechanical motion with bioengineering applications such as drug delivery, wearable and assistive devices, prostheses, and even artificial organs.

## Gene Bank

#### Context

- Union Agriculture Minister inaugurated the world's second-largest refurbished gene bank at the National Bureau of Plant

Genetic Resources (NBPGR), Pusa, New Delhi.

- The National Gene Bank established in the year 1996 to preserve the seeds of Plant Genetic Resources (PGR) for future generations, has the capacity to preserve about one million germplasm in the form of seeds.

#### About

- Gene banks are a type of biorepository that preserves genetic material.
- For plants, this is done by in vitro storage, freezing cuttings from the plant, or stocking the seeds (e.g. in a seedbank).
- For animals, this is done by the freezing of sperm and eggs in zoological freezers until further need.
- Genetic material in a 'gene bank' is preserved in a variety of ways, such as **freezing at -196° Celsius in liquid nitrogen**, being placed in artificial ecosystems, and put in controlled nutrient mediums.
- **Svalbard Global Seed Vault** is located on the **Norwegian island of Spitsbergen in the remote Arctic Svalbard archipelago**

## QSim

#### Context

- Minister of State for Electronics & Information Technology, launched QSim - Quantum Computer Simulator Toolkit.
- **Aim:** To enable Researchers and Students to carryout research in Quantum Computing in a cost effective manner.

#### About

- QSim is an outcome of the project "Design and Development of Quantum Computer Toolkit (Simulator, Workbench) and Capacity Building".
- This is one of the first initiatives in the country to address the common challenge of advancing the Quantum Computing research frontiers in India.
- This project is being executed collaboratively by IISc Bangalore, IIT Roorkee and C-DAC with the support of Ministry of Electronics and Information Technology (MeitY).

#### QSim - Feature Highlights

- **Intuitive UI:** QSim offers a robust QC allowing students / researchers to create Quantum programs, visualize the instant circuit generation and simulated outputs.
- **Simulate noisy Quantum logic circuits:** Helps simulate Quantum circuits with and without noise and test how well various algorithms work with imperfect quantum components.
- **Pre-loaded Quantum algorithms**
- **Integrated with HPC:** The quantum simulations are performed on powerful HPC resources allowing multiple users to submit jobs simultaneously with different Qubit configurations.

#### QSim - Offering Models

- PARAM SHAVAK QSim - Standalone system with Quantum Simulator in a box
- PARAM QSim Cloud - Available on cloud using HPC infrastructure PARAM SIDDHI AI (developed and deployed under NSM program)

## EOS-03

#### Context

- Indian Space Research Organisation's (ISRO) second mission of the year to place an earth observation satellite by a GSLV rocket faced a setback as the mission could not be accomplished fully due to performance anomaly in the cryogenic stage of the rocket.

#### EOS-03

- EOS-03 is a state-of-the-art agile **Earth observation satellite** which will be placed in a Geosynchronous Transfer Orbit by GSLV-F10.
- It is meant to provide almost real-time images of large parts of the country that could be used for **monitoring of natural disaster like floods and cyclones, water bodies, crops, vegetation and forest cover**.
- The SSLV is designed to cater to the increasing demand for launch of small satellites, mainly from businesses and universities; it costs much less and consumes less energy.

## miSHERLOCK

#### In News

- A team of researchers based at Harvard University's Wyss Institute and MIT have unveiled a quick and inexpensive testing platform capable of distinguishing between major SARS-CoV-2 variants called miSHERLOCK

#### Details

- The platform, called miSHERLOCK is fully self-contained from sample preparation to test readout.
- It is built around the CRISPR-based diagnostic tool called SHERLOCK.
- It requires no external equipment or instruments, and is eventually meant to be constructed by the user from 3-D printable

parts and battery-powered electronics.

## Eutelsat Quantum

### Context

- Recently, the European Space Agency (ESA) launched the world's first commercial fully reprogrammable satellite called Eutelsat Quantum.

### Details

- Eutelsat Quantum, is the first commercial fully flexible software-defined satellite in the world.

### What is a reprogrammable satellite?

- A re-programmable satellite allows the user to change the communications as per need, in real time.
- The traditional models do not have this feature; they are designed and "hard-wired" on Earth.
- Even while orbiting in a fixed position at 35,000 kilometers above Earth, the satellite can be reprogrammed.
- Because it can be reprogrammed in orbit, it can respond to changing demands for data transmission and secure communications during its 15-year lifetime.

### How will Eutelsat Quantum benefit us?

- The Eutelsat Quantum weighs 3.5 tonnes and consists of eight communication beams.
- Each of the beams can be modified to make changes to the coverage area and its telecommunications signal.
- As the changes can be done in minutes, this satellite can be used in providing mobile coverage in moving objects successfully.
- The satellite can detect and characterise any rogue emission, enabling it to respond dynamically to accidental interference or intentional jamming.
- The Eutelsat Quantum will be covering the geographical area from West Africa to Asia in a 15 years period of time.

## Active Galactic Nuclei (AGN)

### Context

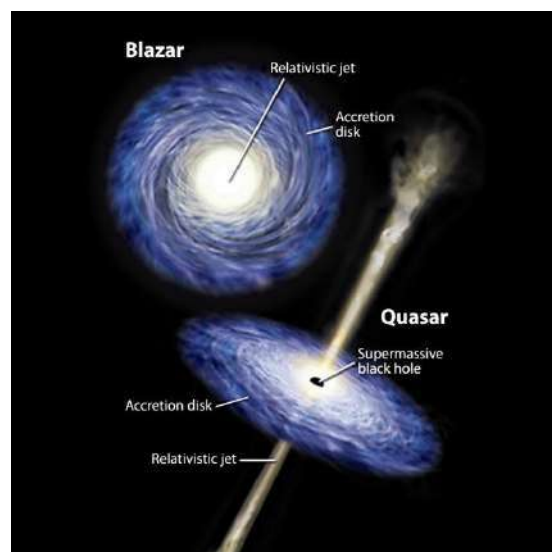
- Indian researchers have discovered three super-massive black holes from three galaxies merging together to form a triple active galactic nucleus.

### Super-Massive Black Hole & AGN

- At the center of most galaxies, there's a massive black hole.
- The concentration of matter here is so dense that even light can't escape from it.
- They have mass of millions or even billions of Suns.
- The black hole accretes gas, dust, and stellar debris around it.
- As these material falls towards the black hole, their gravitational energy gets converted to light forming active galactic nuclei (AGN).
- 15 % of AGN emit charged particles called jets travelling at speeds close to the speed of light.

### Details

- An Active Galactic Nucleus (AGN) is a compact region at the center of a galaxy that has a much-higher-than-normal luminosity over at least some portion of the electromagnetic spectrum.
- Such excess non-stellar (not from star) emission has been observed in the radio, microwave, infrared, optical, ultra-violet, X-ray and gamma ray wavebands.
- A galaxy hosting an AGN is called an "active galaxy".
- Numerous subclasses of AGN have been defined based on their observed characteristics; the most powerful AGN are classified as quasars.
- A blazar is an AGN with a jet pointed toward the Earth, in which radiation from the jet is enhanced by relativistic beaming.



# SECURITY

## India-Indonesia Coordinated Patrol (CORPAT)

### Context

- Indian Naval Ship (INS) Saryu, an indigenously built Offshore Patrol Vessel is undertaking coordinated patrol (CORPAT) with



Indonesian Naval Ship KRI Bung Tomo.

### 36th edition of CORPAT between India and Indonesia

- It witnessed participation of Maritime Patrol Aircraft from both nations.
- The exercise, being conducted as a '**non-contact, at sea only**' exercise in view of COVID-19 pandemic.
- It highlighted the high degree of mutual trust and confidence, synergy and cooperation between the two friendly navies.

### About CORPAT

- India and Indonesia have been carrying out Coordinated Patrols along the International Maritime Boundary Line (IMBL) **twice a year since 2002**.
- **Aim:** Keeping this vital part of the **Indian Ocean Region safe and secure for commercial shipping, international trade and conduct of legitimate maritime activities**.
- **Significance:** CORPATs helps to
- **build understanding and interoperability** between navies
- facilitate institution of measures to prevent and suppress **Illegal Unreported Unregulated (IUU) fishing, drug trafficking, maritime terrorism, armed robbery and piracy**.
- Realization of India's **vision of SAGAR** (Security And Growth for All in the Region) in indo-pacific region.



## Exercise Talisman Sabre

### Context

- Australia is keen that India join its biggest war games 'Exercise Talisman Sabre' in 2023.
- Meanwhile, the Quad group of countries comprising **India, Australia, Japan and the U.S.** are set to hold the annual **Malabar naval exercise 2021** off the coast of Guam.
  - o Australia was included in the Malabar 2020.
- These maritime initiatives enhance synergy and coordination between the Indian Navy and friendly countries, based on common maritime interests and commitment towards Freedom of Navigation at sea.

### Exercise Talisman Sabre

- It is a **biennial**, multinational military exercise led by **Australia and the United States**.
- Talisman Sabre 2021, was the largest bilateral combined training activity between the Australian Defence Force (ADF) and the U.S. military.
- The other countries include Canada, Japan, New Zealand, South Korea and U.K.

## Ghaznavi' Missile

### Context

- Pakistan successfully test-fires nuclear-capable surface-to-surface ballistic missile, which can strike targets up to **290 kilometres**.
- Launch of ballistic missile 'Ghaznavi' was aimed at **ensuring operational readiness** of Army Strategic Forces Command, besides re-validating technical parameters of the weapon system.

# HOW THEY STACK UP

China and Pakistan, India's two main adversaries, own an arsenal of powerful ballistic missiles. Here's a comparison.

## INDIA'S AGNI MISSILES

Missile	Range (km)	Payload* (kg)
■ Agni-I	700	1,000
■ Agni-II	2,500	1,000
■ Agni-III	3,000	1,500
■ Agni-IV	3,500	700
■ Agni-V	5,000	1,500



Agni-III

## CHINA'S BALLISTIC MISSILES

Missile	Range (km)	Payload* (kg)
■ DF-3A	2,800	2,000
■ DF-21	3,000	700
■ DF-4A	5,000	2,000
■ DF-31A	7,000	1,800
■ DF-31	Over 10,000	1,000
■ DF-5A	Over 13,000	3,200



One of China's ICBM

## PAKISTAN'S BALLISTIC MISSILES

Missile	Range (km)	Payload* (kg)
■ Ghaznavi	320	1,000
■ Shaheen-I	735	1,000
■ Ghauro	950	1,000
■ Shaheen-2	Over 10,000	1,000

\* A 1,000kg payload means missile can carry nuclear warhead



Pakistan's 'Agni', the Ghauro



## Bilateral Naval Exercise 'AL-Mohed AL-Hindi'

### Why in news

- **India, Saudi Arabia** began maiden naval exercise 'AL - Mohed AL - Hindi'.
- **Aim:** Deeper understanding of each other's operational practices.

## SEACAT Exercise

### Context

- The Indian Navy demonstrated its maritime maneuvers in U.S. Navy-led Southeast Asia Cooperation and Training (SEACAT) military exercise in Singapore.
- The military exercise also included navies of 20 other partner nations as well.
- Nations like Australia, Bangladesh, Brunei, Canada, France, Germany, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, South Korea, Singapore, Sri Lanka, Thailand, East Timor, United Kingdom, United States, and Vietnam took part in SEACAT.

### SEACAT Exercise

- It began in 2002 as "Southeast Asia Cooperation Against Terrorism"
- **Aim:** to foster enhanced cooperation between Southeast Asian countries by incorporating tactics, standardized training, and procedures to combat contingencies or illegal activities in the maritime domain.
- To encourage countries to use their naval forces to bolster understanding of the operational environment, build capacity for humanitarian support missions, and uphold international laws and norms.

## Operation Blue Freedom

### Context

- **People with disabilities** from across the country will undertake an **expedition till Siachen Glacier** to create a new World Record for the largest team of people with disabilities to reach the world's highest battlefield.

### More about news

- Recently, The Government of India has permitted a team of people with disabilities to scale Siachen Glacier.
- The team of people with disabilities **trained by "Team CLAW"** a team of Armed Forces veterans.
- The successful execution of this pioneering expedition, 'Operation Blue Freedom', shall firmly place India on the global stage as a leader in empowering Divyangjan and set a benchmark for other nations to emulate.

## Defence Testing Infrastructure Scheme

### Context

- In order to boost domestic defence and aerospace manufacturing, Ministry of Defence (MoD) has launched **Defence Testing Infrastructure Scheme (DTIS)** with an outlay of **Rs 400 crore for creating state-of-the-art testing infrastructure** in partnership with the private industry.

### More about Scheme

- It would run for the duration of five years and envisages setting up of 6-8 Greenfield Defence Testing Infrastructure facilities that are required for defence and aerospace related production.
- The projects under the scheme will be provided with up to 75 per cent Government funding in the form of 'Grant-in-Aid'.
- The remaining 25 per cent of the project cost will have to be borne by the Special Purpose Vehicle (SPV) constituents of which will be the Indian private entities and state governments.

## Chaff Technology

### Context

- DRDO develops Advanced Chaff Technology for Indian Air Force

### Key highlights

- It is the technology to safeguard fighter aircraft from hostile radar threats
- Given to the industry for production in large quantities
- In today's electronic warfare, survivability of fighter aircraft is of prime concern because of advancement in modern radar threats.
- To ensure survivability of aircraft, Counter Measure Dispensing System (CMDs) is used which provides passive jamming against Infra-Red and radar threats.
- Chaff is a critical defence technology used to protect fighter aircraft from hostile radar threats.
- The importance of this technology lies in the fact that very less quantity of chaff material deployed in the air acts as decoy to deflect enemy's missiles for ensuring safety of the fighter aircraft.

## Indian Coast Guard Ship Vigraha

### Context

- Raksha Mantri commissioned indigenously built **Indian Coast Guard Ship Vigraha**.

### About ICGS Vigraha

- ICGS Vigraha is seventh in the series of Offshore Patrol Vessels.
- It is Indigenously built by the Larsen & Toubro Ship Building Limited.
- It is fitted with advanced technology radars, navigation & communication equipment, sensors and machinery capable of operating in tropical sea conditions.
- It is designed to carry one twin-engine Helicopter & four high speed boats
- The ship will be based in Visakhapatnam, Andhra Pradesh and operate on the eastern seaboard under the Operational and Administrative Control of the Commander, Coast Guard Region (East).
- The vessel is armed with a 40/60 Bofors gun and fitted with two 12.7 mm Stabilised Remote Control Gun with fire control system.
- The ship is also equipped with integrated bridge system, integrated platform management system, automated power management system and high-power external fire-fighting system.
- The ship is also capable of carrying pollution response equipment to contain oil spill at sea.



## KAZIND-21

### Context

- Indo-kazakhstan joint training exercise to commence on 30 august 2021.

### More about news

- As part of **military diplomacy** and **to strengthen the growing strategic relation** with Kazakhstan, the 5th edition of Indo-Kazakhstan Joint Training Exercise, "KAZIND-21" will be conducted from 30 August to 11 September 2021.
- The exercise is a joint training between both the Armies, which will boost the bilateral relations between India and Kazakhstan.
- The Exercise will provide an opportunity to the Armed Forces of India & Kazakhstan **to train for Counter Insurgency/ Counter Terrorism operation in mountainous, rural scenario under UN mandate**.
- The scope of Joint Exercise includes professional exchange, planning & execution of operation in Counter terrorism environment at sub unit level and sharing expertise on skills at arms, combat shooting and experiences in Counter Insurgency/ Counter Terrorism operations.
- The exercise **will strengthen mutual confidence, inter-operability and enable sharing of best practices between the Armed Forces of India and Kazakhstan**.

## AK Rifles

### Context

- India to procure 70,000 latest AK rifles from Russia. Defence cooperation is an important pillar of the India-Russia strategic partnership.

### Other defence procurements

- Army is trying to buy a limited number of Kamov-226 helicopters off the shelf to meet immediate shortage of light utility helicopters.
- The development happens in spite of the joint venture of both the countries to manufacture 7.5 lakh AK-203 rifles in India.
- An agreement to procure **200 Ka-226T twin-engine utility helicopters estimated** to cost over \$1 billion, was inked by India and Russia in 2015.
- 60 helicopters will directly be imported by India and the rest 140 will be manufactured by A Joint venture 'India Russia Helicopters Limited' formed between Hindustan Aeronautics Limited (HAL) and Russian Helicopters.
- 200 Ka-226T twin-engine utility helicopters will replace the ageing Cheetah and Chetak helicopters.

### Why AK 203 assault rifles?

- AK-203 assault rifle is considered to be the latest and most advanced version of the AK-47 rifle.
- It is a 7.62×39mm variant from the AK-100 rifle family (one that offers the AK-74M system, in multiple cartridges and lengths).
- This variant is expected to replace the Indian Small Arms System (INSAS) 5.56×45 mm assault rifle, that are presently being used by Army, Navy and the Air Force besides other security forces.
- INSAS rifles are not suitable for use at high altitude. Several other issues with these rifles include gun jamming, oil leakage etc.

### AK 203: Strengths & Advantages

- Popular because of **robust mechanics and simplicity of operation**, these rifles have been tested under the conditions of **extreme heat and cold**.
- This variant is an advanced version of AK-47 and its **magazine can hold 30 bullets**.

- Unlike the INSAS rifles, these rifles **never get jammed as these belong to AK series**.
- These rifles are a type of Kalashnikov rifles, which can work under extreme climatic conditions and are **effective even in sand, soil and water**.
- These rifles also offer **high degree of versatility, adjustability and customizability**.
- The 7.62 mm ammunition in AK-203 gun is NATO grade and therefore more powerful.
- The rifle, which can fire 600 bullets in one minute, means 10 bullets in a second, can be used in automatic and semi-automatic mode.

#### Manufacturing of 7.5 lakh AK-203 rifles in Uttar Pradesh

- **India and Russia** had signed an Inter-Governmental Agreement (IGA) in February 2019 for production of AK 203 assault rifles.
- For this, a Joint venture was formed between Ordnance Factories Board (OFB) on the Indian side, and Rosonboron Exports and Concern Kalashnikov on the Russian side.
- Other India-Russia bilateral projects currently underway include indigenous production of **T-90 tanks and Su-30-MKI aircraft**, supply of **MiG-29-K aircraft** and **Kamov-31** and **Mi-17 helicopters**, upgrade of MiG-29 aircraft and supply of Multi-Barrel Rocket Launcher Smerch.
- Both the countries have also collaborated to develop and produce **supersonic BrahMos cruise missiles** in India.

## Multi-Mode Hand Grenades

### Context

- The first batch of Multi-Mode Hand Grenades (MMHG), manufactured by Economic Explosives Limited (EEL) following Transfer of Technology from Terminal Ballistics Research Laboratory of Defence Research & Development Organisation (DRDO), was handed over to the Indian Army.
- MMHG as a shining example of the **increasing collaboration between the public & private sectors** and a big step towards self-reliance in defence manufacturing.

### Measures undertaken by the Government to transform the defence sector into a self-reliant industry

- Setting up of Defence Industrial Corridors in Uttar Pradesh and Tamil Nadu
- formulation of draft Defence Production and Export Promotion Policy (DPEPP) 2020
- earmarking around 64 per cent of its modernisation funds under capital acquisition budget for 2021-22 for procurement from domestic companies
- notifying two Positive Indigenisation Lists of over 200 defence items to promote self-reliance & defence exports
- Corporatisation of Ordnance Factory Board (OFB)
- increasing FDI limit from 49 to 74 per cent under automatic route and beyond 74 per cent through government route and according top priority to 'Buy {Indian-IDD (Indigenously Designed, Developed and Manufactured)}' category for capital procurement.
- Technology Transfer to Industries by DRDO.



## Krivak class Stealth Frigates

### Context

- The first of two additional Krivak class stealth frigates being built by Russia is expected to be delivered to India in the middle of 2023.

### Background

- In October 2016, India and Russia signed an **Inter-Governmental Agreement (IGA)** for four Krivak or Talwar class stealth frigates.
- Two to be **procured directly from Russia** and two to be **built by the Goa Shipyard Limited (GSL)** — after which a \$1-billion deal was signed for the direct purchase.



- The procurement of the frigates will involve a rupee-rouble transaction instead of using U.S. dollars to avoid American sanctions on Russian defense companies under CAATSA, or the Countering America's Adversaries Through Sanctions Act.
- India will also buy 70,000 assault rifles from Russia.
- The 4,000-ton Krivak III vessels will also accommodate two multirole helicopters and will be used for anti-submarine and airborne early warning missions.
- India has already built seven basic versions of Krivak-class stealth frigates under the Navy's Project 17A scheme at state-owned shipyards Mazagon Dock Limited, and Garden Reach Shipbuilders and Engineers.
- The Indian Navy currently has a fleet strength of 140 warships, with plans to increase that number to 198 by 2027.
- Indian Navy currently operates six Krivak class frigates weighing around 4,000 tonnes procured in two different batches.

## INDIA-RUSSIA DEALS IN THE PIPELINE



### AKULA CLASS NUCLEAR-POWERED ATTACK SUBMARINE

**\$3 bn or ₹21,000 cr**  
(to be delivered by 2026)  
STATUS: Signed



### KAMOV KA-226 LIGHT UTILITY HELICOPTERS

JV between HAL and Russian helicopters for production  
(200 Kamov Ka-226)  
**\$1 bn or ₹7,000 cr**  
STATUS: MoU signed in June 2018

### AK-203

**\$1.6 bn or ₹12,000 cr**  
(700,000 rifles)



Indo-Russian joint venture to make AK-203 rifles at an idle Ordnance Board Factory in Korwa

STATUS: Signed. JV to be established soon

### 4 KRIVAK CLASS FRIGATES

Two built in Russia, two to be built at the Goa shipyard

**\$2.5 bn or ₹17,000 cr**

STATUS: Signed



### 18 ADDITIONAL SUKHOI SU-30MKI AIRCRAFT

**\$700 mn or ₹5,000 cr**

STATUS: Being negotiated

### 21 MOTHBALLED MIG-29 AIRFRAMES

**\$800 mn**

or ₹5,600 cr

STATUS: Being negotiated



### 10 KAMOV KA-31 AEW&C HELICOPTERS

**\$500 mn or ₹3,600 cr**

STATUS: Approved. Contract yet to be signed



## Exercise Konkan 2021

### Context

- Exercise Konkan 2021 held between INS Tabar and HMS Westminster in the English Channel.
- It is joint naval exercise between India and U.K.
- The exercise included the participation of integral helicopters of the two ships and the Falcon Electronic Warfare aircraft.
- A wide range of exercises including co-ordinated anti-submarine procedures, firing drills, combined maritime picture compilation, combat formation maneuvering and replenishment at sea were conducted.
- Exercise Konkan 2021 consolidate interoperability and helped cement the strong bonds of friendship the between the two navies.



### Exercise KONKAN

#### Maritime Security

The UK and India are two prosperous, outward-looking democracies, committed to freedom of navigation and the rule of law at sea, in the Indian Ocean and beyond.

#### Closer Defence Partnership

The UK-India 2018 Roadmap, signed by Prime Ministers Modi and Johnson in May 2021, is an historic commitment to strengthen relations between the two countries, including closer defence co-operation.

#### Naval Modernisation

The UK and India are in the midst of modernising their navies around the introduction of a new generation of large aircraft carriers, creating new opportunities to learn from one another.

HMS Queen Elizabeth

Rajput-class guided missile destroyer

12 Ships

2 Submarines

30+ Aircraft

4500 Personnel

Follow this journey... #CSG21



## Hindustan-228

### Context

- On August 15, the public sector aircraft manufacturing company Hindustan Aeronautics Limited (HAL) carried out a successful ground run and low speed taxi trials of a commercial aircraft – Hindustan-228 – for 'Type Certification' by the Directorate General of Civil Aviation (DGCA).

### About Hindustan-228

- The 19-seater Hindustan-228 or the Do-228 is the first major attempt in India to develop a small civil transport aircraft after the 14-seater Saras aircraft development program at the National Aeronautics Laboratory was shelved in 2009 on account of multiple problems in its development.
- The type certification by the DGCA will enable HAL to get an international certification for the aircraft.

### Why is HAL building a civil aircraft?

- Small civilian aircrafts are considered to be an essential element of the **UDAN (Ude Desh ka Aam Naagrik) scheme** that the central government is attempting to put in place for **regional connectivity**.
- Hindustan-228 can be utilized by civil operators and state governments for intra and inter-state connectivity with training, maintenance and logistics support from HAL.
- The Hindustan-228 aircraft is **built on the existing frame of the German Dornier 228 defence transport aircraft** used by the defence forces.
- HAL Do-228-201(Upgraded) civil aircraft is **equipped with a digital cockpit** which will ensure more accurate readings, precise information and ergonomic data displays with feedback loops and capability for self-check to alert pilots in emergencies.

### What are the roles envisaged for the civilian Hindustan 228 aircraft?

- The Hindustan-228 is conceived to be a **multirole utility aircraft** capable of being used for VIP transport, passenger transport, air ambulance, flight inspection roles, cloud seeding, recreational activities like para jumping, aerial surveillance, photography, remote sensing and cargo transport.
- With a maximum cruise speed of 428 kmph and a range of 700 kmph the aircraft is capable of night flying.
- HAL is looking forward to exporting the aircraft as well to countries like Nepal.

## Operation Devi Shakti

### Context

- The **evacuation operation from Afghanistan** in the backdrop of the Taliban's takeover of the country last week is known as "Operation Devi Shakti".

### More about news

- An Indian Air Force (IAF) flight carried 24 Indian and 11 Nepalese evacuees from Kabul to Delhi under Operation Devi Shakti.
- Up till now, around 626 people from Kabul have been evacuated that covered Indian citizens as well as Afghan nationals including Sikhs and Hindus of Afghanistan.

# ENVIRONMENT & ECOLOGY

## Ground level Ozone

### Context

- A Centre for Science and Environment study has found that ozone levels are exceeding the permitted levels even during winter in Delhi-NCR, making the smog more "toxic".
- Despite lockdown, more days witnessed higher and longer duration of ozone spells.

### Year-round menace

- Ozone, a highly reactive gas and dangerous for those suffering from respiratory conditions and asthma, is becoming more widespread in Delhi and NCR across all seasons.
- Contrary to the notion that ozone, produced photochemically from interaction between gases in the presence of sunlight, is predominantly a summer phenomenon, the analysis finds the gas



has emerged as an equally strong concern during winter as well.

### Ground-level ozone

- Tropospheric, or ground level ozone, is created by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC).
- It usually increases when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight, impacting human health.
- Its precursors are methane (CH<sub>4</sub>) and Nonmethane hydrocarbons (NMHCs).
- It is a colourless and highly irritating gas.
- It has significant effects on human health. Exposure to ozone can cause premature mortality and a range of morbidity and asthma symptom.
- It can significantly impact vegetation and decrease the productivity of some crops.
- It can injure flowers and shrubs and may contribute to forest decline.
- Ozone can also damage synthetic materials, cause cracks in rubber, accelerate fading of dyes, and speed deterioration of some paints and coatings.
- It damages cotton, acetate, nylon, polyester and other textiles.

## Light Pollution

### Context

- Skyglow forces dung beetles in the city to abandon the Milky Way as their compass.

### What is Light Pollution?

- It is excessive, misdirected, or obtrusive artificial (usually outdoor) light.
- Too much light pollution has consequences:
- it washes out starlight in the night sky
- interferes with astronomical research
- disrupts ecosystems: Change in night brightness would affect animals that rely on the sky as their compass. Their sensitive eyes can be blinded by bright city lights. The disappearance of stars from the night sky can cause them to lose their way.
- has adverse health effects and wastes energy.

### What causing light pollution?

- **Increasing urbanisation** and the installation of new streetlights
- security floodlights and outdoor ornamental lighting.

### Types of Light Pollution

- **Glare** from unshielded lighting is a public-health hazard. Glare light scattering in the eye causes loss of contrast, sometimes blinds you temporarily and leads to unsafe driving conditions, for instance.
- **Light trespass** occurs when unwanted light enters one's property.
- **Skyglow** refers to the glow effect that can be seen over populated areas. Skyglow is the combination of all the reflected light and upward-directed (unshielded) light escaping up into the sky.

### Solutions exist

- Simple solution is **turning off unnecessary lights** at night.
- Where lights cannot be turned off, **they can be shielded** so that they do not shed light into the surrounding environment and sky.
- using energy efficient bulbs, and by using bulbs with appropriate spectral power distributions for the task at hand.

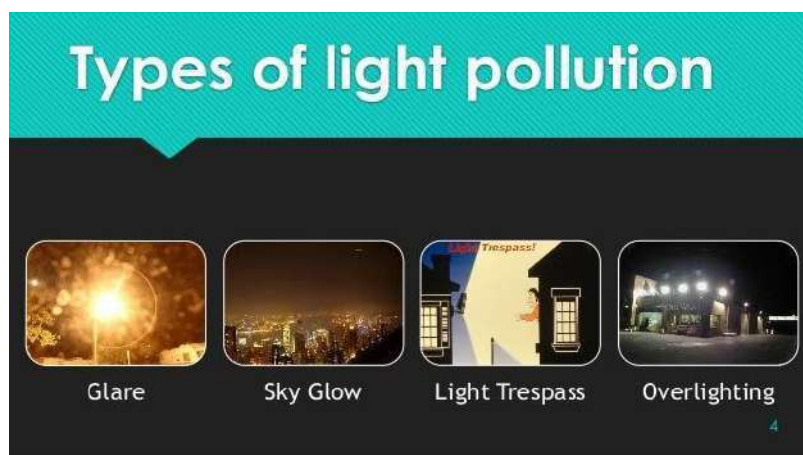
## Himalayan glaciers are retreating

### Context

- Studies show Himalayan glaciers are retreating but not at rapid pace: Govt

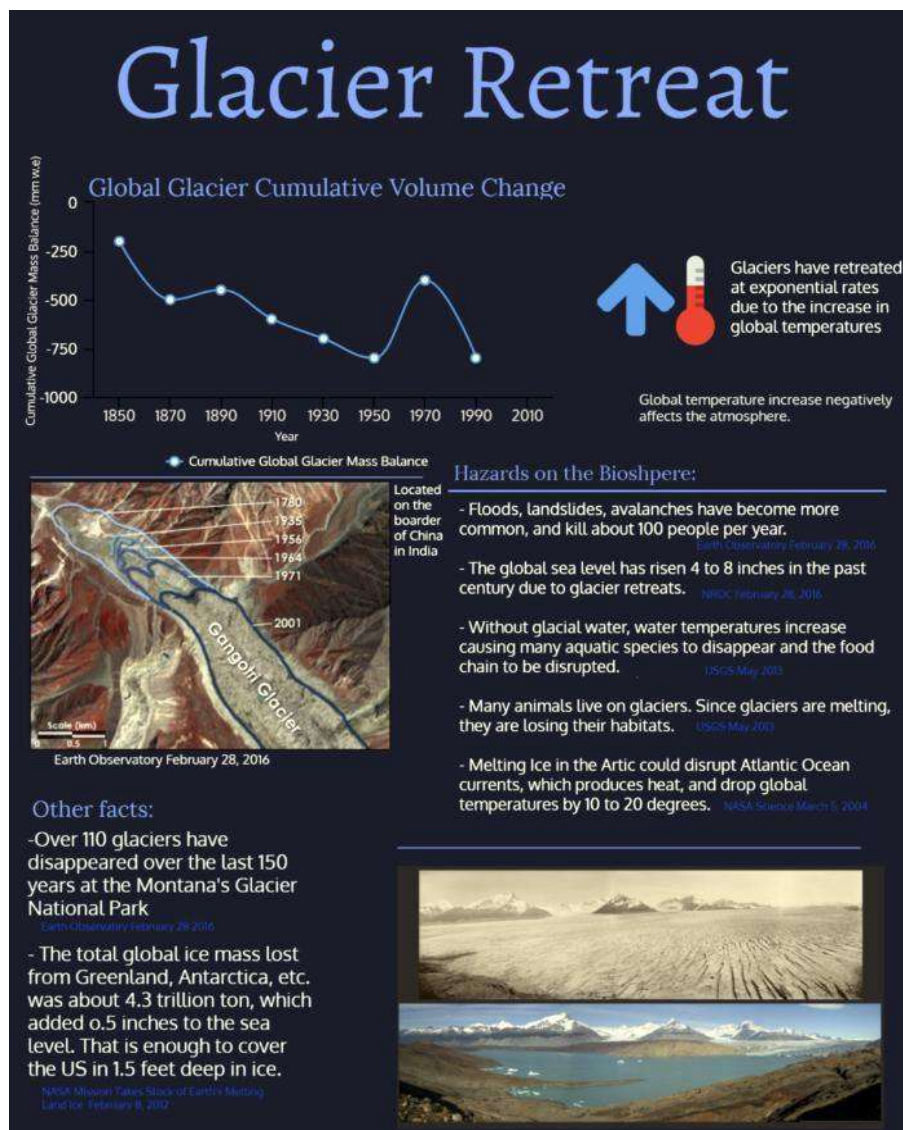
### More about news

- The studies showed that glaciers with an area of more than 10 square km are unlikely to get affected appreciably in the coming years. However, smaller glaciers of less than 2 square km area are likely to show rapid changes



### Why glaciers matters?

- Snow and glaciers are perennial sources of water for rivers originating from the Himalayas.
- Glaciers receive and accumulate snow in winter and release melt water in summer through surface flow, groundwater seepage.
- The rate of melting/recession varies from glaciers to glaciers depending on its topography and climatic variability of the region.
- Glaciers are also early indicators of climate changes that will have a somewhat more delayed impact on other parts of the Earth system.
- Glaciers are sentinels of climate change.
- They are the most visible evidence of global warming today.
- Glaciers' white surfaces reflect the sun's rays, helping to keep our current climate mild. When glaciers melt, darker exposed surfaces absorb and release heat, raising temperatures.
- A retreating glacier loses more water than it gains and so causes sea level to rise.



## Anaimalai Flying Frog

### Context

- A critically endangered frog species, the *Racophorus pseudomalabaricus* or Anaimalai flying frog, is getting a new home.

### Frog facts

- It is also known as the False Malabar Gliding Frog.
- Endemic to the southern part of the Western Ghats, the numbers of these frogs have declined rapidly due to the loss of habitat.



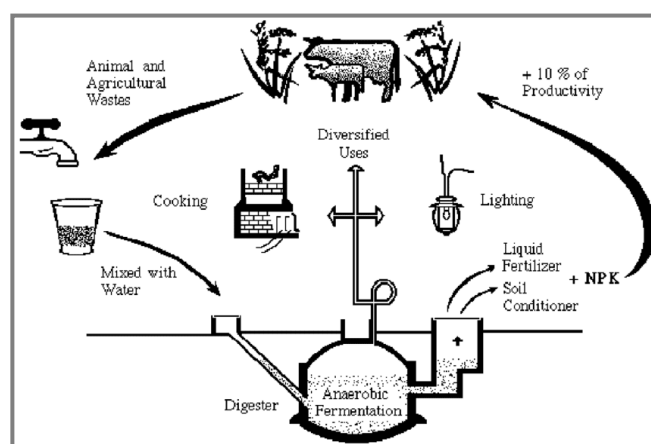
## 'Biomethanation'

### Context

- The Ministry of New and Renewable Energy (MNRE) has launched a loan interest subvention scheme **in association with United Nations Industrial Development Organization (UNIDO) and Global Environment Facility (GEF) to provide financial assistance for innovative waste to energy biomethanation projects.**

### Biomethanation process

- It is a process by which organic material is microbiologically converted under **anaerobic conditions to biogas.**
- Microorganisms degrade organic matter via cascades of biochemical conversions to **methane and carbon dioxide.**
- The industrial organic waste-to-energy bio-methanation





projects are generally **capital intensive and financially sensitive** to both operating costs, including waste availability and revenue.

- Innovations in such projects seek to **improve overall energy output** thereby **minimising the cost of energy generation**.
- The loan scheme provides **financial assistance to beneficiaries to reduce the financial burden on account of interest** on the loan component faced by such demonstration projects.

#### Inventory tool

- A Geographic Information System (GIS) based inventory tool of organic waste streams is also unveiled.
- The tool provides district level estimates of available urban and industrial organic wastes and their energy generation potential across India.
- The tool will enable SMEs and project developers to set up new waste to energy projects and may facilitate the rapid growth of biomethanation in waste-to-energy sector in the country.

#### About Global Environment Facility (GEF)

- It was established on the eve of the **1992 Rio Earth Summit** to help tackle our planet's most pressing environmental problems.
- The GEF unites 184 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives.
- An **independently operating financial organization**, the GEF provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, persistent organic pollutants (POPs), mercury, sustainable forest management, food security, sustainable cities.
- The GEF also serves as financial mechanism for the following conventions:
  - Convention on Biological Diversity (CBD)
  - United Nations Framework Convention on Climate Change (UNFCCC)
  - United Nations Convention to Combat Desertification (UNCCD)
  - Stockholm Convention on Persistent Organic Pollutants
  - Minamata Convention on Mercury
- The GEF, although not linked formally to the Montreal Protocol on Substances that Deplete the Ozone Layer (MP), supports implementation of the Protocol in countries with economies in transition.

#### About United Nations Industrial Development Organization (UNIDO)

- It is a **specialized agency of the United Nations** that assists countries in economic and industrial development.
- It is headquartered at the UN Office in Vienna, Austria, with a permanent presence in over 60 countries.
- UNIDO's strategic priorities include **creating shared prosperity; advancing economic competitiveness; safeguarding the environment; and strengthening knowledge and institutions.**
- Each of these goals is to be achieved through technical cooperation, policy advice, analysis and research, the development of uniform standards and quality control, and partnerships for knowledge transfer, networking and industrial cooperation

## India Plastics Pact

#### Context

- The India Plastics Pact, the first in Asia, will be launched in September at the CII Annual Sustainability Summit.

#### About India Plastics Pact

- The India Plastics Pact is an **ambitious, collaborative initiative** that aims to bring together businesses, governments and NGOs across the whole value chain to set time-bound commitments to reduce plastics from their value chains.
- The India Plastics Pact aims to **promote public-private collaborations that enable solutions to eliminate the plastics we do not need, bring innovation to packaging design**, and to capture the value of the plastics we use.
- The Pact aims to transform the current linear plastics system into a circular plastics economy that will:



#### Why does India need a Plastics Pact?

- 9.46million tonnes of plastic waste India generates annually
- 40 %plastic waste goes uncollected
- 43 %all plastics produced in India are used for packaging, majority of them being single-use.



### How will it work?

- The Pact will create a unified national framework for a circular economy for plastics with aligned targets and associated reporting.
- It will provide a platform for collaboration, learning and tangible action.
- All stakeholders will support a joint set of ambitious and time-bound targets, ensuring that this collaboration will drive significant change by 2030.
- The Indian Plastics Pact will also build on the positive work started by other initiatives and help scale up and disseminate good practice more.



## Kaziranga National Park

### Context

- **Kaziranga has become the first National Park** in India to have been equipped with satellite phones.

### Need

- For boosting anti-poaching measure.
- The satellite phones will be used in pockets of the park's six ranges with no wireless or poor mobile connectivity.
- The satellite phones will give an edge to the forest personnel over the poachers and also during emergencies like floods.

### About satellite Phones

- Satellite phones, are generally used by the law-enforcing agencies.
- The public is barred from using satellite phones in India.
- The Government of India has issued an advisory that the use of Thuraya/Iridium satellite phone in India are banned and unauthorised/illegal in India under Section 6 of Indian Wireless Act and Section 20 of Indian Telegraph Act.
- Satellite phones uses radiowaves radiation for communication.
- Satellite phones send radio signals to a satellite which then transmits back down to earth where a station will then route the call to the Public Switched Telephone Network (PSTN).
- Unlike traditional cell phones that rely on cell towers, satellite phones work anywhere on earth. Satellite networks are the only networks offering reliable communication.
- For this reason, satellite phones work anywhere, even in the most remote areas of the world.

### About KNP

- Kaziranga National park's is home to more than 2200 Indian **one-horned rhinoceros**, approximately **2/3rd of their total world population**.
- It is located in the edge of the **Eastern Himalayan biodiversity hotspots** – Golaghat and Nagaon district.
- In 1985, it was declared as a **World Heritage Site** by UNESCO.
- **It was declared as Tiger Reserve in 2006.**
- It is recognized as an **Important Bird Area** by **BirdLife International** for the conservation of avifaunal species.

## All India Elephant and Tiger population estimation exercise

### Context

- All India Elephant and Tiger population estimation exercise to be done in convergence for the first time in 2022
- Estimation protocol for the same is adopted.

### Asian Elephant

- It is distributed throughout the Indian subcontinent and Southeast Asia, from India in the west, Nepal in the north, Sumatra in the south, and to Borneo in the east.
- The Asian elephant is the **largest living land animal in Asia**.
- Since 1986, the Asian elephant has been listed as **Endangered** on the IUCN Red List, as the population has declined by at least 50 percent over the last three elephant generations, which is about 60–75 years.
- Elephant is the **Natural Heritage Animal of India**.
- It is primarily threatened by **loss of habitat, habitat degradation, fragmentation and poaching**.
- The Asian elephant is listed on **CITES Appendix I**.

- CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention) is a multilateral treaty to protect endangered plants and animals.

## Ramsar Convention

### Context

- Four more Indian sites - **two each from Haryana and Gujarat** - have been recognised as wetlands of international importance under the Ramsar Convention, taking the number of such sites in the country to **46**.
- Two wetlands in Haryana - **Sultanpur National Park in Gurgaon and Bhindawas Wildlife Sanctuary in Jhajjar and Thol and Wadhvana from Gujarat**

### Bhindawas Wildlife Sanctuary

- It is a human-made freshwater wetland.
- It is also the largest in Haryana.
- Over 250 bird species use the sanctuary throughout the year as a resting and roosting site.
- The site supports more than 10 globally threatened species including the endangered Egyptian Vulture, Steppe Eagle, Pallas's Fish Eagle, and Black-bellied Tern.

### Sultanpur National Park in Haryana

- It supports more than 220 species of resident, winter migratory and local migratory waterbirds at critical stages of their life cycles.
- More than 10 of these are globally threatened, including the **critically endangered sociable lapwing, and the endangered Egyptian Vulture, Saker Falcon, Pallas's Fish Eagle and Black-bellied Tern.**

### Thol Lake Wildlife Sanctuary in Gujarat

- It lies on the **Central Asian Flyway** and more than 320 bird species can be found here.
- It supports more than 30 threatened waterbird species, such as the **critically endangered White-rumped Vulture and Sociable Lapwing, and the vulnerable Sarus Crane, Common Pochard and Lesser White-fronted Goose.**

### Wadhvana Wetland in Gujarat

- It is **internationally important for its birdlife** as it provides wintering ground to migratory waterbirds, including over 80 species that migrate on the Central Asian Flyway.
- They include some threatened or near-threatened species such as the endangered Pallas's fish-Eagle, the vulnerable Common Pochard, and the near-threatened Dalmatian Pelican, Grey-headed Fish-eagle and Ferruginous Duck.

### The Ramsar Convention

- It is an international treaty for the conservation and wise use of wetlands.
- It is named after the Iranian city of Ramsar, on the Caspian Sea, where the treaty was signed on February 2, 1971.
- The aim of the Ramsar list is "to develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits".

To know more about Ramsar sites in India, visit: <https://www.iasgyan.in/blogs/ramsar-convention>

## Rare turtles rescued in Maharashtra return to Assam

### Context

- Rare turtles rescued in Maharashtra return to their native habitat in Assam after an 18-hour flight.
- The turtles belong to five species, including the spotted pond turtle and the crowned river turtle marked as endangered in the Red List of the International Union for Conservation of Nature.

### Spotted pond turtle

- The black pond turtle also known as the spotted pond turtle or the Indian spotted turtle, is a species of freshwater turtle **endemic to South Asia**.
- It is found in southern **Pakistan (Indus and Ganges River drainages), northeastern India (Assam), Sri Lanka, and Bangladesh.**
- **IUCN Status: Endangered**

### Crowned river turtle

- The brahminy river turtle or crowned river turtle is a species of turtle that is **endemic to South Asia**.
- It is found in northern India, Pakistan, and Bangladesh in the watersheds of the **Ganges, Brahmaputra, and Indus rivers.**
- **IUCN STATUS: Endangered**



## Greater Adjutant Storks (Garuda)

### Context

- Bihar plans GPS trackers for endangered Greater Adjutant Storks to study their movements

### About Greater Adjutant Storks

- They are locally known as 'Garuda'.
- Bhagalpur's Kadiwa Diara floodplains area is the third-most popular breeding centre for the greater adjutant stork in the world after **Assam and Cambodia**.
- The greater adjutant is one of the most threatened stork species of the world and is widely considered to be a rare bird.
- However, the global population of the Greater Adjutant Stork is estimated to be roughly not more than 1,500 now.
- The greater adjutant stork is classified as '**endangered**' on the IUCN's Red List 2004 of threatened species and **listed under Schedule IV of the Indian Wild Life (Protection) Act, 1972**.

## Plastic Waste Management Amendment Rules, 2021

### Context

- The Environment Ministry released a draft gazette notification that chalked out a phased manner of banning single use carry bags as well as other commodities.

### Details of Notification on the Plastic Waste Management Amendment Rules, 2021

- Polythene bags with thickness less than 50 microns are already banned in the country.
- From September 30 this year, polythene bags under 75 microns will not be allowed.
- From December 31 next year, polythene bags under 120 microns will be banned.
- The manufacture, import, stocking, distribution, sale and use of single-use plastic, including polystyrene and expanded polystyrene commodities shall be prohibited with effect from the 1st July, 2022
- The items that will be banned beginning next year are – Earbuds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (thermocool) for decoration, plastic plates, cups, glasses, cutlery such as forks, spoons and knives, straw, trays, wrapping films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100-microns and stirrers.
- The Central Pollution Control Board, along with state pollution bodies, will monitor the ban, identify violations, and impose penalties already prescribed under the Environmental Protection Act.

### What was the need?

- High cost of collection
- High environmental cost
- many plastic commodities were not being collected and recycled
- rag-pickers find thicker plastic bags have higher value than thinner ones.
- Plastic bags with higher thickness are more easily handled as waste and have higher recyclability.

### Issues

- Manufacturing industries need to install a different kind of machine for producing plastic bags above the 120 micron plastic bag.
- The ban will not apply to commodities made of compostable plastic.
- Some states, such as Karnataka, already have rules to enforce bans on the items mentioned in the draft notification.
- Capital cost in changing from plastic to an alternative material.

## Impatiens balsamina

### Context

- Three new wild balsam species reported from Kerala.

### More about news

- The three species are
- A plant with whitish-creamy flowers found in the Kallar forest, Thiruvananthapuram district, has been named *Impatiens achudanandanii* after Mr. Achuthanandan.
- A discovery from the Sankhili forest in south Kerala, christened *Impatiens shailajae*, honours Ms. Shailaja.
- Impatiens danii*, spotted in Munnar, Idukki, is named after Mathew Dan, scientist and head, Plant Genetic Resource Division, Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Thiruvananthapuram.
- Given their tiny populations, all three species can be classified as **Critically Endangered (CE)**, applying the IUCN criteria.
- These are **straggling, glabrous herb**.



### About *Impatiens balsamina*

- It is commonly known as balsam, is a species of plant native to India and Myanmar.
- Different parts of the plant are used as traditional remedies for disease and skin afflictions.
- Juice from the leaves is used to treat warts and snakebite, and the flower is applied to burns.
- This species has been used as indigenous traditional medicine in Asia for rheumatism, fractures, and other ailments.

## Project BOLD

### Context

- The Project BOLD (Bamboo Oasis on Lands in Drought) of Khadi and Village Industries Commission (KVIC) has received Indian Army's support in Leh.

### Project BOLD

- It is an initiative of the Khadi and Village Industries Commission (KVIC).
- It was launched with an objective of preventing land degradation and developing green cover.
- It create sustainable income for the local tribal population and also contribute to environment and land protection.

## Slender loris

### Context

- In Karur, a conservation dilemma regarding the slender loris

### More about news

- The Kadavur hills in central Tamil Nadu's Karur district are home to the **Kadavur Reserve Forest**.
- These forests are home to the **shy and reclusive slender loris, a species of primate**.
- There is a conservation dilemma regarding these animals in the area currently.
- The wildlife census conducted during 2016-17 showed an appreciable population of 3,500 slender loris in the Kadavur Reserve Forest.

### About the Slender loris (*Loris tardigradus*)

- It is secretive and has nocturnal habits.
- It usually travels from the canopy of one tree to another. But, at times, it also comes down to bushes at the ground level to feed.
- It sleeps by day in the foliage or in a hole or crevice. It comes out at dusk in search of prey.
- They are fond of lantana berries and also eat insects, lizards, small birds, tree frogs, tender leaves and buds.
- They play a key role in controlling agricultural crop pests.



### Survival threats

- As it is believed that these animals have some medicinal properties, they are captured and sold.
- There is great demand for keeping these animal as pets, they are illegally smuggled.
- Habitat loss, electrocution of live wires and road accidents are other threats that have caused its populations to dwindle.

### Conservation Status

- **IUCN Status:** Endangered.
- It has been brought **under Schedule I of the Wild Life (Protection) Act, 1972** in order to provide the **highest level of legal protection**.

## Acetabularia jalakanyakae

### Context

- New algal species with 'umbrella head' discovered from Andaman and Nicobar Islands.
- Measuring as small as 20 to 40 mm, the stunning bright green algae, resembling an umbrella or a mushroom, has grooves on its cap measuring 15 to 20mm in diameter.

### More about news

- Named after the imaginary sea mermaid, *Acetabularia jalakanyakae* is **very primitive and is a single-cell organism**.
- Its nucleus forms a rhizoid structure, which facilitates the algae to attach itself to shallow rocks.
- It is highly regenerative in nature. Even if one chops off the top portion, this algae can regrow.
- As it is **primarily a marine algae**, the projected sea level rise due to global warming is not as much of a direct threat to its





existence.

- But due to climate change, the oceans are warming and there is increasing acidification — both of which could be harmful,”

## Children's Climate Risk Index (CCRI)

### Context

- Climate crisis putting a billion children at 'extremely high risk,' warns new UN report.
- Almost half of the world's children are seriously threatened by the rapidly deteriorating global climate.

### More about news

- UNICEF — a United Nations agency is working in more than 190 countries and territories to provide humanitarian and developmental aid to the world's most disadvantaged children and adolescents.
- Recently, UNICEF has launched “**The Climate Crisis Is a Child Rights Crisis**” report that has found that a billion children across the world are at “extremely high risk” from the impacts of climate change.
- It is the first climate report that show regions where children are vulnerable due to an array of stressors, including poverty and lack of access to education, health care or clean water.

### About Children's Climate Risk Index

- The report introduces the new Children's Climate Risk Index (CCRI).
- CCRI is a composite index that ranks nations based on children's exposure to climate shocks, providing the first comprehensive look at how exactly children are affected by the climate crisis, offering a road map for policymakers seeking to prioritise action based on those who are most at risk.
- CCRI found that 1 billion children are “highly exposed” to “exceedingly high levels of air pollution,” 920 million to water scarcity, 820 million to heat waves, 815 million to lead pollution, 600 million to vector-borne diseases, 400 million to tropical storms, 330 million to riverine flooding, and 240 million to coastal flooding.

### Key highlights of report

- Climate and environmental shocks are undermining the complete spectrum of children's rights, from access to clean air, food and safe water; to education, housing, freedom from exploitation and even their right to survive.
- The report found that **almost every single child on the planet has been exposed to at least one climate or environmental stressor**, such as air pollution, flooding, heat waves, tropical storms, flooding or drought.
- Moreover, the report found that 850 million children — **approximately one-third of the world's child population — are exposed to four or more stressors.**
- Children bear the **greatest burden of climate change**. Not only are they more vulnerable than adults to the extreme weather, toxic hazards and diseases it causes, but the planet is becoming a more dangerous place to live.
- **A 2020 report produced by Oxfam**, found that the richest one per cent of people are responsible for 15 percent of cumulative emissions — twice as much as the poorest half of the global population.
- **Climate change is deeply inequitable**. While no child is responsible for rising global temperatures, they will pay the highest costs. The children from countries least responsible will suffer most of all.
- The main problem is that the **world's nations are not meeting their targets to achieve these goals.**

### Suggestions

- UNICEF calls on governments and businesses to protect children from the climate crisis by **reducing greenhouse gas emissions.**
- By increasing investments in health and hygiene services, education and clean water; providing children with climate education and green skills; including young people in climate negotiations and decision making.
- Ensuring a “green, low-carbon and inclusive” COVID-19 recovery “so that the capacity of future generations to address and respond to the climate crisis is not compromised.”

## New Delhi Statement on Environment

### Context

- BRICS Environment Ministers adopt the New Delhi Statement on Environment.

### More about news

- At the 7<sup>th</sup> meeting of the BRICS Environment Ministerial 2021, India stressed on the need for taking concrete collective global actions against global environment and climate challenge, guided by equity, national priorities and circumstances, and the principles of “**Common but Differentiated Responsibilities and Respective Capabilities(CBDR-RC)**”.
- The New Delhi Statement on Environment was adopted, which is aimed at **furthering the spirit of Cooperation for Continuity, Consolidation and Consensus in Environment among the BRICS Nations.**

## 'Sujalam' campaign

### Context

- The **Jal Shakti Ministry** has launched this campaign to **create a million soak pits in villages** across the country over the next 100 days.
- It aims to **help manage grey water and prevent the clogging of water bodies**.
- Although the Central government does not have any comprehensive estimate of the total number of soak pits needed countrywide, the States have been asked to develop their own targets.

### Need

- The household or community soak pit is the **simplest solution for grey water management**.
- Best solution for most villages which are generally dry, grey water can be **safely and inexpensively filtered through a soak pit**.
- A household soak pit **could be constructed for about ₹3000-5000 in most cases**.

## Forum for Decarbonizing Transport' in India

### Context

- NITI Aayog and World Resources Institute India Jointly Launch 'Forum for Decarbonizing Transport' in India as part of the NDC-Transport Initiative for Asia (NDC-TIA) project.

### NDC-TIA project

- The NDC Transport Initiative for Asia (TIA 2020-2023) is a **joint programme of seven organisations** that will engage China, **India, and Vietnam** in promoting a comprehensive approach to decarbonizing transport in their respective countries.
- The project is **part of the International Climate Initiative (IKI)**.
- The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support the initiative on the basis of a decision adopted by the German Bundestag.
- NITI Aayog is the implementing partner for the India component of the project.
- It aims at **bringing down the peak level of GHG emissions** (transport sector) in Asia (in line with a well below 2-degree pathway), resulting in problems like congestion and air pollution.
- The NDC-TIA India component focuses on developing a coherent strategy of effective policies and the formation of a multi-stakeholder platform for decarbonizing transport in the country.
- Through this forum, India will work in close coordination with all these stakeholders to formulate strategies and develop appropriate business models **to accelerate electric mobility in India**.
- The forum will also provide a platform to initiate dialogues for the development of uniform policies and help achieve specific results in reducing emissions from the transport sector

### Need

- India has a massive and diverse transport sector, which is also the third most CO<sub>2</sub> emitting sector.
- Data from Ministry of Environment Forest and Climate Change, 2018 suggests that within the transport sector, road transport contributes to more than 90% of the total CO<sub>2</sub> emissions.

### Measure taken

- Government of India is continuously working towards adoption of electric vehicles (EVs) in the country.
- NITI Aayog has been at the helm of the promotion of EVs and sustainable mobility through the **National Mission on Transformative Mobility and Battery Storage**.

### What next?

- To leverage and streamline EVs across the country, there is a **need is to create a favourable ecosystem** for different stakeholders.
- These stakeholders include Central/state Governments, state-designated agencies, financial institutions, businesses, OEMs, research and technical institutes, private bodies and think tanks.
- A coordinated effort between these stakeholders will help **enable investment, encourage adoption, and ensure fair operation in the industry**.
- **Promotion of walking, cycling and public transport** coupled with electrification of motor vehicles

## India-US Climate, Clean Energy Agenda 2030 Partnership

### Context

- **Climate Action and Finance Mobilization Dialogue (CAFMD) Track** under the India-US Climate, Clean Energy Agenda 2030 Partnership and other related issues discussed with U.S.
- India and the US, will engage for a **constructive engagement under the India-US Climate and Clean Energy Agenda 2030 Partnership**.
- These platforms provide greater opportunities for working together for climate actions and emphasised that India stands

committed to working with the US on Clean Energy.

- The launch of the CAFMD was done to enhance actions in the current decade to meet the goals of the Paris Agreement.

## Sambhar Lake

### Context

- Sambhar Lake in Rajasthan is shrinking with degradation of soil and water quality.

### Why it is a cause of concern?

- Decline in the population of migratory birds.
- Needs a faster restoration for conservation of its wetland and salt brine worth \$300 million.
- Lake's ecology has deteriorated.

### What all is leading to this?

- 'Mining menace': 30% of the Sambhar Lake's area had been lost to mining and other activities, including the illegal salt pan encroachments. It has also threatened the livelihoods of local people who have always lived in harmony with the lake and its ecology.

### About Sambhar Lake

- It is the country's largest inland saline water body, which attracts thousands of migratory birds every year.
- The death of more than 20,000 birds due to avian botulism, which migrate annually to the lake had made international headlines in 2019.
- The lake receives water from six rivers: Mantha, Rupangarh, Khari, Khandela, Medtha and Samod.
- Sambhar has been designated as a Ramsar site (recognized wetland of international importance) because the wetland is a key wintering area for tens of thousands of pink flamingos and other birds that migrate from northern Asia and Siberia.

### Why there is need to conserve wetland?

NEED FOR CONSERVATION			PROHIBITED ACTIVITIES WITHIN WETLANDS	
WHAT IS WETLAND			<ul style="list-style-type: none"><li>➤ Any kind of encroachment</li><li>➤ setting up of any industry</li><li>➤ Expansion of existing industries</li><li>➤ Solid waste dumping</li><li>➤ Discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements</li><li>➤ Poaching</li><li>➤ Any construction of a permanent nature except for boat jetties within 50 metres from the mean high flood level observed in the past 10 years</li></ul>	
<ul style="list-style-type: none"><li>➤ Land area covered by water, either temporarily/seasonally or permanently (marsh, fen and peatland come under this category)</li><li>➤ It has characteristics of a distinct ecosystem</li></ul>				
WHY ARE THEY IMPORTANT				
<ul style="list-style-type: none"><li>➤ Play a key role in hydrological cycle and flood control, water supply, providing food, fibre and raw materials</li><li>➤ Wetlands support lakhs of migratory birds from colder regions of the world in summers, apart from mangroves that protect coastlines and filter pollutants</li></ul>				
WETLANDS IN NUMBERS			Isro had in 2011 prepared a national wetlands atlas on the basis of satellite images	
It mapped <b>2,01,503</b> wetlands	They comprise around <b>4.63%</b> of the geographic area of India	No. of wetland sites in India under Ramsar Convention   <b>37</b>		
INDIA'S PROMINENT WETLANDS			Chilika lake areas (Odisha)   Wular lake (J&K)   Renuka (Himachal Pradesh)   Sambhar lake (Rajasthan)   Deepor Beel (Assam)   East Kolkata wetlands (West Bengal)   Nal Sarovar (Gujarat)   Harike (Punjab)   Rudra Sagar (Tripura) and Bhoj wetland (Madhya Pradesh)	



**1. Consider the following statements about the Deccan Plateau:**

1. The Deccan Plateau extends over five Indian states.
2. It is located between the Western Ghats and the Eastern Ghats.
3. The northwestern part of the plateau is made up of igneous rocks known as the Deccan Traps.

Which of the statements given above is/are correct?

- a) 1 only                      b) 2 and 3 only  
c) 1 and 3 only              d) 1, 2 and 3

**2. Which of the following is/are major schools of Vedic philosophy?**

1. Nyaya
2. Vishishtadvaita
3. Mimamsa

Choose the correct answer using the code given below:

- a) 1 and 2 only              b) 2 and 3 only  
c) 1 and 3 only              d) 1, 2 and 3

**3. Consider the following statements about the Barak River:**

1. It forms the natural border between Nagaland-Manipur state.
2. Its navigable part is declared as National Waterway one (NW-1).
3. The Tipaimukh Dam is proposed on the river.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only              b) 2 and 3 only  
c) 3 only                      d) 1 and 3 only

**4. Consider the following statement about the Anti-Dumping duty:**

1. It is an import tax imposed by the importing country on imported products.
2. It is a protectionist tariff.

Which of the statements given above is/are correct?

- a) 1 only                      b) 2 only  
c) Both 1 and 2              d) Neither 1 nor 2

**5. With reference to the Central Employment Guarantee Council, consider the following statements:**

1. It was constituted under the Mahatma Gandhi National Rural Employment Guarantee Act, 2005.
2. It is chaired by the Union Minister of Labour & Employment.

Which of the statements given above is/are correct?

- a) 1 only                      b) 2 only  
c) Both 1 and 2              d) Neither 1 nor 2

**6. Consider the following statements about the Nagarhole National Park:**

1. It is located in Karnataka.
2. It is a UNESCO world heritage site.
3. It is part of the UNESCO MAB Programme.

Which of the statements given above is/are correct?

- a) 1 and 2 only              b) 2 and 3 only  
c) 1 and 3 only              d) 1, 2 and 3

**7. Consider the following statements:**

1. Peninsular rivers are perennial in nature.
2. They are characterised with short and shallow courses.
3. Peninsular rivers form meanders.

Which of the statements given above is/are correct?

- a) 1 and 2 only              b) 2 only  
c) 1 and 3 only              d) 1, 2 and 3

**8. Consider the following statements:**

1. To invoke a public detention law against someone, it is not enough that his/her actions pose a threat to law and order.
2. Article 22 of the Indian Constitution provides protection against arrest and detention in certain cases.

Which of the statements mentioned above is/are correct?

- a) 1 only                      b) 2 only  
c) Both 1 and 2              d) Neither 1 nor 2

**9. Consider the following statements about the Thangka painting?**

1. It serves as important teaching tools depicting the life of Krishna.
2. It is mainly practiced in southern Indian states.
3. Vegetable and mineral colors are used for making them.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only              b) 2 and 3 only  
c) 3 only                      d) 1 and 3 only

**10. Consider the following statements about the Gilgit-Baltistan region:**

1. It is home to the Masherbrum and Gasherbrum peaks.
2. The Biafo Glacier, the Baltoro Glacier, and the Batura Glacier are found in this region.

Which of the statements mentioned above is/are correct?

- a) 1 only                      b) 2 only  
c) Both 1 and 2              d) Neither 1 nor 2

**11. Consider the following statements about the Jim Corbett National Park:**

1. It was the first national park that came under the Project Tiger initiative.
2. It is located in Himachal Pradesh.
3. The Ramganga river flows through this park.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only              b) 2 and 3 only  
c) 1 and 3 only              d) 1, 2 and 3

**12. Which of the following activities cannot be done by the Non-banking financial companies (NBFCs)?**

1. accept demand deposits
2. outsource core management functions
3. management of investment portfolio

Choose the correct answer using the code given below:



- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**13. Consider the following statements:**

- Solar flares can affect Global Positioning Systems (GPS), radio and satellite communications.
- Auroras occur when charged particles ejected from the Sun's surface enter the Earth's atmosphere.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**14. Consider the following statements:**

- India is the largest producer of Silk.
- India is the only country in the world, which produces all the four varieties of silk - Mulberry, Eri, Tassar and Muga.
- Chanderpaul Silk and Arni Silk have the Geographical Indications tag.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 2 and 3 only

**15. Consider the following statements about the Bharatanatyam:**

- It is also called Sadhir Attam.
- It is a major form of Indian classical dance that originated in Kerala.
- Description of Bharatanatyam is noted in the ancient epic Silappadikaram.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 3 only      d) 1 and 3 only

**16. Consider the following statements about the Terai Arc Landscape:**

- It comprises the Shivalik hills.
- It is protected under the WWF's Terai Arc Landscape programme.
- Rajaji National Park and Valmiki Tiger Reserve are part of this landscape.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**17. Which of the following Intangible Cultural Heritage of India are recognized by UNESCO?**

- Kumbh Mela
- Manipuri Sankirtana
- Kalaripayattu

Choose the correct answer using the code given below:

- a) 1 and 2 only      b) 2 only  
c) 2 and 3 only      d) 1, 2 and 3

**18. In context of the Additional Tier 1 bonds, consider the following statements:**

- These are a kind of perpetual bond without any expiry date that allows banks to meet their short term capital requirement.
- The issuing bank has no obligation to pay back the principal to investors.
- These bonds are neither tradable nor exchangeable.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 3 only

**19. Consider the following statements about the ecotones:**

- It is a transition area between two biological communities, where two communities meet and integrate.
- Species richness decreases at ecotones because the limits of the ranges of two region's species reach into the transition.
- Marshlands, mangrove forests, and estuaries are examples of ecotones.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**20. In context of the Sentinelese, consider the following statements:**

- These are indigenous people, who inhabit the Andaman group of islands.
- They are designated as particularly vulnerable tribal groups (PVTG).

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**21. Consider the following statements about the South Asian Free Trade Area (SAFTA) agreement:**

- It is the free trade arrangement of the South Asian Association for Regional Cooperation (SAARC).
- This agreement came into force in 2020.
- Afghanistan, Bangladesh, Bhutan and India are its signatories among other members.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**22. Consider the following statements about the Blockchain Technology:**

- It is a distributed ledger that records data in individual blocks, which are linked to one another using cryptography.
- Most crypto currencies are based on this technology to record transactions.
- It can be used in detecting counterfeits.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**23. Consider the following statements about the Jaipur Blue Pottery:**

1. This art form came to India from Iran and Turkey .
2. It is one of the few pottery techniques in the world that does not use clay.
3. Recently, it got included in the UNESCO intangible heritage list.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only    b) 2 and 3 only  
c) 3 only    d) 1, 2 and 3

**24. Which of the following was/were famous ports in the Chola Empire?**

1. Poompuhar
2. Muziris
3. Kadalur

Choose the correct answer using the code given below:

- a) 1 and 2 only    b) 2 only  
c) 1 and 3 only    d) 1, 2 and 3

**25. In context of the Nuclear Suppliers Group (NSG), consider the following statements:**

1. It is a multilateral export control regime that prevents nuclear proliferation by controlling the export of materials that can be used to manufacture nuclear weapons.
2. It was founded in response to the Indian nuclear test in 1974.
3. India is not a member of NSG.

Which of the statements given above is/are correct?

- a) 1 and 2 only    b) 2 only  
c) 1 and 3 only    d) 1, 2 and 3

**26. The National Company Law Appellate Tribunal (NCLAT) is responsible for hearing appeals from the orders of**

1. National Company Law Tribunal
2. Insolvency and Bankruptcy Board of India
3. Competition Commission of India

Choose the correct answer using the code given below:

- a) 1 and 2 only    b) 2 only  
c) 1 and 3 only    d) 1, 2 and 3

**27. With reference to the Limited Liability Partnership (LLP), consider the following statements:**

1. It is an alternative corporate business form that gives the benefits of limited liability of a company and the flexibility of a partnership.
2. The Limited Liability Partnership Act 2008 has a mandatory requirement that one of the partners in the LLP must be an Indian.
3. For LLP there is no requirement of compulsory audit.

Choose the correct answer using the code given below:

- a) 1 and 2 only    b) 1 only  
c) 2 and 3 only    d) 1, 2 and 3 only

**28. Consider the following statements about the prompt corrective action (PCA) Framework:**

1. Capital to risk weighted assets ratio, net non-performing assets and Return on Assets parameters are used as trigger points to initiate prompt corrective action.
2. It is applicable only to commercial banks.

Which of the statements given above is/are correct?

- a) 1 only    b) 2 only  
c) Both 1 and 2    d) Neither 1 nor 2

**29. In context of the Eco-Sensitive Zone, consider the following statements:**

1. It is a fragile area that exists within 10 kilometres of protected areas.
2. ESZs are declared by the respective state governments.
3. Commercial use of firewood and wastewater disposal is prohibited around ESZ.

Which of the statements given above is/are correct?

- a) 1 and 2 only    b) 2 only  
c) 1 and 3 only    d) 1, 2 and 3

**30. Consider the following statements about the Samagra Shiksha scheme:**

1. This centrally sponsored scheme.
2. It subsumes the schemes of Sarva Shiksha Abhiyan , Rashtriya Madhyamik Shiksha Abhiyan and Teacher Education .

Which of the statements mentioned above is/are correct?

- a) 1 only    b) 2 only  
c) Both 1 and 2    d) Neither 1 nor 2

**31. Consider the following statements about the INS Vikrant:**

1. This maiden indigenous aircraft carrier (IAC) is built by the Mazagon Dock Shipbuilders Limited.
2. Italy and Russia have helped in development of this IAC

Which of the statements mentioned above is/are correct?

- a) 1 only    b) 2 only  
c) Both 1 and 2    d) Neither 1 nor 2

**32. Consider the following statements about the Missile Technology Control Regime (MTCR):**

1. It focuses on rockets and unmanned aerial vehicles capable of delivering a payload of at least 500 kg to a range of at least 300 km.
2. It imposes legally binding obligations on members to limit the proliferation of missiles and missile technology.
3. It was formed by the G-7 countries.

Which of the statements given above is/are correct?

- a) 1 and 2 only    b) 2 only  
c) 1 and 3 only    d) 1, 2 and 3

**33. Which of the following tribes is/are recognized as the Particularly Vulnerable Tribal Groups (PVTGs) in Odisha?**

1. Mankidia
2. Kaders
3. Birhor

Choose the correct answer using the code given below:

- a) 1 and 2 only      b) 2 and 3 only
- c) 1 and 3 only      d) 1, 2 and 3

**34. Consider the following statements:**

1. The primary objective of monetary policy is to maintain price stability.
2. The Finance minister acts as the ex-officio chairperson of the Monetary Policy Committee.
3. Marginal Standing Facility and Open Market Operations instruments are used for implementing monetary policy.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only
- c) 1 and 3 only      d) 1, 2 and 3

**35. Consider the following statement about the Rashtriya Uchchatar Shiksha Abhiyan (RUSA):**

1. It is a centrally sponsored scheme that aims at providing strategic funding to higher educational institutions throughout the country.
2. NITI Aayog monitors the academic, administrative and financial advancements taken under this scheme.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only
- c) Both 1 and 2      d) Neither 1 nor 2

**36. Consider the following statements about the Quit India Movement:**

1. It is also known as the August Movement.
2. Muslim League, the Hindu Mahasabha and the Communist party of India opposed this movement.
3. Failure of the Cripps' Mission played an important role in calling for the Quit India Movement.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only
- c) 1 and 3 only      d) 1, 2 and 3

**37. With reference to the 'Seekho Aur Kamao' scheme, consider the following statements:**

1. It is a skill development scheme for youth of 14 - 35 years age group that aims to improve the employability of school dropouts.
2. It is implemented by the Ministry of Skill Development And Entrepreneurship.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only
- c) Both 1 and 2      d) Neither 1 nor 2

**38. Consider the following statements about Paris Agreement, 2015:**

1. It is an international treaty on climate change.
2. It's long-term temperature goal is to keep the rise in mean global temperature to well below 2 °C above pre-industrial levels.
3. It is a binding agreement and many of its articles imply obligations on members to facilitate international collaboration.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only
- c) 3 only      d) 1 and 3 only

**39. Consider the following statements about the District Mineral Foundation (DMF):**

1. It is a statutory body set up under the Mine and Minerals Development Regulation (Amendment) Act, 2015.
2. Its manner of operation comes under the jurisdiction of the relevant State Government.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only
- c) Both 1 and 2      d) Neither 1 nor 2

**40. In context of the Bhaona, consider the following statements:**

1. This traditional form of entertainment is written only in Assamese language.
2. Sankaradeva created it to convey spiritualism in the Vaishnav mould.
3. It is also known as Ankiya Nats.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only
- c) 2 and 3 only      d) 3 only

**41. Consider the following statements:**

1. Tripura tops rubber cultivation in India.
2. It can grow in lateritic soil, which is moderate acidic in nature.
3. India is the second largest global producer of Rubber.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only
- c) 1 and 3 only      d) 3 only

**42. Consider the following statements:**

1. In India, any tax being charged has to be backed by a law passed by the legislature or Parliament.
2. In India, paying tax is a fundamental duty.
3. The Seventh Schedule of the Constitution puts separate heads of taxation under the Union and State list.

Which of the statements mentioned above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only
- c) 1 and 3 only      d) 1, 2 and 3

**43. With reference to the Anti dumping, consider the following statements:**

1. It is a measure of protection for the domestic industry.
2. It is levied below the normal customs duty chargeable

on the import of goods in question.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**44. Consider the following statements about the Deendayal Antyodaya Yojana (DAY-NRLM):**

1. It is an initiative by the Ministry of Social justice and Empowerment.
2. Under this mission, 10 Kgs of food grains is distributed per month free of cost to the destitute above the age of 65 years with no or meager subsistence.

Which of the statements given above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**45. Consider the following statements:**

1. India is globally the 5th largest producer of installed hydroelectric power capacity.
2. Uttarakhand, is the largest producer of hydroelectric power in India.
3. Hydropower is a non-renewable resource of energy.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 1, 2 and 3

**46. Consider the following statements:**

1. Around 70 per cent of India's trading by volume and 95 per cent by value is done through maritime transport.
2. Andhra Pradesh coastline has a maximum number of major and non-major ports.
3. The Indian Government has allowed Foreign Direct Investment (FDI) of up to 100 per cent under the automatic route for port and harbour construction.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 3 only

**47. In context of the Mission for Integrated Development of Horticulture (MIDH), consider the following statements:**

1. It is a centrally sponsored scheme for the holistic growth of the horticulture sector covering coconut, cocoa and bamboo.
2. Under MIDH, Government of India contributes 60% of total outlay for developmental programmes in all the states except states in North East and Himalayas

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 1, 2 and 3

**48. With reference to the Thanjavur painting, consider the following statements:**

1. They have originated in the Maratha court of Thanjavur.
2. They are distinguished by their famous gold coating.

3. It has been recognized as a Geographical indication by the Government of India.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 1, 2 and 3

**49. With reference to the Asiatic lions, consider the following statements:**

1. This species is endemic to Gujarat state..
2. This species faces the threat of genetic homogeneity.
3. It is categorised as vulnerable on the International Union for the Conservation of Nature Red List.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 1, 2 and 3

**50. Consider the following statements about the SMILE scheme:**

1. It is an initiative by the Ministry of Social Justice and Empowerment .
2. It focuses on rehabilitation, education, skill development and economic linkages of the persons found to be engaged in begging.

Which of the statements mentioned above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**51. Consider the following statements about the electoral bonds:**

1. It resembles promissory notes and allows donors to pay political parties with banks as an intermediary.
2. As per Reserve Bank of India and Election Commission, electoral bond scheme has legitimised electoral corruption at a huge scale.
3. Only citizens of India and entities incorporated or established in India can purchase electoral bonds.

Which of the statements given above is/are correct?

- a) 3 only      b) 1 and 2 only  
c) 2 and 3 only      d) 1, 2 and 3

**52. With reference to the United Nations Population Fund (UNFPA), consider the following statements:**

1. It is aimed at improving reproductive and maternal health worldwide.
2. It is a founding member of the United Nations Development Group.
3. All UNFPA funding is voluntary.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**53. Consider the following statements about the SEACAT military exercise:**

1. It is a U.S. Navy led military exercise.
2. It aims to foster enhanced cooperation between Southeast Asian countries.



Which of the statements given above is/are correct?

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2

**54. Consider the following statements about the Sugarcane:**

1. Peninsular India gives higher yield of sugarcane per unit area as compared to north India.
2. Uttar Pradesh is the leading producer of sugar in India.
3. It is also grown for biofuel production.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**55. Consider the following statements:**

1. The Strait of Gibraltar separates Spain from Morocco.
2. Spain and Morocco surrounds the Mediterranean Sea.
3. Turkey is surrounded by the Mediterranean Sea, Black sea, Sea of Marmara and Aegean sea.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 and 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**56. Consider the following statements:**

1. Fair and Remunerative Prices is the minimum price at which sugarcane is to be purchased by the central government from farmers.
2. There is no statutory backing for Fair and Remunerative Prices.
3. FRP is recommended by the Commission for Agricultural Costs and Prices (CACP)

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**57. Consider the following statements about the Adopt a Heritage scheme:**

1. It is an initiative of the Ministry of Tourism, in collaboration with the Ministry of Culture and the Archaeological Survey of India.
2. Under this scheme, only Public sector companies are eligible for adopting selected heritage and tourist sites.
3. Under this scheme, no financial bid is used for selecting the Monument Mitras.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**58. Consider the following statement about the Samarth Scheme:**

1. Its objective is to provide skill to the youth for sustainable and gainful employment in the textile sector.
2. It covers the entire value chain of textiles including Spinning & Weaving in the organized Sector.
3. The effectiveness of training provided under Samarth is required to be assessed by an independent third party Assessment Agency.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**59. Consider the following statements about the Nationally Determined Contributions (NDC)-Transport Initiative for Asia (TIA):**

1. It is a joint programme of UNEP and World Bank.
2. It is part of the International Climate Initiative (IKI).
3. Ministry of Environment, Forest and Climate Change is the implementing partner for the India component of the project.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 2 only  
c) 1 and 3 only      d) 1, 2 and 3

**60. Consider the following statements about the Pulicat lake:**

1. It is the largest brackish water lagoon in India.
2. The barrier island of Sriharikota separates it from the Bay of Bengal.
3. The Arani River and the Kalangi River feed this lagoon.

Which of the statements given above is/are correct?

- a) 1 and 2 only      b) 3 only  
c) 1 and 3 only      d) 1, 2 and 3

**ANSWERS**

1. b	16. d	31. b	46. d
2. c	17. a	32. c	47. b
3. d	18. b	33. c	48. d
4. b	19. c	34. c	49. a
5. a	20. c	35. a	50. c
6. a	21. c	36. d	51. b
7. b	22. d	37. a	52. d
8. c	23. a	38. a	53. c
9. c	24. c	39. b	54. d
10. c	25. d	40. a	55. d
11. c	26. d	41. b	56. b
12. d	27. d	42. c	57. c
13. c	28. c	43. d	58. c
14. d	29. c	44. d	59. b
15. d	30. c	45. a	60. b