# THE IAS GAZETTE

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## GLOBAL PLATFORM FOR DISASTER RISK REDUCTION, 2022

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IASGYAN
PREDICT THE UNPREDICTABLE

# GENERAL STUDIES - I

## SAFEGUARDING INTANGIBLE CULTURAL HERITAGE

GS-I CULTURE & HERITAGE

### In News

- **India has been elected as a member of the Intergovernmental Committee of UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage for the 2022-2026 cycle**.

### Details

- Against the four seats falling vacant within the Asia-Pacific group, six countries, namely, India, Bangladesh, Vietnam, Cambodia, Malaysia, and Thailand had presented their candidature.
- India received 110 votes from the 155 State Parties that were present and voting.
- **The Intergovernmental Committee of the 2003 Convention consists of 24 members and is elected in the General Assembly of the Convention according to the principles of equitable geographical representation and rotation. States Members to the Committee are elected for a term of four years.**
- Some of the core functions of the Intergovernmental Committee include **promoting the objectives of the Convention, providing guidance on best practices, and making recommendations on measures for the safeguarding of intangible cultural heritage.**
- The Committee also **examines requests submitted by States Parties for the inscription of intangible heritage on the Lists as well as proposals for programmes and projects.**
- In the past, **India has served two terms as a member of the Intergovernmental Committee of this Convention. One from 2006 to 2010 and the other from 2014 to 2018**.
- For its 2022-2026 term, India has formulated a clear vision for the protection and promotion of the intangible cultural heritage of humanity.
- **Some of the priority areas that India will focus upon include fostering community participation, strengthening international cooperation through intangible heritage, promoting academic research on intangible cultural heritage, and aligning the work of the Convention with the UN Sustainable Development Goals**.
- **India ratified the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage in September 2005.**
- **With 14 inscriptions on the Representative List of Intangible Cultural Heritage of Humanity, India also ranks high in the listing of intangible cultural heritage**. After the inscription of Durga Puja in 2021, India submitted the nomination for Garba of Gujarat to be discussed in 2023.

### Recent developments

- The 16th Committee of UNESCO for safeguarding of the Intangible Cultural Heritage (ICH) in its meeting held in Paris has inscribed DURGA PUJA in KOLKATA on the representative list of Intangible Cultural Heritage of Humanity.
- This is the 1st festival in Asia to achieve recognition as UNESCO ICH of Humanity.
- UNESCO's list of intangible culture is an annual list which focuses on those forms of performing art which are of outstanding value but are vulnerable due to lack of support.
- Convention for the Safeguarding of the Intangible Cultural Heritage was adopted in 2003. India ratified it in 2007.
- In total, 14 Intangible Cultural Heritage elements from India have now been inscribed on UNESCO's Representative List.

### List of the Intangible Cultural Heritage of Humanity

- UNESCO established it's Lists of Intangible Cultural Heritage with the aim of ensuring better protection of important intangible cultural heritages worldwide and the awareness of their significance.
- The list was established in 2008 when the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage took effect.

### 13 other elements apart from Durga Puja

| 13 ICH traditions recognised by UNESCO | | | |
|---|---|---|---|
| 1. | Tradition of Vedic chanting, 2008 | 8. | Buddhist chanting of Ladakh: recitation of sacred Buddhist texts in the trans-Himalayan Ladakh region, Jammu and Kashmir, India, 2012 |
| 2. | Ramlila, the traditional performance of the Ramayana, 2008 | 9. | Sankirtana, ritual singing, drumming and dancing of Manipur, 2013 |
| 3. | Kutiyattam, Sanskrit theatre, 2008 | 10. | Traditional brass and copper craft of utensil making among the Thatheras of Jandiala Guru, Punjab, India ,2014 |
| 4. | Ramman, religious festival and ritual theatre of the Garhwal Himalayas, India, 2009 | 11. | Yoga, 2016 |
| 5. | Mudiyettu, ritual theatre and dance drama of Kerala, 2010 | 12. | Nowruz, 2016 |
| 6. | Kalbelia folk songs and dances of Rajasthan, 2010 | 13. | Kumbh Mela, 2017 |
| 7. | Chhau dance, 2010 | | |

### What is UNESCO?

- UNESCO is the United Nations Educational, Scientific and Cultural Organization. It seeks to build peace through international cooperation in education, sciences and culture. UNESCO's

programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015.

- As early as 1942, in wartime, the governments of the European countries, which were confronting Nazi Germany and its allies, met in the United Kingdom for the Conference of Allied Ministers of Education (CAME).
- World War II was far from over, yet those countries were looking for ways and means to rebuild their education systems once peace was restored.
- The project quickly gained momentum and soon acquired a universal character.
- New governments, including that of the United States, decided to join in. Upon the proposal of CAME, a United Nations Conference for the establishment of an educational and cultural organization (ECO/CONF) was convened in London from 1 to 16 November 1945.
- Scarcely had the war ended when the conference opened. It gathered together representatives of forty-four countries who decided to create an organization that would embody a genuine culture of peace.
- In their eyes, the new organization was to establish the "intellectual and moral solidarity of mankind" and thereby prevent the outbreak of another world war.

# AZORES HIGH



## Context

- An extremely large 'Azores High' has resulted in abnormally dry conditions across the western Mediterranean, including the Iberian Peninsula, primarily occupied by Spain and Portugal, according to a new study.

## What is Azores high?

- The Azores High also known as North Atlantic (Subtropical) High/Anticyclone or the Bermuda-Azores High, is a **large subtropical semi-permanent centre of high atmospheric pressure system typically found south of the Azores in the Atlantic Ocean, at the Horse latitudes.**
- Azores High **extends over the eastern subtropical North Atlantic and western Europe during winter.**
- The system influences the weather and climatic patterns of vast areas of North Africa and Southern Europe, and to a lesser extent, eastern North America.
- It is **associated with anti-cyclonic winds in the subtropical North Atlantic.** It is formed by dry air aloft descending the subtropics and coincides with the downward branch of the Hadley Circulation.
- The aridity of the Sahara Desert and the summer drought of the Mediterranean Basin is due to the large-scale subsidence and sinking motion of air in the system.
- In its summer position (the Bermuda High), the high is centered near Bermuda, and creates a southwest flow of warm tropical air toward the East Coast of the United States. In summer, the Azores-Bermuda High is strongest. The central pressure hovers around 1024 mbar (hPa).
- This high-pressure block exhibits anticyclonicbehaviour, circulating the air clockwise. Due to this direction of movement, African eastern waves are impelled along the southern periphery of the Azores High away from coastal West Africa towards the Caribbean, Central America, or the Bahamas, favouring tropical cyclogenesis, especially during the hurricane season.

## Expansion of Azores High

- Reports suggest **Global Warming is intensifying the Bermuda High in some years** leading to more precipitation extremes across the Southeastern United States.
- The Azores High expansion is **driven by external climate forces** and that the only external forcing that produces this signal in the industrial era is **atmospheric greenhouse gas concentrations.**
- Winters with an extremely large Azores High were significantly more common in the industrial era (since 1850) than in pre-industrial times.
- There has been a **robust increase in the frequency of extremely large Azores High Area (AHA) events** and an **overall expansion signal in the winter Azores High over the past 100 years.**
- **Azores High expansion emerged after 1850** and strengthened in the twentieth century, consistent with anthropogenically driven warming.

## Implications

- An annual drying of 5-10 millimetres per year per decade has been recorded in the Iberian Peninsula throughout the second half of the 20th century. A further 10-20 per cent drop in winter precipitation is expected by the end of the 21st century.
- These projected changes **make agriculture of the Iberian region some of the most vulnerable in Europe.** The study projected:
  1. Olive-growing regions in southern Spain will suffer a 30 per cent decline in production by 2100
  2. Cultivation area in grape-growing regions across the Iberian Peninsula will shrink 25-99 per cent by 2050 due to severe water deficits that will render land unsuitable for viticulture.
- An expanding Azores High is **in concurrent with a pole-ward shift in the North Atlantic storm track and an increase in anticyclone frequency at the Azores High's poleward edge as well as a positive trend in regional subtropical indicators**.

APTI PLUS

# GENERAL STUDIES - II

## RENUNCIATION OF INDIAN CITIZENSHIP

GS-II POLITY

### In News

- The Ministry of Home Affairs (MHA) has stated in the Lok Sabha that **over 1.6 lakh Indians had renounced their citizenship in 2021.**
  - This is the highest number in the past 5 years
  - More than 78,000 Indians acquired U.S. citizenship, the highest among all other countries.
- The Ministry highlighted that the individuals renounced Indian citizenship due to personal reasons, which are unknown to the government.

### Indian Citizenship

- Citizenship status in India allows citizens of the Indian State to enjoy all civil and political rights.
- The **Constitution of India allows for only single citizenship, that is, Indian citizenship. There is no provision for separate state citizenship.**
  - The other federal states like USA and Switzerland adopted the system of double citizenship.
  - In the USA, each person is not only a citizen of the USA but also of the particular state to which he belongs.
- The system of single citizenship **provided uniform rights** (except in a few cases) for the people of India to promote the feeling of fraternity and unity among them and to build an integrated Indian nation.

### Indian Constitution deals with citizenship from Articles 5 to 11 under Part II

- The original constitution only identifies the persons who became citizens of India at its commencement (i.e., on January 26, 1950).
  - It does not deal with the problem of acquisition or loss of citizenship after its commencement.
  - It empowers the Parliament to enact a law to provide for such matters and any other matter relating to citizenship.
  - Parliament has enacted the Citizenship Act (1955), which has been amended from time to time.
- **According to the Constitution, the following four categories of persons became the citizens of India at its commencement i.e., on January 26, 1950.**
  - Persons domiciled in India.
  - Persons migrated from Pakistan.
  - Persons migrated to Pakistan but later returned.
  - Persons of Indian origin residing outside India.
- **The Citizenship Act (1955) provides for the acquisition and loss of citizenship** after the commencement of the Constitution.

### Acquisition of Citizenship

- **The Citizenship Act of 1955 prescribes five ways of acquiring citizenship, via, birth, descent, registration, naturalization and incorporation of territory.**
- **By Birth** - A person born in India on or after January 26, 1950, but before July 1, 1987, is a citizen of India by birth irrespective of the nationality of his parents.
  - A person born in India on or after July 1, 1987, is considered a citizen of India only if either of his parents is a citizen of India at the time of his birth.
  - Further, those born in India on or after December 3, 2004, are considered citizens of India only if both of their parents are citizens of India.
  - The children of foreign diplomats posted in India and enemy aliens cannot acquire Indian citizenship by birth.
- **By Descent** - A person born outside India on or after January 26, 1950, but before December 10, 1992, is a citizen of India by descent, if his father was a citizen of India at the time of his birth.
  - A person born outside India on or after December 10, 1992, is considered a citizen of India if either of his parents is a citizen of India at the time of his birth.
  - December 3, 2004, onwards, a person born outside India shall not be a citizen of India by descent, unless his birth is registered at an Indian consulate within one year of the date of birth.
- **By Registration** - Central Government may, on an application, register as a citizen of India any person if he belongs to any of the following categories, namely:-
  - A person of Indian origin who is ordinarily resident in India for seven years before making an application for registration.
  - A person who is married to a citizen of India and is ordinarily resident in India for seven years before making an application for registration.

- Minor children of persons who are citizens of India.

- **By Naturalization** - Central Government may, on an application, grant a certificate of naturalization to any person if he possesses the required qualifications, including adequate knowledge of a language specified in the Eighth Schedule to the Constitution.
  - The government of India may waive all or any of the above conditions for naturalization in the case of a person who has rendered distinguished service to science, philosophy, art, literature, world peace or human progress.
- **By Incorporation of Territory -** If any foreign territory becomes a part of India, the Government of India specifies the persons who among the people of the territory shall be the citizens of India.
  - Such persons become citizens of India from the notified date.
  - For example, when Pondicherry became a part of India, the Government of India issued the Citizenship (Pondicherry) Order (1962), under the Citizenship Act (1955).
- **Every Registered and naturalized citizen must take an oath of loyalty to the Constitution of India.**

### Loss of Citizenship

- The Citizenship Act (1955) prescribes **three ways of losing citizenship** whether acquired under the Act or before it under the Constitution, via, renunciation, termination and deprivation:
- **By Renunciation -** Any citizen of India of full age and capacity can make a declaration renouncing his Indian citizenship.
  - When a person renounces his Indian citizenship, every minor child of that person also loses Indian citizenship.
  - However, when such a child attains the age of eighteen, he may resume Indian citizenship.
- **By Termination** - When an Indian citizen voluntarily acquires the citizenship of another country, his Indian citizenship automatically terminates.
  - This provision, however, does not apply during a war in which India is engaged.
- **By Deprivation** - It is a compulsory termination of Indian citizenship by the Central government:
  - If the citizen has obtained citizenship by fraud.
  - The citizen has shown disloyalty to the Constitution of India.
  - The citizen has unlawfully traded or communicated with the enemy during a war.
  - The citizen has, within five years after registration or naturalization, been imprisoned in any country for two years.
  - The citizen has been ordinarily resident out of India for seven years continuously.

## ELECTION OF VICE-PRESIDENT

*GS-II POLITY*

### In News

- The **Election Commission of India has announced the election for the post of Vice-President** will be held on 6th August.
- The tenure of the present vice-president will end on 10th August.
- The Commission stated that the **Lok Sabha Secretary-General will be appointed as the Returning Officer**.

### Vice-President

- The Vice-President occupies the second-highest constitutional office in the country.
- This office is modelled **on the lines of the American Vice-President.**
- **Article 63:** There shall be a Vice-President of India. The office cannot remain vacant.
- The Vice-President **holds office for a term of five years** from the date on which he enters his office.
  - He can continue to be in office, irrespective of the expiry of the term until the success or assumes office.
- He can **resign from his office at any time by addressing the resignation letter to the President**.
- A formal **impeachment is not required for his removal.**
- He can be removed by a resolution of the Rajya Sabha passed by an absolute majority (ie, a majority of the total members of the House) and agreed to by the Lok Sabha.
- He is also **eligible for re-election** to that office. He may be elected for any number of terms.

### Election

- The **Electoral College is different from the Electoral College for the election of the President** in the following two respects:
  - It **consists of both elected and nominated members of the Parliament** (in the case of the president, only elected members).
  - It does **not include the members of the state legislative assemblies** (in the case of the President, the elected members of the state legislative assemblies are included).

### Qualification

- To be eligible for election as Vice-President, a person should fulfil the following qualifications:

- He should be a citizen of India.
- He should have **completed 35 years of age**.
- He should be **qualified for election as a member of the Rajya Sabha.**
- He should not hold any office of profit under the Union government or any state government or any local authority or any other public authority.

- He should **not be a member of either House of Parliament or a House of the state legislature**.
  - If any such person is elected Vice-President, he is deemed to have vacated his seat in that House on the date on which he enters his office as Vice-President.
- He should **not hold any other office of profit.**

### The Function of the Vice President

- He is the **Chairman of the Rajya Sabha**. Vice-President presides over the Rajya Sabha.
- The Vice-President acts as President when there is a vacancy in the office of the President.
  - The vacancy may occur for reasons of death, resignation, removal by impeachment or otherwise.
  - He discharges the functions of the President when the President is unable to perform his functions.
  - The reasons may also include the absence of the President from India or illness or some other cause.
- He is **not a member of the Rajya Sabha**; he has no right to vote but can exercise a —Casting Vote.
- When Vice-President is acting as, or discharging the functions of the President, have all the powers and immunities of the President and be entitled to such emoluments, allowances, and privileges as may be determined by the Parliament by law and, until provision in that emoluments, allowances, and privileges as are specified in the Second Schedule.
  - When he acts as the President, he will not draw the salary of the Chairman of the Council of State as he ceases to perform these duties as the Chairman.

## FOREIGN CONTRIBUTION REGULATION ACT (FCRA) — GS-II POLITY

### In News

- The Union Ministry of Home Affairs has **amended the Foreign Contribution Regulation Act (FCRA) to provide certain relaxations.**
- The new rule **allowed relatives to send Rs 10 lakh (earlier it was Rs 1 lakh) to India without informing the government.**
  - In case the amount limit exceeds, then **the individuals will get 3 months to inform the government, earlier it was 30-days**
- It will provide more time to the organisations to inform the government about the opening of bank accounts for the utilization of funds received under the 'registration' or 'prior permission' category.
- The provision to declare foreign contributions by the organisation/individual at every quarter on its official website has been removed.

### Foreign Contribution Regulation Act

- The Foreign Contribution Regulation Act was passed by the Indian Parliament in 2010.
  - The act **regulates the foreign contribution by individuals or associations or companies.**
- The Union Minister of Home Affairs introduced the Foreign Contribution (Regulation) Amendment Bill in 2020, which made several changes.

### Foreign Contribution (Regulation) Amendment Act, 2020

- The Act regulates the acceptance and utilisation of foreign contributions by individuals, associations and companies.
  - **Foreign contribution is the donation or transfer of any currency, security or article (of beyond a specified value) by a foreign source**.
- **Prohibition to accept foreign Contributions**: Certain persons are prohibited to accept any foreign contribution. These include:
  - **Election candidates, editor or publisher of a newspaper, judges, government servants, members of any legislature, and political parties, among others.**
  - The Bill adds public servants (as defined under the Indian Penal Code) to this list. A public servant includes any person who is in service or paid by the government or remunerated by the government for the performance of any public duty.
- **Transfer of foreign Contributions**
  - Foreign contribution **cannot be transferred to any other person unless such person is also registered to accept foreign contribution (or has obtained prior permission under the Act to obtain foreign contribution).**
  - The Act prohibited the transfer of foreign contributions to any other person. The term 'person' under the Act includes an individual, an association, or a registered company.
- **Aadhar for registration**

- Any person seeking registration (or renewal of such registration) or prior permission for receiving a foreign contribution must make an application to the central government in the prescribed manner.
- The Act adds that **any person seeking prior permission, registration or renewal of registration must provide the Aadhar number of all its office bearers, directors or key functionaries, as an identification document.**
- **In the case of a foreigner, they must provide a copy of their passport or the Overseas Citizen of India card for identification.**

- **FCRA Account**
  - **Foreign contributions must be received only in an account designated by the bank as an "FCRA account"** in such a branch of the State Bank of India, New Delhi, as notified by the central government.
  - No funds other than the foreign contribution should be received or deposited in this account.
  - The person may open another FCRA account in any scheduled bank of their choice for keeping or utilising the received contribution.
- **Restriction in the utilisation of foreign contribution**
  - The Government may restrict the usage of unutilised foreign contributions for persons who have been granted prior permission to receive such contributions.
- **Renewal of licence**
  - **Every person who has been given a certificate of registration must renew the certificate within 6 months of expiration**.
  - The Act provides that the government may conduct an inquiry before renewing the certificate.
- **Reduction in use of foreign contributions for administrative purposes**
  - A person who receives a foreign contribution must use it only for the purpose for which the contribution is received.
  - **They must not use more than 20% of the contribution for meeting administrative expenses (earlier it was 50%).**
- **Suspension of Registration**
  - Earlier governments may suspend the registration of a person for a period not exceeding 180 days.
  - **The Act adds that such suspension may be extended up to an additional 180 days.**

## CHAKMAS

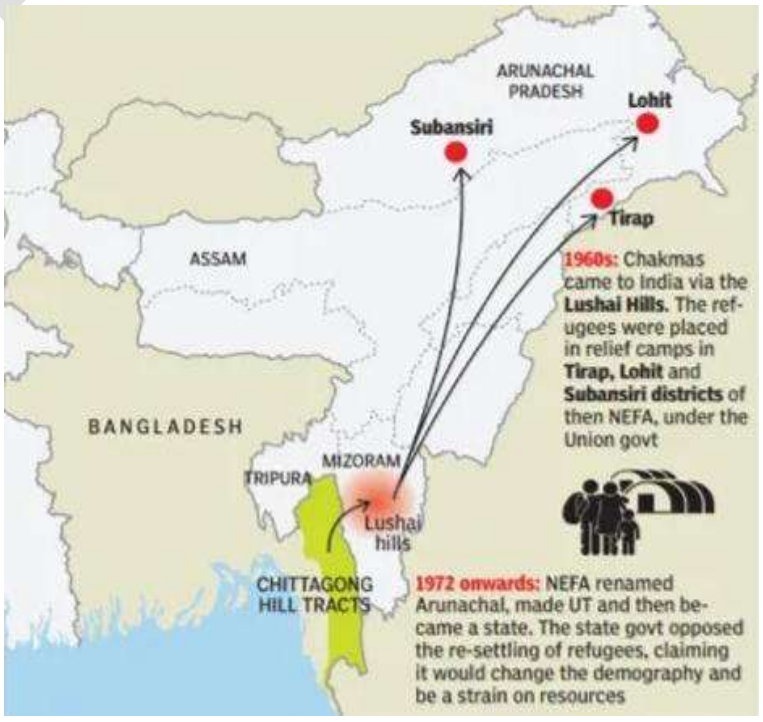
*GS-II POLITY*

### In News

- The National Human Rights Commission (NHRC) has asked the Deputy Commissioner of Changlang district (Arunachal Pradesh) to submit its Action Taken Report (ATR) on a complaint alleging harassment and false prosecution of some Chakma villagers.

### Background

- The **Chakmas communities had once lived in the Chittagong Hills Tracts of East Pakistan, which is now Bangladesh**.
  - They **fled their homes when their land was submerged by the Kaptai dam in the 1960s**.
  - The **Chakmas are Buddhist**.
  - They had faced religious persecution in Bangladesh.
  - After they migrated to India, the government settled a majority of them in Arunachal Pradesh.
- In 2015, the Supreme Court of India asked the Union Government to grant citizenship to the Chakma.
- **Several organisations and civil society groups in Arunachal Pradesh were against it**, saying the decision would change the demography of the state and affect the minority status of the tribal population.




### National Human Rights Commission

- The National Human Rights Commission is a **statutory body established in 1993** under the Protection of Human Rights Act, 1993.
  - It was amended in 2006.
- The commission works as the watchdog of human rights in the country.
- The commission is a multi-member body consisting of a **chairman and four members**.

- The **chairman should be retired chief justice of India**, and members should be serving or retired judges of the Supreme Court, a serving or retired chief justice of a high court and two persons having knowledge or practical experience concerning human rights.
- In addition to these full-time members, the commission also has **4 ex-officio members**;
  - The chairman of the National Commission for Minorities.
  - The National Commission for SCs.
  - The National Commission for STs.
  - The National Commission for Women.
- The chairman and members are appointed by the president on the **recommendations of a 6-member committee consisting of;**
  - The Prime Minister is the head.
  - The Speaker of the Lok Sabha.
  - The Deputy Chairman of the Rajya Sabha.
  - Leaders of the Opposition in both the Houses of Parliament.
  - The Central home minister.
- The **chairman and members hold office for a term of five years or until they attain the age of 70 years,** whichever is earlier.
- The salaries, allowances and other conditions of service of the chairman or a member are determined by the Central government. But, they cannot be varied to his disadvantage after his appointment.
  - After the tenure, the chairman and members are not eligible for further employment under the Central or state government.
- The President can also **remove the chairman or any member on the ground of proven misbehaviour or incapacity.**
  - However, in these cases, the president has to refer the matter to the Supreme Court for an inquiry.
  - If the Supreme Court, after the inquiry, upholds the cause of removal and advises so, then the president can remove the chairman or a member.

### Functions of the Commission

- **Inquire into any violation of human rights** or negligence in the prevention of such violation by a public servant, **either suo motu or on a petition presented to it or on an order of a court.**
- Intervene in any proceeding involving an allegation of violation of human rights pending before a court.
- **Visit jails and detention places to study** the living conditions of inmates and make recommendations.
- Review the constitutional and other legal safeguards for the protection of human rights and recommend measures for their effective implementation.
- Review the factors including acts of terrorism that inhibit the enjoyment of human rights and recommend remedial measures.
- **Study treaties and other international instruments on human rights** and make recommendations for their effective implementation.
- Undertake and promote research in the field of human rights.
- Spread human rights literacy among the people and promote awareness of the safeguards available for the protection of these rights.
- **Encourage the efforts of non-governmental organisations** (NGOs) working in the field of human rights.
- Undertake such other functions as it may consider necessary for the promotion of human rights.
- The Central government should inform the Commission of the action taken on the recommendations within three months.
- The commission **submits its annual or special reports to the Central government and the state government concerned.**
- These reports are laid before the respective legislatures, along with a memorandum of action taken on the recommendations of the commission and the reasons for non-acceptance of any of such recommendations.

## SUB-CATEGORISATION OF OBCs

*GS-II POLITY*

### In News

- The Union Cabinet has decided to extend the period of **the Justice Rohini Commission** to submit its report.
- Many politicians and activities have criticised the move as the decision to extend the time limit were taken without any extension request from the commission.
- **The Justice Rohini Commission on Sub-categorisation of OBCs** was set up in 2017 under Article 340 of the Indian Constitution.
- The Commission was tasked with sub-categorisation of the Other Backward Classes (OBCs) and equitable distribution of benefits reserved for them.

### Arguments in favour of Sub-categorisation of OBCs

- Those at the lower levels of the Social System are not just disadvantaged socially but also economically, therefore it is

important to identify them to ensure their welfare.

- Sub-categorisation will promote independent research into the question of who does and does not need affirmative action.
- The faith of our citizens cannot be restored until credible exercises of data collection are undertaken.
- **It will generate exhaustive data, that will allow policymakers to develop better policies, and implementation strategies,** and will also enable a more rational debate on sensitive issues.
- **The Justice Rohini committee was appointed in 2017 to look into the sub-categorization of the OBC communities;** however, in the absence of data, there can be no data bank or any proper sub-categorization.
- **India needs to be bold and decisive in tackling reservation questions through data and statistics in the way the USA does to tackle race issues,** by collecting data around race, class, language, and inter-race marriages, among other metrics.
- It will ensure equality, by providing opportunities to people from backward classes.
- It will promote justice and human rights, decrease inequality by promoting economic opportunities for the lower section of Society.
- **It will provide a level playing field** as it is challenging for people from backward sections that were historically deprived of education, skills, and wealth to all of a sudden start competing with those who had access to those resources for years.

### Argument against sub-categorisation of OBCs

- **The data will suffer in respect of "completeness and accuracy", as Caste data collected in the Socio-Economic and Caste Census (SECC) of 2011 is "unusable" for official purposes as they are far from accurate and also misleading**.
- Many people may not register themselves to hide their caste identity.
- **This could further divide Indian society. The government had said that the total number of castes surveyed in 1931 was 4,147, while the SECC 2021 figures show that there are more than 46 lakh castes in India.**
- Earlier attempts failed as the entire exercise was corrupted because the enumerators had used different spellings for the same castes. **In many cases, the respondents had refused to reveal their castes.**
- **It will promote Casteism and creates division in our society, and also encourages caste-based Politics**.
- Affects the productivity of an organization if unfit candidates get the opportunities.
- A reservation only provides a limited and short-term solution to historical injustice issues.
- Many deserving people from the upper castes are also affected by poverty and illiteracy.
- Reservation demands by various groups may cause social turmoil, such as during **the Mandal Commission (1990).**

### Way forward

- **In democratic Societies there is nothing to legally stop a Person from the most deprived Class from reaching the highest Position, but these legal rights also need socio-economic support from the government as affirmative action**.
- Governments need to take effective affirmative action based on strong data to ensure the socio-economic development of marginalized people living at the bottom of the social hierarchy.

## NOMINATION TO RAJYA SABHA

*GS-II POLITY*

### In News

- The Prime Minister of India has congratulated the new nomination Rajya Sabha Members.
- **Recently nominated Members in Rajya Sabha:**
  - Athlete P.T. Usha
  - Music Composer 'Ilaiyaraaja'
  - Philanthropist and social worker 'Veerendra Heggade'.
  - Film Director and Screenwriter 'V. Vijayendra Prasad Garu'

### About Rajya Sabha

- Rajya Sabha was 1st Constituted in 1952.
- **In 1954, Rajya Sabha announced that the Council of States would be Called 'Rajya Sabha'.**
- S. Radhakrishnan was appointed as 1st Chairman.
- **Maximum Strength:** 250, of which 238 are to be elected and 12 are to be nominated by the President.
- **Present Strength:** 245, of which 233 are elected and 12 are nominated.
  - 4 members are elected from UTs (3 from Delhi and 1 from Puducherry). Other Union territories are not represented.
- **Not subject to dissolution, one-third of its members retire every 2nd year.**
- **6 years Tenures**, but a member elected in a bye-election Serves for the remainder of the term.
- The vice-President is the ex officio Chairman, elected by members of both Houses of Parliament in accordance with the System of proportional representation by means of a Single transferable vote, 5 years tenure.
  - Deputy Chairman is elected by members of Rajya Sabha from amongst its members.

- Normally, Prime Minister nominates a Minister who is a member of Rajya Sabha as Leader of the House, but if Prime Minister himself is a member of Rajya Sabha, he will act as Leader of the House.
- **Secretary-General in Rajya Sabha:** Appointed by Chairman and holds a rank equivalent to Cabinet Secretary, Assists Presiding Officers by giving them advice and expert opinion.

### Members of Rajya Sabha

- **Members are elected by the elected members of Assemblies of States and UTs in accordance with the System of proportional representation by means of the Single transferable vote**.
  - 12 members are nominated by President from amongst persons having special knowledge or practical experience in literature, science, art and Social Service.
- Rajya Sabha members can vote in the election of Vice-President but are not allowed to vote in the election of President.
- A Minister who is a Member of Lok Sabha has the right to speak in and takes part in the proceedings of Rajya Sabha but has no right to vote in Rajya Sabha and vice versa.
- **Under Article 105, Members enjoy certain powers and privileges.**
- If any question arises about disqualification, it is referred to the decision of the President and his decision is final.
  - Before giving any decision on any such question, President obtains the opinion of the Election Commission and acts according to such opinion.
- **If any question arises about disqualification under the 10th Schedule, the question is referred to Chairman and his decision is final.**

### Special powers of Rajya Sabha

- **Empower Parliament to make laws in respect of any matter enumerated in the State List in the national interest by adopting a resolution to this effect (Article 249).**
- **Creation of All India Services (Article 312).**
- **Approving Proclamations (issued under article 352 or article 356 or article 360).**
- In legislative matters, Rajya Sabha enjoys almost equal powers with Lok Sabha, except in the case of Money Bills.
- Joint Sitting of the Houses for resolving the deadlock between the two Houses, except in Case of Money Bill and Constitution Amendment Bill, till now only 3 joint Sitting.

## NEW DRUGS, MEDICAL DEVICES AND COSMETICS BILLS

*GS-II POLITY*

### In News

- Recently the **Union Health Ministry released the new draft of the 'Drug, Medical Devices, and Cosmetics Bill-2022'.**
  - The draft separately defines medical devices.
  - It has provisions to establish a separate expert group on medical devices.
  - It calls for the setting up of central and state medical device-testing laboratories.
  - It also highlighted that the Central government will formulate rules for the regulation of online pharmacies.
- The Union government has released the draft bill and invited comments, objections, and suggestions on the draft Bill.

### About the Draft Bill

- It introduced a **separate definition for medical devices, which includes;**
  - All types of diagnostic equipment and its software.
  - Implants and devices for assistance with disabilities.
  - Life support system.
  - Instruments used for disinfection, and any kits.
- It made a provision for the **creation of a 'medical devices technical advisory board'.**
  - This board will include medical professionals, and also people with technical knowledge of the devices.
  - Officials from the Health Ministry, department of atomic energy, department of science and technology, Ministry of Electronics, DRDO, and experts in the field of biomedical technology, biomaterials, and polymer technology will be part of the Advisory board.
- At present, all the decisions regarding medical devices are taken by the drugs technical advisory board, the board is not fully equipped to understand the engineering aspects of the device.
- The Draft Bill also **proposes medical device testing centres in states and at the central level.**
- The Bill has stated that **clinical trials or clinical investigations of drugs and medical devices will need compulsory permission from the central licensing authority.**
- The Bill highlighted that medical management and **compensation have to be provided to persons who are injured while participating in clinical trials.**

  - In case of death, the legal heir of the participant should be awarded compensation.
- The Bill also recognized the issue of e-pharmacies; it states that the **Union government would come up with rules and regulations to regulate the online sale of drugs.**
  - The Union Government would come up with new sets of rules for online pharmacies.

### Objectives of the Draft Bill

- The Ministry **aims at addressing the core objectives of accessibility, affordability, safety and quality, focusing on self-sustainability, innovation and growth in the medical devices sector.**
- **Regulatory streamlining** to optimize regulatory processes and promote ease of doing business.
- **Quality Standards and Safety of the Devices** in order to provide safety devices to the consumers.
- **Infrastructure Development** to provide the best physical foundation, including medical devices parks with common facilities such as testing centres, to improve cost competitiveness and enhance the attraction of domestic manufacturers.
- **Promoting Research and Development and Innovation.**
- **Human Resource Development** to create manpower with required skills.
- **Awareness Creation and Brand Positioning** in creating awareness and positioning India as a hub for manufacturing of medical devices as part of the "Make in India, Make for the World" initiative.

### Significance of the Medical Device Sector in India

- **The medical devices sector in India is an essential and integral constituent of the Indian healthcare sector, particularly for the prevention, diagnosis, treatment and management of all medical conditions, diseases, illnesses, and disabilities**.
- The Sector is expected to grow in market size from the present 11 billion US dollars to 50 billion US dollars by 2025.
- The medical device is a multi-product sector, with the following broad classifications:
  - Electronics Equipment
  - Implants
  - Consumables and Disposables
  - Surgical Instruments.
- The Indian medical devices sector's contribution has become even more prominent as India supported the global battle against the COVID-19 pandemic through the production of medical devices and diagnostic kits, e.g., Ventilators, RT-PCR kits, IR Thermometers, PPE Kits & N-95 masks.

## GUIDELINES TO FACILITATE JUVENILE JUSTICE BOARDS

*GS-II POLITY*

### In News

- The **Supreme Court of India has asked** the Union Government, the National Commission for Protection of Child Rights (NCPCR) and the State Commission for Protection of Child Rights (SCPCR) **to release guidelines to aid and facilitate the Juvenile Justice Boards (JJBs) in defining whether a child of 16 years of age and above can be tried as an adult for a heinous offence.**
- The Court said that **while considering a child as an adult, we should look at his or her physical maturity, cognitive abilities, and social and emotional competencies.**

### Details

- According to the Juvenile Justice (Care and Protection of Children) Act (JJ Act) 2015**, if a child of 16 years of age or above has committed a heinous offence (Crime for which the minimum punishment is 7 years imprisonment) — then the Juvenile Justice Boards (JJBs) need to conduct a preliminary assessment with regard to accused mental and physical ability to understand the consequences of the offence and the circumstances before deciding whether the child needs to be tried as an adult.**
  - Before 2015, all children below the age of 18 years were treated as juveniles.
- The **assessment needs to be done within 3 months** from the date of the first production of the child before the Board.
- Juvenile Justice Board is **composed of a judicial officer and two social workers**.
- If the Board order to treat a child as an adult
  - The case is transferred before the children's court.
  - The court decides whether there is a need for a trial of the child as an adult or the child is sent to a "place of safety" until he reaches the age of 21 years, and is only then transferred to jail.

### Juvenile Justice Board

- The **Juvenile Justice (Care and Protection of Children) Act, 2015 introduced the Juvenile Justice Board.**
- The bench has all the powers of a criminal court under the Code of Criminal Procedure.

- The **Board includes psychologists and sociologists** to decide whether the trial of offenders of age group 16-18 should be held as adults or not.
  - The members are selected by a selection committee that is headed by a retired judge of the High Court.
- The State Government is responsible for training all the members of the Juvenile Justice Board.
- The **tenure period is 3 years**. However, members can also be appointed consecutively for a maximum of two terms.
- The pay and allowances of the Principal Magistrate are governed by the state government.

### Juvenile Justice Act, 2015

- In 2015, the Indian Parliament has passed the Juvenile Justice (Care and Protection of Children) Act.
- It **replaced the Juvenile Delinquency Law and the Juvenile Justice (Care and Protection of Children Act) 2000.**
- The Act introduced the provisions **to allow trials of juveniles in the age group of 16-18 years as an adult who were found to be indulged in heinous crimes.**
- It replaced the Hindu Adoptions and Maintenance Act of 1956 and the Guardians of the ward Act of 1890 with more universally accessible adoption law.
- It made the Central Adoption Resource Authority (CARA) the statutory body for adoption-related matters.

### Juvenile Justice (Care and Protection) Amendment Act 2021

- Crimes against children that allow imprisonment between 3 to and 7 years will be considered "non-cognizable".
  - A cognizable offence is an offence in which the **police officer can arrest the convict without a warrant and can start an investigation without the authorization of the court**.
  - Cognizable offences are serious such as **kidnapping, theft, dowry death, rape, murder etc**.
- It strengthened the provision of protection and adoption of children.
- Adoption **power was transferred to the district magistrate.**

## SUSPENSION OF MPs

*GS-II POLITY*

### In News

- Recently more than 20 Opposition members were suspended from the Rajya Sabha for a week.

### Reason for suspending an MP

- It is the **role and duty of the Presiding Officer; Speaker of Lok Sabha and Chairman of Rajya Sabha to maintain order in the House to ensure smooth functioning of the house.**
- In order to ensure that proceedings are conducted in the proper manner, the Speaker/ Chairman is empowered to force a Member to withdraw from the House.
- The MPs were suspended for "unruly behaviour".

### Rules under which the Presiding Officer acts

- **Rule Number 373 of the Rules of Procedure and Conduct of Business** says: "The Speaker, if he believes that the conduct of any Member is grossly disorderly, may direct such Member to withdraw immediately from the House, and any Member so ordered to withdraw shall do so forthwith and shall remain absent during the remainder of the day's sitting."
- **Rule 374 says: The Speaker may name a Member who disregards the authority of the Chair** or abuses the rules of the House by persistently and wilfully obstructing the business thereof.
- Like the Speaker in Lok Sabha, the Chairman of Rajya Sabha is empowered under Rule Number 255 of its Rule Book to "direct any Member whose conduct is in his opinion grossly disorderly to withdraw immediately" from the House.
- **Under Rule 256,** the Chairman may "name a Member who disregards the authority of the Chair or abuses the rules of the Council by persistently and wilfully obstructing" business.
  - In such a situation, the House may adopt a motion suspending the Member from the service of the House for a period not exceeding the remainder of the session.
  - The House may, by another motion, terminate the suspension.

### Way Forward

- Every instance of suspension of an MP triggers strong statements on both sides. It is generally agreed that **a balance has to be struck and that the solution to unruly behaviour has to be long-term and consistent with democratic values.**

## PENDENCY OF CASES IN COURTS

GS-II POLITY

### Context

- Statistics of the Supreme Court show that 70,362 cases are pending as of August 1, 2022.

### Details

- **Over 31 million cases are pending in Subordinate Courts across the country.**
- The high pendency of Cases in Some tribunals indicates that the objective of setting them is not achieved.
- The Ministry of Law & Justice stated that the government, including PSUs and other autonomous bodies, are party to around "46%" of 3.14 crore court cases pending in various courts in the country, making it the biggest litigant in the country.

### Concern

- Case pendency Hurts investors' confidence.
- Economic activity is getting affected by high pendency and delays across the legal system.
- It adds a burden on Courts and collaterally harms other litigants.
- **It increases project costs and delays projects.**
- Slows down administrative processes, delaying decision-making.
- Diversion of precious resources.
- Effects ease of doing business.

### Steps to reduce Pendency by Government

- Adoption of "National Litigation Policy 2010" to transform government into an Efficient and Responsible litigant.
- All states formulated state litigation policies after National Litigation Policy 2010.
- Legal Information Management and Briefing System (LIMBS), was created in 2015 with the objective of tracking cases to which the government is a party.
- The Supreme Court advised the centre that criminals sentenced to imprisonment for 6 months or a year should be allocated social service duties rather than be sent to further choke the already overflowing prisons.

### Steps need to be taken

- National Litigation Policy should be revised.
- **Address all 3 stages of dispute:**
  - Pre-litigation
  - Litigation
  - Post litigation stage.
- Establish Fair accountability mechanisms, Consequences for violation must be clearly provided.
- Appointment of a Nodal Officer to regularly monitor the status of the cases in every department.
- Promotion of alternative dispute resolution mechanisms to encourage mediation.
- Coordinated action between government and judiciary.
- Judicial capacity should be strengthened in the lower courts to reduce the burden on higher courts.
- Increase expenditure on the judiciary.
- Improve courts case management and court automation system.
- Create subject-specific benches.
- Tax departments must limit their appeals as their success rate is less than 30% at all three levels of the judiciary.
- Robust internal dispute resolution mechanisms.
- Step-by-step online dispute resolution must be adopted as done by the Ministry of Consumer Affairs.
- Judges should write Shorter and more Pointed judgments.

### Way Forward

- Courts need to monitor the progress of Cases based on urgency and type of Case.
- Courts must set a time limit to dispose of certain types of Cases.
- Understand why Some Courts perform well despite a Shortage of judges and adopt Such Courts as role models.
- Analytics tools can be developed in a manner that helps the judges monitor Cases based on parameters Such as how long an accused has been in judicial custody, Cases that can affect the General public, and Cases that have been long pending.
- Alternative methods should be used for dealing with non-criminal offenders and petty criminals.

# ABORTION LAW IN INDIA



## In News

- Recently a 25 years old pregnant woman moved to the Supreme Court to allow abortion after the Delhi High Court declined her request last week.
- She has challenged the **Medical termination of pregnancy rules 2003, which allows only specific categories of women for termination of pregnancy between 20 and 24 weeks.**

## Abortions law in India

- In the 1960s, the Union government constituted **Shantilal Shah Committee** to prepare a draft for the legalisation of abortion in India.
- **In 1971, the Medical Termination of Pregnancy (MTP) Act** was enacted to reduce maternal mortality due to unsafe abortions.
  - It set an upper limit of the gestation period to which a woman can seek a medical abortion to 20 weeks.
  - Abortion is to be performed only by doctors with specialisation in gynaecology or obstetrics.
- **Under section 312 of the Indian Penal Code (IPC),** a person who "voluntarily causes a woman with child to miscarry" will be jailed for up to 3 years or fine or both.
  - The only exception from punishment is when it was done to save the life of the pregnant woman.
- The **MTP Act was amended in 2003** to allow the use of the abortion medicine misoprostol, to medically terminate a pregnancy for up to 7 weeks.
- The **MTP Act was again amended in 2021**, it increased the upper limit of the gestation period to which a woman can seek a medical abortion to 24 weeks from 20 weeks permitted in the 1971 Act. But the new upper limit can only be applied in specific cases.
  - **Abortion up to 20 weeks** of gestational age can be done after the opinion of a single registered medical practitioner.
  - **From 20 weeks up to 24 weeks**, the opinion of two registered medical practitioners is required.
- Under the 2021 amendment Act, **medical termination of pregnancy is permitted if it is based on medical opinion and fulfill at least one of the following reasons**;
  - If the pregnancy would involve a risk to the life of the pregnant woman.
  - If pregnancy results in any injury to the woman's physical or mental health.
  - If f unborn child suffers from a serious physical or mental abnormality.
- The **pregnancy can be terminated up to 24 weeks of gestational age under any of these conditions;**
  - If the woman is either a survivor of sexual assault or rape.
  - If she is a minor.
  - If her marital status has changed during the ongoing pregnancy (widowhood or divorce).
  - If she has major physical disabilities or is mentally ill.
  - If foetal malformation was incompatible with life or after birth, it would be seriously handicapped.
- If the pregnancy has to be terminated beyond the 24-week gestational age, it can only be done on the grounds of foetal abnormalities and only after clearance from a four-member Medical Board.
- **In the K.S. Puttaswamy v. Union of India and other cases**, the Supreme Court had held that the decision taken by a pregnant person related **to pregnancy is part of her right to privacy under article 21.**

## Concern

- According to the Lancet study, **15.6 million abortions were conducted every year in India**.
- The Ministry of Health and Family Welfare's 2019-20 report indicates that there is a 70% shortage of obstetrician-gynaecologists in India.
- As the law does not permit abortion at will, it pushes women to adopt unsafe, illegal and dangerous ways of abortions.
- According to a study, every year **more than 8,00,000 unsafe and illegal abortions are performed in India and many of them result in maternal mortality.**

# SOCIAL AUDIT OF MGNREGA FUNDS

GS-II GOVERNANCE

## In News

- Recently an **audit report in Kerala has surfaced the issue of financial deviation and misappropriation of MGNREGA funds.**
- A Financial deviation of at least Rs 2 crore has been found during a social audit.
  - The audit report was prepared by the Kerala Social Audit Society.
- According to Kerala Social Audit Society **members 'the real amount would be much more as the audit was held only in a section of panchayats, that too only for 4 months".**
- The **social audit is a mandatory component of the MGNREGS.**
- According to reports, **funds were misappropriated in many ways;**
  - Largely through fake entries in the muster roll.
  - Payments were illegally made to accounts of those who have not worked those who are abroad and even to accounts of government employees at civic bodies.
  - Fake bills were submitted.
  - Works that were not sanctioned or allowed under the scheme were found implemented.
  - Many panchayats introduced contractors with the order of local politicians, to pocket money with fake muster rolls.

## Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005

- The MGNREGA is Indian labour law and social security programme that aims to **guarantee the 'right to work'.**
- It provides a **legal right for 100 days of employment in every financial year to at least one member of every rural household** whose adult members agree to do **unskilled manual work**.
- **The Ministry of Rural Development is monitoring** the implementation of this scheme.
- **Women were guaranteed one-third of the jobs** made available under the MGNREGA.
- The MGNREGA programme also helps in **creating durable assets** (such as roads, canals, ponds and wells).
- **Work to be provided within 5 km of workers' residence** and minimum wages are to be paid.
- **Right to get unemployment allowance** in case employment is not provided within 15 days of applying.
- MGNREGA is implemented mainly by gram panchayats. Adult members of rural households submit their details to the Gram Panchayat. The Gram Panchayat registers households after making an enquiry and issues a job card. The job card contains the details of the adult member enrolled and his /her photo
- **The involvement of contractors is banned.**
- **The Social Audit of MGNREGA works is mandatory,** which ensures accountability and transparency.

## Significance of MGNREGA

- The programme is providing **economic security and creates rural assets.**
- It also helps in protecting the environment, reducing rural-urban migration and promoting social equity, etc.
- It focuses on the economic and social empowerment of women.
- It **provides "Green" and "Decent" work.**
- Works under MGNREGA help to address the climate change vulnerability and protect the farmers from such risks and conserve natural resources.

## INTERNET SHUTDOWN

GS-II GOVERNANCE

### In News

- According to a United Nations reports **several governments across the world have ordered an Internet shutdown due to several reasons.**
  - The report mainly tried to present the effect of Internet shutdowns on the lives of people.

### Details

- Government order **Internet shutdowns to intentionally disrupt or block;**
  - Access to and the use of information and online communications systems.
  - To make it difficult to share and watch videos, live broadcasts and other journalistic work, etc.
- **Internet shutdowns are generally ordered during;**
  - Civil society movements.
  - To ensure security as well as during electoral proceedings.
  - To restrict human rights monitoring and reporting.
- Internet restrictions also have huge economic impacts.
- **About India:**
  - Between 2016-2021, India blocked or disrupted internet connections 106 times and at least 85 of India's internet shutdown episodes were in Jammu & Kashmir.
  - Almost half of all shutdowns were recorded during protests, public demonstrations and political crises.

### Cost of Internet Shutdown

- It Impacts the economy, access to education, and health.
- It **disrupts financial transactions, commerce and industry.**
- According to the World Bank Internet shutdowns in Myanmar alone had cost nearly $2.8 billion from February-December 2021.
- Hospitals were unable to contact their doctors in cases of emergency.
- Producers and sellers are being cut off from customers and potentially facing economic hardships.
- It directly puts people's safety and well-being at risk.

### Internet Restrictions in India

- India tops the list of Internet Shutdowns globally.
- The **Union Government justify the restrictions based on the threat of;**
  - An uprising.
  - Law and order.
  - National Security.
  - Possible misuse of the internet for the propagation of terror activities.
  - A shutdown is based on intelligence inputs.
  - As a preventive measure used by the law & order administration as a last resort to address mass Protests, Civil unrest.
  - To ensure Peace.
- India lost over $1.3 billion due to internet Shutdowns in 2019.
- Fundamental rights to Speech, Conduct business, access to healthcare etc are compromised.
- Shutting the internet results in an information blackout that Can also Create Panic.

### Way Forward

- Blanket restrictions **violate fundamental rights and are also unconstitutional**.
- Internet shutdown **can only be for a reasonable duration and periodic review** should be done before extending it.
- It must not be used to suppress legitimate expression of opinion or grievance or exercise of any democratic rights.
- **Powers must be exercised in a reasonable and bona fide manner**.
- Activists, law experts, and human rights agencies suggest that there is no real evidence to prove that the Internet Shutdown helps in Preventing mass protests or civil unrest.
- **We need to Strike a balance between the rights of the individual and the security concerns of the State.**

APTI PLUS

## STATE RANKING INDEX UNDER NFSA

GS-II GOVERNANCE

### In News

- **Union Minister of Consumer Affairs has released the 1st edition of 'State Ranking Index for NFSA'.**
- The Index was released during the conference on 'Food Nutrition and Security in India'.
  - It was organized by the Department of Food and Public Distribution, under the Ministry of Consumer Affairs.
- **Odisha emerged as the top-ranked state** followed by Uttar Pradesh and Andhra Pradesh in the General Category States.
- Tripura stood first followed by Himachal Pradesh and Sikkim in the Special Category States/UTs.
- On the occasion, the minister highlighted that the state rankings for food distribution will encourage more competition to improve the systems.
- The Index is an attempt **to record the status and progress of the implementation of the National Food Security Act (NFSA)** and various reform initiatives across the country.

### National Food Security Act, 2013

- The National Food Security Act, 2013 was notified to **provide food and nutritional security**.
- The **objective of the Act is to provide for food and nutritional security** in the human life cycle approach, by ensuring access to an adequate quantity of quality food at affordable prices to people to live a life with dignity.
- The Act **provides for coverage of up to 75% of the rural population and up to 50% of the urban population** for receiving subsidized foodgrains under the Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population.
- The eligible persons will be entitled to receive 5 Kgs of foodgrains per person per month at subsidised prices of Rs. 3/2/1 per Kg for rice/wheat/coarse grains.

**IMPLEMENTING FOOD SECURITY**

How the 20 'general category' states ranked in terms of NFSA implementation

**TOP THREE**

| Rank | State | Index score |
|---|---|---|
| 1 | Odisha | 0.836 |
| 2 | Uttar Pradesh | 0.797 |
| 3 | Andhra Pradesh | 0.794 |

**BOTTOM THREE**

| | | |
|---|---|---|
| 18 | Delhi | 0.658 |
| 19 | Chhattisgarh | 0.654 |
| 20 | Goa | 0.631 |

- The existing Antyodaya Anna Yojana (AAY) households, which constitute the poorest of the poor, will continue to receive 35 Kgs of foodgrains per household per month.
- Corresponding to the all-India coverage of 75% and 50% in the rural and urban areas**, State-wise coverage is determined by the Central Government.**
- The work of identification of eligible households is to be done by States/UTs.
- Pregnant women and lactating mothers and children in the age group of 6 months to 14 years are entitled to meals as per prescribed nutritional norms **under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes.**
- Children up to 14 years of age are entitled to nutritious meals as per the prescribed nutritional standards.In case of non-supply of entitled food grains or meals, the beneficiaries will receive a food security allowance.
- Besides meals to pregnant women and lactating mothers during pregnancy and six months after childbirth, such **women are entitled to receive maternity benefits of not less than Rs. 6,000.**
- The eldest woman of the household age 18 years or above be the head of the household to issue ration cards.
- Grievance redressal mechanism at the District and State levels. States will have the flexibility to use the existing machinery or set up separate mechanisms.

## MISSION VATSALYA

GS-II GOVERNANCE

### In News

- The **Union Ministry of Women and Child Development is implementing "Mission Vatsalya" for the welfare and rehabilitation of children**.
  - It is a **centrally Sponsored Scheme.**
- **For the effective implementation of various schemes and programmes**, all major schemes under the Ministry of Women and Child Development, have been classified **under 3 umbrella schemes**;
  - **Mission Poshan 2.0**
  - **Mission Vatsalya**
  - **Mission Shakti**

### Mission POSHAN 2.0

- It is an Integrated Nutrition Support Programme.
- **It aims to address the challenges of malnutrition in children, adolescent girls, pregnant women and lactating mothers.**
- **The objective is to optimize the quality and delivery of the Supplementary Nutrition Program**.

- It also focuses on Maternal Nutrition, Infant and Young Child Feeding Norms, Wellness through AYUSH, etc.
- The Mission will integrate several key strategies to fulfil its objectives;
  - Corrective strategies
  - Nutrition Awareness strategies
  - Communication strategies and Creation of green eco-systems.
- Digital infrastructure under the "Poshan Tracker" will strengthen and bring about transparency in nutrition delivery support systems.
- **Schemes under Mission POSHAN 2.0**
  - ICDS-Anganwadi Services
  - PoshanAbhiyan
  - Scheme for Adolescent Girls
  - National Crèche Scheme

### Mission Vatsalya

- **The objective of Mission Vatsalya is to ensure a healthy and happy childhood for every child in India.**
- Focus under Mission Vatsalya;
  - Service delivery structures
  - Institutional care/services
  - Non-institutional community-based care
  - Emergency outreach services
  - Training and capacity building
  - Child Protection Services and Child Welfare Services

### Mission Shakti

- Mission Shakti aims to ensure a lifecycle support system for women through integrated care, safety, protection, rehabilitation and empowerment.
- Mission Shakti has two sub-schemes 'Sambal' and 'Samarthya'.
  - The "Sambal" is a sub-scheme for the safety and security of women.
  - The "Samarthya" is a sub-scheme for the empowerment of women.
- **Initiatives under SAMBAL;**
  - **One-Stop Centre (OSC)** to facilitate access to an integrated range of services including medical aid, police assistance, legal aid/ case management, psychosocial counselling and temporary support services to women affected by violence.
  - **BetiBachaoBetiPadhao,** to address the declining Child Sex Ratio.
  - **Mahila Police Volunteers,** to report the incidences of violence against women
  - Women's Helpline.
  - NariAdalats to promote and facilitate alternative dispute resolution and gender justice within families and in society.
- **Initiatives under SAMARTHYA;**
  - **Gender Budgeting** is a tool for mainstreaming gender perspectives at various stages of planning, budgeting, implementation, impact assessment and revisiting of policy/programme objectives and allocations.
  - SwadharGreh to provide relief and rehabilitation to destitute women and women in distress.
  - Working Women Hostels for ensuring safe accommodation for women working away from their place of residence.
  - **National Creche Scheme to provide daycare facilities to children of the age group of 6 months to 6 years of working women who are employed.**
  - **Pradhan MantriMatruVandanaYojana (PMMVY) Provide Cash incentives for improved health and nutrition to pregnant and nursing mothers.**
  - Umbrella ICDS Scheme is also subsumed in 'Samarthya'.

### Present Status of these Schemes

- **Poshan Abhiyaan has a total financial cost of Rs 1,81,703 crore;**
  - Total cost under Mission Poshan 2.0 has been calculated based on the cost-sharing ratio between the Central and States/UTs; 60:40 for States and UTs with the legislature.
  - 90:10 for North East Region and the Himalayan States and UT of Jammu & Kashmir.
  - 100% for Union Territories without legislature.
- **Mission Shakti has a total financial cost of Rs 20989 Crore.**
  - The sub-scheme 'Sambal' will be implemented as a Centrally Sponsored scheme with 100% central funding from the Nirbhaya Fund/ MWCD budget
  - The sub-scheme 'Samarthya' will be implemented as a Centrally Sponsored Scheme with a funding ratio of 60:40 between Centre and State Governments / UTs with the legislature, except North East & Special Category States / UTs with legislature where the fund ratio will be 90:10. For UTs without legislature, 100% of funding will be provided by the Central Government.
- **Mission Vatsalya has a total financial cost of Rs 10916 Crore.**

## Way Forward

- **Women and Children constitute 67.7% of India's population as per the 2011 census, therefore the Empowerment and protection of women and children and ensuring their development are crucial for the sustainable and equitable development of the country**.
- We need to create a safe and secure environment and empower women by providing them with an environment that is accessible, affordable, reliable and free from all forms of discrimination and violence.
- **There is a need to create an inclusive society where women and girls have equal access to resources and opportunities, enabling them to participate in the social, economic and political development of India**.
- When we empower the women in a family, we empower the entire household. When we help with a woman's education, we ensure that the entire family is educated. When we facilitate her good health, we help keep the entire family healthy. When we secure her future, we secure the future of the entire home.

## MISSION SHAKTI

GS-II SOCIAL JUSTICE

### In News

- The **Union Ministry of Women and Child Development has released guidelines for effectively implementing the 'Mission Shakti' scheme**.
- The Union Government of India has launched the scheme as an **integrated women empowerment programme to ensure the safety, security and empowerment of women**.

### Mission Shakti

- The Union Ministry of Women and Child Development is the implementing body of the scheme during the 15th Finance Commission period 2021-22 to 2025-26.
- Mission Shakti aims to ensure a lifecycle support system for women through integrated care, safety, protection, rehabilitation and empowerment.
- **Mission Shakti has two sub-schemes 'Sambal' and 'Samarthya'.**
  - The "Sambal" is a sub-scheme for the safety and security of women.
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# INDIA-TAJIKISTAN RELATIONS



## Context

- **India's Minister for Science and Technology and Earth Sciences held a bilateral meeting with the Minister for Energy and Water resources of Republic of Tajikistan** on the side-lines of the UN Ocean Conference Lisbon, Portugal and discussed several issues of mutual interest.

## More on the news

- Tajikistan Minister **requested India to support global water action and climate resistance on Water for sustainable Development.**
- Prime Minister hosted the **first meeting of the India-Central Asia Summit in January this year with the participation of the Presidents of Tajikistan, Kazakhstan, Kyrgyz Republic, Turkmenistan and Uzbekistan**.
- **11th meeting of the Intergovernmental Commission of Tajikistan and India on trade-economic, scientific and technical cooperation** took place in 2020, where cooperation in the areas of economy, trade, finance, investment, the private sector, industry and new technologies, transport, agriculture, energy, education, culture and tourism were discussed.

## Background

- **Since the establishment of diplomatic relations on 28 August 1992**, regular high level visits between the two countries have further cemented the bilateral ties.
- Deep-rooted historical and cultural linkages have helped expand and widen the relationship to a new level.
- President Shri Ram NathKovind paid a State Visit to Tajikistan in 2018. Prime Minister Modi visited Tajikistan in 2015.
- The **two countries have five bilateral consultative mechanisms** in the form of: - Foreign Office Consultations, Joint Working Group on Counter-terrorism, Joint Commission on Trade, Economic, Scientific and Technical Cooperation, JWG on Defence Cooperation and JWG on Peaceful Use of Space Technology for Development
- Tajikistan **supports India in most elections for UN bodies and other international organisations**.
- **Since Tajikistan's independence in 1991, India has played the role of a development and aid partner for Tajikistan.** In 2021, India provided USD 2 million financial assistance to Tajikistan to help conduct SCO Head of State Summit in Dushanbe. Since the outbreak of Covid19 in 2020, India has provided humanitarian medical assistance to Tajikistan.
- **Tajikistan has been a beneficiary of Indian Technical & Economic Cooperation Programme** (**ITEC**).
- **Trade and Economy is the weakest link in India-Tajikistan's relationship**, which in turn is impacted by lack of reliable land connectivity between the two countries. The trade route through Iran and Turkmenistan is impacted from time to time due to US sanctions on Iran, and ups and downs of bilateral relation between Turkmenistan and Tajikistan.
  - Tajik export to India from Jan-Sep 2020 was USD 0.007 million, while import from India was USD 22.313 million. Tajikistan's total import in 2019 was 24.197 million and export to India was USD 0.06 million.
- Tajikistan has potential in hydroelectricity generation, power transport, mining, full chain of cotton processing, tourism, medical tourism to India etc.
- **India and Tajikistan share strong historical, cultural and linguistic ties**. There is great liking for Indian culture and films and films and TV serials dubbed in Russian language are routinely shown on local TV channels.
- **Indian visa regime for Tajikistan is liberal**.
- **The total number of NRIs is estimated at about 1650, out of which more than 1450 are students pursuing MBBS course at the Avicenna Tajik State Medical University.**

## Tajikistan

- Tajikistan is officially known as the Republic of Tajikistan.
- It is a **landlocked country in Central Asia.**
- Dushanbe is the capital and also the largest city.
- <u>It is **bordered by;**</u>
  - Afghanistan in the South.
  - Uzbekistan in the West.

- Kyrgyzstan in the North.
- China in the East.

- It is **covered by mountains of the Pamir range.**
- Mountains cover more than 90% of the country.
- It is highly dependent on remittances, aluminium and cotton production.
- The **Amu Darya and Panj rivers mark the border with Afghanistan.**

## MOU BETWEEN INDIA AND SINGAPORE

*GS-II INTERNATIONAL RELATIONS*

### Context

- The Union Cabinet was apprised of a **Memorandum of Understanding (MoU) signed between the Department of Science and Technology of the Republic of India and the Ministry of Trade and Industry of the Government of the Republic of Singapore on Cooperation in the fields of Science, Technology and Innovation**.

### About

- The **MoU will provide a mechanism and help in creating and ecosystem that will promote innovation and entrepreneurship in both countries leading to new technology creation, manpower training, IP generation through collaboration.**
- The activities envisaged in the MoU will involve product development and technology exchange which may lead to generation of new enterprises and employment.
- The **objective of this Memorandum is to encourage, develop and facilitate cooperation between India and Singapore in fields of common interest in science, technology and innovation.**
- Priority will be given to collaboration within any area of mutual interest that can advance progress in research, innovation and technological development including:
  - Agriculture and food science and technology;
  - Advanced manufacturing and engineering;
  - Green economy, energy, water, climate and natural resources;
  - Data science, Emerging Technologies;
  - Advanced Materials; and
  - Health and biotechnology.

### Background

- The close ties between India and Singapore have a history rooted in strong commercial, cultural and people-to-people links across a millennium.
- **The more modern relationship is attributed to Sir Stamford Raffles who, in 1819, established a trading station in Singapore on the route of the Straits of Malacca which later became a crown colony and governed from Kolkata till 1867.**
- **India was one of the first countries to recognize Singapore in 1965.**
- Following the conclusion of Comprehensive Economic Cooperation Agreement (CECA) of 2005, this robust relationship was elevated to **a Strategic Partnership in 2015 during the visit of PM Modi and on the occasion of the 50th anniversary of the establishment of diplomatic relations**.
- PM Modi became the first Indian PM to deliver keynote address at the annual Shangri La Dialogue in 2018.
- PM Lee visited New Delhi in 2018 to participate in the Republic Day Celebrations
- **India-Singapore relations are based on shared values and approaches, economic opportunities and convergence of interests on key issues**.
- Political engagement is regular. There are more than 20 regular bilateral mechanisms, dialogues and exercises.
- There is great convergence on a broad range of international issues and both are members of a number of forums, including East Asia Summit, G20, Commonwealth, IORA (Indian Ocean Rim Association) and IONS (Indian
- Key agreements include **the Comprehensive Economic Cooperation Agreement (2005), Double Taxation Avoidance Agreement (1994), Bilateral Air Services Agreement (1968), Defence Cooperation Agreement (2003)**
- Singapore **participates in IONS and multilateral Exercise MILAN hosted by Indian Navy. New developments include the inaugural Trilateral Maritime Exercise between India, Singapore and Thailand** (SITMEX), announced by PM Modi in 2018.
- ISRO launched Singapore's first indigenously built micro-satellite in 2011; 2 more in 2014 and 6 in 2015.
- **Five areas of cooperation were agreed in 2014**- (i) Scale up Trade & Investment; (ii) Speed up Connectivity; (iii) Smart Cities & Urban Rejuvenation; (iv) Skill development; and (v) State focus.
- In 2018, FinTech & Innovation was recognized as the new driver of bilateral relationship.
- **Singapore is India's largest trade partner in ASEAN. It is the leading source of Foreign Direct Investment, among the largest sources of External Commercial Borrowings and Foreign Portfolio Investment**.

- Bilateral trade expanded after the conclusion of CECA from USD 6.7 billion in FY 2004-05 to USD 27.85 billion in 2018-19. Bilateral trade in FY 2019-20 was USD17.9 billion with exports to Singapore constituting USD 7.1 billion.
- **More than 80 % of listed offshore bonds by Indian issuers are listed on Singapore Stock Exchange** (SGX).
- About 9000 Indian companies are registered in Singapore.
- While the contract to develop a part of the Amaravati Capital City Project by Singapore consortium stands cancelled, **Singaporean companies continue to participate in a number of smart city, urban planning, logistics and infrastructure projects.**
- Singapore is working with Rajasthan, Himachal Pradesh and Maharashtra in **preparing Master Plans for townships.**
- Singapore is working with the Central and state Governments as well as Government organisations **to establishes skill development centres in various sectors**.
- State governments are working with Singapore in the Smart Cities & Urban Rejuvenation as well as Skills Development initiatives.
- In 2019, a **Pilot demo of BHIM UPI QR based payments was launched in Singapore**
- There is ongoing cooperation between leading Indian and Singaporean institutions in Innovation.
- Cultural exchanges include performing arts, theatre, museum exchanges, art, languages, and youth exchanges.
- **Ethnic Indians constitute about 9.1 % or around 3.5 lakhs of the resident population of 3.9 million in Singapore.**

## INDIA-RUSSIA DEFENCE COOPERATION / *GS-II INTERNATIONAL RELATIONS*

### Context

- **As the war in Ukraine stretches over four months with no end in sight, it has given rise to apprehensions on Russia's ability to adhere to timely deliveries of spares and hardware.**

### What is the status of India-Russia defence cooperation?

- **When the war began, the Indian armed forces have stocks of spares and supplies for eight to ten months and the expectation was that the war would end quickly**.
- However, as it stretches on with no clear endgame, there are apprehensions on Russia's ability to adhere to the timelines for both spares as well as new deliveries.
- **Army Chief Manoj Pande acknowledged the Army's dependency on certain weapon systems** specially in the area of air defence, rockets, missiles and certain tanks from Russia and Ukraine and said that as far as the immediate impact was concerned "the supply chain of certain spares and ammunition has got impacted to some extent, but we have adequate stocks to last for a reasonable period of time."
- He added that they are also **looking at certain alternative mitigation measures and identifying alternate sources from friendly foreign countries while in the long term**, this is also an opportunity for the private industry to step up production and meet the requirements.
- Officials have stated that while some timeline lapses and shipping delays were possible, there would not be any dent on the Army's operational preparedness along the borders especially the Line of Actual Control.
- In addition, the **armed forces have also made significant emergency procurements in the last two years since the standoff in Eastern Ladakh and have stocked up on spares and ammunition. Therefore, there shouldn't be any immediate urgency for spares and other requirements**.
- **Russia has assured India that it would adhere to delivery timelines**. However, as the war stretches on there are apprehensions that it could have an impact as the Russian industry would be caught up in replenishing the inventories of their own armed forces.

### What is the status of deals underway/new deals pending with Russia?

- The defence trade between India and Russia has **crossed $15 billion since 2018,** in the backdrop of some big deals including the **$5.43 billion S-400 long-range air defence systems.**
- Other major contracts currently under implementation are **the construction of four additional stealth frigates in Russia and India, licensed production of the Mango Armor-piercing fin-stabilised discarding sabot (APFSDS) rounds for the T-90S tanks as also additional T-90S tanks, AK-203 assault rifles** among others.
- However, there is some delay. For instance, the **delivery of the second regiment of the S-400 is delayed by a few months as also the operationalisation of the agreement for the manufacture of 6.1 lakh AK-203 rifles at Korwa, Amethi in Uttar Pradesh.**
- There are also several big ticket deals currently under negotiation but several of them have been deferred by the Defence Ministry as part of the review of all direct import deals.
- This is in conjunction with efforts to push the 'Make in India' scheme in defence. **Russian deals have also been deferred including the one for 21 MiG-29 fighter jets for the Indian Air Force (IAF) along with the upgradation of 59 existing Mig-29**

**jets estimated to cost ₹7,418 crore and the manufacture of 12 SU-30 MKI aircraft at an estimated ₹10,730 crore by Hindustan Aeronautics Limited (HAL).**

- Another **long pending deal is for the manufacture of 200 K-226T utility helicopters in India**
- In addition, a **deal for six Ka-31 early warning helicopters and a bigger deal for Igla-S very short range air defence systems have also been deferred** though the Army inducted a small number of Igla-S systems brought under emergency procurement.

### What is the status of payments?

- With **Russia being shut out of the global SWIFT system for money transfers, India and Russia have agreed to conduct payments through the Rupee-Rouble arrangement.**
- With several big ticket deals including the S-400 under implementation, there are large volume of payments to be made.
- The Central banks of the two countries had extensively discussed this issue, and officials recently said that small payments have been resumed and work is on to resolve larger payments. For the two countries, payments by the Rupee-Rouble arrangement is not new.
- For instance, for the S-400 air defence systems signed in October 2018, with the looming threat of U.S. sanctions under CAATSA (Countering America's Adversaries Through Sanctions Act), the two sides had worked out payments through the Rupee-Rouble exchange.
- In fact, the delivery schedule got slightly delayed as the payment was tied up. However, at that time Russia was within the SWIFT system.
- **While India continues to remain Russia's largest arms buyer with a major chunk of legacy hardware from Russia and the Soviet Union, the volume of imports has reduced in the last decade.**

### Russia-Traditional military supplier

- Russia has been a traditional military supplier, **over 60% of Indian military inventory** is of Russian origin, including fighter jets, tanks, helicopters and submarines.
- In 2021, India and Russia signed a **₹5000 crore deal for 6.1 lakh AK-203 assault rifles** to be manufactured jointly in Uttar Pradesh.
- Russia is **manufacturing two stealth frigates for the Navy**. While another two are being manufactured by the Goa Shipyard Limited under technology transfer.
- India is also looking to receive the third Akula class nuclear attack submarine (SSN) sometime in 2025.
- India-Russia military technical cooperation has evolved from a **buyer - seller framework to one involving joint research, development and production of advanced defence technologies and systems**
- **BrahMos Missile System** as well as the licensed production in India of **SU-30 aircraft and T-90 tanks**, are examples of such flagship cooperation.
- Furthering this cooperation, an agreement on the cooperation in the production of spare parts for Russian/Soviet military equipment was signed.
- **Agreements on supply of S-400 air defence systems, construction of frigates and shareholders agreement on the formation of joint venture to manufacture Ka-226T helicopters in India.**
- Production of AK Series Assault Rifles at Ordnance Factory Korwa under the 'Make-in-India' program.
- The two countries also hold exchanges and training exercises between their armed forces annually.
- The first-ever Tri-Services exercise –'INDRA 2017' took place in 2017.

## INDIA-AUSTRALIA COOPERATION

*GS-II INTERNATIONAL RELATIONS*

### Context

- **Australia is all set to supply critical minerals required for India's electric vehicles, solar power projects and other strategic areas**, said Canberra's Minister for Resources and Minister for Northern Australia. **Australia will commit A$5.8 million to the three-year India-Australia Critical Minerals Investment Partnership.**

### Details

- **Australia has the resources to help India fulfil its ambitions to lower emissions and meet growing demand for critical minerals** to help India's space and defence industries, and the manufacture of solar panels, batteries and electric vehicles.
- **The war in Ukraine has in fact opened newer horizons for the market of critical minerals and as a result, Australia can emerge as a key supplier of the minerals to India**.
- Before the Russian military invasion of Ukraine, **eastern Ukraine (Donbas) was expected to emerge as a major source of lithium in the world market.**
- Russian advances and ultimately the control of the Donbas region - Donetsk & Luhansk - has forced emerging electric vehicle makers to look for lithium elsewhere, like in Australia.

- **Apart from lithium, the war has also affected the market of minerals that are necessary for the making of solar power generation.**
- **MoU between KhanijBidesh India Ltd (KABIL) and the Critical Minerals Facilitation Office (CMFO) of Australia** that will try to source lithium and cobalt.

### Background

- The India-Australia bilateral relationship has undergone evolution in recent years, developing along a positive track, into a strategic partnership.
- The two nations have much in common, underpinned by **shared values of a pluralistic, Westminster-style democracies, Commonwealth traditions, expanding economic engagement and increasing high level interaction.**
- The long-standing people-to-people ties, ever increasing Indian students coming to Australia for higher education, growing tourism and sporting links have played a significant role in further strengthening bilateral relations between the two countries.
- The **historical ties between India and Australia started immediately following European settlement in Australia from 1788.**
- **All trade to and fro from the penal colony of New South Wales was controlled by the British East India Company through Kolkata.**
- India and Australia **established diplomatic relations in the pre-Independence period, with the establishment of India Trade Office in Sydney in 1941.**
- The end of the Cold War and simultaneously India's decision to launch major economic reforms in 1991 provided the first positive move towards development of closer ties between the two nations.
- With the changing global scenario, Australia has come to look at India as an important partner in promoting regional security and stability. This led to **upgradation of bilateral relationship to a 'Strategic Partnership', including a Joint Declaration on Security Cooperation in 2009.**

### Political relations

- Over the years an array of institutional mechanism has been put in place to promote bilateral co-operation.
- Bilateral mechanisms include **high level visits, Annual Meetings of Prime Ministers, Foreign Ministers' Framework Dialogue, Joint Trade & Commerce Ministerial Commission, India-Australia '2+2' Foreign Secretaries and Defence Secretaries Dialogue, Defence Policy Talks, Australia-India Education Council, Defence Services Staff Talks, Energy Security Dialogue, JWGs on different issues etc.**
- Australia's White Paper on Foreign Policy released in November 2017 **sees India in the front rank of Australia's international partnerships.**
- During the 2018 Indian President visit, Australian Prime Minister announced support to its **India Economic Strategy's priority recommendations, including to take measures to increase Australian investment in India from A$10 billion to 100 billion by 2035**.
- **Trilateral dialogues:** India-Australia-Japan, Indonesia-Australia-India
- India and Australia **co-operate in various multilateral fora**. Australia supports India's candidature in an expanded UN Security Council. Both India and Australia are members of the Commonwealth, IORA, ASEAN Regional Forum, Asia Pacific Partnership on Climate and Clean Development, and have participated in the East Asia Summits. Both countries have also been cooperating as members of the Five Interested Parties (FIP) in the WTO context. Australia is an important player in APEC and supports India's membership of the organisation. In 2008, Australia became an Observer in SAARC.

### Economic And Trade Relationship

- **India Economic Strategy,** prepared by Australian Think Tank, to define a pathway for Australia to unlock opportunities offered by Indian Economic growth aims for a clear exposition of the kind of relationship Australia should aspire to have with India out to 2035. The Paper identifies ten key sectors (Education as flagship sector; Agribusiness, Resources and Tourism as lead sectors; Energy, Health, Financial Services, Infrastructure, Sports, Science & Innovation as Promising Sectors) and ten states in India (Andhra Pradesh, Delhi NCR, Gujarat, Karnataka, Maharashtra, Punjab, Tamil Nadu, Telangana, UP and West Bengal) where Australia should focus efforts
- **India-Australia Joint Ministerial Commission** (JMC) was established in 1989 to enable interaction at a Government and business level on a range of trade and investment related issues.
- India is the **5th largest trade partner of Australia** with trade in goods and services at A$ 29 billion representing 3.6% share of the total Australian trade in 2017-18, with export at A$ 8 billion and import at A$ 21 billion.
- The two countries are also discussing a Comprehensive Economic Cooperation Agreement (CECA).
- **India-Australia CEO Forum** is a mechanism for business from both nations to engage directly on ways to build the bilateral trade and investment relationship

### Civil Nuclear Co-Operation

- A **Civil Nuclear Cooperation Agreement between the two countries was signed in September 2014**
- The Australian Parliament passed the **"Civil Nuclear Transfer to India Bill 2016"** in 2016 which ensures that Uranium mining companies in Australia may fulfil contracts to supply Australian uranium to India for civil use with confidence that exports

would not be hindered by domestic legal action challenging the consistency of the safeguards applied by the IAEA in India and Australia's international non-proliferation obligations.

**Defence Co-Operation**

- Defence Policy Talks and Service to Service Staff talks are also held regularly.
- The first-ever Bilateral Maritime Exercise, **AUSINDEX** 15, was conducted in Visakhapatnam in 2015.
- 4th edition of **AUSTRAHIND** (Special Forces of Army Exercise) was held in 2019.

**Agriculture, Science And Technology**

- An **Australia-India Strategic Research Fund** (AISRF), which was established in 2006, supports scientists in India and Australia to collaborate on leading-edge research.

**Resources And Energy Security**

- A **Joint Working Group on Energy and Minerals** was established in 1999 to expand bilateral relationship in the energy and resources sector.

**Education, Sports, Art And Culture**

- The **Joint Working Group on Education** between the two countries has identified several key areas for co-operation, including collaborative research in education policy, student exchange programmes, capacity building in vocational education and distance learning in higher education.
- The number of **Indian students currently enrolled for studying in Australia is around 90,000.**
- Under the New Colombo Plan of Australian government, Australian undergraduates have studied and completed internships in India.
- Australia has also agreed to help in establishing a world class Sports University in India.

**Consular Cooperation**

- The **Mutual Legal Assistance Treaty (MLAT) and the Extradition Treaty between India and Australia, which were signed in 2008, have been ratified by both the Governments, and have entered into force**

**Indian Community In Australia**

- The Indian community in Australia continues to grow in size and importance, with the **population of nearly half seven lakhs.**
- India is one of the top sources of skilled immigrants to Australia.
- **India is now the third largest source of immigrants to Australia, after UK and New Zealand and the largest source of skilled professionals for Australia.**

### Roadblocks

- Australian **concerns have to do with China**'s increased activities in the Pacific; while India is concerned about China's greater presence and influence in the Indian Ocean
- **Australia has long been an American ally, while India remains uncomfortable about alliances**
- **Deficit of military capabilities**, especially on the Indian side: India's reluctance to involve Australia in the Malabar trilateral naval exercise alongside the other three Quad nations.
- Although Australia has developed its uranium export industry in recent years, there are still **considerable reservations among many in Australia about its sale**
- India and Australia are **too far from concluding the bilateral Comprehensive Economic Cooperation Agreement (CECA) in the near term.**
- **Australia's investment in India is not improving due to compromises**, an interfering bureaucracy, corruption etc.
- **India opted out from Regional Comprehensive Economic Partnership**. India and Australia could not agree regarding market access over agriculture and dairy products.

## CRISIS IN SRI LANKA / GS-II INTERNATIONAL RELATIONS

### Context

- Parliament speaker accepts Gotabaya Rajapaksa's resignation; new President to be elected within 7 days.

### A summary of the Sri Lankan crisis

- Sri Lanka is going through a **catastrophic economic crisis**, with widespread **public unrest and suffering** that necessitates immediate action.
- The massive economic crisis in Sri Lanka is thought to have a strong **political undercurrent**.
- This is likely the source of people's dissatisfaction with the government of **Gotabaya Rajapaksa**, whose leadership has been called into doubt on the basis of **accountability and credibility.**
- To deal with the public uproar, **Sri Lanka's president imposed a 36-hour curfew, which many protestors refused to accept.**
- The **President declared a state of emergency**, which **sparked more rallies and was criticised** by opposition leaders. As a result, the **state of emergency was lifted.**

- There are **long queues for fuel, cooking gas, and other needs, as well as long periods of power outages.**
- Many officials resigned from their positions as the ruling political leadership failed to maintain the people's faith, with **41 parliamentarians leaving the ruling party's alliance**.

### The Crisis's Possible Causes

- The main causes of the ongoing economic crisis, according to analysts, are **economic mismanagement and a lack of realistic financial policy.**
- A **budget shortfall**, which means the **country's national expenditure has surpassed its national income**, **as well as a current account deficit**, has resulted from mismanagement.
- Sri Lanka's foreign exchange reserves have **plummeted by 70% to $2.31 billion**, leaving the country unable to **import basic necessities** such as food and fuel.
- Rajapaksha **promised deep tax cuts during the 2019 election campaign**, and their implementation has wiped off a significant portion of the GDP.
- The pandemic also **lowered the value of Sri Lanka's wealthy tourism business and remittances from overseas workers.** Credit rating agencies responded by keeping the country out of international financial markets.
- The government's decision to **prohibit the use of all chemical fertilisers** had **an impact on the agricultural industry, resulting in a decrease in the production of vital rice crops.**
- Sri Lanka's foreign debt is dominated by **international sovereign bonds**, which account for $12.55 billion and are held by the **Asian Development Bank (ADB), Japan, and China, among others**.
- The government has **ignored the economic problem from the beginning and has refused to seek aid and guidance from IMF experts**. The situation was exacerbated as **oil prices skyrocketed as a result of Russia's invasion of Ukraine.**

### Olive Branch to Sri Lanka

- Both **India and China** have offered assistance to Sri Lanka at this time of distress.
- A **$500 million credit line** has been agreed with India, and a diesel supply will come to cover the fuel demand.
- India and Sri Lanka have agreed to a **$1 billion credit line** for the purchase of basics such as **food and medication. Sri Lanka has made a request to New Delhi for an additional $1 billion.**
- The **Central Bank of Sri Lanka has received a $1.5 billion swap and a $1.3 billion syndicated loan from China.**
- A **credit facility of $1.5 billion and a supplementary loan of up to $1 billion** have also been guaranteed by China.

### How is it an opportunity for India?

- The economic crisis in Sri Lanka has the **potential to allow India to expand its influence in its neighboring region**, which is crucial to India's national interests.
- During the period **2005-15, the India-Sri Lanka relationship deteriorated**, notably **after India accused the government of human rights breaches during the three-decade-long civil conflict.**
- A **99-year lease has been granted to Beijing** for the disputed **Hambantota port** and over 15,000 acres of land which China will use these ports as important places to operate in the Indian Ocean region, which was **a huge issue for India.**
- The Sri Lankan administration began to develop its predisposition towards India after **realising the limitations of economic and geopolitical collaboration with China.**
- Sri Lanka's declaration of a **"India first" policy sent a pro-India message**, noting that India has always stepped in to help the island country in times of need.
- The recent economic crisis in Sri Lanka may provide India with an opportunity to reestablish the spirit of its **Neighbourhood First policy** and extend its assistance.

### What is the way forward?

- Sri Lanka's monetary policy needs to be **overhauled to deal with the country's huge current account deficit and rapidly dwindling foreign reserves.**
- Sri Lanka's **internal economy must be modernised and transformed** because the country has no place in the global industrial supply chain.
- Sri Lanka's export sector, which is now **dominated by textiles and agricultural products such as tea and rubber, needs diversification**, and it is past time to broaden the scope of exports.
- The country must put **measures in place to encourage the manufacture of key goods** for which it is heavily reliant on imports.
- At this time, the **focus must be on establishing social stability**, which is necessary for other advancements to occur.
- Sri Lanka should make **long-term strategic decisions with its tried-and-tested partners**.
- Through a responsible administration backed by accountability that ensures **inclusive growth, the spirit of independence, self-improvement, unity, and mutual help among bilateral partners** must be revived in the country.

# EXPANSION OF SCO



## Context

- Iran and Belarus are likely to be the two newest additions to the China and Russia-backed Shanghai Cooperation Organisation (SCO) grouping

## More on the news

- Expanding the group is among the issues that leaders of the grouping, including Prime Minister Narendra Modi, Russian President Vladimir Putin and Chinese President Xi Jinping are likely to discuss at the **SCO summit in Samarkand, Uzbekistan, in September.**
- **China, Russia and four Central Asian states — Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan — were the founding members of the SCO, while India and Pakistan joined the grouping in 2017 in its first round of expansion.**
- Last year's summit in Dushanbe agreed for Iran to join, while Belarus has also begun the membership process.
- **China and Russia are looking to frame the grouping as a counter to the West** — particularly after Russia's invasion of Ukraine.
- The expansion of NATO is totally different as the SCO is a cooperative organisation based on non-alignment and not targeting a third party.
- **India will host the SCO summit next year, and Varanasi has been selected as the SCO region's first "Tourism and Cultural Capital**.

## What is SCO?

- It is a **Eurasian political, economic, and security alliance.**
- The original five nations, with the exclusion of Uzbekistan, were previously members of the **Shanghai Five group**.
- Since then, the organisation has expanded its membership to eight countries when **India and Pakistan joined SCO as full members on 9 June 2017 at a summit in Astana, Kazakhstan.**
- **The Heads of State Council (HSC)** is the supreme decision-making body in the SCO.
- It is the **largest regional organisation** in the world in terms of **geographical coverage and population, covering three-fifths of the Eurasian continent** and nearly half of the human population.
- The SCO is widely regarded as the **"alliance of the East",** due to its growing centrality in Asia-Pacific, and has been the primary security pillar of the region.
- The **Regional Anti-Terrorist Structure (RATS),** headquartered in Tashkent, Uzbekistan, is a **permanent organ of the SCO**, which serves to **promote cooperation of member states against the three evils of terrorism, separatism and extremism.**

## Criticisms of the SCO

- It is used by member states to **shield each other from international criticism regarding human rights violations.**
- Even after 19 years, the SCO is struggling to emerge as a cohesive organisation because it **lacks coherence on account of China's pre-pondering influence.**

## India-SCO

- It is the only regional grouping in the vast Eurasian space.
- The specific advantage for India lies in the SCO **providing a robust platform for connecting with countries of Central Asia**, which comprise our extended neighbourhood and with whom India shares millennia of vibrant, multifaceted linkages.
- Central Asia and Afghanistan are vital for India's security, meeting its energy requirements, connectivity, trade and

economic progress and growth.

- India through its active participation has strengthened greater trade, economic and cultural cooperation within SCO by putting **human beings at the center** of SCO activities.
- It has fostered greater peace and prosperity in the region.
- India's initiatives have emphasised its commitment to expanding its partnership with SCO by playing a proactive, positive and constructive role in the organisation.

## ARAGALAYA

GS-II INTERNATIONAL RELATIONS

### Context

- Aragalaya, the Sinhalese word for "struggle", is being used widely to describe the daily gathering of people at Colombo's Galle Face Green that began with the demand that Gotabaya resign as President and make way for a new dispensation, even "a new system".

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- The massive economic crisis in Sri Lanka is thought to have a strong political undercurrent.
- This is likely the source of people's dissatisfaction with the government of Gotabaya Rajapaksa, whose leadership has been called into doubt on the basis of accountability and credibility.
- To deal with the public uproar, Sri Lanka's president imposed a 36-hour curfew, which many protestors refused to accept.
- The President declared a state of emergency, which sparked more rallies and was criticised by opposition leaders. As a result, the state of emergency was lifted.
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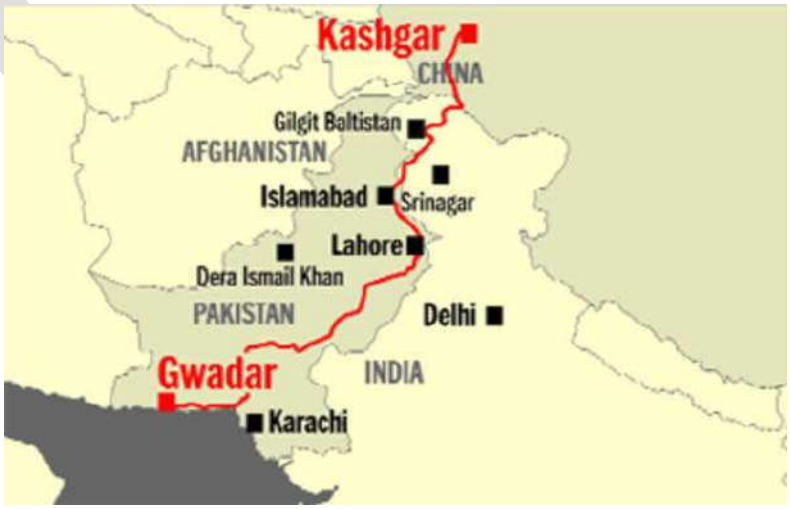
## CHINA PAKISTAN ECONOMIC CORRIDOR / GS-II INTERNATIONAL RELATIONS

### Context

- **Days after China and Pakistan held a meeting to bring other countries into the China-Pakistan Economic Corridor (CPEC), India said that efforts to broaden CPEC's scope are "inherently illegal".**

### More on the news

- The Joint Working Group of International Cooperation and Coordination under CPEC met on July 21, when the Pakistani and Chinese officials discussed bringing in a third county into the fold.
- **CPEC consists of a number of infrastructure projects that are under construction across Pakistan and is aimed at connecting China overland with the Gulf countries by cutting through the Himalayan range in Gilgit Baltistan and the Pakistan-occupied Kashmir**.
- Soon after coming to power in Afghanistan last year, the Taliban had expressed desire to join the infrastructure project.
- **India reminded Taliban and similar potential third parties of the problems associated with the CPEC, saying, "Such activities are inherently illegal, illegitimate and unacceptable, and will be treated accordingly by India."**
- Earlier, Pakistan signed a new agreement with China to begin the second phase of the USD 60 billion China-Pakistan Economic Corridor (CPEC).




### What is CPEC?

- CPEC is a 3,000-km long route of infrastructure projects connecting China's northwest Xinjiang Uygur Autonomous Region and the Gwadar Port in the western province of Balochistan in Pakistan.
- It is a bilateral project between Pakistan and China, intended to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial, and other infrastructure development projects.
- It will pave the way for China to access the Middle East and Africa from Gwadar Port, enabling China to access the Indian

Ocean and in return China will support development projects in Pakistan to overcome the latter's energy crises and stabilising its faltering economy.
- CPEC is a part of the Belt and Road Initiative.

### Background

- In 2013, **Chinese President Xi Jinping, during his visits to Kazakhstan and Indonesia, expressed his vision to build a Silk Road Economic Belt (SERB) and a 21st Century Maritime Silk Road (MSR), to break the "bottleneck" in Asian connectivity. Thus, the Belt and Road initiative was born.**
- The **initiative envisioned a Chinese-led investment of over $1 trillion in partner countries by 2025**. More than 60 countries have now joined BRI agreements with China, with infrastructure projects under the initiative being planned or under construction in Asia, Africa, Europe, and Latin America.
- To finance BRI projects, China offers huge loans at commercial interest rates that countries have to pay within a fixed number of years.
- The west has accused China of debt-trapping by extending "predatory loans" that force countries to cede key assets to China. However, research indicates that low and middle-income countries are often the ones to approach China after not being able to secure loans from elsewhere.
- **In recent years, the BRI seems to have experienced a slowing down as annual Chinese lending to countries under the initiative slimmed from its peak of $125 billion in 2015 to around $50 to 55 billion in 2021.**

### Investments in the Indian neighbourhood

- The **biggest project under BRI is in Pakistan, the China Pakistan Economic Corridor** (CPEC). Over time, China pledged $62 billion in low-interest loans and financing from Chinese state-owned banks and the Asian Development Bank (ADB).
- **Bangladesh, which joined the BRI in 2016, has been promised the second-highest belt and road investment by China in South Asia after Pakistan**.
- In Sri Lanka, multiple infrastructure projects that were being financed by China came under the fold of the BRI after it was launched in 2013. The island nation in the last couple of years has witnessed competition between India and China in port terminal and energy projects. **In 2021, Colombo ejected India and Japan out of a deal to develop the East Container Terminal at the Colombo port and got China to take up the project**. Some BRI projects in Sri Lanka have been described as white elephants — such as the Hambantota port.
- **Afghanistan has not comprehensively been brought into the BRI, despite a Memorandum of Understanding (MoU) being signed with China in 2016**
- **One of the most prominent BRI projects undertaken in the Maldives is the two km long China-Maldives Friendship Bridge — a $200 million four lane bridge**.

## INDIA AFRICA CONCLAVE

*GS-II INTERNATIONAL RELATIONS*

### Context

- High-level diplomats from several African nations were in New Delhi for a key two-day investment meet.

### More on the news

- VP met VPs of Gambia, Mauritius & Zambia, and DPM of Namibia. **Leaders are in New Delhi for the ongoing CII-EXIM Bank Conclave & other bilateral engagements.**
- The joint interaction saw discussions **on ways to propel the India-Africa growth partnership forward.**
- Union Minister for Commerce & Industry emphasized upon the **need for a trade and investment agreement between India and Africa.**
- **Forty high-level ministers from 17 countries**, including Cameroon, Burkina Faso, Eswatini, Republic of the Congo, Ethiopia, Gabon, Equatorial Guinea, Ghana, Niger, Malawi, Mauritius, Sudan, Namibia, Nigeria and Sierra Leone, are participating in the two-day summit.
- The **CII-EXIM Bank Conclave on India-Africa Growth Partnership was launched in 2005 with the support of India's Ministry of External Affairs and Ministry of Commerce & Industry to encourage the development of private investment from India in African countries.**
- This is the 17th edition of the conclave.
- Over the years, it has **"emerged as one of the largest congregations of senior ministers, policy makers and business leaders from Africa and India, cutting across sectors", and "played a pivotal role in encouraging Indian companies to establish and grow their footprint in Africa"**.
- This year's conclave focuses on infrastructure development and trade finance, education and training, agriculture and food processing, consultancy services, and healthcare in addition to other areas where Indian companies have steadily increased

their presence over the years in Africa.

### The significance

- **Trade between the African subcontinent and India increased from $7.2 billion in 2001 to $59.9 billion in 2017**, making India the **continent's fourth-largest national trading partner**, according to Exim Bank and the African Export-Import Bank (Afriexim Bank).
- Trade with India accounted for more than 6.4 per cent of total African trade in 2017.
- Bilateral trade between India and the 48 countries of sub-Saharan Africa was valued at $46.82 billion in 2020-21, down from $55.70 billion in 2019-20.
- India has a negative trade balance with sub-Saharan Africa, the Ministry figures show.
- **Ministry of External Affairs said that 38 African nations have benefited from India's Duty Free Tariff Preference (DFTP) scheme which provides duty free access to 98.2 per cent of India's total tariff lines.**
- Lines of Credit (LoCs) worth $12.26 billion have so far been extended to African countries, making them the second-largest recipient of India's concessional loans, the MEA said.
- **Mauritius is the first and only African country so far to have a CECPA (Comprehensive Economic Cooperation and Partnership Agreement) with India, an agreement that aims at building trade ties between the two countries.**

### Background

- India's **relations with Africa date back several centuries**. The presence of Indians in East Africa is documented in the 'Periplus of the Erythraean Sea' or Guidebook of the Red Sea by an ancient Greek author written in 60 AD.
- The **geographical proximity and easy navigability** in Indian Ocean resulted in well-established trade network between India and the Swahili Coast predating European exploration.
- More **concrete relation between India and Africa begins to emerge during the Islamic age** which is evident through the accounts of Venetian traveller Marco Polo.
- **Political connection during the colonial era was linked through M.K Gandhi** who began his political career in South Africa, became the leader of colonized and established Indian Natal Congress in 1894.
- After India got independent, it raised voice for African liberation taking their case to all the available international forums. End of racial struggle and decolonization became the rallying point of India–Africa relations.
- India was a forerunner as a champion of the interests of the developing countries from Africa, particularly through the **Bandung Declaration of 1955, the Group of 77, and the Non Aligned Movement (NAM).**
- Africa is home to over half a dozen of the fastest growing countries of this decade such as Rwanda, Senegal, and Tanzania etc making it one of the growth pole of the world.
- **African continent has a population of over one billion with a combined GDP of 2.5 trillion dollars making it a huge potential market.**
- Africa is a **resource rich continent** dominated by commodities like crude oil, gas, pulses and lentils, leather, gold and other metals, all of which India lack in sufficient quantities.
- India's **duty-free tariff preferential scheme for Least Developed Nation** (LDCs) launched in 2008 has benefited 33 African states.
- Multilateral engagement was launched with the first **India Africa Forum Summit** (IAFS) in 2008.
- India is investing in capacity building providing more than $1 billion in technical assistance and training to personnel under the **Indian Technical and Economic Cooperation** (ITEC) program.
- As a full member of **African Capacity Building Foundation** (ACBF), India has pledged $1 million towards ACBF's sustainable development, poverty alleviation, and capacity building initiative.
- India has invested $100 million in the **Pan-African E-Network** to bridge the digital divide in Africa, leveraging its strengths in information technology.
- Indian military academies offer **training to military officers** from a number of African states.
- India has also unveiled the Vision Document of the **Asian Africa Growth Corridor** which is jointly prepared by Indian and Japanese think tanks.
- **Vice President Venkaiah Naidu visited Gabon and Senegal- the first visit from India at the level of Vice President to these countries and the first-ever high-level visit from India to Gabon and Senegal.**
- Under the **Vaccine Maitri initiative**, India supplied 24.7 million doses of Made of India Covid vaccines to 42 countries in Africa.
- Moreover, over **3 million strong Indian diaspora in Africa** also proves to a crucial strategic asset for India to further its relations with African countries.

# TUNISIA AND ARAB SPRING



## Context

- **Tunisian President Kais Saied is set to secure more power under a new constitution that is expected to pass in a referendum, in what critics fear is a march to one-man rule over a country that rose up against dictatorship in 2010.**

## More on the news

- Saied's opponents fear the changes will deal a major blow to democracy in Tunisia, widely seen as the only success story of the "Arab Spring" uprisings against autocratic rule that elsewhere ended in renewed repression and civil wars.
- **The Arab Spring was a series of anti-government protests, uprisings, and armed rebellions that spread across much of the Arab world in the early 2010s. It began in response to corruption and economic stagnation and was first started in Tunisia**

## How the Arab Spring panned out for the countries affected

### TUNISIA

- Fruit seller Mohammed Bouazizi set himself on fire in 2010 after a local official confiscated his barrow. Protests spread from his town, SidiBouzid, across the country, turning deadly.
- President Zine el-Abidine Ben Ali fled in 2011, inspiring revolts elsewhere.
- Tunisia held a first democratic election that October, won by the moderate Islamist Ennahda which had been banned under Ben Ali.
- A new constitution establishing a parliamentary system was agreed in 2014, and Tunisians choose their lawmakers and president in free and fair elections, most recently in 2019.
- However, economic troubles caused hardship and disillusionment. Illegal emigration to Europe increased. The economy, heavily dependent on tourism, was hit particularly hard by COVID-19.
- In July 2021, President Kais Saied froze parliament and sacked the government – moves his opponents called a coup but which were welcomed by those Tunisians who were fed up with political bickering and paralysis.
- A year later, Saied called a referendum on a new constitution that strengthened the presidency, capping what his opponents called a march to one-man rule. Saied has said freedoms will be protected.

### EGYPT

- President Hosni Mubarak had been in power since 1981, but massive anti-government protests began on Jan. 25, 2011 as activists called a "day of rage", inspired by Tunisia.
- As hundreds of thousands of protesters massed after Friday prayers three days later, Mubarak deployed the military.
- Protests gathered momentum, police were pulled from the streets and the army stood back until Mubarak stepped down – to be tried in August on charges of abusing power and killing demonstrators.
- The once-banned Muslim Brotherhood won the 2012 election but a year later the military, encouraged by anti-Brotherhood protests, toppled the new president, Mohamed Mursi, who was put in prison and died in 2019.
- Army chief Abdel Fattah el-Sisi replaced him as president. Rights groups documented abuses in a crackdown on dissent and the military faced a long-running insurgency from Islamist militants in Sinai.

### YEMEN

- Crowds took to the streets against President Ali Abdullah Saleh from 2011, aggravating splits in the army and between political blocs.
- Gulf states brokered a transition deal including a "national dialogue" aimed at resolving Yemen's problems, with Saleh's old deputy Abd-Rabbu Mansour Hadi to be president until elections
- With an al Qaeda insurgency raging in the east, Sanaa faced new problems in the north from the Iran-allied Houthi group and from a revived southern secessionist movement.
- In 2015, after the Houthis seized Sanaa, Saudi Arabia and its allies began a military campaign to keep Hadi in power – a war that soon reached bloody stalemate, aggravating food shortages and cholera outbreaks.
- Ex-president Saleh was killed in a roadside attack in 2017 after switching sides, abandoning the Iran-aligned Houthis for the Saudi-led coalition.
- A U.N.-backed ceasefire took effect in April, 2022 and Hadi, who had spent years in exile in Saudi Arabia, was replaced by a presidential council.

### LIBYA

- In first Benghazi and then Misrata, protests broke out in February, 2011, soon turning to armed revolt against Muammar Gaddafi's 42-year rule.
- In March, the United Nations Security Council declared a no-fly zone to protect civilians from Gaddafi's forces and NATO started air strikes to halt their advance on Benghazi.
- By August, rebels had seized Tripoli and in October Gaddafi was captured hiding in a drainpipe outside his hometown of Sirte

and killed.

- Local militias seized hold of territory and, as chaos took hold, the country split in 2014 between western and eastern factions.
- The U.N. helped broker a political agreement in 2015, but in practice the country stayed divided and Islamic State seized control of Sirte for more than a year.
- In 2019 eastern commander KhalifaHaftar launched a new war, assaulting Tripoli for 14 months before his forces turned back.
- By now the conflict was international, with Russia, the UAE and Egypt backing Haftar and Turkey the Tripoli government.
- A U.N.-backed election – part of a peace process aimed at knitting Libya back together – was cancelled in December, 2021 for reasons including disputes over the rules.
- In March 2022, the Sirte-based parliament appointed a new prime minister but the government based in Tripoli refused to step down, leaving Libya split between rival administrations.

**BAHRAIN**

- On Feb. 14, 2011, the biggest protests in years erupted in Bahrain as demonstrators echoed the Egyptian crowd's call for a "day of rage" to demand the ruling monarchy grant democracy.
- As protesters and police clashed over the coming weeks, sectarian tensions rose in a country where many majority Shi'ite Muslims had long chafed against the Sunni ruling dynasty.
- On March 14, neighbouring Sunni kingdom Saudi Arabia sent tanks across the causeway linking it to Bahrain to guard major installations.
- The authorities declared martial law and cleared protesters from the camp that had become their symbol.
- Protests continued for months, leading to at least 35 deaths, but the monarchy suppressed the uprising and restored control.

**SYRIA**

- When the first protests began to spread through Syria in March, 2011, President Bashar al-Assad sent in security forces and there was a wave of arrests and shootings.
- By July, protesters were taking up arms and army units were joining the gathering revolt, later backed by Gulf monarchies and Turkey, as Assad hit back with air strikes.
- Full-blown war erupted.
- As chaos engulfed the country, the Islamic State group in 2014 seized a swathe of territory, drawing a U.S.-led coalition to back Kurdish fighters in the northeast.
- Support from Russia, Iran and Lebanon's Shi'ite Hezbollah movement helped Assad claw back control over much of the country, defeating the rebels in areas including Aleppo and Eastern Ghouta from 2015-18.
- By the end of the decade, hundreds of thousands were dead and more than half the country's pre-war population was displaced with the country partitioned between Assad, Turkey-backed rebels and Kurdish-led groups.

# MALNUTRITION IN INDIA

GS-II HEALTH

## Context

- The Government aims at reducing stunting and under-nutrition (underweight prevalence) among children under 6 years by 2% per annum.

## Malnutrition

- Malnutrition refers to **deficiencies or excesses in nutrient intake, imbalance of essential nutrients or impaired nutrient utilization**. The double burden of malnutrition consists of both undernutrition and overweight and obesity, as well as diet-related noncommunicable diseases.
- Undernutrition manifests in four broad forms: **wasting, stunting, underweight, and micronutrient deficiencies.**

## Status of Malnutrition in India

- According to 2019-21 National Family Health Survey (NFHS-5), nutrition indicators for children under 5 have improved over NFHS-4 (2015-16).
- Stunting has reduced from 38.4% to 35.5%, wasting from 21.0% to 19.3% and underweight prevalence is down from 35.8% to 32.1%, according to the data. Women (15-49 years) whose BMI is below normal has reduced from 22.9% in NFHS-4 to 18.7% in NFHS-5. Despite the decrease, nutrition experts have said that India has one of the highest burdens of malnutrition in the world.
- Meghalaya has the highest number of stunted children (46.5%), followed by Bihar (42.9%). Puducherry and Sikkim have the lowest percentage of stunted children. Bihar has the highest number of underweight children (41%), followed by Gujarat (39.7%).
- The NFHS-5 data shows that Jharkhand has the highest percentage of women, between 15 and 49 years, who have a below-normal Body Mass Index (BMI). More than 26% Jharkhand women have below-normal BMI, the national average being 18.5%. Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra and Odisha also have high percentages of undernourished women.

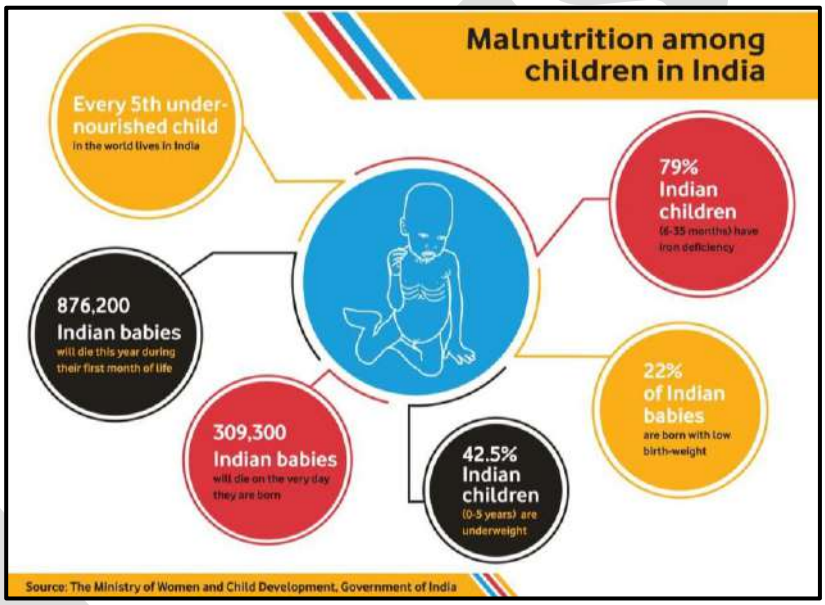
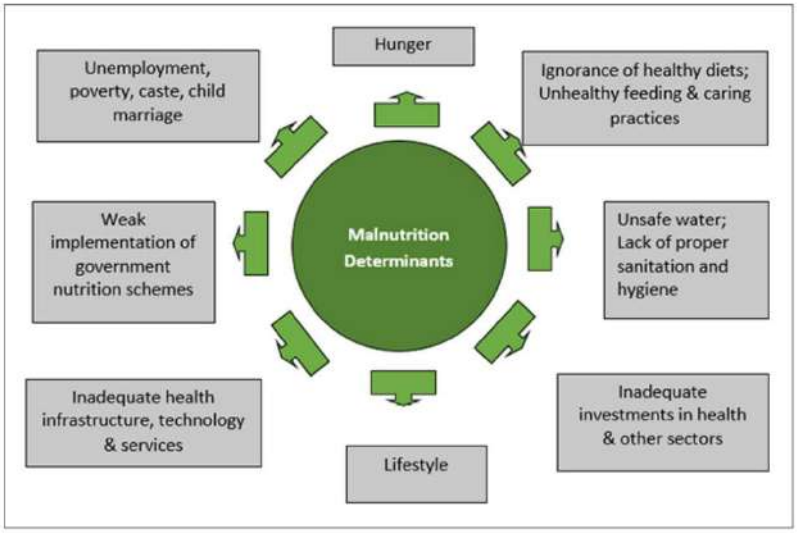



**Figure 3: Common Reasons for Prevalence of Malnutrition**




## Box 1: Government Policy Interventions and Programmes to Combat Malnutrition

| Direct Policy Measures | Plans, Programmes and Missions |
|---|---|
| • Expand the safety net through ICDS to cover all vulnerable groups (children, adolescent girls, mothers, expectant women)<br>• Fortify essential foods with appropriate nutrients (e.g., salt with iodine and/or iron) | • Mid-day Meal Programme, 1962-63<br>• Goitre Control Programme, 1962 (now known as National Iodine Deficiency Disorders Control Programme)<br>• Special Nutrition Programme, 1970-71<br>• Balwadi Nutrition Programme, 1970-71 |

| | |
|---|---|
| • Popularise low cost nutritious food<br>• Control micro-nutrient deficiencies amongst vulnerable groups<br>**Indirect Policy Measures**<br>• Ensure food security through increased production of food grains<br>• Improve dietary pattern by promoting production and increasing per capita availability of nutritionally rich food<br>• Effecting income transfers (improve purchasing power of landless, rural and urban poor; expand and improve public distribution system)<br>• Other: Implement land reforms (tenure, ceiling laws) to reduce vulnerability of poor; increase health and immunisation facilities, and nutrition knowledge; prevent food adulteration; monitor nutrition programmes and strengthen nutrition surveillance; community participation | • Nutritional Anaemia Prophylaxis Programme, 1970<br>• Prophylaxis Programme against Blindness due to Vitamin A Deficiency, 1970<br>• Integrated Child Development Services (ICDS), 1975<br>• National Diarrhoeal Diseases Control Programme, 1981<br>• Wheat-based Supplementary Nutrition Programme, 1986<br>• National Plan of Action on Nutrition, 1995<br>• Public Distribution System, 1997<br>• National Nutrition Mission, 2003<br>• National Health Mission, 2013 (subsumes former Rural & Urban Health Missions)<br>• National Iron+ Initiative, 2013<br>• Promotion of Infant & Young Child Feeding Practices Guidelines, 2013<br>• Weekly Iron & Folic Acid Supplementation, 2015<br>• National Deworming Day, 2015<br>• Establishment of: Nutritional Rehabilitation Centres; Village Health Sanitation & Nutrition Committee<br>• Bi-annual Vitamin-A Supplementation<br>• Village Health & Nutrition Days (at Anganwadi centers) |

## Strategies to prevent malnutrition and improve nutrition

### Nutritional planning

- Nutritional planning involves **formulation of a nutrition policy** and overall long term planning to improve production and supplies of food, ensure its equitable distribution and programs to increase the purchasing power of people.
- This involves **political commitment** by the government. A well planned and well executed long term project can accelerate the developmental process and the benefits can be rewarding and permanent.

### Improved health care system

- Infections like malaria, measles and diarrhoea are prevalent in our society and they precipitate acute malnutrition among children and infants.
- A good health care system that provides immunization, oral rehydration, periodic deworming, early diagnosis and proper treatment of common illnesses can go a long way in preventing malnutrition in the society.

### Nutrition education

People need to be educated on

- The nutritional quality of common foods
- Importance and nutritional quality of various locally available and culturally accepted low cost foods
- Importance of exclusive breastfeeding for six months and continuing to breast feed up to two years or beyond.
- Damage caused by irrational beliefs and cultural practices of feeding
- Recipes for preparing proper weaning foods and good supplementary food from locally available low cost foods.
- Importance of including milk, eggs, meat or pulses in sufficient quantities in the diet to enhance the net dietary protein value.
- Importance of feeding children and adults during illness
- Importance and advantages of growing a kitchen garden
- Importance of immunizing their children and following proper sanitation in their day-to-day life.

### Early detection of malnutrition and intervention

- The longer the developmental delays remain uncorrected, the greater the chance of permanent effects and hence intervention must occur during pregnancy and first three years of life.

### Nutrition supplementation

- Usually, biologically vulnerable groups like pregnant women, infants, preschool going and school going children are targeted by various welfare measures conducted by the government. Calories, proteins and micronutrients like iron, vitamin A and zinc can be supplemented.

## Conclusion

- Attention needs to be paid to understanding what prevents the nation from achieving its goals related to nutrition. The agencies of State governments have to adopt a comprehensive and coordinated multi-sectoral approach which is formulated by taking into account the varied nature of local-level challenges. They have to demonstrate better governance, too. For its part, civil society must respond in a responsible manner. In particular, attention needs to be paid on building neighbourhood health and nutrition profiles and carrying out interventions based on identified needs.

# WORLD DRUG REPORT 2022



## Context

- Recently UNODC released its World Drug Report 2022.

## World Drug Report 2022- Findings

### Rise in Cocaine use

- The UNODC research suggests that **cocaine use is rising again in 2021 after a decline during the pandemic**.

### Other drugs and their production

- With the legalization of cannabis, the daily usage of the drug has accelerated, with young adults reporting greater use of high-potency products frequently.
- Cannabis is still the most widely produced substance, cultivation of opium poppy declines while coca bush cultivation stabilised over the past five years.
- Afghanistan, Myanmar, and Mexico accounted for more than 95% of global opium poppy cultivation during the past five years, and Colombia, Peru, and Bolivia accounted for virtually all of global coca bush cultivation.

### Drugs through darknet

- In 2021, drugs accounted for 91 per cent of all sales on the 28 major darknet marketplaces monitored over the period 2019–2021, up from 85 per cent in 2019.

### Impact of Russia Ukraine War

- UNODC research has found that the armed conflict in Ukraine has a significant impact on drug use and trafficking inside and outside Ukraine.
- The conflict may displace existing drug trafficking routes outside Ukraine, but it can also exacerbate the instability that makes drug trafficking and manufacturing flourish.
- Lack of law enforcement stopping laboratories engaged in drug production in conflict zones can be the reason.
- Even before the conflict, Ukraine had one of the highest adult drug prevalence rates in the world, with 1.7% of its adults injecting drugs, mostly heroin and methadone.

### Trauma and lack of access to economic opportunities

- Exposure to trauma and lack of access to economic opportunities are one of the main risk factors of increased drug use among internally displaced persons and refugees. These populations have quickly reached several millions in the Ukraine context.

### Drugs and Refugees

- Research said that in the context of Afghanistan, the majority of injecting drug users initiated injecting when they were refugees. Same was the findings of a study done in Columbia also.

### Impact

- Increasing drug use in areas of armed conflict can break up health care structures, increase HIV transmissions due to needles being shared.

### Drug Trafficking route

- The Balkan route remains the primary route for Afghan heroin to reach Europe. In 2006-2016, Ukraine emerged as one of the variations of the Balkan route: a sub-branch that transits the Black Sea via Ukraine, although much smaller amounts are traded than on the Balkan route.

## Remedies suggested by UNODC

- UNODC urges the policy makers across the world to **tailor holistic drug-supply reduction strategies** encompassing economic development and alternative livelihoods in countries where coca bush is illicitly cultivated.
- **Drug policy approaches should be integrated into conflict and peace-building responses in conflict areas**.
- Also governments should **encourage more complex and deep investigation of transnational crimes**, aimed at revealing and dismantling related financial flows. These measures will ensure that organized crime groups can't contribute to instability and violence through the illicit drug trade.

**United Nations Office on Drugs and Crime**

- The United Nations Office on Drugs and Crime is a United Nations office that was **established in 1997** as the Office for Drug Control and Crime Prevention by combining the United Nations International Drug Control Program (UNDCP) and the Crime Prevention and Criminal Justice Division in the United Nations Office at Vienna. It was renamed the United Nations Office on Drugs and Crime in 2002.
- The agency's focus is the trafficking in and abuse of illicit drugs, crime prevention and criminal justice, international terrorism, and political corruption. It is a **member of the United Nations Development Group.**

## CERVAVAC



### Context

- The Drugs Controller General of India (DCGI) granted market authorization to Serum Institute of India (SII) to manufacture indigenously-developed India's first Quadrivalent Human Papillomavirus vaccine (qHPV) against cervical cancer.

### About Cervavac

- Cervavac is **India's first quadrivalent human papillomavirus vaccine (qHPV) vaccine**, and intended to protect women against cervical cancer.

### What is HPV?

- Human papillomavirus (HPV) is the most common viral infection of the reproductive tract. Most sexually active women and men get infected at some point and some may even get repeatedly infected. More than 90 percent of the infected population eventually clears the infection.
- Cervical cancer is by far the most common HPV-related disease. Almost all cases of cervical cancer can be attributed to HPV infection.

**HPV vaccine**

- Human papillomavirus vaccines are vaccines that prevent infection by certain types of human papillomavirus. Available HPV vaccines protect against either two, four, or nine types of HPV. All HPV vaccines protect against at least HPV types 16 and 18, which cause the greatest risk of cervical cancer.

### Cervical cancer

- Cervical cancer is a common sexually transmitted infection. Long-lasting infection with certain types of HPV is the main cause of cervical cancer.

**World Scenario**

- Worldwide, cervical cancer is the second most common cancer type and the second most common cause of cancer death in women of reproductive age (15–44).

**India**

- India accounts for about a fifth of the global burden, with 1.23 lakh cases and around 67,000 deaths per year according to the World Health Organization's International Agency for Research on Cancer (IARC-WHO).
- Cervical cancer is a leading cancer among women, with about 132,000 cases annually and 74,000 deaths in India, according to the Indian Council of Medical Research (ICMR). India contributes 17 percent of the world's population but shares more than a quarter of the global cervical cancer burden.

### Concerns

- Screening and vaccination are two powerful tools that are available for preventive cervical cancer. Still there is little awareness among women for prevention of this cancer and less than 10% of Indian women get screened. All women aged 30-49 must get screened for cervical cancer even if they have no symptoms.
- Although HPV vaccination was introduced in 2008, it has yet to be included in the national immunization programme.
- Cervical cancer is preventable, but kills one woman every eight minutes in the country. But it is preventable as long as it is detected early and managed effectively.

### The new vaccine

- The HPV vaccine, Cervavac, manufactured by Serum Institute, is made on the recombinant technology platform. It is said to be **effective against four strains of the Human Papillomavirus virus - Type 6, Type 11, Type 16 and Type 18.**
- The vaccine is **based on VLP (virus like particles), similar to the hepatitis B vaccine**, and provides protection by generating antibodies against the HPV virus's L1 protein.

**VLP**

- Virus-like particles (VLPs) are multiprotein structures that mimic the organization and conformation of viruses but **lack the viral genome**, potentially yielding safer and cheaper vaccine candidates. Thus, Virus-like particles are molecules that mimic viruses but are not infectious. They are a very effective way of creating vaccines against diseases such as human papillomavirus (HPV), hepatitis B, malaria, and more.
- VLP vaccines are a type of recombinant vaccine.

- The vaccine can be administered to those in **the 9 to 26 age group.**

### Significance

- DGCI approval will allow the government to procure enough HPV vaccines at a special price to vaccinate nearly 50 million girls aged 9–14 years in India who are waiting to receive the vaccine. This will be a **huge step to accelerate cervical cancer elimination in India and globally**.

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## AND MANY MORE...

# GENERAL STUDIES - III

## FINANCIAL STABILITY REPORT (FSR)

GS-III ECONOMY

### Context

- RBI released the Financial Stability Report.

### Key Findings

- The asset quality of the banking system has improved **with gross non-performing assets (GNPA) ratio declining from 7.4 per cent in March 2021 to a six-year low of 5.9 per cent in March 2022.**
- **Net non-performing assets (NNPA) ratio also fell by 70 bps during 2021-22 and stood at 1.7 per cent** at the year-end.
- GNPA ratio of all banks may improve to 5.3 per cent by March 2023 under the baseline scenario driven by higher expected bank credit growth and declining trend in the stock of GNPAs.
- The **provisioning coverage ratio (PCR) improved to 70.9 per cent in March 2022** from 67.6 per cent a year ago.
- The **slippage ratio, measuring new accretions to NPAs as a share of standard advances at the beginning of the period, declined across bank groups during FY22**.
- **Write-off ratio fell for the second year running to 20.0 per cent in 2021-22**.
- Banks as well as non-banking financial institutions have sufficient capital buffers to withstand shocks, and support from it during Covid helped banks arrest their GNPA ratio.
- Like most other emerging market economies and even some advanced economies, the **Indian economy is facing significant spillovers from the evolving global conditions.**
- Indian economy remains on the path of recovery, **though inflationary pressures, external spillovers and geopolitical risks warrant careful handling and close monitoring**.
- FSR said the **advent of fintechs has exposed the banking system to new risks which extend beyond prudential issues and often intersect with other public policy objectives relating to safeguarding of data privacy, cyber security, consumer protection, competition and compliance with AML (anti-money laundering) policies.**
- **Regulators and supervisors face a challenging balancing act between innovation-friendliness and managing risks to financial stability**, which requires more engagement of stakeholders such as regulators, the fintech industry, and the academia to work towards common principles for management of fintech activities.
- **Cryptocurrencies are termed as a "clear danger"** and it said that anything that derives value based on make-believe, without any underlying, is just "speculation under a sophisticated name".

### About Financial Stability Report

- It is published twice each year.
- The FSR is one of the most crucial documents on the Indian economy as it presents an assessment of the health of the financial system.
- As part of the FSR, the RBI also conducts "stress tests" to figure out what might happen to the health of the banking system if the broader economy worsens.
- Each FSR also contains the results of something called the Systemic Risk Surveys.

### Objective of the report

- FSR looks at questions:
  - Do Indian banks (both public and private) have enough capital to run their operations?
  - Are the levels of bad loans (or non-performing assets) within manageable limits?
  - Are different sectors of the economy able to get credit (or new loans) for economic activity such as starting a new business or buying a new house or car?
- FSR also allows the RBI to assess the macro-financial risks in the economy.

## SMALL SAVING INSTRUMENTS

GS-III ECONOMY

### Context

- The government's move to keep interest rates on small savings instruments unchanged comes as a setback for small investors.

### More on the news

- At a time inflation is ruling over 7% and bond yields have risen over 7.4%, not only will the decision result in negative real rate of return – after adjusting for inflation — for savers and pensioners, but the status quo is also likely to prompt banks to go slow in hiking deposit rates.

- **Barring PPF and Sukanya Samriddhi Yojana, all other small saving instruments are currently fetching negative real returns amid high inflation**.

### Impact

- **Banks are now unlikely to go for a major hike in deposit rates**.
- Now with markets showing huge volatility in the wake of rising rates and foreign portfolio outflows, **savers are looking at bank deposits and small savings**.
- Technically, negative real rates discourage savings and boost consumption. This, in turn, may fuel more inflation and lead to even more negative real rates. Keeping interest rates too low for too long can have negative consequences.
- If small savings rate are not raised, **banks would not be forced to raise rates, unless they need to mobilise funds for credit demand.**
- While one can strategise to invest in a good debt product yielding better returns, experts say equities are the best option for beating inflation and generating positive real rate of return.

### About

- Small Savings Schemes are **a set of savings instruments managed by the central government** with an aim to encourage citizens to save regularly irrespective of their age.
- They **provide returns that are generally higher than bank fixed deposits** and **they come with a sovereign guarantee.**
- These schemes, which are launched by the government, banks, and public sector financial institutions, offer **attractive rates of interest and tax exemptions/benefits on investment**.

### Interest Rates

- **Since 2016, the Finance Ministry has been reviewing the interest rates on small savings schemes on a quarterly basis**.
- These administered interest rates are **linked to market yields on government securities (G-secs).**

### Fund

- All deposits received under various small savings schemes are pooled in the **National Small Savings Fund.**
- The **NSSF is administered by the Government of India, Ministry of Finance under National Small Savings Fund Rules, 2001,** which is derived from Article 283(1) of the Constitution.
- Funds collected under SSS are the liabilities of the Union government accounted for in the Public Accounts of India.
- The money in the fund is **used by the central government to finance its fiscal deficit**.

### Types and sub-types of Small Savings Schemes

1. **Post office deposits**
   a) Savings deposit
   b) Recurring deposit and
   c) Time deposits
2. **Savings certificates**
   a) National Savings Certificate
   b) KisanVikasPatra.
3. **Social security schemes**
   a) Public Provident Fund,
   b) SukanyaSamriddhi Account
   c) Senior Citizens Savings Scheme.

## PURCHASING MANAGER'S INDEX PMI

GS-III ECONOMY

### Context

- India's services firms saw growth in new business and output accelerate to a 11-year high in June, as per the survey-based S&P Global India Services Purchasing Managers Index (PMI).
- The index rose to 59.2 last month, from 58.9 in May, signaling a strengthening in demand across the services sector, which had borne the brunt of the COVID-19 pandemic.

### What is a PMI?

- PMI or a Purchasing Managers' Index (PMI) is an **indicator of business activity** -- both in the manufacturing and services sectors.
- It is a **survey-based measure** that asks the respondents about changes in their perception of some key business variables from

the month before.

- It is **calculated separately for the manufacturing and services sectors and then a composite index is constructed.**
- **Started in 1948 by the US-based Institute of Supply Management, the Purchasing Managers' Index**, or PMI, has now become one of the most closely watched indicators of business activity across the world.

### How is the PMI derived?

- The PMI is derived from a series of qualitative questions.
- Executives from a reasonably big sample, running into hundreds of firms, are asked whether key indicators such as output, new orders, business expectations and employment were stronger than the month before and are asked to rate them.

### How does one read the PMI?

- A figure **above 50 denotes expansion in business activity.**
- Anything **below 50 denotes contraction**.
- Higher the difference from this mid-point greater the expansion or contraction.
- The rate of expansion can also be judged by comparing the PMI with that of the previous month data.
- If the figure is higher than the previous month's then the economy is expanding at a faster rate. If it is lower than the previous month then it is growing at a lower rate.

### What are its implications for the economy?

- The PMI is usually released at the start of the month, much before most of the official data on industrial output, manufacturing and GDP growth becomes available.
- It is, therefore, considered a good leading indicator of economic activity. Economists consider the manufacturing growth measured by the PMI as a good indicator of industrial output, for which official statistics are released later.
- Central banks of many countries also use the index to help make decisions on interest rates.

### What does it mean for financial markets?

- The PMI also gives **an indication of corporate earnings** and is closely watched by investors as well as the bond markets.
- A good reading enhances the attractiveness of an economy vis-a-vis another competing economy.
- For instance, India's manufacturing activity as measured by the PMI expanded, while for China/XYZ country it dipped.

## START UP ECOSYSTEM IN INDIA — GS-III ECONOMY

### Context

- **Industry estimates peg the cumulative job losses in startups at over 10,000 so far this year.**

### Details

- As per Investindia, since the launch of the Startup India initiative in January 2016, **more than 69,000 startups have been recognized in the country** till May this year.
- As per data from the Ministry of Commerce and Industry, the **number of people employed in start-ups covered under the Start-up India initiative stood at about 1.74 lakh in 2021**.
- With funding starting to dry up due to global macro-economic factors, the startup ecosystem in India is bracing itself for **potential mass lay-offs in the next 12-18 months, particularly in sectors such as ed-tech and gaming that got a significant push during the pandemic.**
- In the last quarter (April-June), start-up funding fell by about 40% to about 6-7 billion.
- **Over the past years, India's strong digital boom along with the relative ease of funding fuelled the rise of Indian start-ups, and with an intent to ramp-up growth through new offerings – including products and solutions, they went on a rapid expansion of their product and tech teams.**
- **Challenges in fund-raising:** Sectors which got a huge natural push during the pandemic such as ed-tech and gaming, their growth has now plateaued, and they are in more trouble
- **Buy-outs, mergers, governance issues:** In case start-ups are not able to raise money, many may put themselves up for sale, and larger firms who may have earlier missed out on opportunities will be eager to pick up equity in such start-ups.

### Definition of Start Up in India

An entity shall be considered as a startup if it satisfies all the following conditions:

1. **If it is incorporated/registered as any of the followings:**
   a) Private Limited Company (as defined in Companies Act, 2013).
   b) Partnership Firm (registered under Partnership Act, 1932).

c) Limited Liability Partnership (registered under Limited Liability Partnership Act, 2008).
d) One Person Company (as defined in Companies Act, 2013).

***Provided that such entity is not formed by splitting up or reconstruction of a business already in existence.***

2. It has **not completed ten years since incorporation/registration** as above.
3. Its **turnover for any of the financial years has not exceeded INR 100 Crore**.
4. It satisfies any of the following conditions:
   a) **It is working towards:** Innovation/ Development/Improvement of new products/processes/services .
   b) **It is a scalable business model** with a high potential of: Employment generation or Wealth creation.

***A DPIIT recognized startup is eligible for exemption from the provisions of section 56(2)(viib) of the Income Tax Act.***
***Startups are exempted from income tax for 3 years provided they get a certification from Inter-Ministerial Board (IMB).***

### Status of Start Ups in India: Economic Survey 2022 Report

- India has over **61,400 startups recognised by the Department for Promotion of Industry and Internal Trade (DPIIT),** with at least 14,000 recognised during fiscal 2022, according to the Economic Survey 2021-22.
- Startups in India have grown remarkably over the last six years. The number of new recognised startups has increased to over 14,000 in 2021-22 from only 733 in 2016-17.
- **India has become the third-largest startup ecosystem in the world after the US and China.**
- A record **44 Indian startups achieved unicorn status in 2021**, taking the overall tally of startup unicorns in India to 83, with **most in the services sector.**
- In recent years, Delhi has replaced Bengaluru as the startup capital of India.
- **Maharashtra** has the highest number of recognised startups.

### Government Schemes to Support Startups in India

- **SAMRIDH (Startup Accelerators of MeitY for Product Innovation, Development, and growth) Scheme** to provide funding support to startups along with helping them bring skill sets together which will help them grow successful.
- **Startup India Seed Fund** - The Startup India Seed Fund Scheme (SISFS) aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market entry and commercialization.
- **Startup India Initiative** gives tax benefits to startups under this scheme.
- **A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship (ASPIRE) initiative** to offer proper knowledge to the entrepreneurs to start with their business and emerge as employers.
- **Pradhan Mantri Mudra Yojana (PMMY)** provide startup loans of up to INR 10 lakhs to small enterprises, business, which are non-corporate, and non-farm small/micro-enterprises.
- **eBiz -** the first electronic government-to-business(G2B) portal, to transform and develop a conducive business environment in the country.
- **"Support for International Patent Protection in E&IT (SIP-EIT)".** This scheme provides financial support to MSMEs and Technology Startups for international patent filing.
- **Multiplier Grants Scheme (MGS):** This scheme aims to encourage collaborative Research & Development (R&D) between industry and academics/institutions for the development of products and packages. Under the scheme, if the industry supports the R&D of products that can be commercialized at the institutional level, the government shall provide financial support which will be up to twice the amount provided by industry.
- **Venture Capital Assistance (VCA) scheme** by Small Farmer's Agri-Business Consortium (SFAC) for the welfare of farmer-entrepreneurs. It intends to provide assistance in the form of term loans to farmers so that the latter can meet the capital requirements for their project's implementation.
- **NewGen IEDC initiative** launched by the National Science and Technology Entrepreneurship Development Board under the Department of Science and Technology. The initiative aims to inculcate the spirit of innovation and entrepreneurship among the Indian youth through guidance, mentorship, and support.

## MICRO FINANCE INSTITUTIONS

*GS-III ECONOMY*

### Context

- **Microfinance companies are expecting greater growth in rural markets than urban**, following new guidelines issued by the Reserve Bank of India.

### Details

- The central bank has allowed **households earning up to ₹3 lakh annually to be classified as eligible for microloans, expanding the market for microfinance institutions** (MFIs).
- The cap earlier was ₹1.25 lakh in rural areas and ₹2 lakh in other areas.

- It also **removed the cap on pricing loans, aiding deeper penetration into existing markets and entry into new ones.**
- According to CRISIL, the annual credit cost of NBFC-MFIs had shot up to 4-5% owing to covid-related provisioning, from 1.5-2% earlier.
- With asset quality pressures gradually easing and sizeable provision buffers created, their credit cost is expected to decline to 2.5-2.8% this fiscal.

### Microfinance Institutions

- Microfinance institutions (MFIs) are financial companies that provide small loans to people who do not have any access to banking facilities.
- In India, a microfinance loan is defined as a **collateral-free loan given to a household having an annual income of up to Rs 3 lakh. (Recently revised by RBI. Earlier it was Rs 1 Lakh)**
- **Example of MFIs:** Bandhan Bank Limited, Ujjivan Small Finance Bank, Annapurna Finance Pvt. Ltd, Muthoot Microfin Limited, Credit Access Grameen Limited, Sonata Finance Private Limited etc.
- **The different types of institutions that offer microfinance are:**
  1. Credit unions
  2. Non-governmental organisations
  3. Commercial banks

***Some government banks also offer microfinance to the eligible categories of borrowers.***

***Although most microfinance institutions target the eradication of poverty as their primary motive, some of the new entrants are focused on the sale of more products to consumers.***

### Goals of Microfinance Institutions

- Microfinance institutions have been gaining popularity in the recent years and are now considered as effective tools for alleviating poverty. The primary goals of microfinance institutions are the following:

1. Transform into a financial institution that assists in the development of communities that are sustainable.
2. Help in the provision of resources that offer support to the lower sections of the society. **There is special focus on women in this regard,** as they have emerged successful in setting up income generation enterprises.
3. Evaluate the options available to help eradicate poverty at a faster rate.
4. Mobilize self-employment opportunities for the underprivileged.
5. Empowering rural people by training them in simple skills so that they are capable of setting up income generation businesses.

As per World Bank data, close to 1.7 billion people across multiple countries do not have access to basic financial services. This is where microfinance institutions play a major role.

### Regulations for MFIs

- The regulations pertaining to MFIs are usually based on their statuses.
- A **microfinance bankwill be required to adhere to all banking regulations like traditional banks**.
- **Cooperatives and NGOs will not be expected to comply with the same regulations.** However, they may be regulated by similar oversight authorities.

### How are MFIs Funded?

Microfinance Institutions get funding from several sources, such as:

- **Member and customer deposits –** This is applicable to MFIs that are organised as mutual funds, cooperatives, and microfinance banks offering savings products.
- **Subsidies and grants –** Grants are more prominent when the MFI is just being set up.
- **Own capital –** The microfinance institution's own finance/capital accounts for a part of the funding extended to borrowers.
- **Loans from partner banks –** This is the primary source of funding for an MFI.
- **Funding received from public investors –** Bilateral or multilateral organisations offer funds to MFIs. This is a source of long-term funding for the MFI.
- **Funding received from private investors –** These funds are supplied directly to the MFI or through investment funds that specialise in microfinance. This is also a source of long-term funding for the MFI.

### Challenges Faced by MFIs in India

- **Cost of outreach -** reaching the unbanked populations of the world means servicing small loan amounts and servicing remote and sparsely populated areas of the planet, which can be dangerously unprofitable without high rates of process automation and mobile delivery.

- **Lack of scalability -** smaller microfinance systems often struggle to preserve the profitability and performance in these markets, as Financial Institutions experience high growth rates that result from getting the service delivery right. This results in thwarting the growth of these organizations.
- **Quality of SHGs (Self Help Groups) -** Due to the fast growth of the SHG-Bank Linkage Programme, the quality of MFIs has come under stress. This is due to various reasons such as:
  1. The intrusive involvement of government departments in promoting groups
  2. Diminishing skill sets on part of the MFIs members in managing their groups.
  3. Changing group dynamics.
- **Geographic Factors** - Around 60% of MFIs agree that the Geographic factors make it difficult to communicate with clients of far-flung areas which create a problem in growth and expansion of the organization.
- **Diverse business models** - Supporting the very wide range of features and lending activities is difficult and requires a considerable amount of cost and efforts.
- **High Transaction Cost** - High transaction cost is a big challenge for microfinance institution. The volume of transactions is very small, whereas the fixed cost of those transactions is very high.
- **KYC and security challenges –** The customers serviced by Microfinance instructions are usually the ones having none or very limited official identification or able to provide tangible security, this makes it extremely difficult for institutions to offer any banking services.
- **Limited budgets –** Making provisions for large upfront investments is not possible for most of the MFIs which limits their capability to purchase world-class banking solutions that can help them fulfil their requirements and support their growth targets.
- **Unfavorable policies:** Although microfinance institutions have been profitable in India, there have been regulations and populist politics that have proved to be unfavourable to them.
- **Easily affected**: The small size of these institutions implies that they will **be affected by small adverse developments resulting in fragile finances.**
- **Funding:** Banks usually have multiple products and an assured deposit structure. On the other hand, micro lending institutions are **highly dependent on the market for funding**. This means that at the smallest of events affecting business, MFIs could find it difficult to procure financing.
- **Over-dependence of the banking system:** Additionally, banks today have a presence in the microlending space and they are also partnering with MFIs through strategic stakes. MFIs are also finding it difficult to grow independently without any support from anchor investors. There are many MFIs that included NGO-run units and societies. Non-banking finance companies – microfinance institutions (NBFC-MFIs) had also been registered with the Microfinance Institutions Network (MFIN).
- **Over borrowing:** The biggest risk looming over the microfinance industry today is the tendency to over borrow on the part of loan seekers. The fact that 20% to 30% of loan applications are now being rejected by MFIs is attributed to the excess borrowing witnessed in the industry.
- **Missing of Targets:** It is a common mistake by the MFIs to neglect the urban poor; they primarily try to focus on the rural poor.
- **Loan Default:** Risk management remains inefficient. Plus, late payments are almost 70% in MFIs, which further creates a hurdle for the institution's working capital and profit.
- **High rates of interest charged by lenders:** MFIs have a high rate of interest charged on the loans that amount to 12-30% of the principal amount. This leads to default.

### Solutions

- **Proper Regulation -** When the microfinance was in its emergent stage, and individual establishments were allowed to have innovative, operational models, a non- restrictive surrounding wasn't a big concern. However, now the institution needs restrictions that protect the interest of stakeholders and promotes growth.
- **Field superintendence** - This can keep an eye on the performance of ground employees of MFIs and their loan recovery practices.
- **Focus on rural poor -** Instead of reducing the initial cost at places where there are MFIs, these institutions could start targeting the rural poor and establish new branches over the areas.
- **Complete variety of product** - This will help in diverting the dependency of people from the commercial banks.
- **Transparency of interest rates -** The MFIs should abide by an actual Interest rate on the products and amounts which should be mentioned to the customers.
- **Technology to scale back overhead -** MFIs ought to use new technologies and IT tools & applications to scale back their operational costs. Microfinance institutions should be inspired to adopt cost-cutting measures to scale back their operating costs.
- **Different sources of fund -** In the absence of adequate funds, the expansion and the reach of MFIs become restricted and to

beat this downside, MFIs could hunt for alternative sources for funding their loan portfolio.

## FOREIGN PORTFOLIO INVESTORS (FPIS)

GS-III ECONOMY

### Context

- Foreign Portfolio Investors (FPIs) have been on a selling spree in India. June 2022 witnessed the worst sell-off since March 2020

### What is Foreign Portfolio Investment?

- FPI is an investment by **non-residents in Indian securities** including **shares, government bonds, corporate bonds, convertible securities, units of business trusts**, etc. The class of investors who make an investment in these securities is known as Foreign Portfolio Investors.

### What are the major laws/regulations applicable to an FPI in India?

- FPIs are primarily **governed by The Securities and Exchange Board of India (SEBI)**.
- SEBI has recently introduced the SEBI (Foreign Portfolio Investors) Regulations, 2019, repealing the erstwhile 2014 Regulations.
- Further, FPIs are also **required to comply with the Foreign Exchange Management Act, 1999and** the **Income-tax Act, 1961.**

### Foreign Portfolio Investment Eligibility Criteria

**To become an FPI, an individual must meet the following requirements:**

- The petitioner **must not be a non-resident Indian,** according to the Income Tax Act of 1961.
- Should not be a citizen of a country that is subject to the FATF's public statement.
- If the bank is the applicant, it **must be from a country whose central bank is a Bank for International Settlements member.**

### Pros and Cons of FPIs

| FPI advantages | FPI disadvantages |
|---|---|
| Helps companies raise significant capital without incurring massive expenses. | Economic turmoil and political instability may have a negative impact on any investment via the FPI route. |
| Investors can gain substantially from exchange rate differences. | Markets in any country are inherently volatile. Despite the fluid nature of FPIs, losses may pile up if funds are not withdrawn hastily. |
| FPIs help investors diversify their portfolios, which, in turn, boosts their confidence. | |
| FPIs inevitably move towards larger markets with lower competition. This combination is rather attractive to any investor. | |

### Why have FPIs been selling India holdings?

- FPIs sold assets worth about Rs 50,000 crore in June 2022. This is the **second highest sell-off in a month since 1993, after March 2020.**

**Uneven post pandemic recovery**

- Post-pandemic, recovery in the Indian economy has been uneven. The second wave of the COVID-19 pandemic in 2021 devastated lives and livelihoods. The economy stuttered again when a third, albeit less severe, wave saw the spread of the Omicron variant early this year.

**Supply-side shortages**

- The return of pent-up demand in economies worldwide as the pandemic subsided. The pace of recovery caught suppliers off guard, contributing to supply-side shortages.

**Russia's invasion of Ukraine**

- Next came Russia's invasion of Ukraine. Sunflower and wheat supplies, to name just two commodities, from these two nations were impacted, leading to a rise in global prices for these crops. As supplies in general tightened across the globe, commodity prices too rose and overall inflation accelerated. India witnessed a quickening pace in price rise. Inflation stayed above the

Reserve Bank's upper comfort level of 6% for five months running, touching 7.8% in April, before receding to a slightly less aggressive 7.04% in the subsequent month.

**Uneven Industrial production**

- Industrial production has seen a bumpy ride without giving confidence of a full and final recovery from the pandemic. For example, the S&P Global India Manufacturing Purchasing Managers' Index (PMI) slid to 53.9 in June — the lowest level in nine months — from 54.6 in the previous month. Experts attribute this to inflation pressures, which also dampened business confidence sentiment to a 27-month low in June, as per survey-based findings.

**Consumption expenditure**

- Consumption expenditure too has remained weak in the subcontinent.

**U.S. Federal Reserve interest rate**

- When the differential between the interest rates in the U.S. and other markets narrow, and if such an occurrence is accompanied by the strengthening of the dollar, then the ability of investors to realise healthy returns is impacted.

**Depreciating rupee**

- The rupee has been depreciating against the dollar, which has seen a general strengthening against several other currencies. The rupee touched its record low of 79.33 against the greenback on Tuesday.

***With each of these factors contributing to a decline in confidence of robust economic performance, FPIs have been exiting market investments over these past months.***

### Impact does an FPI sell-off have?

- When FPIs sell their holdings and repatriate funds back to their home markets, the local currency deprecates. After all, they sell rupees in exchange for their home market currency. As supply of the rupee in the market rises, its value declines. In this instance, the rupee has been seeing all-time lows recently.
- About a year ago, it was trading in the region of 73 to a U.S. dollar; it is now at the around 80 level. With a weaker rupee, we have to sell out more funds to import the same unit of goods. The most telling impact is on the cost of our crude oil imports that contribute to 85% of our oil needs.

## FOREX RESERVES AND RUPEE'S EXCHANGE RATE — GS-III ECONOMY

### Context

- In the immediate past, **both India's forex reserves as well rupee's exchange rate (vis a vis the US dollar) have been falling quite sharply.**

### What is the rupee's exchange rate?

- Imagine that at the beginning, for every rupee demanded in the market, there is a demand for a US dollar. The exchange rate between the two currencies would be 1.
- But if over time more dollars are demanded than the rupee (because, say, Indians import more from the US than what the Americans import from India, then the dollar would appreciate against the rupee. The dollar's exchange rate with the rupee would change from 1 to (say) 10.
- Those Indians who import stuff from the US will be getting annoyed because, with each passing year, the rupee buys less and less of an American product (which is priced in US dollars).
- But those Indians who export stuff to the US would enjoy this "depreciation" in the rupee's value. Because the rupee's depreciation makes India's mangoes cheaper and more affordable to US customers.
- **In a free market set-up, the rupee's exchange rate will fluctuate depending on the relative demand for the rupee among Americans (or foreigners in general) and the demand for dollars among Indians.**
- **For an emerging economy such as India, which is trying to build its economy by increasingly creating a niche for itself in the global market, the exchange rate mustn't appreciate to such an extent that it hurts India's exporters.**

### Forex reserves explained

- Suppose in a particular year, foreigners demanded rupees more than Indians demanded dollars. That is, there was a relative excess of dollars in comparison to the rupees in the forex market.
- Without the RBI, the rupee would have appreciated/become stronger. But that would have hurt the interests of India's exporters.
- So what the RBI does is that it buys the excess dollars from the forex market using the rupee (that it can print). This exchange reduces the presence of dollars and increases the presence of the rupee in the forex market, thus holding back the rupee from becoming stronger (or appreciating) against the dollar.
- What happens to the dollars the RBI buys? They become India's forex reserve.
- One key reason why RBI intervenes in the forex market is to smoothen the volatility of the exchange rate.

- But the other big reason is strategic- we often hear about the number of months for which they will cover the country's import (called the "import cover").

### Upshot

- For a developing economy such as India, a gradually weakening rupee is economically beneficial and, thus, desirable.
- The point of forex reserves is two-fold: to smoothen fluctuations in the exchange rate and to provide some strategic import cover. Merely accumulating forex reserves is not an end in itself; it is neither the ultimate measure of an economy's success nor something that comes without a cost

## SARFAESI ACT — GS-III ECONOMY

### Context

- Banks have invoked **the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act** against telecom infrastructure provider GTL to recover their pending dues.

### What is the Sarfaesi Act?

- The SARFAESI Act of 2002 was **brought in to guard financial institutions against loan defaulters**. To recover their bad debts, the banks under this law can take control of securities pledged against the loan, manage or sell them to recover dues without court intervention.
- The law is **applicable throughout the country and covers all assets, movable or immovable, promised as security to the lender.**

### Aim of the SARFAESI Act

- The SARFAESI Act has two main objectives, namely:
  1. Recovering the financial institutions' and banks' non-performing assets (NPAs) in a timely and effective manner.
  2. Allows financial organisations and banks to sell residential and commercial assets at auction if a borrower defaults on his or her debt.

### Why was such a law needed?

- Before the law was enacted in December 2002, banks and other financial institutions were forced to take a lengthy route to recover their bad debts.
- The lenders would appeal in civil courts or designated tribunals to get hold of 'security interests' to recovery of defaulting loans, which in turn made the recovery slow and added to the growing list of lender's non-performing assets.

### Elements of the SARFAESI Act

- The SARFAESI Act is applied to the entire country of India. The SARFAESI Act, 2002 provisions are in effect for modifying the four laws listed below:
  1. Indian Stamp Act, 1899.
  2. The recovery of the debts due to the Banks and Financial Institutions Act, 1993 (RDDBFI).
  3. The Depositories Act, 1996 and for those matters that are connected therewith or incidental thereto.
  4. The Reconstruction and Securitisation of Financial Assets and Enforcement of Security Interest Act, 2002.

### Features of SARFAESI ACT

Securitization and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002 aims to protect banks and financial institutions from incurring losses. Its features are provided below:

- **Enforcement of security interests:** The Act enforces security interests by the secured creditors with no involvement of the court. In case of a default by a borrower, the act authorizes the bank or a financial institution to issue a demand notice to the borrower and induces him/her to satisfy off the obligations within sixty days from the date of the notification.
- **Reconstruction of financial assets:** SARFAESI Act allows the banker and financial institutions to take legitimate measures of the management, sale, settlements, debt restriction, or take any possession under SBI guidelines every now and then.
- **Securitization of financial assets and issue security receipts:** The primary point of the securitization act is to make accessible the enforcement of security interest for example to take possessions of the assets that were given security for the loan.
- **Act as an agent of banks or financial institutions:** The SARFAESI Act 2002 acts as the manager of the secured assets given by the financial institutions and ensures that the dues are recovered at an ideal time.

### What assets are covered under the SARFAESI Act?

- Any asset, i.e. movable or immovable, given as security by way of hypothecation, mortgage, or creation of a security interest in

any other form except those excluded under Section 31 of the Act are covered under the SARFAESI Act.

### Is SARFAESI Act applicable to cooperative banks?

- In 2020, the Supreme Court upheld amendments made to the SARFAESI Act in 2013, which included cooperative banks under the ambit of the Act.

### Is SARFAESI Act applicable to NBFCs (Non-Banking Financial Companies)?

- The Ministry of Finance, vide its notification dated 24th February 2020, notified that the **NBFCs with asset size of Rs.100 crores or more are eligible NBFCs that are covered under the SARFAESI Act** to enforce security interest on debts amounting to at least Rs.50 lacs.

### Challenges

- One of the Act's significant flaws is that it **does not apply to unsecured creditors.**
- The bank has **no influence over what happens to the asset after it is placed up for auction**. If there are no buyers for the asset at the auction, the bank cannot proceed, pursuant to the previous conditions.
- Furthermore, the Government of India added a new clause in 2011 declaring that the bank might acquire the asset if there was no better bidder. This created another issue that if the factory was in the city, the bank might buy it and use it to erect a new branch or build a housing colony for its employees. However, if it was in an extremely remote place, it was useless to the bank.
- The Act's provision permitted the bank to keep a specific asset for a maximum of seven years. However, if the bank does not get a reasonable bid within the specified time frame, the **remedy for such a situation is not specified in the Act.**
- In some cases, the **auction process is hurriedly completed** and it would be extremely difficult for the borrowers to get the transaction set-aside.
- **Conflict between the Insolvency and Bankruptcy Code (IBC) and the Sarfaesi Act**.
  1. The IBC provides for a non-obstante clause in section 238, giving the Code's provisions precedence over any other provision in law. The same has been confirmed by the Supreme Court in **Encore Asset Reconstruction Company Pvt Ltd v. MsCharuSandeel Desai,** where it stated that the IBC clearly prevailed over the Sarfaesi Act.
  2. The Sarfaesi Act provides for the setting up of (Asset Reconstruction Companies) ARCs, which are specialized financial institutions acquiring non-performing assets or bad assets from financial institutional and banks. However, it does not allow ARCs to submit resolution plans and its guidelines prohibit ARCs to infuse equity in insolvent companies at the resolution stage. Contrary to this, Section 29A of the IBC permits ARCs to become resolution applicants.

### Final Thought

- For an insolvency regime to function effectively, clear harmonization for the interplay of the different laws will have to be done. **Harmonization between IBC and Sarfaesi provisions** is the need of the hour.
- **Clarity of provisions in Auction notice and their ground level implementation** is another need of the hour.
- The SARFAESI Act, 2002 is a vital Act for the advancement of the country's economy, and broadening its scope is regarded as a necessary step in strengthening the country's financial institutions.

## NATURAL FARMING

GS-III ECONOMY

### Context

- Prime Minister Narendra Modi lauded the experiments of Natural Farming in Surat district of Gujarat.

### What is natural farming?

- Natural Farming is a **chemical-free alias traditional farming method**. It is **considered as agro-ecology** based diversified farming system which integrates crops, trees and livestock with functional biodiversity.
- Natural farming as an ecological farming approach was **established by Masanobu Fukuoka (1913–2008), a Japanese farmer and philosopher**, introduced **in his 1975 book The One-Straw Revolution.**
- Natural farming is popularly known as "do nothing" farming and it is an environmentally sustainable way of growing food.
- The most critical aspect of natural farming is to let nature play a dominant role to the maximum extent possible. Hence, **no-till, farm biodiversity, integration and symbiotic farm components and protection of soil cover** all have a place in this process of farming.

### Similarities between natural farming and organic farming:

- Natural and organic **both are chemical free and more or less poison free** farming methods.
- Both systems discourage farmers from using any chemical fertilizers, pesticides on plants and in all agricultural practices.
- Both farming methods encourage farmers to use local breeds of seeds, and native varieties of vegetables, grains, pulses and

other crops.
- Organic and natural farming methods **promote nonchemical and homemade pest control methods**.

### Key differences between natural farming and organic farming

- **Fertilizers**: In organic farming, organic fertilizers and **manures like compost, vermin-compost, cow dung manure, etc. are used** and added to farmlands from external sources. In natural farming, **neither chemical nor organic fertilizers** are added to the soil. In fact, **no external fertilizers are added** to soil or give to plants whatsoever.
- **Organic matter:** In natural farming, **decomposition of organic matter by microbes and earthworms is encouraged** right on the soil surface itself, which gradually adds nutrition in the soil, over the period.
- **Agro practices:** Organic farming still requires basic agro practices like plowing, tilting, mixing of manures, weeding, etc. to be performed. In natural farming there **no plowing, no tilting of soil and no fertilizers, and no weeding** is done just the way it would be in natural ecosystems.
- **Cost:** Organic farming is still expensive due to the requirement of bulk manures, and it has an ecological impact on surrounding environments; whereas, **natural agriculture is an extremely low-cost farming method**, completely molding with local biodiversity.
- **Popular model:** There are many working models of natural farming all over the world, the zero budget natural farming (ZBNF) is the most popular model in India. This comprehensive, natural, and spiritual farming system is developed by Padma Shri SubhashPalekar.

### Principles of Natural Farming in a nutshell,

- **No, till farming –** plowing the soil alters the natural environment of the soil and promotes the development of weeds.
- **No weeding by tillage or herbicides –** weeds are not eliminated however, can be suppressed by spreading straw over freshly sown land and growing ground cover.
- **No chemical fertilizers –** this is because adding chemical fertilizers help in the development of the plant but not of the soil, which continues to deteriorate.
- **No dependence on chemical pesticides –** natures have balancing act prevents any one species from gaining the upper hand.

### Forms of Natural Farming

#### Fertility farming

- In 1951, Newman Turner advocated the practice of "fertility farming", a system featuring the **use of a cover crop, no tillage, no chemical fertilizers, no pesticides, no weeding and no composting**.
- Although Turner was a commercial farmer and did not practice random seeding of seed balls, his "fertility farming" principles share similarities with Fukuoka's system of natural farming. Turner also advocate a "natural method" of animal husbandry.

#### Rishi Kheti

- In India, natural farming of Masanobu Fukuoka was called "Rishi Kheti" by practitioners like Partap Aggarwal.
- The Rishi Kheti**use cow products like buttermilk, milk, curd and its waste urine for preparing growth promoters.**
- The Rishi Kheti is considered to be **non-violent farming without any usage of chemical fertilizer and pesticides**.
- They obtain high quality natural or organic produce having medicinal values. Today still a small number of farmers in Madhya Pradesh, Punjab, Maharashtra and Andhra Pradesh, Tamil Nadu use this farming method in India.

#### Zero Budget Farming

- Zero Budget Farming is a variation on natural farming developed in, and **primarily practiced in southern India.** It also called spiritual farming.
- The method involves **mulching, intercropping, and the use of several preparations which include cow dung**. These preparations, generated on-site, are central to the practice, and said to promote microbe and earthworm activity in the soil. Indian agriculturist **SubhashPalekar has researched** and written extensively on this method.

### Promotion of Natural Farming in India

- In India, Natural farming is **promoted as BharatiyaPrakritikKrishiPaddhatiProgramme (BPKP)** under centrally sponsored scheme- ParamparagatKrishiVikasYojana (PKVY).
- BPKP is aimed at **promoting traditional indigenous practices which reduces externally purchased inputs**. It is largely based on on-farm biomass recycling with major stress on biomass mulching, use of on-farm cow dung-urine formulations; periodic soil aeration and exclusion of all synthetic chemical inputs.
- According to HLPE Report, **natural farming will reduce dependency on purchased inputs** and will help to ease smallholder farmers from credits burden.
- The BPKP programme has been **adopted in State of Andhra Pradesh, Karnataka, Himachal Pradesh, Gujarat, Uttar Pradesh and Kerala.**
- Several studies have reported the effectiveness of natural farming- BPKP in terms **of increase in production, sustainability,**

**saving of water use, improvement in soil health and farmland ecosystem**. It is considered as a **cost- effective farming practices** with scope for raising employment and rural development.

## BUILT OPERATE TRANSFER MODEL

GS-III ECONOMY

### Context

- The National Highways Authority of India (NHAI) plans to offer at least two highway upgradation projects to private players using the build-operate-transfer (BOT) model during the current quarter.
- The BOT (toll) model was the preferred model for road projects, accounting for 96% of all projects awarded in 2011-12.

### Project categories

- There are acronyms of various different categories of projects.
- An understanding of these categories is important to differentiate between different types of projects, and the way accountability devolves between owner, developer and contractor.

### Project Grouping

**PPP**

- A public–private partnership (PPP, 3P, or P3) is a cooperative arrangement between two or more public and private sectors, typically **of a long-term nature.**
- In other words, it involves government(s) and business(es) that **work together to complete a project** .
- The public and private stakeholders sign up to **jointly develop, finance, execute and operate a (mostly) infrastructure project**, and thus an entity called concessionaire is created (sometimes also called an SPV - special purpose vehicle).
- The contract demarcates the responsibilities of the two partners, and in most cases, the public partner assumes the preparatory works like land acquisition, statutory approvals, political resolution of issues, etc., in addition to overall tracking of the work to be done by the private partner.
- The public partner **may or may not** be bringing in any hard equity other than land, etc.
- The private agency invests money, obtains financing, executes the project and runs the assets thus created for a pre-defined period of time in order to realize a return on its financial investments.

**Engineering, Procurement and Construction (EPC) Model:**

- Under this model, the **cost is completely borne by the government.**
- Government invites bids for engineering knowledge from the private players.
- Procurement of raw material and construction costs are met by the government.
- The private sector's participation is minimum and is limited to the provision of engineering expertise.
- A difficulty of the model is the high financial burden for the government.
- EPC Contractor (private entity) is made responsible for all the activities from design, procurement, construction, to commissioning and handover of the project to the Government.
- This is a PPP model for the development of infrastructure projects especially highways.

**EPCM**

- EPCM stands for **Engineering, Procurement and Construction Management.**
- Simply put, EPCM is a way of working on an engineering project which lets the project owner (say Government) stay in complete control of their project while engineering consultants (Private entities) manage the process from start to finish.
- This means the private entities take care of all the stages of engineering: including planning, complex engineering requirements, co-ordinating all contractors and vendors etc. on the client's behalf and providing a single point of contact.

**EPCI**

- EPCI stands for **Engineering, Procurement, Construction and Installation.**
- This terminology is used for **Off-Shore setups/Constructions.**
- In an EPCI contract, the contractor will design the structure/equipments, procure the required materials for its construction, will provide the necessary transportation of the structure and sets it up at an off-shore site.
- The points and terminologies are much similar to an EPC contract.

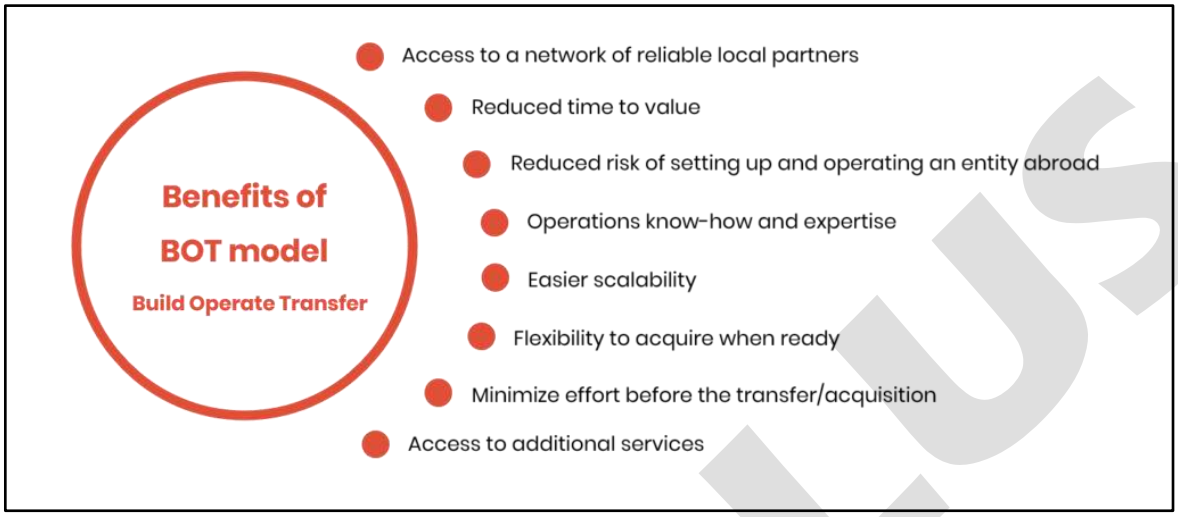
**LSTK (Lump sum Turnkey) or Turnkey Project**

- One of the special modes of carrying out international business is a turnkey project.
- The turnkey projects meaning, a contract under which a firm agrees to fully design, construct and equip a manufacturing/ business/ service facility and turn the project over to the purchaser **when it is ready for operation for remuneration.**
- The term turn-key project (Turn-key delivery) describes a project (or the delivery of such) in which the supplier or provider is **responsible to the client for the entire result of the project** and presents it to the client completely finished and ready to use.

## Project Classification

### Build Operate and Transfer (BOT) Model:

- The private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector.
- The **private sector partner is expected to bring the finance** for the project and take the responsibility to construct and maintain it.
- In return, the public sector will allow it to collect revenue from the users.
- The national highway projects contracted out by NHAI under PPP mode is an example.




| | Public-Private Partnership (PPP) | | | | |
|---|---|---|---|---|---|
| **Contract type** | **Design-Build-Finance-Operate (DBFO)** | **Build-Transfer-Operate (BTO)** | **Build-Operate-Transfer (BOT)** | **Build-Own-Operate-Transfer (BOOT)** | **Build-Own-Operate (BOO)** |
| **Construction** | Private Sector | Private Sector | Private Sector | Private Sector | Private Sector |
| **Operation** | Private Sector | Private Sector | Private Sector | Private Sector | Private Sector |
| **Ownership** | Public Sector | Private Sector during construction, then Public Sector | Private Sector during Contract, then Public Sector | Private Sector during Contract, then Public Sector | Private Sector |
| **Who pays?** | Users or Offtaker | Users or Offtaker | Users or Offtaker | Users or Offtaker | Users or Offtaker |
| **Who is paid?** | Private Sector | Private Sector | Private Sector | Private Sector | Private Sector |

# MAINSTREAMING MILLETS

GS-III ECONOMY

## Context:

- NITI Aayog and the World Food Programme (WFP), India, launched the 'Mapping and Exchange of Good Practices' initiative for mainstreaming millets in Asia and Africa in a hybrid event.
- NITI and WFP will prepare a compendium of good practices for scaling up the production and consumption of millets in India and abroad.

## About Millets

- Millets are cereal crops with **high nutritive value and categorized as small-seeded grasses.**
- The key varieties of millets include **Sorghum, Pearl Millet, Ragi, Small Millet, Foxtail Millet, Barnyard Millet, Kodo Millet and others.**
- Major producers include **Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.**
- High in dietary fibre, nutri-cereals are **a powerhouse of nutrients including iron, folate, calcium, zinc, magnesium,**

**phosphorous, copper, vitamins and antioxidants.**

### Importance of millets for Environment and Climate Change

- Millets are known for their climate-resilient features including **adaptation to a wide range of ecological conditions, less irrigational requirements, better growth and productivity in low nutrient input conditions, less reliance on synthetic fertilizers, and minimum vulnerability to environmental stresses**
- Millets can counter many of the adverse effects of climate change better than most other food crops. They **grow in almost any type of soil – sandy or with varying levels of acidity. They hardly need any fertilisers or irrigation.**
- The inter-cropping of millets with other crops is especially beneficial because the **fibrous roots of millet plants help in improving soil quality, keep water run-off in check and aid soil conservation in erosion-prone areas, thereby restoring natural ecosystems.**
- Being hardy crops, they can withstand extreme temperatures, floods and droughts. **Being a C4 group of cereals**, millets convert more carbon dioxide to oxygen, contributing in mitigating climate change **through their low carbon footprint of 3,218-kilogram equivalent of carbon dioxide per hectare**, as compared to wheat and rice, with 3,968kg and 3,401kg, respectively, on the same measure.
- Thus, millets can help to phase out climatic uncertainties, reducing atmospheric carbon dioxide, and can contribute in mitigating the climate change.

### Biofuel and Climate Resilience

- Recently, the deadline for achieving 20% ethanol blending with petrol has been set for 2025 - a measure aimed at the reduction of carbon emissions from the combustion of fossil fuels.
- Most bio-ethanol in India is produced using sugar molasses and maize. However, a study conducted among farmers in Madhya Pradesh showed that **bio-ethanol can be created using sorghum (jowar) and pearl millet (bajra), and that this fuel could bring down carbon emissions by about half.**
- Millets also offer a significant **cost advantage over maize** as a feedstock for bio-ethanol production. Estimates also suggest that **millets can deliver greater returns than maize, while using 40% less energy in processing.**

### Agrarian Importance of Millets for Farmers

- Dry lands constitute 40% of the global land surface and are home for about 1/3rd of the global population.
- These **low fertile soils are predicted to elevate up to 50–56% in 2100 AD,** and 78% of dry land expansion is expected to occur in developing countries.
- Increasingly **erratic rainfall patterns and crop losses due to climate change factors has affected farmers tremendously.**
- The spate of **farmer's suicides in an agriculture-based country like India** has reached to an average of 52 deaths/day, and reports of **farmers selling their blood to earn a livelihood in drought-hit region of the country depict the severity of the agrarian crisis.**
- There is a **lesser possibility of increasing the production of major staple cereals as the world is already facing the challenges of increase in dry lands and deepening of ground water level** .
- According to the report of the **National Rainfed Area Authority (NRAA)** even after realizing the full irrigation potential, about half of the net sown area will continue to remain rainfed .This alarms the need of shifting to the alternative of current cereal staples.
- The need of the hour is to adapt to climate change **by switching from water-intensive rice, sugarcane and maize cultivation to various types of drought-resistant millets**
- **Millets cultivation can be a solution to this problem as these can grow on shallow, low fertile soils with a pH of soil ranging from acidic 4.5 to basic soils with pH of 8.0.** Millets can be a good alternative to wheat especially on acidic soils.
- Unlike rice and wheat that require many inputs in terms of fertiliser and water, millets grow well in dry regions as rain-fed crops.
- Therefore, boosting millet cultivation **will empower the average farmer** and achieve the objectives of **enhancing incomes and improving crop diversification.**

### Challenges with Millet Cultivation in India

- **No market to sell millet crops:** In some village areas farmers are not getting the do not get the market to sell their crops. To sell crops in bulk they have to locate certain small shops since there is no profitable market or demand nearby. This also makes the distribution of crops difficult.
- **Low bulk prices of Millets in India and high MRP:** Farmers get a low pay for millets which urges them to lower millet production and grow other crops instead to earn a better income. However, since the MRP for millets is high, the public usually prefers buying other cheaper grains instead.
- **Government schemes and efforts are unable to reach the farmers:** All schemes and plan benefits are limited to the big cities,

due to which farmers are not at all aware of the programs.

- **Low crop productivity and high labor intensity:** Cultivating millets requires strong manual labor and is difficult for a single person to do. Added to this is the fact that certain millets turn out to be low in productivity.
- **Easy availability of other grains:** such as rice due to a good network of Public Distribution System gives tough competition for the demand of millets in India. This causes grains such as rice to be established as the staple food in a region.
- **Lack of know-how** on ways to use small millets in the daily diet/staple diet across the country is widespread.
- **Improper suitable processing units close to millet fields**: causes local producers to take their produce to distant places. For example, raw grains of Kodo millets produced in Tamil Nadu, need to be transported to Maharashtra for processing.

### Measures being taken to promote Millet: A multi-pronged strategy

- The APEDA is also working in collaboration with the Department of Agriculture and Farmers Welfare to **increase cultivation area, production and productivity of millets, including bajra, jowar and ragi.**
- In view of the nutritional value of the millets, the **government has notified millets as nutri-cereals in April, 2018.** The millets are a rich source of protein, fibre, minerals, iron, calcium and have a low glycemic index.
- In March, 2021, the **United Nations General Assembly (UNGA) has declared 2023 as International Year of Millets.**
- **Intensive Millets Promotion(INSIMP):** Launched in 2012 as a part of the Rashtriya Krishi Vikas Yojana (RKVY), to advance equipment and technology related to millet harvest and increasing productivity of inefficient areas.
- Developing and identifying new areas receiving adequate rainfall for millet farming as a part of the RashtriyaKrishiVikasYojana(RKVY).
- Till 2018-19, millet production was extended to over 14 states.
- Millets are being **promoted under the National Food Security Mission (NFSM)** to help provide good nutrition to those who are unable to afford it. To provide a steady market for the produce, **the government included millets in the public distribution system.**
- **Provision of seed kits and inputs to farmers, building value chains through Farmer Producer Organisations and supporting the marketability of nutri-cereals** are some of the key interventions that have been put in place.
- Recently APEDA launched a variety of "Millet in Minutes" products under the category of Ready-to-Eat (RTE) such as Upma, Pongal, Khichadi, Noodles, Biryani, etc.
- The Ministry of Women and Child Development has been working at the intersection of agriculture and nutrition by **setting up nutri-gardens, promoting research on the inter-linkages between crop diversity** and dietary diversity and **running a behaviour change campaign** to generate consumer demand for nutri-cereals.
- In 2018, the **#LetsMilletCampaign in Bengaluru** saw the avant-garde use of millets in dishes such as risotto and pizza by restaurateurs.
- Cultural associations and festivals, such as the **North-East Network in Nagaland organized in 2020** and **Mandukiya in Vishakhapatnam celebrated annually in June/July, has helped promote the growth of millets.**
- The government also initiated the **'Integrated Cereals Development Programmes in Coarse Cereals'** under Macro Management of Agriculture.
- The government of **Tamil Nadu is converting fallow and wastelands into millet farms.**

### Suggestions

- Grassroots workers like the **anganwadi and ASHA workers must be further involved as nutrition ambassadors and entrepreneurs in the millet revolution.**
- Collaborations with schemes like National Rural Livelihoods Mission and **focus on the creation of an attractive value chain** are needed. Techniques in packaging and processing must precede efforts to target metropolitan cities and urban centers to create more demand. Promotion of processed millet products such as ragi cookies, bajra biscuits, jowarnamkeen.
- An inclusive rural economy can be built around millets by promoting **entrepreneurial ventures through the India Millets Mission**. Similarly, initiatives around appropriate pricing must be undertaken.
- The need of the hour is **Dedicated programmes with proper training and capacity-building initiatives** that urge farmers to move away from loss-making crops toward diversification via millets.
- There is an imported penetration of seeds, whole grains and cereals not native to the Indian geography or cuisine. Quinoa is a prominent example that has seen increasing domination in urban diets. Hence, under the **'Vocal for Local' campaign**, indigenous crops must be lent more support and focus.
- Empower women farmers and self-help groups (SHG), by equipping them with advanced packaging techniques, agro-marketing, financial literacy and other entrepreneurial skills.
- One way to double farm incomes and encourage farm diversification is to make millet production attractive by introducing millet cultivation in areas where farmers' distress is visible.

## OPIUM PRODUCTION AND REGULATIONS IN INDIA

GS-III ECONOMY

### Context

- India has opened up the highly regulated sector of producing and processing opium to private players.

### Since when has opium been grown in India?

- India has been growing poppy at least **since the 15th century**, as per historical records. The British East India Company assumed monopoly on the cultivation of poppy when the Mughal Empire was on the decline, and the entire trade was brought under government control by 1873.
- After India gained independence, the cultivation and trade of opium passed on to the Indian government, with the activity being controlled **by The Opium Act, 1857, The Opium Act, 1878, and The Dangerous Drugs Act, 1930.** At present, the cultivation and processing of poppy and opium is controlled by the provisions of The Narcotic Drugs and Psychotropic Substances (NDPS) Act and Rules.

### What is the process of growing and processing opium in India?

- Due to the potential for illicit trade and risk of addiction, the **cultivation of opium poppy is strictly regulated in the country**, with the crops being **allowed to be sown only in tracts of land** notified by the central government in 22 districts in the states **of Madhya Pradesh, Uttar Pradesh, and Rajasthan.**
- The **government announces the licensing policy for opium cultivation every year**, providing details on minimum qualifying yield, the maximum area that can be cultivated by a single cultivator, and the maximum benefit that is allowed to cultivators for damage to the crop due to natural causes.
- The **cultivation of opium poppy is strictly monitored — the government uses satellite images to check for illicit cultivation**. Once the crop is ready, they have a formula on how much the yield should be. This entire quantity is then bought by the government and processed in its own factories.
- The opium produced in the country is **currently processed entirely at the Government Opium and Alkaloid Factories in Uttar Pradesh's Ghazipur and Madhya Pradesh's Neemuch.** Products such as morphine, codeine, thebaine, and oxycodone are produced.

### What is opium used for?

- Opium is a natural substance **obtained from poppy seeds and its derivatives are mainly used for pain management**.
- The extracts from opium poppy such as morphine are **potent painkillers and are mainly prescribed to cancer patients**. The opium product codeine is **helpful in cough suppression.**
- It is **used illicitly for smoking, drinking, or even eating as pills**. The addictive properties of opium are the reason that the cultivation of poppy is highly regulated around the world. **Only 12 countries including India allow its cultivation legally for medicinal use.**

- **How does the involvement of private players help?**
- The **involvement of the private sector might boost the domestic production of various alkaloids such as morphine and codeine, bring in modern technology, and reduce imports**. Despite being one of the few global cultivators of poppy, India still imports these active pharmaceutical ingredients as well as poppy seeds, which is also consumed as a food item in the country.

## INDIA'S TOP REMITTANCE RECIPIENT IN 2021

GS-III ECONOMY

### Context

- **India received 87 billion dollars in remittances in 2021, the top remittance recipient, and way ahead of countries like China and Mexico, according to a World Health Organisation report released.**

### Details

- The first WHO World report on the health of refugees and migrants said that today **about one in eight people in the world, some one billion, are migrants.**
- The report by the specialised agency of the United Nations responsible for international public health said that in 2021 the **top five remittance recipients in current US dollars were India, China, Mexico, the Philippines and Egypt.**
- With $87 billion, India was the top remittance recipient among low- and middle-income countries, as per 2021 estimates, way ahead of China and Mexico's 53 billion dollars, the Philippines (36 billion dollars) and Egypt (33 billion dollars).
- **The United States was the largest source country for remittances** in 2020, followed by the United Arab Emirates, Saudi

Arabia and Switzerland.

- **Remittances increase or maintain consumer spending and soften the blow of economic hardship**, such as during the COVID-19 pandemic.
- Remittances are expected to continue growing in 2022, but there are challenges, such as the COVID-19 crisis, which still poses one of the greatest risks to flows to low- and middle-income countries, especially as fiscal stimulus programmes in migrant destination countries cannot continue indefinitely," the report said.
- It said **remittances are an "important and positive" economic result of migration for migrants themselves and for family and friends remaining in their home countries.**
- Once migrants have accessed economic opportunities, they often send remittances to their families. Remittances account for a large fraction of the global movement of funds.
- Despite predictions that remittances would fall due to the COVID-19 pandemic (in part as a result of travel restrictions and the economic downturn), remittances proved to be resilient.
- The economic recovery in 2021 followed the resilience of remittance flows seen in 2020, which declined by a modest 1.7 per cent to $549 billion in the face of one of the deepest global recessions.
- It noted that in many low- and middle-income countries, migrants stepped up their support to families back home, especially to countries affected by the spread of the COVID-19 Delta variant.
- In most other areas, remittances have also recovered strongly, registering growth of 5-10 per cent in Europe and Central Asia, the Middle East and northern Africa, southern Asia and sub-Saharan Africa, but at a slower pace of 1.4 per cent in eastern Asia and the Pacific, excluding China (139).
- The key contributing factors are the willingness of migrants to support their families in times of need, together with the fiscal stimuli and employment support programmes implemented in the United States and European destination countries, which provided many migrants with the financial wherewithal to increase support to their families at home.
- In the Gulf Cooperation Council countries and the Russian Federation, the recovery of outward remittances was also facilitated by stronger oil prices and the resulting pickup in economic activity, it said.

## WTO AGREEMENT ON FISHERIES SUBSIDIES

*GS-III ECONOMY*

### Context

- The **Agreement on Fisheries Subsidies (Agreement) agreed at the recently concluded World Trade Organization (WTO) Ministerial meeting will prohibit subsidies from being provided for Illegal, Unreported and Unregulated (IUU) fishing and overfished stocks**.

### Details

- Under the Special and Differential Treatment (S&DT), Developing Countries and Least Developed Countries (LDCs) have been allowed a transition period of two years from the date of entry into force of this Agreement.
- The Agreement also prohibits providing subsidies for fishing on high seas, which are outside the jurisdiction of coastal countries and Regional Fisheries Management Organizations/ Arrangements (RFMO/As).
- As per the Agreement, no prohibition has been imposed on a WTO Member regarding granting or maintaining subsidy to its vessel or operator as long as it is not carrying out IUU.
- Similarly, no prohibition on providing subsidies has been imposed for fishing regarding overfished stocks as long as such subsidies are implemented to rebuild the stock to a biologically sustainable level.
- The Agreement will eliminate the subsidies granted to fishing vessels or fishing operators engaged in IUU fishing. Such disciplining will check large-scale IUU fishing which deprives coastal countries like India of fisheries resources, thereby significantly impacting the livelihoods of our fishing communities.
- This Agreement also provides flexibility to extend subsidies concerning overfished stocks if measures are taken to rebuild fish stocks to a biologically sustainable level, which supports our fishing communities.
- Developing Countries and Least Developed Countries have been allowed Special and Differential Treatment, with no obligation to implement disciplines for a period of two years from the date of entry into force of the Agreement.

### India's stand

- India's stand is that we are **one of the lowest fisheries subsidisers despite such a large population and one of the disciplined nations in sustainably harnessing the fisheries resources.**
- **India does not exploit the resources indiscriminately like other advanced fishing nations and India's fisheries sector primarily depends on several millions of small-scale and traditional fishers.**
- Therefore, those WTO Members who have provided huge subsidies in the past, and engaged in large-scale industrial fishing, which is responsible for the depletion of fish stocks, should take more obligations to prohibit subsidies based on the **'polluter pay principle' and 'common but differentiated responsibilities'.**

**Background**

- It is estimated that **34% of global stocks are overfished compared with 10% in 1974.** This means the reserves are being exploited at a pace where the fish population cannot replenish itself.
- Reasons: Fishing is a big corporate business. EU fishing vessels catch fish from far-off Africa, but the EU lectures poor countries that traditional fishing vessels used by small fishermen deplete the global stock.
- **Also, the rich countries led by the EU, the US, and Japan provide the most subsidy — 65 percent of the total annual $35-billion fisheries subsidy**. But as these subsidies are largely non-specific or Green Box, they are clear.
- **Poor countries mostly give direct support, which the WTO considers bad. Like agriculture, this is also a market access versus livelihood issue.**
- The negotiations on fisheries subsidies are aimed at broad and practical disciplines on marine wild capture fishing and fishing-related activities by prohibiting subsidies to three pillars: **(I) Illegal, Unreported & Unregulated (IUU) fishing.; (II) Overfished stocks; and (III) Overfishing and Overcapacity.**
- The key demandeurs of fisheries subsidies disciplines are the EU, Japan, Australia, New Zealand, Canada, the US, Iceland, Norway, etc. Countries like India, Indonesia, and the ACP group want flexibility under special and differential treatment (S&DT).

# SPACE SUSTAINABILITY



## Context

- U.K. hosted the fourth summit for Space Sustainability in London in collaboration with the Secure World Foundation.

## What is Space Sustainability?

- Space sustainability is **ensuring that all humanity can continue to use outer space for peaceful purposes and socioeconomic benefit now and in the long term.** This requires international cooperation, discussion, & agreements to ensure that outer space is safe & secure.

## Need for Space sustainability

### Space Debris

- Currently, an estimated 20,000 objects—including satellites and space debris—are crowding low-Earth orbit. It can be a hazard to active satellites, spacecraft and even the space station. It could hinder our ability to use weather satellites.

### Kessler syndrome

- It says if there is too much space junk in orbit, it could result in a chain reaction where more and more objects will collide and create new space junk in the process, to the point where Earth's orbit became unusable – a Domino Effect.

### Broader Implications

- Unsustainable use of space can threaten the: National and international security; Earth observation; Telecommunications; Satellite navigation; Scientific exploration; Economic development.

## Inititiatives being taken

### Outer Space Treaty

- The OST, is a multilateral treaty that forms the basis of international space law.Key provisions of the OST include prohibiting nuclear weapons in space; limiting the use of the Moon and other celestial bodies to peaceful purposes; establishing that space shall be freely explored and used by all nations; and precluding any country from claiming sovereignty over outer space or any celestial body.

### Liability Convention (1972)

- Outlines the liability of launching states for damage caused by their space objects on the Earth or in space.

### Moon Agreement (1984)

- Reaffirms Outer Space Treaty provisions applied to the exploration of the Moon and exploitation of resources found on the Moon.

### COPUOS

- As the outer space is considered a shared natural resource, the **United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) in 2019 adopted a set of 21 voluntary, non-binding guidelines** to ensure the long-term sustainability of outer space activities.

The IADC has published a set of voluntary guidelines designed to reduce the creation of orbital debris. In 2008 most of these guidelines were included in a resolution proposed by COPUOS and passed by the UNGA. Guidelines include:

1. Limit production of debris during routine operations.
2. Minimize the potential for accidental on-orbit breakups.
3. Dispose of spacecraft post-mission.
4. Prevent on-orbit collisions.
5. Prohibit intentional destruction of satellites.

### Inter-Agency Space Debris Coordination Committee

- IADC is an inter-governmental forum whose aim is to co-ordinate efforts to deal with debris in orbit around the Earth founded in 1993.

### LTS Working Group

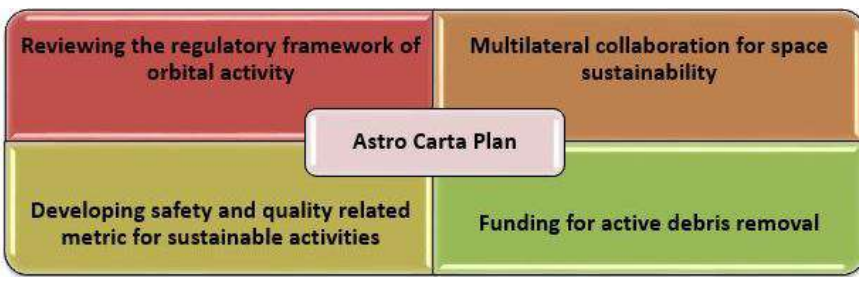
- The Working Group was tasked with producing a set of voluntary guidelines for all space actors to help ensure the long-term sustainable use of outer space.

### Artemis Accords

- These **provide a set of principles to create a safe, sustainable & transparent environment that inspires exploration, science, and commercial activities.**

### UK's "Astro Carta" for space sustainability

- It is based on Artemis Accords model for sustainable space exploration.



**ClearSpace-1 Mission (2025)**

- In this a "chaser" with its four robotic arms will grab the leftover of 2013 craft known as VESPA (Vega Secondary Payload Adapter) and drag it down to Earth's atmosphere where both will burn up.

**China's low Earth orbit robot prototype NEO-01'**

- It can scoop up space debris left behind by other spacecraft with a big net and then burn it with its electric propulsion system.

**Starship**

- Space X Starship – the passenger carrying spacecraft once ready can collect and de-orbit space junk apart as well.

**Conference on Disarmament (CD)**

- It is an international forum for negotiating arms control and disarmament matters. Focus area: Prevention of an arms race in outer space.

**"Draft International Code of Conduct on Outer Space Activities"**

- For establishment of a Working Group on the Long-Term Sustainability of Outer Space Activities by the UN COPUOS.

**Secure World Foundation**

- It is a private operating foundation working with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its peoples.

### ISRO's Efforts

**'Project NETRA'**

- This **domestic surveillance system** would provide information on status of debris, which would aid in planning on protecting space assets.

**'SPADEX'**

- ISRO is developing a docking experiment called 'SPADEX'. It looks at docking a satellite on an existing satellite, offering support in re-fuelling and other in-orbit services while enhancing the capability of a satellite. This would ensure the longevity of a mission.

**Other**

- India and U.S. signed a new pact for monitoring space objects at the 2+2 dialogue. ISRO's GSLV employs passivation of the Cryogenic Upper Stage at the end of its useful mission.

### Way Ahead

- While most National Space Programs set sustainability standards, a collective effort by all space players, with the active role of the UN COPUOS or the United Nations Office for Outer Space Affairs (UNOOSA), is needed to set equitable standards for the ease of activities.

## BLOCKCHAIN AND CRYPTO ASSETS COUNCIL (BACC) / GS-III SCIENCE & TECHNOLOGY

### Context

- The Internet and Mobile Association of India (IAMAI) has decided to shut down the Blockchain and Crypto Assets Council (BACC).

**Internet and Mobile Association of India (IAMAI)**

- Internet and Mobile Association of India (IAMAI) is a not-for-profit industry body representing the interests of online and mobile value-added services industry. It is registered under The Societies Registration Act, 1860.Its mandate is to expand and enhance the online and mobile value-added services sectors.

### What is BACC?

- The Blockchain and Crypto Assets Council (BACC), which represents Indian crypto industry players such as CoinSwitchKuber, WazirX, CoinDCX, Zebpay, BitBNS, Vauld, Chingari, Mudrex, etc, was **formed to advocate the crypto industry's arguments to regulatory bodies such as the Reserve Bank of India (RBI).** The central bank has been deeply sceptical of private cryptocurrencies.

### And why has it been dissolved?

- IAMAI said it took the decision in light of the fact that a resolution of the **regulatory environment for the industry is still very uncertain**.
- Over the past few years, as a clampdown on cryptocurrencies has progressed, including action by law enforcement agencies against some platforms, the frequent issuing of new rules and regulatory tweaks even as there is a lack of clarity on policy in the longer run.

- IAMAI wants to utilize its limited resources for other emerging digital sectors, which make a more immediate and direct contribution to digital India, notably, deepening financial inclusion and promoting Central Bank issued Digital Currency (CBDC).

**Read**: **https://www.iasgyan.in/daily-current-affairs/cryptocurrency-8**

## ISRO MISSIONS

GS-III SCIENCE & TECHNOLOGY

### Context

- ISRO has set new deadlines for major missions.

### Missions

#### XPoSat

- The X-ray Polarimeter Satellite (XPoSat) is a ISRO planned space observatory to study polarization of cosmic X-rays. It is planned to be launched in Q2 2023 on a Small Satellite Launch Vehicle (SSLV), with mission life of at least five years.
- XPoSat will study the 50 brightest known sources in the universe, including pulsars, black hole X-ray binaries, active galactic nuclei, and non-thermal supernova remnants. The observatory will be placed in a circular low Earth orbit of 500–700 km.

### Gaganyaan

#### About

- Gaganyaan is an Indian crewed orbital spacecraft that is intended to send 3 astronauts to space for a minimum of seven days by 2023, as part of the Indian Human Spaceflight Programme.
- It will be for the first time that India will launch its manned mission to space, making the country fourth in line to have sent a human to space.

#### Launch Vehicle

- GSLV Mk-lll (Geosynchronous Satellite Launch Vehicle) the three-stage heavy-lift launch vehicle will be used for carrying the orbital module.
- Placement
- The spacecraft will be placed in a low earth orbit of 300-400 km.
- The human spaceflight will take 16 minutes to reach the orbit where it will stay for five to seven days.
- The capsule will rotate around the Earth every 90 minutes, and astronauts will be able to witness sunrise and sunset. The three astronauts will be able to see India from space every 24 hours, while they conduct experiments on micro-gravity.

#### Suit

- With the ability to hold one oxygen cylinder, the suit will allow the astronaut to breathe in space for 60 minutes.

#### Return

- For its return, the capsule will take 36 hours, and will land in the Arabian Sea, just off the coast of Gujarat.

#### Vyommitra

- ISRO has also developed a female half humanoid robot named Vyommitra, a combination of two Sanskrit words Vyoma (space) and Mitra (friend), which will be sent on the first unmanned Gaganyaan flight.
- Vyommitra will help in simulating human functions in space and will also interact with the environment control life support system.
- Vyommitra has been designed to speak in Hindi and English, can act as a companion to the astronauts, converse with them, and also respond to their queries.

### ADITYA L1 Mission

- The Aditya-1 mission was conceived as a 400 kg class satellite carrying one payload, the Visible Emission Line Coronagraph (VELC) and was planned to launch in a 800 km low earth orbit.
- A Satellite placed in the halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system has the major advantage of continuously viewing the Sun without any occultation/ eclipses.
- Therefore, the Aditya-1 mission has now been revised to "Aditya-L1 mission" and will be inserted in a halo orbit around the L1, which is 1.5 million km from the Earth.
- The satellite carries additional six payloads with enhanced science scope and objectives.
- Aditya-1 was meant to observe only the solar corona.
- The outer layers of the Sun, extending to thousands of km above the disc (photosphere) is termed as the corona.
- It has a temperature of more than a million-degree Kelvin which is much higher than the solar disc temperature of around 6000K.
- How the corona gets heated to such high temperatures is still an unanswered question in solar physics.
- Aditya-L1 with additional experiments can now provide observations of Sun's Corona (soft and hard X-ray, Emission lines in

the visible and NIR), Chromosphere (UV) and photosphere (broadband filters).

- In addition, particle payloads will study the particle flux emanating from the Sun and reaching the L1 orbit, and the magnetometer payload will measure the variation in magnetic field strength at the halo orbit around L1.
- These payloads have to be placed outside the interference from the Earth's magnetic field and could not have been useful in the low earth orbit.

### Chandrayaan-3

- Chandrayaan-3 is a lander-and rover-specific mission, which will demonstrate India's capability of soft landing on a celestial body, with the rover.
- It will then communicate with Earth via the existing orbiter from Chandrayaan-2 and take images 100 km from Moon's orbit. The orbiter has an estimated lifespan of seven years.
- The unique exploration of Chandrayaan-3 aims at studying not just one area of the Moon but all the areas combining the exosphere, the surface as well as the sub-surface in a single mission.
- With Chandrayaan-1, ISRO achieved immense success as the 'Moon Impact Probe' by Chandrayaan-1 lunar remote sensing orbiter detected water in vapor form in trace amounts.
- With Chandrayaan-3, India aims to further the study of the lunar surface, focusing on the South Pole or dark side of the Moon that has not seen sunlight in billions of years, which is believed to have ice and vast mineral reserves.

### Why exploring the Moon is imperative?

- The Moon is the closest cosmic body at which space discovery can be attempted and documented.
- Further, Moon is a promising testbed to showcase technologies required for deep-space missions.
- Exploring the Moon will enhance our understanding of the celestial body clearly, stimulating the advancement of technology, promoting global alliances and inspiring future generations of explorers and scientists.

### Why Lunar South Pole of the Moon is targeted for exploration?

- The Moon provides the best linkage to Earth's early history and civilization.
- The exploration will offer an undisturbed historical record of the inner Solar system environment.
- The Lunar South pole is especially interesting because the lunar surface area that remains in shadow is much larger than that at the North Pole.
- Further, there could be a possibility of the presence of water in permanently shadowed areas around it.
- In addition, the South Pole region has craters that are cold traps and contain a fossil record of the early Solar System.

## FIBERISATION

*GS-III SCIENCE & TECHNOLOGY*

### Context

- India is preparing to auction off about 72 Ghz of airwaves to rollout 5G services in the country. However, the infrastructure needed for such a rollout requires fiberisation that could be a challenge.

### What is Fiberisation?

- The **process of connecting radio towers with each other via optical fibre cables is called fiberisation**. It helps provide full utilisation of network capacity, and carry large amounts of data once 5G services are rolled out.
- It will also aid in providing **additional bandwidth and stronger backhaul support**. The backhaul is a component of the larger transport that is responsible for carrying data across the network. It represents the part of the network that connects the core of the network to the edge. As a result, fibre backhaul remains an important part of transport across all telecoms.

### Need for Fiberisation

- Fibre-based media, commonly called optical media, provides **almost infinite bandwidth and coverage, low latency and high insulation from interference.** With 5G, it will also be necessary to increase the density of mobile towers to provide better coverage to consumers and businesses. This calls for increased requirements for fibre deployment.

### Status of Fiberisation in India

- In India, **currently only 33% of the towers are fiberised,** compared to the 65%-70% in South Korea and 80%-90% in the U.S., Japan and China, according to a 2021 report by India Infrastructure Research.
- The **fibre kilometer (fkm) per capita in India is lower than other key markets.** Ideally, a country needs 1.3 km of fibre per capita to ensure good fiberisation. India's fkm is just .09 compared to 1.35 in Japan, 1.34 in the U.S. and 1.3 in China, the report noted.
- To transition into 5G, **India needs at least 16 times more fibre.**
- There is also a **need to increase data capacity in the fiberised towers**. These tower sites which are connected via fibre are called fibre point of presence (POP).

### Challenges

**Investment**

- To reach the targeted level of fiberisation, India requires about ₹2.2 lakh crore of investment to help fiberise 70% towers.
- Programmes like BharatNet and Smart Cities will further add to the demand of fibre deployment, necessitating a complete tower fiberisation.

**Speed of implementation**

- PM Modi, in his 2020 Independence Day speech, laid out the vision to connect every village in the country with optical fiber cable (OFC) in 1,000 days. To achieve that vision, cables must be laid at a speed of 1,251 km a day, around 3.6 times the current average speed of 350 km a day.

**Right of Way (RoW) rules**

- The Indian Telegraph Right of Way (RoW) Rules 2016 wer notified by the Department of Telecommunications (DoT), Govt. in 2016. The rules aim to incorporate **nominal one-time compensation and uniform procedure for establishment of Overground Telegraph Line (OTL) anywhere in the country**.
- While all States/UTs are required to implement these rules, several districts and local bodies have not agreed to the RoW policies as notified in those respective States. These places are following their own bylaws overriding the State RoW policies aligned with the RoW rules, 2016.

**Non-Cooperation by ministries**

- Central Ministries like Ministry of Road Transport and Highways, National Highway Authority of India, Ministry of Environment and Forests, Ministry of Railways, Ministry of Defense, Ministry of Civil Aviation, Department of Post, etc. have not yet adopted RoW Rules, citing their own departmental rules.

### Steps being taken and Way Ahead

**GatiShakti Sanchar online portal**

- GatiShakti Sanchar online portal can simplify RoW approvals and help deploy cables for 5G. This initiative will enable centralisation of RoW approvals for telecom infrastructure projects, including 5G and help operators to deploy required infrastructure for the upcoming 5G rollout in a timely manner.

**Revision of RoW Rules**

- In October 2021, the DoT revised the RoW rules, making it easier to install aerial optical fibre cable in the country. This can enable infrastructure providers to deploy cables overhead via street light poles and traffic light posts.

**Street furniture and aerial fiber deployment**

- The Telecom Regulatory Authority of India has published a consultation paper on using street furniture for small cell and aerial fiber deployment. This along with the findings from the pilot projects will help to inform the regulatory and policy framework.

**Satellite communication**

- Satellite communication can provide high-capacity backhaul connectivity to large numbers of edge servers over wide areas, thereby complementing the terrestrial network with cost-effective scalability.
- Satellite communication can facilitate 5G broadband connectivity to underserved areas where it is not feasible to deploy terrestrial infrastructure like remote villages, islands or mountainous regions. Satellite-based networks are the only means for delivering 5G broadband to users on board moving vessels, including cars, ships, airplanes and high-speed trains.

**Space-based broadcast capabilities**

- Space-based broadcast capabilities support over-the-air software updates for connected cars anywhere in the world.
- Space-based backhaul will also provide disaster relief services, support emergency response teams as well as deliver broadband connectivity for one-off entertainment or sports events anywhere in the world, Intelsat said.
- The low-Earth Orbit (LEO) satellites will be well-suited to offer not only backhaul, but also direct connectivity. As the 5G standard is adopted, new markets will open up for satellite operators, including IoT, private 5G, and cellular backhaul for densification to enable more cell sites and edge devices.

## PRIVATE SECTOR IN SPACE

*GS-III SCIENCE & TECHNOLOGY*

### Context

- Principal Scientific Adviser stated that the Govt. would soon come up with a new space policy that could initiate the rise of India's own "SpaceX-like ventures".

### Status of Indian Space Industry

- India is the **sixth-largest player in the space industry** internationally having 3.6% of the world's space-tech companies (as of 2021).
- The Indian Space Industry was **valued at $7 billion in 2019** and aspires to grow to $50 billion by 2024.

- The country's standout feature is its cost-effectiveness. India holds the distinction of being the first country to have reached the Mars' orbit in its first attempt and at $75 million — way cheaper than Western standards.
- Despite its achievements and priority status, India's space sector suffers from several regulatory constraints.

## Private Sector participation in Space Industry: Key reforms

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

- In 2020, Indian National Space Promotion and Authorisation Centre (IN-SPACe) was established. It is mandated with the task of **promoting, authorising and licensing private players to carry out space activities**. As an oversight and regulatory body, it is **responsible for devising mechanisms to offer sharing of technology, expertise, and facilities free of cost (if feasible) to promote non-government private entities (NGPEs).**
- IN-SPACe's Monitoring and Promotion Directorate oversees NGPE's activities as per prescribed regulations and reports back in case any corrective actions or resolutions are required. ISRO shares its expertise in matters pertaining to quality and reliability protocols, documentations and testing procedure.

### NewSpace India Ltd (NSIL)

- NewSpace India Ltd (NSIL) established in 2019, is mandated to transfer the matured technologies developed by the ISRO to Indian industries. All of them are under the purview of the Ministry of Defence.

### Increasing participation of private enterprises in the Indian space sector

- As of 2021, India has 368 private space firms, making it fifth in the world after the US, the UK, Canada and Germany.
- With 368 private space firms, India is leading China (288), France (269), and Spain (206).
- The number of private company proposals in the space sector has increased by 30% in 2021 from 22 proposals in 2020- ISRO.

### Establishment of the Indian Space Association (ISpA)

- In 2021, GOI, launched the ISpA. This association **will help private players carry out independent space activities**, facilitate services and technology developed by ISRO to be utilised in the private sector, provide regulatory and policy inputs and support start-ups, MSMEs and academia.
- ISpA**will support the government's vision of 'Atmanirbhar India' (self-reliant India) and 'Make in India'** to become a leader in the global space industry.
- It would act as a **single-window agency and open the Indian space sector to private enterprises and start-ups.**

### Transferring technologies developed by ISRO to industries for commercialisation

- A memorandum of understanding (MoU) was signed between the Department of Space (DoS) and NewSpace India Limited (NSIL) in 2020. This MoU will help the NSIL identify technologies developed by ISRO (that have the potential for commercialisation) and transfer it to external entities in the public & private sectors, academia and state & central government organisations. Under this agreement, NSIL has transferred over 363 technologies for commercialisation. **eg:** When India was fighting COVID-19, ISRO developed three types of ventilators and transferred the technology for clinical usage.
- Platforms such as Polar Satellite Launch Vehicle and Small Satellite Launch Vehicle have been identified for transfer of technology to the private sector.

### Sharing ISRO's facilities with private players

- ISRO has opened its facilities to the private sector.
- It has allowed two satellites from the private sector and one from academia to be tested in the US Rao Satellite Centre, Bangalore, in 2021.
- Further testing of the two satellites will take place at ISRO's spaceport and rocket centre facilities in Sriharikota and Thiruvananthapuram.

## Final Thought

- Private sector's involvement in the long term, as with other commercial sectors, will help spur investment and expertise in the realm which is capital-intensive and demands high technology.
- India needs to increase its share in the global space industry and the private sector will play a big role in that.

## DEFENCE EXPORTS

GS-III SECURITY & DEFENSE

### Context

- **India's defence imports have decreased by about 21% in the past four or five years and this has happened in a short time, Prime Minister Narendra Modi said while stating that the country is moving fast from being the "biggest defence importer to a big exporter".**

### More on the news

- **Defence exports have increased seven times in the last eight years.**
- Very recently, India had achieved **defence exports worth ₹13,000 crore and of this, 70% was from the private sector**," Mr. Modi said at the **Naval Innovation and Indigenisation Organisation (NIIO) seminar 'Swavlamban'.**
- In the past eight years, the government had not only increased the defence budget, but also ensured that it was utilised for the development of defence manufacturing within the country.
- PM **unveiled 'SPRINT Challenges' aimed at the development of 75 indigenous technologies/products by the industry for induction into the Navy.**
- He also witnessed the demonstration of an **electric human-carrying drone, which was described as the country's first such drone.**
- **39 ships and submarines were now under construction in India and Navy was currently hand-holding 40 start-ups that were developing a range of niche technologies.**
- The U.S. was a major buyer, as also nations in Southeast Asia, West Asia and Africa.

### Background

- While India's defence imports from the U.S. have gone up significantly in recent years, **Indian companies have been increasingly becoming part of the supply chains of U.S. defence companies.**
- In January 2022, India signed a **USD 374.96-million deal with the Philippines**, its single biggest defence export order, for the supply of three batteries of shore-based anti-ship variant of the BrahMos supersonic cruise missile.
- India has **imposed a phased import ban on 310 different weapons and systems during the last two years**, which helped boost export.
- Over **30 Indian defence companies have exported arms and equipment to countries like Italy, Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, UAE, Bhutan, Ethiopia, Saudi Arabia, Philippines, Poland, Spain and Chile**
- The exports include personal protective items, defence electronics systems, engineering mechanical equipment, offshore patrol vessels, advanced light helicopters, avionics suits, radio systems and radar systems.
- The **Stockholm International Peace Research Institute (SIPRI) ranked India at number 23 in the list of major arms exporters for 2015-2019.**
- **India has set a target of clocking defence exports worth USD 5 billion by 2024.**
- **Defence Production and Export Promotion Policy 2020** is envisaged as an overarching guiding document to provide a focused, structured and significant thrust to defence production capabilities of the country for self-reliance and exports.
- The **DPP 2016 came out with a new category called Indian IDDM (Indigenously Designed, Developed and Manufactured).**
- A **strategic partnership model** allows Indian companies to collaborate with foreign OEMs and get transfer of technology, get the capability to build, manufacture India and sustain those projects in India.
- There are two positive **indigenization lists of 101 items and 108 items** that range from platforms to weapon systems to sensors to the entire plethora of items.

## JOINT THEATRE COMMANDS OF TRI-SERVICES

GS-III SECURITY & DEFENSE

### Context

- Defence Minister Rajnath Singh announced the setting up of "joint theatre commands" so as to have an enhanced coordination among all three services of the country's armed forces.

### What are integrated theatre commands?

- It is a **unified command** under which all the resources of the Army, the Navy and the Air Force are pooled, depending on the threat perception.
- The commands could be **geographical** — like looking at a border with a particular country — or **thematic,** like a command for all maritime threats.
- Several nations in the world have theatre commands, including the United States and China.

### Are theatre commands a new idea?

- The idea of creating an integrated tri-Services command in India is not new — it had been recommended at various levels after the Kargil conflict.
- When Gen Rawat was appointed Chief of Defence Staff in January 2020 with a mandate to raise such commands within his three-year tenure, the idea was finally brought to the design table.

### What is the proposal under discussion?

- A model with four to five integrated tri-Services theatre commands is under discussion, with each command headed by a three-star officer.
- This officer, the theatre commander, will report to the Chiefs of Staff Committee (COSC), which, as the name suggests, includes the three Service chiefs, and is headed by the CDS as its permanent chairman.
- This brings in a major change — the Service chiefs currently have all the operational control over their forces; operational powers will now move to the COSC.
- Each of these commands will have the needed assets from all the three forces. Operational control over all of those assets, regardless of the force, will lie with the commander of that theatre.

### The proposed commands are

- **A Maritime Theatre Command**, which will take care of all the maritime security needs of the country on both the eastern and the western seaboards, and will include air strike assets and amphibian forces of the Army.
- **An Air Defence Command**, which will be mandated with air defence across the country and beyond. The fighter jets will have reconnaissance and surveillance assets as well.
- **Two or three land-based commands** are proposed. If there are two commands, there will be one each for India's borders with China and Pakistan.
- But there is also a proposal to have another command looking at India's borders with Pakistan and China in Jammu and Kashmir, and Ladakh, given the unique territory and security needs of the country in that region.
- Apart from these theatre commands, there will be two functional tri-Services commands as well.
- There will be a **Logistics Command**, which will have the logistics of all the Services under one person; and there will be a **Training and Doctrine Command**, so that all Services work under a common doctrine and have some basic common training.

### What will be the role of the Services, if not operational?

- As of now, the Services have to speak to each other in times of need and urgency to request their assets to conduct a particular operation.
- The proposal is to have a theatre commander who will have operational control of the assets under his command, thus enhancing jointness among the forces, and also reducing duplication of resources.
- However, this would leave the Service chiefs with no direct control over their assets operationally.
- This does not mean their roles will be made redundant. Now the Services will have the core tasks to Raise, Train and Sustain their respective forces.
- Also, as each chief will be a member of the COSC, and an expert of his/her domain, his or her inputs will be necessary for all operational decisions.

### How many commands are there now; are any of them tri-Service commands?

- As of now, the three forces have 17 commands between them.
- The Army has **seven commands**: Northern, Eastern, Southern, Western, Central, Southwestern and Army Training Command (ARTRAC).
- The Air Force has seven as well: Western, Eastern, Southern, Southwestern, Central, Training, and Maintenance commands.
- The Navy has three: Western, Eastern and Southern, of which Southern is largely about training.
- Even if these commands operate in the same region, they are not co-located, and their areas of operational responsibility are not necessarily the same.
- There are **two existing tri-Service commands** as well — the **Andaman and Nicobar Command (ANC),** which is headed by rotation by officers from the three Services, and the **Strategic Force Command**, which is responsible for India's nuclear assets.

APTI PLUS

## NITI AAYOG'S REPORT ON GREEN HYDROGEN



### Context

- A new report released by NITI Aayog highlights that **green hydrogen can substantially spur industrial decarbonisation and economic growth for India in the coming decades**. **Harnessing Green Hydrogen: Opportunities for Deep Decarbonisation in India** provides a pathway to accelerate the emergence of a green hydrogen economy, which is critical for India to achieve its net-zero ambitions by 2070.

### Details

- The report, **co-authored by NITI Aayog and RMI, underscores that green hydrogen—produced by renewable energy through electrolysis of water—will be crucial for achieving decarbonisation of harder-to-abate sectors such as, fertilisers, refining, methanol, maritime shipping, iron & steel and transport**.
- It further states that with emerging global momentum on hydrogen, India can situate this decarbonisation opportunity not just within the context of a low-carbon economy but also as an enabler of energy security and economic development for the nation.
- Given the right policies, **India can emerge as the least cost producer and bring down the price of green hydrogen to US$ 1 per kg by 2030.**
- While hydrogen can be produced from multiple sources, India's distinct advantage in low-cost renewable electricity means that green hydrogen will emerge as the most cost-effective form.
- **The report concludes that hydrogen demand in India could grow more than fourfold by 2050, representing almost 10% of global demand**.
- **Given that the majority of this demand could be met with green hydrogen in the long term, the cumulative value of the green hydrogen market in India could reach US $8 billion by 2030.**
- The report describes pathways that can capture the benefits of green hydrogen:
- Near-term policy measures can bring down the current costs of green hydrogen to make it competitive with the existing grey hydrogen (hydrogen produced by natural gas) prices. Medium-term price targets should be set to guide the industry towards making green hydrogen the most competitive form of hydrogen.
- Government can encourage near-term market development by identifying industrial clusters and enacting associated viability gap funding, mandates and targets.
- Opportunities around research and development and manufacturing of components like electrolysers need to be identified and appropriately encouraged with adequate financial mechanisms such as production-linked incentive (PLI) scheme to enable 25 GW of manufacturing capacity of electrolysers by 2028.
- A globally competitive green hydrogen industry can lead to exports in green hydrogen and hydrogen-embedded low-carbon products like green ammonia and green steel that can unlock 95 GW of electrolysis capacity in the nation by 2030.

### What is green hydrogen?

- A **colourless, odourless, tasteless, non-toxic and highly combustible gaseous substance**, hydrogen is the lightest, simplest and most abundant member of the family of chemical elements in the universe.
- But a colour — green — prefixed to it makes hydrogen the **"fuel of the future".** The 'green' depends on how the electricity is generated to obtain the hydrogen, which does not emit greenhouse gas when burned.
- Green hydrogen is **produced through electrolysis using renewable sources of energy such as solar, wind or hydel power**.
- Hydrogen gas **can be used as a fuel in transportation, power generation and industrial activities**. It does not release green house gas emissions such as carbondioxide when it is burned.
- Green hydrogen, which has the potential to replace fossil fuels, is the name given to hydrogen gas produced using renewable energy such as wind or solar power that do not entail greenhouse gas emissions.

### Making of Green Hydrogen

- With electrolysis, all that is required 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.

### Green Hydrogen: The importance

- 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.

### Green hydrogen current status

- At present, **less than 1 per cent of hydrogen produced is green hydroge**n, according to **IRENA's World Energy Transitions Outlook.**
- India consumes about six million tonnes of hydrogen every year. This could increase to 28 million tonnes by 2050.
- India has favorable geographic location and abundance of sunlight and wind for the production of green hydrogen.
- India will become a net exporter of green hydrogen by 2030 due to its cheap renewable energy tariffs, according to the **Global Hydrogen Council.**

### Challenges in producing Green Hydrogen

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

### Why is India pursuing green hydrogen?

- Under the Paris Agreement (a legally binding international treaty on climate change with the goal of limiting global warming to below 2°C compared to pre-industrial levels) of 2015**, India is committed to reducing its greenhouse gas emissions by 33-35% from the 2005 levels.**
- At the 2021 Conference of Parties in Glasgow, **India reiterated its commitment to move from a fossil and import-dependent economy to a net-zero economy by 2070.**
- India's average annual energy import bill is more than $100 billion and the increased consumption of fossil fuel has made the country a high carbon dioxide ($CO_2$) emitter, accounting for nearly 7% of the global $CO_2$ burden.
- In order to become energy independent by 2047, the **government stressed the need to introduce green hydrogen as an alternative fuel that can make India the global hub and a major exporter of hydrogen.**
- The **National Hydrogen Mission** was launched on August 15, 2021, with a view to cutting down carbon emissions and increasing the use of renewable sources of energy.

### 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 announce edit would set up the country's first green hydrogen.**
- Reliance Energy said that it would invest Rs 600 billion in building factories to produce green hydrogen among other carbon friendly technologies.

### Why India should opt for Green Hydrogen?

- Adoption of Green hydrogen technology is **favorable in those sectors where direct electrification isn't feasible** for ex in

Heavy-duty, long-range transport and long-term storage in the power sector.

- With technological improvements, green hydrogen will become **more affordable and accessible**.
- It can be used in a wide range of existing applications such as **fertilisers, mobility, power, chemicals and shipping**.
- It **can be blended up to 10 per cent by city gas distribution networks** for wider acceptance.
- It is a cross-cutting solution that **may reduce emissions across a range of sectors.**

### What can India do to build a global-scale green hydrogen industry?

- India should **announce ambitious national targets for green hydrogen** and electrolyser capacity by 2030.
- Launch an **incentive programme for the production of electrolysers.**
- Implementing **complementary solutions** that create virtuous cycles for ex. building the hydrogen infrastructure for refueling, heating and generating electricity at airports.
- **Optimising distribution networks** to decarbonise the gas grid.

## LISBON DECLARATION / GS-III ENVIRONMENT & ECOLOGY

### Context

- **All 198 members of the United Nations unanimously adopted July 1, 2022 the Lisbon Declaration on ocean conservation.**

### More on the news

- The nations, on the last day of the UN Ocean Conference 2022, **committed to follow science-based and innovative actions on an urgent basis**
- They also recognised that developing countries, particularly small island developing states and least developed countries, **need assistance with capacity building.**
- **Participants at the conference also agreed to work on preventing, reducing and controlling marine pollution**. It includes:
  - Nutrient pollution
  - Untreated wastewater
  - Solid waste discharges
  - Hazardous substances
  - Emissions from the maritime sector, including shipping, shipwrecks
  - Anthropogenic underwater noise
- Other pledges include developing and promoting innovative financing solutions to help create sustainable ocean-based economies as well as expanding nature-based solutions to help conserve and preserve coastal communities.
- The **representatives called upon all stakeholders to urgently take ambitious and concerted action to accelerate implementation to achieve Goal 14 as soon as possible.**
- **More than 130 countries participated in the UN Ocean Conference at Lisbon from 27th of June to 1st of July 2022.**

### About the 2022 UN Ocean Conference

- The **ocean covers 70 percent of the Earth's surface, is the planet's largest biosphere, and is home to up to 80 percent of all life in the world.**
- **It generates 50 percent of the oxygen we need, absorbs 25 percent of all carbon dioxide emissions and captures 90 percent of the additional heat generated from those emissions.**
- It is not just 'the lungs of the planet' but also its largest carbon sink - a vital buffer against the impacts of climate change.
- It nurtures unimaginable biodiversity and produces food, jobs, mineral and energy resources needed for life on the planet to survive and thrive.
- There is a great deal we still do not know about the ocean but there are many reasons why we need to manage it sustainably - as set out in the targets of Sustainable Development Goal 14: Life Below Water.
- The science is clear – the ocean is facing unprecedented threats as a result of human activities. Its health and ability to sustain life will only get worse as the world population grows and human activities increase. If we want to address some of the most defining issues of our time such as climate change, food insecurity, diseases and pandemics, diminishing biodiversity, economic inequality and even conflicts and strife, we must act now to protect the state of our ocean.

### Scaling up Ocean Action Based on Science and Innovation for the Implementation of Goal 14: Stocktaking, Partnerships and Solutions

- The **Ocean Conference, co-hosted by the Governments of Kenya and Portugal,** comes at a critical time as the world is seeking to address the many of the deep-rooted problems of our societies laid bare by the COVID-19 pandemic and which will require major structural transformations and common shared solutions that are anchored in the SDGs.
- To mobilize action, the **Conference will seek to propel much-needed science-based innovative solutions aimed at starting a**

**new chapter of global ocean action.**

- Solutions for a sustainably managed ocean involve green technology and innovative uses of marine resources. They also include addressing the threats to health, ecology, economy and governance of the ocean - acidification, marine litter and pollution, illegal, unreported and unregulated fishing, and the loss of habitats and biodiversity.
- **Sustainable Development Goal 14: Life Below Water**
- **Adopted in 2015 as an integral aspect of the 2030 Agenda for Sustainable Development and its set of 17 transformative goals, Goal 14 stresses the need to conserve and sustainably use the world's oceans, seas and marine resources.**
- Advancement of Goal 14 is guided by specific targets that focus on an array of ocean issues, including reducing marine pollution, protecting marine and coastal ecosystems, minimizing acidification, ending illegal and over-fishing, increasing investment in scientific knowledge and marine technology, and respecting international law that calls for the safe and sustainable use of the ocean and its resources.

### UN Decade of Ocean Science for Sustainable Development 2021 – 2030

- A vast majority of the ocean remains unmapped, unobserved and unexplored. Our understanding of the ocean and its contribution to sustainability largely depends on our capacity to conduct effective ocean science - through research and sustained observations, supported by adequate infrastructures and investments.
- The **Decade provides a common framework to ensure that ocean science can fully support countries' actions to sustainably manage the ocean and more particularly to achieve the 2030 Agenda for Sustainable Development – through the creation of a new foundation, across the science-policy interface, to strengthen the management of the ocean and coasts for the benefit of humanity.**

### World Ocean Day

- The United Nations **celebrates World Oceans Day every year on June 8.**
- As part of the celebrations, the Office of Legal Affairs, Division for Ocean Affairs and the Law of the Sea organizes several events and hosts a reception at United Nations Headquarters in New York City, where the Secretary-General's Annual World Oceans Day Message is delivered and the winners of the Annual World Oceans Day Oceanic Photo Competition are announced.
- Each year on the evening of World Oceans Day, the the Empire State Building is lit in blue to honour the world's oceans.

## HIMALAYAN WOLF

*GS-III ENVIRONMENT & ECOLOGY*

### Context

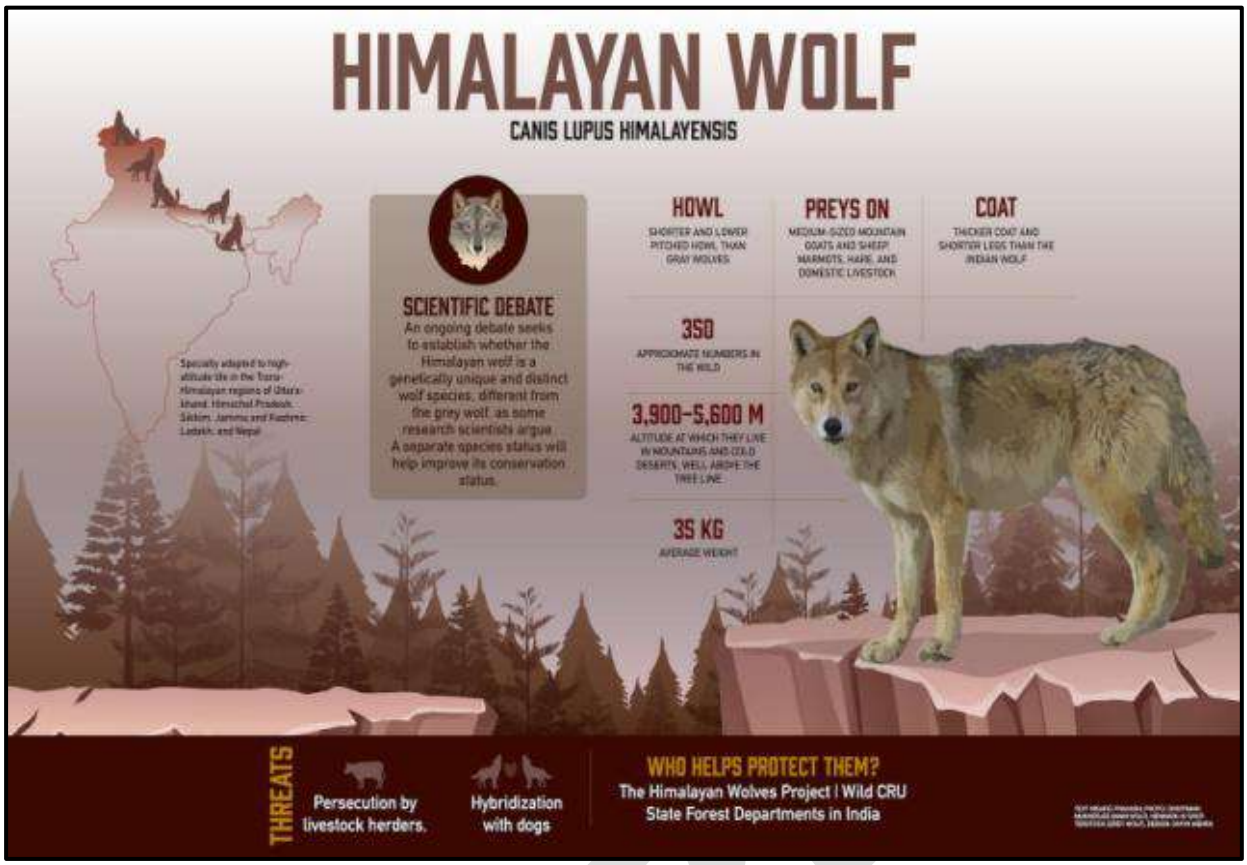
- The **Himalayan wolf, found throughout the Himalayas, is a major predator of livestock in the region; however, if its natural prey is abundant, it would not show preference for livestock, according to a new study.**

### Wolf in India

- Out of 32 sub-species of wolves that are recognised, two are believed to inhabit the Indian subcontinent: the **Tibetan Wolf** and the **Indian wolf**.
- The Tibetan wolf is **one of the world's most ancient species.**
- **Distribution Range:**
  - Tibetan Wolf-range extends from trans-Himalaya into Tibet and China. It can be found living in Ladakh in the Himalayas, the Tibetan Plateau
  - Indian wolf that ranges over peninsular India. Indian wolf is distributed across the states of Gujarat, Rajasthan, Haryana, Uttar Pradesh, Madhya Pradesh, Maharashtra, Karnataka, Kerala and Andhra Pradesh.
- **Population in India:** Unlike the Indian wolf, which we know numbers around 3,000, there is not enough data on the Tibetan wolf.
- **Protection Status**:
  - Indian wolf: **Least concerned (IUCN Red list)**
  - Tibetan wolf :**critically endangered**
  - Both species are protected as a **Schedule I animal** under the Wildlife Protection Act.
  - They are listed on **CITES Appendix I** as endangered due to international trade.

### Threats to Wolf in India

- **Habitat destruction**: increasing demand and pressure on grasslands
- Local community people kills wolves to protect livestock, they use **Shandong (wolf traps)**, which is an important part of their cultural heritage.
- depletion of the natural prey base.




### What are Shangdong?

- Shangdong are **traditional trapping pits** with inverted funnel-shaped stone walls, usually built near villages or herder camps.
- Typically, a live domestic animal is placed in the pit to attract the wolves.
- Once the wolves jump into the pit, the walls prevent them from escaping. The trapped wolves are usually stoned to death.
- In 2017, the Nature Conservation Foundation NCF started working with communities and religious leaders to support the neutralisation of the Shandong while preserving their structure, and assisted the communities to build Stupas.

## CLEAN ENERGY

GS-III ENVIRONMENT & ECOLOGY

### Context

- **India has achieved clean energy targets nine years ahead of schedule Power Minister said at the Sydney Energy Forum. India has installed 162 GW (1 GW is a 1000 MW) of renewable energy capacity which is 41% of the 402 GW of electricity installed.**

### Details

- This **target was reached in November 2021 and in Glasgow (at the UN COP-21) Prime Minister committed to installing 500 GW of renewable energy by 2030, which would then be 50% of the installed capacity**.
- Despite having among the lowest per capita emissions in the world, India has invested in this energy transition because its traditions teach it to respect and care for the environment.
- **In 2015, India committed to ensuring that 40% of its energy would be from renewable sources by 2030 as part of its Nationally Determined Contributions (NDC).**

### About the forum

- Theme: **Securing Clean Energy Supply Chains for the Indo-Pacific**
- **Co-hosted by the Australian Government and the International Energy Agency, with the support of the Business Council of Australia as a Forum partner.**
- **Ministers from the United States, Japan, India, Indonesia, and the Pacific Island nation of Samoa** are attending the forum along with leaders of major companies that are committed to low emissions technologies.
- The forum will **"foster connections between investors, business and government with a focus on innovations in key clean energy technologies such as solar, hydrogen, critical minerals and batteries."**
- The energy crisis that has gripped the world has been "sometime in the making" and not only due to the Russia-Ukraine war

but because of the "cartelisation in the fossil fuel industry."

- Renewable energy promised to break these cartels though it was possible that there would be newer such cartel forming in manufacturing and the equipment and the world would have to take steps to ensure that these don't coalesce.

### What Is Renewable Energy?

- Renewable energy, often referred to as clean energy, comes from natural sources or processes that are constantly replenished. For example, sunlight or wind keep shining and blowing, even if their availability depends on time and weather.

### Types of Renewable Energy Sources

**The most common renewable power technologies include:**

**Wind**

- This takes advantage of wind motion to generate electricity. Wind motion is brought about by the heat from the sun, and rotation of the earth, mainly via the Coriolis Effect.

**Solar**

- It taps heat from the sun to produce energy for the generation of electricity, heating, lighting homes and commercial buildings.

**Hydropower**

- Utilizes moving water to produce electricity. Moving water creates high energy that can be harnessed and turned into power.

**Biomass**

- Organic matter that constitutes plants is referred to as biomass, which can be utilized to generate electricity, chemicals or fuels to power vehicles.

**Ocean**

- Takes advantage of rising and falling of tides to generate electricity

**Geothermal**

- Leverages heat from underneath the earth to generate electricity.

### The Advantages of Renewable Energy Resources

- **A Fuel Supply That Never Runs Out:** Renewable energy is created from sources that naturally replenish themselves – such as sunlight, wind, water, biomass, and even geothermal (underground) heat.
- **Zero Carbon Emissions:** There are no greenhouse gasses or other pollutants created during the process. Coal power plants on the other hand create around 2.2 pounds of $CO_2$ for every kilowatt-hour of electricity.
- **Cleaner environment:** Burning fossil fuels causes global warming and causes pollution. On the other hand, renewable energy creates no pollution, waste, or contamination risks to air and water.
- **A Cheaper Form of energy:** Whereas green energy was once a "clean-but-expensive" alternative – it's now helping to reduce energy bills for people in many parts of the world.
- **Renewable Energy Creates New Jobs:** With an increasing focus on global warming and many governments setting ambitious carbon-reduction goals Renewable Energy has quickly become a major source of new job growth.

### Challenges of Renewable Energy

- While renewable energy systems need no fuel and can deliver substantial long-term savings, their up-front costs can still be prohibitive.
- Renewable energy systems rely on natural resources such as sunlight, wind, and water, and therefore, their electricity generation can be as unpredictable as the weather. Solar panels lose efficiency on cloudy days, wind turbines aren't effective in calm weather, and hydropower systems need consistent snow and rainfall to maintain reliable production.
- Due to the intermittent nature of renewables, they need forms of energy storage to capture and release electricity in a consistent and controlled way. Despite falling costs, storage technology is still relatively expensive.
- While solar panels and wind turbines produce no carbon emissions as they make energy – their manufacturing, transport, and installation still creates a carbon footprint.

### Achievements of India

- India was ranked fourth in wind power, fifth in solar power and fourth in renewable power installed capacity, as of 2020.
- Installed renewable power generation capacity has gained pace over the past few years, posting a CAGR of 17.33% between FY16-20. With the increased support of Government and improved economics, the sector has become attractive from an investors perspective.
- The **renewable energy capacity addition stood at 8.2 GW for the first eight months of FY22** against 3.4 GW for the first eight months of FY21.
- According to the data released by Department for Promotion of Industry and Internal Trade (DPIIT), **FDI inflow in the Indian non-conventional energy sector stood at US$ 11.21 billion between April 2000-December 2021.**

- More than Rs. 5.2 lakh crore has been invested in India's renewable energy sector since 2014.
- According to the analytics firm British Business Energy, **India ranked 3rd globally in terms of its renewable energy investments and plans in 2020.**
- India ranked **third on the EY Renewable Energy Country Attractive Index 2021.**

### Targets

#### Paris Agreement Targets

- In the Paris Agreement India has committed to an Intended Nationally Determined Contributions target of achieving 40% of its total electricity generation from non-fossil fuel sources by 2030.

#### Central Electricity Authority's strategy blueprint

- We are also aiming for a more ambitious target of 57% of the total electricity capacity from renewable sources by 2027 in Central Electricity Authority's strategy blueprint.
- According to 2027 blueprint, India aims to have 275 GW from renewable energy, 72 GW of hydroelectricity, 15 GW of nuclear energy and nearly 100 GW from "other zero emission" sources.
- There is also a target for installation of Rooftop Solar Projects(RTP) of 40 GW by 2022 including installation on rooftop of houses.

#### UN Climate Summit

- In 2019 at UN climate summit, India announced that it will be more than doubling its renewable energy target from 175GW by 2022 to 450GW of renewable energy by the same year.
- These targets would place India among the world leaders in renewable energy use and place India at the centre of its "Sunshine Countries" International Solar Alliance project promoting the growth and development of solar power internationally to over 120 countries.

### India's Focus Areas

#### Methanol and Biomass

- Utilizing other alternatives like methanol-based economy and biomass.
- Bio-CNG vehicles with 20% blending in petrol are also a target for the government.
- Generating energy from Biomass is a better option since it will clean the cities and also decrease our energy dependence. Fuels created from biomass have a high calorific value and are cleaner than traditional biomass.

#### The Twin Challenge

- India has a twin challenge of providing more as well as cleaner energy to the population in India.
- It should focus on getting into the manufacturing of solar panels under the AtmaNirbhar Bharat initiative because the demand is to generate jobs and supply decentralised energy to all the households in India.
- Developing the whole supply chain of all the components besides the manufacturing sector.

#### Hydrogen based FCV

- Itis likely to change the landscape of renewables and moving towards Hydrogen Based Fuel Cells Vehicles (FCV) is another area of focus.

#### Grid Integration

- It is the practice of developing effective ways to provide variable renewable energy (RE) to the grid.

## NEW FOREST CONSERVATION RULES

*GS-III ENVIRONMENT & ECOLOGY*

### Context

- The **opposition accused the Union government of diluting the rights of tribal communities through the new forest conservation rules, drawing a rebuttal from the Centre which said these rules simply aim to "streamline" project clearances.**

### Details

- The new Forest Conservation Rules — notified by the Ministry on June 28 — **do not mention the earlier requirement of attaining a gram sabha NOC before diverting forest land for a project.**
- They also **allow forest rights to be settled after the final approval for forest clearances has been granted by the Centre,** a point flagged by critics.
- **The settling of forest rights now needs to be carried out by the state government instead of the Centre, as was the case earlier.** The state governments will be under even greater pressure from the Centre to accelerate the process of diversion of forest land, critics say.
- The government said that the **Forest (Conservation) Rules, 2022, are reformative with an objective to streamline the process of approvals under the Act, and enable the parallel processing under other Acts and Rules including FRA, 2006.**

- The **Forest Conservation Act of 1980, brought the diversion of forest land for non-forestry purposes under the purview of the central government** — prior to this the states were solely in charge of clearing projects and diverting forest land.
- The **Forest Conservation Act, laid down the process by which forest diversion could be carried out for projects such as mines or dams.**
- But the Forest Conservation Act, and the Forest Advisory Committee, which would decide on the cases of forest diversion, would earlier only look at issues of forest health, protection of wildlife species, major harm to biodiversity, the land required for compensatory afforestation in lieu of the forest diversion etc.
- It was **only when the Forest Rights Act, 2006 was enacted that the government mandated that the rights of forest dwelling communities need to be recognised, and that they needed to be consulted before the project was sanctioned**.

### About the news rules

- It constituted an **Advisory Committee**, a **regional empowered committee** at each of the integrated regional offices and a **screening committee** at State/Union Territory (UT) government-level. The role of the Advisory Committee is restricted to **advise or recommend with regards to grant of approval** .
- The MoEFCC has directed the constitution of a **project screening committee in each state/UT for an initial review of proposals involving diversion of forest land.** The five-member committee **will meet at least twice every month** and will advise the state governments on projects in a time bound manner.
- All **non-mining projects between 5-40 hectares** must be reviewed within a period of 60 days and all such mining projects must be reviewed within 75 days. For projects involving a larger area, the committee gets some more time — 120 days for non-mining projects involving more than 100 hectares and 150 days for mining projects.
- All linear projects (roads, highways, etc), projects involving forest land up to 40 hectares and those that have projected a use of forest land having a canopy density up to 0.7 shall be examined in the **Integrated Regional Office.**
- The applicants for diverting forest land in a hilly or mountainous state with green cover covering more than two-thirds of its geographical area, or in a state/UT with forest cover covering more than one-third of its geographical area, **will be able to take up compensatory afforestation in other states/UTs where the cover is less than 20%.**

## ECO-SENSITIVE ZONE (ESZ) / GS-III ENVIRONMENT & ECOLOGY

### Context

- Kerala State Assembly unanimously passed a resolution urging the Central government to exclude the State's human habitations, farmlands and public institutions from the purview of the Ecologically Sensitive Zones (ESZ), recently notified by the Supreme Court, to be set-up around all protected forests in the country.

### More on the news

- The widespread unrest, which has hit districts like Idukki, Kottayam, Pathanamthitta and Wayanad, is borne out of the fear of farmers losing their livelihood, and has found support from the state government, opposition parties and the Catholic Church.
- On June 18, almost two weeks after the court order, the Union government said that it will hold discussions with the Kerala government and file an affidavit in the Supreme Court on the matter.

### What is the recent SC judgment that has caused an uproar in Kerala?

- The Supreme Court directed that **every protected forest, national park and wildlife sanctuary across the country should have a mandatory eco-sensitive zone (ESZ) of a minimum one km starting from their demarcated boundaries.**
- Environment Ministry guidelines show that the purpose of declaring ESZs around national parks, forests and sanctuaries is to create some kind of a "shock absorber" for the protected areas.
- These zones would act as a transition zone from areas of high protection to those involving lesser protection.
- A three-judge Bench highlighted how the nation's natural resources have been for years ravaged by mining and other activities.
- The judgment observed that the **government should not confine its role to that of a "facilitator" of economic activities for the "immediate upliftment of the fortunes of the State".**
- The State also has to act as a trustee for the benefit of the general public in relation to the natural resources so that sustainable development could be achieved in the long term.
- In a series of directions, the court held that **in case any national park or protected forest already has a buffer zone extending beyond one km, that would prevail.**
- **In case the question of the extent of buffer zone was pending a statutory decision, then the court's direction to maintain the one-km safety zone would be applicable until a final decision is arrived at under the law.**
- The court directed that **"mining within the national parks and wildlife sanctuaries shall not be permitted".**
- It held the **Principal Chief Conservator of Forests and Home Secretaries of States responsible for the compliance of the**

**judgment.**

- The Principal Chief Conservator for each State and the Union Territory has also been directed to make a list of subsisting structures within the ESZs and submit reports to the apex court in three months.

### Eco-Sensitive Zones (ESZs)?

- Eco-Sensitive Zones or Ecologically Fragile Areas **are areas within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.**
- ESZs are **notified by MoEFCC, Government of India under Environment Protection Act 1986.**
- In case of places with sensitive corridors, connectivity and ecologically important patches, crucial for landscape linkage, even area beyond 10 km width can also be included in the eco-sensitive zone.
- The basic aim is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.
- **Prohibited activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major hydroelectric projects (HEP), commercial use of wood, Tourism activities like hot-air balloons over the National Park, discharge of effluents or any solid waste or production of hazardous substances.
- **Regulated activities:** Felling of trees, establishment of hotels and resorts, commercial use of natural water, erection of electrical cables, drastic change of agriculture system, e.g. adoption of heavy technology, pesticides etc, widening of roads.
- **Permitted activities:** Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, use of renewable energy sources, adoption of green technology for all activities.

### Why are Eco-Sensitive Zones created?

- According to the guidelines issued by the Environment Ministry on February 9, 2011, ESZs are created as "shock absorbers" for the protected areas, to minimize the negative impact on the "fragile ecosystems" by certain human activities taking place nearby. Furthermore, these areas are meant to act as a transition zone from areas requiring higher protection to those requiring lesser protection.
- The guidelines also state that the ESZs are not meant to hamper the daily activities of people living in the vicinity, but are meant to guard the protected areas and "refine the environment around them".
- To do so, the guidelines list the activities prohibited in an ESZ, such as commercial mining, saw mills, commercial use of wood, etc., apart from regulated activities like felling of trees. Lastly, there are permitted activities like ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, among others.

## SALTWATER CROCODILES

*GS-III ENVIRONMENT & ECOLOGY*

### Context

- A record number of saltwater crocodiles laid eggs during the nesting season this year in Bhitarkanika National Park situated in Odisha's Kendrapara district, with forest officials counting 122 nests.

### Crocodiles in India

- There are three species of crocodilians—saltwater, Mugger and Gharial.

### Mugger

- The mugger crocodile, also called the **Indian crocodile, or marsh crocodile, is found throughout the Indian subcontinent.**
- It is listed as **vulnerable by IUCN**.
- The mugger is mainly a **freshwater species**, and found in lakes, rivers and marshes.

### Gharial

- The Gharial or fish eating crocodile is native to the Indian subcontinent.
- It is listed as **Critically Endangered** by IUCN.
- Small released populations are present and increasing in the rivers of the National Chambal Sanctuary, Katarniaghat Wildlife Sanctuary, Son River Sanctuary and the rainforest biome of Mahanadi in Satkosia Gorge Sanctuary, Orissa.
- The Gharial is found in only some rivers of India which include:
  - Chambal
  - Girwa

- Ganges
- Yamuna
- Kali
- Kosi
- Gandak

### Saltwater Crocodile

- It is the **largest** of all living reptiles.
- It is listed as **least concern** by IUCN.
- It is found throughout the **east coast of India.**
- **Odisha is the only State in India** having all three species gharial, mugger and saltwater crocodile.
- The State forest department began conservation of these crocodile species in 1975 by establishing three rearing centres Tikarpada for gharials in Angul district, Ramatirtha for muggers in Mayurbhanj and Bhitarkanika for saltwater crocodiles in Kendrapara district.

## SOLID WASTE MANAGEMENT / GS-III ENVIRONMENT & ECOLOGY

### Context

- **Engagement of formal waste management system remains low in the cities due to funds crunch, low sectoral development & lack of know-how.**

### Details

- **With burgeoning population and even faster urbanisation, there has been an explosion in the generation of municipal solid waste (MSW) in Indian cities.**
- This has severely damaged the environment and public health, and strained the capacity of urban local bodies to collect, transport, treat and scientifically dispose of solid wastes.
- **Urban India alone generates nearly 0.15 million tonnes per day of MSW, with per capita generation ranging between 0.30 kg per day to 0.45 kg per day.**
- **The volume of waste is projected to reach 165 million tonnes by 2031 and 436 million tonnes by 2050, if existing policies, programmes and management strategies are not adequately addressed.**
- It is important to note that the **engagement of formal waste management system remains low in the cities, primarily due to insufficient funds, low sectoral development and lack of know-how about sustainable waste management businesses.**
- Hence, in many developing countries, including India, waste collection and material recycling activities are majorly performed by the informal waste sector.

### Informal Sector

- The **informal sector may refer to individuals, families, and private sector enterprises working in solid waste management services, whose activities are not organised, sponsored, financed, contracted, recognised, managed, taxed or reported upon by governmental authorities.**
- Informal stakeholders are waste-pickers in dumpsites and at communal waste collection points, informal waste-collectors, itinerant waste-buyers, small junkshop dealers and big waste godown-owners.
- According to the Solid Waste Management Rules (SWM), 2016: **"informal waste collectors" includes individuals, associations or waste-traders who are involved in sorting, sale and purchase of recyclable materials**.
- The informal sector is often not officially approved, recognised and acknowledged, besides the fact that they potentially contribute to waste recycling practices of cities by collecting, sorting, processing, storing and trading waste materials in the recycling value chain.
- 'Role and size of informal sector in waste management — a review', a paper published in Waste and Resource Management in 2013, estimates that the **informal waste economy employs about 0.5-2 per cent of the urban population worldwide.** Assuming an urbanisation rate of 50 per cent, the world's urban population can be calculated at 2.8 billion people.
- **Applying the informal sector range of 0.5-2 per cent to the urban population ranges (2.49-2.8 billion people) leads to an estimated size of roughly 12.5-56 million people worldwide working in the informal sector in waste management. Waste-pickers alone account for 0.1 per cent of India's urban workforce.**
- The informal recycling sector reduces the cost incurred in the treatment and disposal of solid waste by extracting recyclables before the mixed waste is subjected to any specific treatment or haphazardly dumped into the landfills.
- The informal sector is the backbone of the recycling industry in the country, contributing a lot in terms of environmental sustainability and circular economy. It also enormously contributes in reducing the economic burden of urban local bodies.
- For instance, the Bruhat Bengaluru MahanagaraPalike (BBMP) became the first municipality in the country to register waste-pickers and catalogue scrap dealers. As reported by a 2014 study conducted by HasiruDala, a Bengaluru-based non-profit, nearly 4,200 registered waste-pickers save the city about Rs 23 crore annually, which would otherwise have been an addition

to the BBMP's budgeted Rs 450 crore.

### Concerns

- The informal sector lives in close proximity to dumpsites and works under unhygienic and unhealthy conditions.
- Often, the workers have no access to drinking water or public toilets.
- They do not have appropriate personal protective equipment (PPE) such as gloves, gumboots and aprons.
- Due to the poor living and working conditions, malnutrition, anaemia and tuberculosis are common among them.
- Waste-pickers are potentially exposed to a wide range of occupational hazards. Community waste bins and dumpsites act as breeding grounds for various bacterial and viral diseases.
- As a result, waste-pickers often face gastrointestinal ailments.
- Infections are also caused by their contact with human and animal excreta, bodily fluids and dead animals. They also get cut by sharp objects, ragged metal edges and broken glass in the mixed waste.
- Despite their crucial role, informal waste-workers continue to be subjected to systemic marginalisation, economically as well as socially.
- They are treated as dirty and unwanted elements of society, and they have to deal with exploitative social behaviour.
- Further, child labour is quite prevalent and life expectancy is low. In addition, waste-pickers are not covered under any labour legislation. As a result, they do not benefit from social security and medical insurance schemes. There is a dire need to initiate policy action for their social and economic upliftment.

### Case studies

#### Bengaluru municipality: a story of change

- Bengaluru became the first municipality to set up dry waste collection centres (DWCC) in the country.
- DWCCs are an important element of decentralised waste management in Bengaluru, where the recyclable materials are segregated processed, and resold to recycling industries.
- Though the concept was modelled after the neighbourhood recycling centres, it is based on the principles of waste hierarchy, to put in practice the three Rs — reduce, recycle and reuse — at the neighbourhood-level.
- DWCCs facilitate the collection and buy-back of all dry waste from local residents, contract and waste-workers, and scrap dealers.
- They help integrate informal waste-workers into the operations of these centres and encourage or implement extended producers' responsibility (EPR) of packaging materials that are not being recycled currently, thus serving as the cornerstone for the triple bottom line of operations — people, planet and profit.

#### Pune's women-driven SWaCH model

- The KagadKachPatraKashtakari Panchayat (KKPKP) — a trade union of informal waste-pickers and waste-buyers in Pune and Pimpri-Chinchwad was formed in 1993 and got occupational identity in 2007.
- SWaCH is a joint project of KKPKP and the Pune Municipal Corporation (PMC) — the first such entity created through municipal action.
- Today, KKPKP has over 9,000 members, 80 per cent of whom are women from socially backward and marginalised castes.
- SWaCH has over 3,000 worker-members (all women), who provide door-to-door waste collection services (in exchange for fees paid by each household), sort the waste and drop off non-recyclables at city-run feeder points.
- They also earn by selling recyclables to local scrap dealers.
- SWaCH has become a classic model reflecting direct user fee counting for transparency, accountability, efficiency, relationship with citizens and women empowerment.

### About Solid Waste Management Rules, 2016

- The Solid Waste Management Rules (SWM), 2016 replaced the **Municipal Solid Wastes (Management and Handling) Rules, 2000,** which have been in place for the past 16 years.

### Salient features of the SWM, 2016

- **Segregation Of Waste Is Important:** As per the new rules, all waste generators should start segregating their waste into three categories – Biodegradables, Dry Waste (Plastic, Paper, metal, Wood) and Domestic Hazardous Waste (diapers, napkins, mosquito repellents, cleaning agents) before they hand it over to the collectors.
- **Collection And Disposal Of Sanitary Napkins**: In order to manage the sanitary waste like diapers and sanitary pads effectively, the new guidelines have made it mandatory for the manufacturers to provide a pouch or wrapper for disposal whenever they sell their products to the customer.
- **Introduction Of New Things – User Fees And Spot Fines**: Under the new rules, waste generators will have to pay some amount to the waste collectors for activities like collection, disposal, and processing of waste. The local body across India has the authority to decide the 'User Fees.' The rules also stipulate **zero tolerance for throwing, burning or burying the solid**

**waste generated on streets, open public spaces, water bodies,** etc. "Spot Fines" are also introduced under these new rules which means if someone is found littering or disobeying the guidelines, then local bodies have the authority to fine them.

- **Collect Back System For Non-biodegradable Packaging Waste**; The new guidelines says that the brand owners who sell or market their products in packaging material which are non-biodegradable or are not environmental friendly, will have to put a system in place to collect back the packaging waste generated due to their production.
- **Guidelines For The Over-growing Landfills**: No non-recyclable waste having calorific value of 1500 K/cal/kg or more shall be disposed in the landfills. That waste can either be utilised for generating energy or can be used for preparing refuse derived fuel. It can also be used for co-processing in cement or thermal power plants. As per the new rules, the landfill site should be 100 metres away from a river, 200 metres from a pond, 500 metres away from highways, habitations, public parks and water supply wells and 20 km away from airports/airbase.
- **Involvement of Ragpickers**: The new rules help in the integration of ragpickers, waste pickers and kabadiwalas from the informal sector to the formal sector by the state government.
- **Guidelines for Municipal authorities**: All local bodies are required to set up few by-laws regarding waste management, segregation of waste within their society. They are also required to set up a system in place so as the process of waste segregation can be followed smoothly by all waste generators. They are also required to promote the idea of composting, waste segregation and waste management through different educative campaigns.
- **The Process Of Monitoring**: The government has also established a Central Monitoring Committee under the chairmanship of Secretary, MoEF&CC to monitor the overall implementation of the rules effectively. It is advised that the committee comprising of various stakeholders from the central and state governments will meet once a year to discuss and monitor the implementation of these rules.

### Way forward

- There is lack of clear and comprehensive laws and policies to protect the rights of waste-pickers in India. There is an **urgent need to frame and implement a uniform waste-picker welfare law that recognises and integrates them into the waste management chain.**
- The law must include basic provisions related to mandatory identity cards; access to waste for collection, segregation, and sorting; PPE to minimise occupational hazards; right to basic necessities like water, sanitation and facilities for clean living; and health insurance.
- The **role of waste-pickers could be formalised by permitting them to use the designated collection and compaction stations (transfer stations, material recovery facilities) in a city for the segregation of recyclables.**
- There is a need to identify, organise, train, and empower the waste-pickers. This can be done by designing an **inclusive waste management model to integrate the waste-pickers**. For example, involving them in the primary door-to-door collection of waste, or engaging them in material recovery facilities.
- There should be provision of enough space for sorting, recycling, trade of recyclables.

## HUMAN ANIMAL CONFLICT / GS-III ENVIRONMENT & ECOLOGY

### Context

- **Between 2018-19 and 2020-21, 222 elephants were killed by electrocution across the country, 45 by trains, 29 by poachers and 11 by poisoning. Among tigers, too, 29 were killed by poaching between 2019 and 2021, while 197 tiger deaths are under scrutiny**. These figures emerge after adding up data tabled in Lok Sabha by Minister of State for Forest, Environment and Climate Change, in a written response to a question on human-animal conflict.

### What is Man-Animal Conflict (MAC)?

- **It refers to the negative interactions between people and wild animals, with consequences for both people and their resources and wildlife and their habitats (IUCN 2020).**
- Over 2,000 people in India were killed by elephants while tigers claimed over 200 lives in the last five years, according to data provided by the government.

**Tigers**

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| Humans killed by tigers | 50 | 44 | 31 |
| Tigers: natural deaths | 44 | 20 | 4 |
| Unnatural, not poaching | 3 | 0 | 2 |
| Tiger deaths under scrutiny | 22 | 71 | 104 |
| Poaching deaths | 17 | 8 | 4 |
| Seizure | 10 | 7 | 13 |

### Common Reasons

- Competition for shared natural resources between people and wildlife
- Human population growth and the transformation of land use.
- shrinking forest cover, poaching, rapid and unplanned urbanization
- electrification penetrating into forest areas
- increasing road density

- destruction of natural animal corridors
- agricultural expansion and cultivation up to forest boundaries.

| Elephants | 2018-19 | 19-20 | 20-21 |
|---|---|---|---|
| Humans killed by elephants | — | 585 | 461 |
| Elephants killed by trains... | 19 | 14 | 12 |
| ... by electrocution | 81 | 76 | 65 |
| ... by poaching | 6 | 9 | 14 |
| ... by poisoning | 9 | 0 | 2 |

533 Humans killed by elephants in 2021-22

### Consequences of MAC

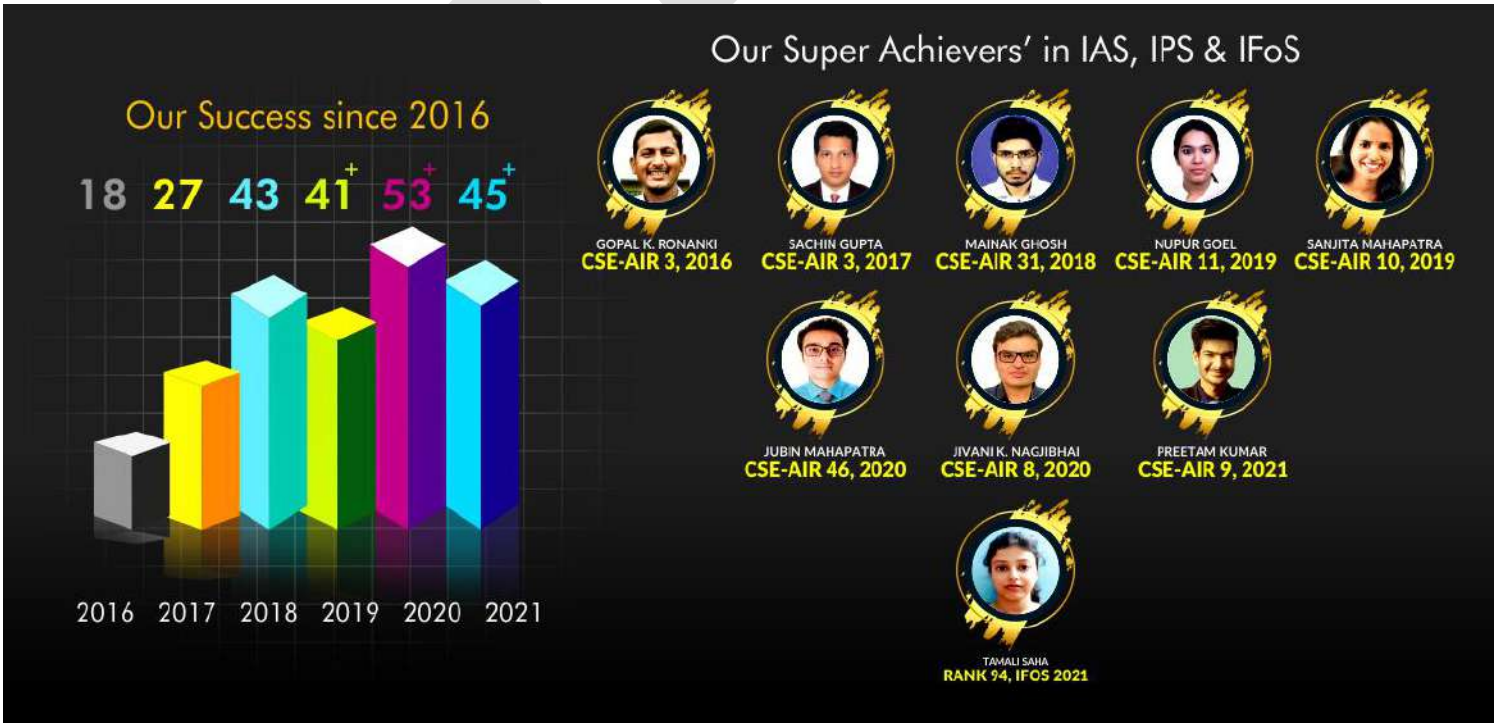
- Influences food security of people and the well-being of both people and animals.
- serious global threat to sustainable development and conservation in urban and rural landscapes.
- destruction of crops and reduced farm productivity
- competition for grazing lands and water, livestock predation, injury and death to farmers,
- damage to infrastructure and
- increased risk of disease transmission among wildlife and

### Conflict mitigation strategies includes

- Lethal control
- Translocation of problematic animals
- Predator-deterring guard dogs
- Effective land use planning
- Compensation
- Spatial analyses and mapping conflict hotspots:
- Erection of fences or other barriers
- Managing garbage to prevent attraction of carnivores
- Improving community education and perception of animals
- population size regulation and
- endangered species preservation
- applying scientific research, sociological studies, and the arts to reducing conflicts.

### Existing government policies

- The government has come up with some policies to grapple with the problem: The compensation for human deaths has been increased from Rs 2.5 lakh to Rs 5 lakh;
- Project Elephant and National Tiger Conservation Authority (NTCA) guidelines have been issued to mitigate the conflict.
- Immune-contraception has been introduced in order to control the population of nilgai, monkeys and wild boars.



## CDRI

GS-III DISASTER MANAGEMENT

### Context

- The Union Cabinet has approved the categorization of the Coalition for Disaster Resilient Infrastructure (CDRI) as an 'International Organization'. It has also approved signing of the Headquarters Agreement (HQA) with CDRI for granting it the exemptions, immunities and privileges as contemplated under the United Nations (Privileges & Immunities) Act, 1947.

### CDRI

- **About:** The Coalition for Disaster Resilient Infrastructure (CDRI) is an **international coalition** of countries, United Nations (UN) agencies, multilateral development banks, the private sector, and academic institutions that **aims to promote disaster-resiliant infrastructure**.
- **Objective:** Its objective is to promote research and knowledge sharing in the fields of infrastructure risk management, standards, financing, and recovery mechanisms. It aims to promote the resilience of infrastructure systems to climate and disaster risks, thereby ensuring sustainable development.
- **Launch:** It was **launched by India at the 2019 UN Climate Action Summit in September 2019**.Since its launch, thirty-one (31) Countries, six (06) International Organizations and two (02) private sector organizations have joined as members of CDRI.
- **Headquarters:** New Delhi, India.

### Significance of Categorization of CDRI

- Categorization of CDRI as an 'International Organization' and signing of HQA will help the CDRI in:
  1. Deputing experts to other countries, that are particularly vulnerable to disaster risk and / or require support for post disaster recovery and also bringing in experts from member countries to India, for similar purposes;
  2. Deploying funds globally and receive contributions from member countries, for CDRI activities;
  3. Making available technical expertise to assist countries to develop resilient infrastructure in accordance with their disaster and climate risks and resources;
  4. Imparting assistance to countries in adopting appropriate risk governance arrangements and strategies for resilient infrastructure;
  5. Rendering all possible support to member countries in upgrading their systems to ensure disaster and climate resilience of existing and future infrastructure, while aligning with the Sustainable Development Goals (SDGs), the Paris Climate Agreement and the Sendai Framework for Disaster Risk Reduction;
  6. Leveraging international engagement to foster disaster resilient infrastructure at home; and,
  7. Providing Indian scientific and technical institution as well as infrastructure developers an opportunity to interact with global experts.

***This will help build our own capacities and mechanisms — both in public and private sectors — to support disaster resilient infrastructure development.***

### Significance of CDRI

- CDRI is a step ahead to promote the resilience of infrastructure systems to climate and disaster risks, thereby ensuring sustainable development. Over a period of time, a network of organizations / stakeholders will be developed to advance disaster resilient infrastructure not only in India but other partner countries as well.

## GLOBAL PLATFORM FOR DISASTER RISK REDUCTION, 2022

GS-III DISASTER MANAGEMENT

### Context

- The Global Platform for Disaster Risk Reduction, 2022 (GP 2022) took place in Indonesia from May 23-28, 2022. The theme this year was **'From Risk to Resilience: Towards Sustainable Development for All in a COVID-19 Transformed World'.**

### About

- The Global Platform for Disaster Risk Reduction (DRR) is the world's foremost gathering on reducing disaster risk and building the resilience of communities and nations. It takes place every two years.

### Key Takeaways of GP 2022

- There is a **need for a whole-of-society approach to disaster risk reduction (DRR),** ensuring no one is left behind.
- **DRR must be at the core of development and finance policies**, legislation and plans to achieve the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDG).
- The **real cost of disasters is that of inaction**, which must be weighed against investments in DRR.

- Current greenhouse gas emission levels far exceed their mitigation, resulting in an increase in frequency and intensity of catastrophic events.
- A **participatory and human rights-based approach in DRR planning** and implementation is crucial as people are affected differently by disasters.
- The development of **multi-hazard early warning systems,** inclusive of communities most at risk.
- The need for a **transformative recovery from the COVID-19 pandemic**, to build back better, greener and more equitably.
- Recovery and reconstruction are most successful when they are community-driven and support existing local structures and resilience-building mechanisms.
- **Ecosystems should be considered as critical infrastructure** and recognized for their basic services, bringing environmental, socio-economic and cultural benefits.
- DRR and climate change adaptation have the common objective of reducing vulnerability and enhancing capacity as well as resilience.
- Risk understanding remains limited, particularly regarding emerging and future hazards, with government policies largely reactive.

### Other focus areas for resilience building

- Greater budgetary allocation at central and state levels
- Revision of national / state disaster response funds norms which was there from 2015-2020
- More resources at gram panchayat level.
- Resources for evacuation, maintenance of cyclone shelters.
- Proper, adequate and timely compensation.
- Governments should strictly impose the law and international conventions related to environmental protection.
- Build rural infrastructure in the disaster-prone areas in the country but not at the cost of livelihood recovery (climate-resilient, sustainable livelihoods) and meeting of the immediate needs.
- The central government announces crores of money as support to the state government, but the state governments do not make it clear where this money is utilized and for whom. There is a need to standardize transparency mechanisms to include transparency boards, clearly mentioning the cost, quality and quantity of relief items, social audits and citizens' reports. This needs to be the standard practice in all relief operations, both by government and civil society actors.
- It is important to gear up and achieve what Sendai Framework ambitiously talked about seven years ago.

## KARAKALPAKSTAN

PLACES IN NEWS

### Context

- Many people were killed during unrest in Uzbekistan's autonomous province of Karakalpakstan.

### Who are the Karakalpaks?

- The Karakalpaks consider themselves to be a **distinct cultural group in Uzbekistan.**
- Their Turkic language – Karakalpak – is closely related to Kazak. Their separate language is a crucial aspect of their cultural identity.
- Their separate language is a crucial aspect of their cultural identity.

### Karakalpakstan

- Karakalpakstan, is **an autonomous republic within Uzbekistan**. It occupies the **whole northwestern part of Uzbekistan**.
- It lies in western Uzbekistan **near the Aral Sea, in the lowest part of the Amu Darya basin**.
- The **Kyzyl Kum Desert is located to the east** and the **Karakum Desert is located to the south**.
- A rocky plateau extends west to the Caspian Sea. The **capital is Nukus**.
- The **name Karakalpakstan is derived from the Karakalpak people**. Karakalpak translates to 'black hat', referring to their **traditional headgear.**

## KYUSHU

PLACES IN NEWS

### Context

- A volcano on Japan's major western island of Kyushu, called Sakurajima, erupted recently.

### Kyushu

- Kyushu is the **third-largest island of Japan's five main islands** and the most southerly of the four largest islands (i.e. excluding Okinawa).
- The island is mountainous, and Japan's **most active volcano, Mt Aso**at 1,591 metres (5,220 ft), is on Kyushu.
- The island is **separated from Honshu by the Kanmon Straits**. Being the nearest island to the Asian continent, historically it is the gateway to Japan.

# SHORT NEWS ARTICLES

## GS-I

# CULTURE & HISTORY

## Alluri Sitarama Raju

**Context**

- The **Prime Minister will participate in the 125th birth anniversary celebrations of freedom fighter of legendary Alluri Seetharama Raju**. Prime Minister Narendra unveil a **30-ft bronze statue of Alluri at Bhimavaram in the West Godavari district of Andhra Pradesh.**

**About**

- Alluri Sitarama Raju was a **legendary freedom fighter who rallied the tribes of the Eastern Ghats to rise in revolt against British rule.**
- The **Rampa rebellion,** which he led with unparalleled courage and bravery, raged from August 1922 to May 1924 and is known as one of the most intense uprisings to have challenged the writ of colonial power in the subcontinent.
- He is **remembered for mounting daring raids to seize arms and ammunition from police stations in the Rampachodavaram, Addateegala, Devipatnam and Rajavommangi areas of the tribal backwoods in what is now the northern part of Andhra Pradesh**.
- **Alluri is revered not just in Andhra Pradesh but also in Telangana, Odisha and Karnataka.**
- He believed in armed struggle and sacrificed his life for the liberation of the tribals.
- **He opposed the Madras Forest Act, 1882 (the region was then part of the erstwhile Madras Presidency), which prohibited the tribes from indulging in podu (shift cultivation) and usurped their right to collect minor forest produce.**

**Why at Bhimavaram?**

- It is the bastion of the resourceful Raju community that dominates the deltaic Godavari region and is engaged mostly in paddy cultivation and aquaculture. Alluri spent some of his early years there.

**What else has Andhra Pradesh done to bring Alluri's legacy alive for posterity?**

- Earlier this year, **Chief Minister decided to reconstitute the region that includes parts of East Godavari and Visakhapatnam districts as the Alluri Sitarama Raju district.**

## Sangam Literature

**Context**

- The rich cultural history of the Tamils will be featured in a project relating to the new Parliament being constructed by the Union government in New Delhi.
    - **Soil samples from five ecological regions mentioned in ancient Tamil Sangam literature — Kurinji, Mullai, Marutham, Neithal and Paalai — have been collected and sent to the capital recently.**

**Sangam literature**

- Sangam literature is the oldest literature to have been composed in the Tamilakam.
- The word Sangam refers to college, and the commentary of Iraiyanar Agapporul (c. AD 750) alludes to three Sangams that lasted at long intervals over 9900 years.
- These were at then Madurai, Kapalapuram and Madurai respectively. There is no material evidence or otherwise to justify this timeline, and historians treat the first two Sangams as fantastical rather than factual. Thus, it is consensually understood that most of the extant Tamil.
- Sangam literature was composed in Madurai.
- The Sangam corpus broadly comprises of poems, epics, grammar and Tirrukural.
- Broadly, Sangam literature consists of poems, grammar, epics and Tirrukural- all broadly being composed between 200 BCE and 1200 AD.

**Important Sangam Literature:**

- Tolkappiyam, penned by Tolkappiyar, is the first Tamil literary work. It is largely a study of the Tamil language, but it also includes information about the political and socio-economic conditions of the time.
- **Ettutogai is made up of eight works**: Aingurunooru, Narrinai, Aganaooru, Purananooru, Kuruntogai, Kalittogai, Paripadal, and Padirruppatu (Eight Anthologies).

- **Pattuppattu consists of ten works:** Thirumurugarruppadai, Porunarruppadai, Sirupanarruppadai, Perumpanarruppadai, Mullaippattu, Nedunalvadai, Maduraikkanji, Kurinjippatttu, Pattinappalai, and Malaipadukadam (Ten Idylls)
- **Pathinenkilkanakku contains eighteen books** on ethics and morals. The most famous of these books is Tirukkural, authored by Thiruvalluvar, a brilliant Tamil poet and philosopher.
- **Silappathikaram was written by Elango Adigal**, and **Manimegalai was written by Sittalai Sattanar**. They also provide valuable information about Sangam politics and society.

# Konark Sun Temple

**Context**

- Visitors to the Sun Temple in Konark, Odisha, will soon be able to see the newly-carved stones on the northern side of the jagmohan, or the assembly hall, of the World Heritage Site. The restoration work is likely to be completed within a month, Archaeological Survey of India (ASI) officials said.

**About**

- It is a 13th-century CE (year 1250) Sun temple at Konark about 35 kilometres (22 mi) northeast from Puri on the coastline of **Odisha, India.**
- The temple is attributed to **king Narasimhadeva I** of the **Eastern Ganga Dynasty** about 1250 CE.
- Dedicated to the **Hindu Sun God Surya**, what remains of the temple complex has the appearance of a 100-foot (30 m) high chariot with immense wheels and horses, all carved from stone.
- Also called the **Surya Devalaya**, it is a classic illustration of the Odisha style of Architecture or **Kalinga Architecture.**
- This temple was called the **"Black Pagoda"** in European sailor accounts as early as 1676 because it looked a great tower which appeared black.
- Similarly, the Jagannath Temple in Puri was called the **"White Pagoda".**
- Declared a UNESCO world heritage site in 1984, it remains a major pilgrimage site for Hindus, who gather here every year for the **ChandrabhagaMela** around the month of February.
- Konark Sun Temple is depicted on the reverse side of the Indian currency note of Rs 10 to signify its importance to Indian cultural heritage.

# Bonalu Festival

**Context**

- Bonalu, a symbol of Telangana's unique culture, with much traditional fervour and glee. Thousands of devotees offered prayers at Ujjaini Mahakali temple to mark the auspicious occasion.

**About**

- Bonalu is an **annual festival celebrated in twin cities Hyderabad and Secunderabad, and parts of Telangana as a thanksgiving to the goddess for fulfilment of vows.**
- It involves worship of the goddess and her various forms.
- During the festival, people also hold **'rangam' or forecasting the future**, organise processions and cultural events. It is celebrated to ward off diseases and usher in good health, peace and prosperity.
- The **Telangana government accorded the status of "state festival" to Bonalu after the formation of the new state in June 2014.**
- The women devotees offered 'Bonam', containing cooked rice, jaggery, curd and neem leaves to goddess Mahankali.
- The **'bonalu' festival is celebrated usually during the Hindu calendar month of 'Ashada' that falls in July/August.**

# Maharaja Serfoji Ii

**Context**

- An **exquisite mid-19 century painting of Maharaja Serfoji II of Thanjavur and his son Sivaji II, stolen from Saraswathi Mahal and found its way to a museum in the US in 2006, has been traced by the idol wing police.**

**About**

- Serfoji was the **last of the Bhonsle Rajas of Thanjavur**. He died in 1832.
- His only son Shivaji ruled until 1855. However, he had no male successor.
- **Thanjavur became a casualty of Lord Dalhousie's infamous 'Doctrine of Lapse', and it got absorbed into British Ruled Indian provinces.**
- The painting, which has Raja Serfoji and his youthful son, according to some historians, was probably painted between 1822 and 1827 and kept in the Saraswathimahal. In 1918, the Saraswathi Mahal Library was opened to the public.
- The investigation revealed that in 1786, when Raja Tulaja of Thanjavur died, his adopted son Serfoji was young, and his other son, whom he had begotten through his concubine, Amar Singh, was appointed the Raja.

# Mangarh Hillock

**Context**

- The National Monuments Authority has recently submitted a report on declaring **Mangarh hillock in Rajasthan as a monument of National Importance to honour Bhil tribal freedom fighters.**

**About**

- The hillock is situated at the Gujarat-Rajasthan border.
- The place is also known as the **Adivasi Jallianwala**, and there has been a demand to build a memorial.
- On November 17, 1913, British forces opened fire on tribal fighters gathered at the site who were holding a meeting in protest, led by a leader from the community Govind Guru, killing over 1,500.
- Bhil are **one of the largest tribal groups, living in Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Andhra Pradesh and Rajasthan.**
- A **"Monument of National Importance"** is designated by the Archaeological Survey of India and includes the following:
- The remains of an ancient monument.
- The site of an ancient monument.
- The land on which there are fences or protective covering structures for preserving the monument.
- Land by means of which people can freely access the monument.
- **National Monuments Authority** under the Ministry of Culture, Govt. of India has been setup as per provisions of The Ancient Monuments and Archaeological Sites and Remains AMASR (Amendment and Validation) Act, 2010 .

# Acharya Prafulla Chandra Ray

**Context**

- **Ministry of Culture along with Department of Chemistry, University of Delhi** and Vijnana Bharti (VIBHA) **organised a curtain raiser for two days** International Conference on the "Contributions of Acharya Prafulla Chandra Ray as a Chemist and Freedom Fighter"

**About**

- Known as "**Father of Indian Chemistry"**, Prafulla Chandra Ray was a well-known Indian scientist and teacher and one of the first "modern" Indian chemical researchers.
- He **discovered the stable compound mercurous nitrite in 1896 and established Bengal Chemical and Pharmaceutical Works Ltd, India's first pharmaceutical company in 1901.**
- Also a very passionate and devoted social worker, he **did not support the caste system.**
- In 1892 with a small capital of 700 INR, he established **Bengal Chemical Works**. It flourished under his management. The company initially produced herbal products and indigenous medicines. In 1901 the enterprise became a limited company, Bengal Chemical and Pharmaceutical Works Ltd (BCPW) and India's first pharmaceutical company. Gradually, the company expanded and became a leading chemicals and medicine producer.
- Prafulla Ray was interested in ancient texts and after much research published **"The History of Hindu Chemistry"** in two volumes in 1902 and 1908
- He was **elected as the Indian Science Congress President in 1920.**
- His **autobiography "Life and Experiences of a Bengali Chemist",** published in two volumes in 1932 and 1935 documents his own motivations as a scientist and the sweeping changes India was experiencing during his lifetime.
- He was a very passionate and devoted social worker and he **participated eagerly and actively in helping famine and flood struck people in Bengal during the early 1920s.**
- He **promoted the khadi material and also established many other industries such as the Bengal Enamel Works, National Tannery Works and the Calcutta Pottery Works.**

# GEOGRAPHY

## Heat waves in Europe

### Context

- Heat waves in Europe, are increasing in frequency and intensity at a faster rate than almost any other part of the planet.

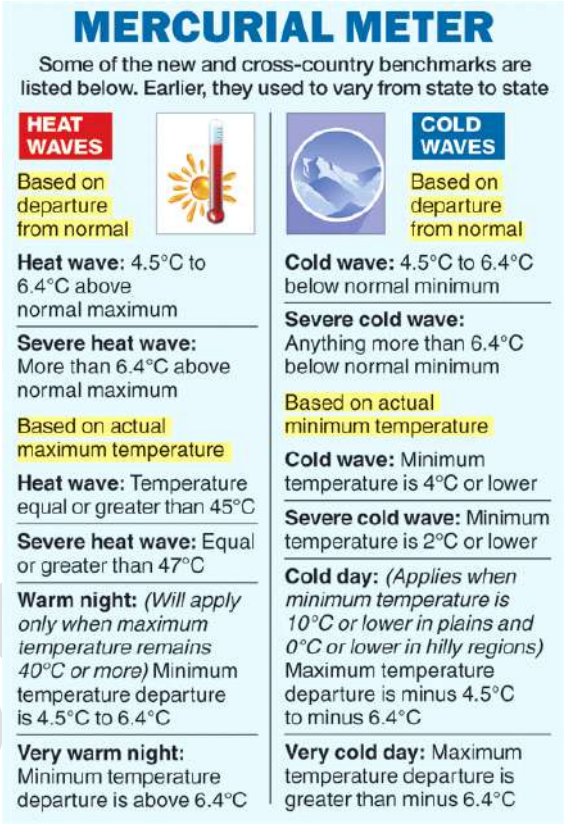
### Heat Wave

- According to the World Meteorological, a heat wave is when the daily maximum temperature for more than five consecutive days exceeds the avg. maximum temperature by 9 degrees Fahrenheit.

### Reasons behind Heat Wave in Europe

- **Global warming**: Temperatures are on average about 1.1 degrees Celsius higher than they were in the late 19th century due to emissions.
- **Warming in the Arctic**, which is occurring much faster than other parts of the world, may play a role. As the Arctic warms at a faster rate, the temperature differential between it and the equator decreases. This leads to a decrease in summertime winds, which has the effect of making weather systems linger for longer.
- Changes in one of the world's major ocean currents, the **Atlantic Meridional Overturning Circulation**, may affect Europe's climate. A **weakening of the current** as the world warmed would cause changes in atmospheric circulation leading to drier summers in Europe.

*Read:https://www.iasgyan.in/daily-current-affairs/heat-waves-22*




## Karakoram Anomaly

### Context

- While glaciers have generally been losing mass and extent across the world and in the Hindu Kush-Himalayan (HKH) region, one subset of glaciers in the Karakoram has been defying this trend. This phenomenon is called 'Karakoram Anomaly'.

### Reason behind this anomaly

- The researchers found **that increasing levels of irrigation in the foothills and lowlands of China, Pakistan and northern India** has pushed up the moisture in the atmosphere in the region. The entire stretch has seen massive intensification of agriculture owing to the Green Revolution in the second half of the 20th century.
- This additional moisture then comes down as snow, especially during summer months, in regions where glaciers have been found to be expanding. The cooling effect of the clouds blocking out the sun makes conditions for glacier growth even more conducive and further slows down melting in the region.
- Another reason could be a **localized vortex in the region which was effectively insulating the region from general warming.**

## Derecho

### Context

- Some states in the US were hit by a storm system called Derecho.

### What is a derecho?

- A derecho, is a widespread, long-lived, straight-line windstorm" that is associated with a "band of rapidly moving showers or thunderstorms".
- The name comes from the Spanish word 'la derecha' which means 'straight'. Straight-line storms are those in which thunderstorm **winds have no rotation unlike a tornado.** These storms travel hundreds of miles and cover a vast area.
- For a storm to be classified as a derecho **it must have wind gusts of at least 93 km per hour; wind damage swath extending more than 400 km.**

### Different types of derechos

- They fall into three categories – progressive, serial and hybrid.
  1. A progressive Derecho is associated with a short line of thunderstorms that may travel for hundreds of miles along a relatively narrow path. It is a summer phenomenon.
  2. A serial derecho, on the other hand, has an extensive squall line – wide and long – sweeping across a large area. It usually

occurs during spring or fall.

3. Hybrid ones have the features of both progressive and serial derechos.

**Where do derechos usually occur?**

- They mostly occur across **central and eastern parts of the United States.**
- Derechos have also been documented elsewhere across the world. In 2010, Russia witnessed its first documented derecho. They have also swept through Germany and Finland, and more recently in Bulgaria and Poland.

**World Population Prospects, 2022**

- India is projected to surpass China as the world's most populous country in 2023, according to the 27th edition of the United Nations' World Population Prospects, 2022. The Report was published by the Population Division of the UN Department of Economic and Social Affairs.

**Highlights of the Report**

- In 2022, China remains the most populous country in the world with 1,426 million, but India has caught up with a marginally less population of 1,412 million.
- It took 123 years for the population to double to 2 billion in 1927. Since then, the number of years taken to add a billion people has only dropped.
- The global population will reach 8 billion on November 15, 2022, more than three times the population of 2.5 billion in 1950.
- In 2020, for the first time since 1950, the rate of population growth fell below 1 per cent per year and it is projected to continue to slow in the next few decades and through the end of this century.
- By 2050, India's population will reach 1,668 million, far exceeding China's declining population at 1,317 million. The global population by 2050 would have touched 9.7 billion.
- Fertility rates have fallen rapidly across the world in recent decades. In 1950, the average woman gave birth around 5 times. Since then, fertility rates have more than halved. In 2021, this global figure was 2.3 births per woman.

# GS-III
# POLITY

## Mediation Bill

**In News**

- The Parliamentary Standing Committee on Law and Justice has recommended **introducing reforms in the Mediation Bill**, to institutionalize mediation and establishment of the Mediation Council of India.
- The committee has **raised concern over making pre-litigation mediation compulsory**.
    - One of the committee members has stated that **making pre-litigation mediation mandatory may result in the delaying of cases.**

**Key Recommendations**

- The Committee has stated that **pre-litigation mediation should be made optional** and this provision must be introduced in a phased manner in all civil and commercial disputes.
    - They recommended that the compulsory provision of pre-litigation mediation should be reconsidered and it should be offered only to those who are willing to mediate.
- They examined the non-applicability of the provisions of the Bill in disputes of non-commercial nature involving the Government and its agencies.
- **They discussed the qualifications and appointment process of the Chairperson and Members**of the proposed Mediation Council.
    - The Committee has suggested that the Chairperson and the full-time Members must have 'capacity' and 'knowledge and experience' in 'mediation.'
- According to present requirements in the Bill, people dealing with problems connecting to 'Alternative Dispute Resolution' can become members and chairman of the council.
    - The committee has recommended that the **appointment of the Chairperson and Members of the Mediation Council of India should be selected by a Selection Committee.**
- They recommended that the **Mediation Council of India should be made the nodal authority for the registration and accreditation of mediators.**
    - Each mediator should be given a unique registration number by the Mediation Council.
- Empower the Mediation Council to constantly assess the mediator by holding training sessions periodically.

**Mediation**

- Mediation is the method of resolving business disputes.

- **Mediation usually involves the disputing parties, their legal counsel and a neutral third party who facilitates the discussions.**
- **Mediation is the step before litigation.** Instead of going for expensive courtroom visits, it is better to discuss the problem before an impartial third party and consider the options that are available and agreeable to both parties.
- **Significance of mediation**
  - **Preferable Outcome:** The goal of mediation is to come up with options that are beneficial to both parties.
  - **Lower Costs:** Mediation involves only discussions between parties and a third party. Costs are much lower since parties do not need to engage legal counsel over a long period.
  - **Confidentiality:** Discussions only occur in a private room between the parties and their mediator. It protects trade secrets and other confidential documents that would otherwise be open to the public as a case in litigation.
  - **Flexibility:** Parties are allowed to frame the discussions in a way most suitable to them.

# Tele-Law Service

### In News

- The Union Minister of Law and Justice has stated that the ministry will provide legal aid to the underprivileged section of society.
- The Ministry is planning to provide legal aid through Tele/Video-conferencing infrastructure available at Common Service Centers (CSCs) in 1 lakh Gram Panchayats.
  - The CSCs will be linked with advocates to provide legal aid to marginalized people.
- The Ministry has announced that from this year the Tele-law service will be made available for the citizens without any cost.
- The Ministry has launched "The Tele-Law mobile application for easy and direct access in 2021 and is available in 22 scheduled languages.

### TELE-LAW PROGRAMME

- The tele-Law programme was launched in 2017 to address cases at the pre-litigation stage.
- It was launched by the **Ministry of Law and Justice** in partnership with the **Ministry of Electronics and Information Technology (MeitY)**
- **The Objective was to Connect Litigants to Lawyers through** video conferencing facilities and telephone services.
- The aim was to support the marginalized and disadvantaged people.
- **Facilities available at the Common Service Centres** are used to connect the vulnerable, unreached groups and communities with the Panel Lawyers to provide timely and helpful legal advice.
- Tele Law service allows anyone to pursue legal advice without spending time and money.
  - The service is free for those who are eligible for free legal Aid as mentioned under **the Legal Services Authority Act, 1987.** For all others, a nominal fee is charged.
- The tele-law services are helping in reducing judiciary pendency and also improving the efficiency of the judicial system.

# Unparliamentry Words

### In News

- Before the beginning of the Monsoon session, **the lok Sabha secretariat released a booklet of more than 50-pages of words considered unfit for being used in Parliament.**
- Many Politicians and activists have **criticised the decision by terming it a "gag order" meant to shield the government against "criticism".**

### Details

- The list includes words and phrases that are **disallowed in the Indian Parliament, in various state assemblies, and also in the parliaments of many countries.**
- The list also includes the words that have been **deleted from the records in both the Lok Sabha and the Rajya Sabha during the past years.**
- Article 105(2) of the Indian Constitution states that "no Member of Parliament shall be liable to any proceedings in any court in respect of anything said by him in Parliament", but this is **not an absolute right to say whatever they want.**
  - It is the **responsibility of MPs to maintain the discipline of the house and follow the Rules of Parliament.**
- Rule 380 of the Rules of Procedure and Conduct of Business in Lok Sabha states that "If the Speaker is of opinion that words have been used in the debate are defamatory or indecent or unparliamentary or undignified, the Speaker may order to delete such words from the proceedings of the House.

### Unparliamentary Words

- There are **many phrases and words**, both in English and in Indian languages, that are considered "unparliamentary".
- The **Presiding Officers**; Speaker of Lok Sabha and Chairperson of Rajya Sabha**; are authorised of keeping unparliamentary words out of Parliament's records.**

- The latest list of Unparliamentry words includes 'Jumlajeevi', 'Baal buddhi', 'Covid spreader', 'abused', 'ashamed', 'betrayal', 'chamchagiri', 'cheated', 'Snoopgate', 'anarchist', 'Shakuni', 'corrupt', 'corruption', 'coward', 'criminal', 'dictatorial', 'taanashah', 'tanashahi', 'vinash purush', 'Khalistani', 'dodgy', 'drama', 'false', 'eyewash', 'fabrication', 'fraud', 'gaslighting', 'hack', 'hooliganism', 'hypocrisy', 'incompetent', 'lie', 'lollipops', 'mislead', 'negligence', 'partisan', 'racist', 'poster-boy', 'scandal', 'ruthless', 'traitor', 'witch'. etc.
- Many expressions have been added to the list including: "You have double standards"; "You have to be fair"; "I curse you" and "Sir, why are you trying to gag my mouth? Don't try to gag my mouth".

### Way Forward

- The Lok Sabha Speaker has clarified that **no words or phrases have been banned in Parliament and members have absolute freedom to express their views**.
- The decision to release the list was taken after the instruction of the Speaker or the Chairman and the government has no role in it.
- The list is just a set of **general guidelines to maintain the dignity of the Parliament.**
- This is a **regular exercise** and such compilations have been brought out in 1986, 1992, 1999, 2004 and 2009.

# Demand for Tribal Status

### In News

- The Union Government is considering the proposal for granting **"tribal" status to the Trans-Giri region of Himachal Pradesh's Sirmaur district**.
- The demand to declare the Trans-Giri region as a tribal area is old, and the demand is linked with another demand for Scheduled Tribe (ST) status for the Hatti community which lives in the Trans-Giri region.
- The list of **Major STs in Himachal Pradesh includes;**
  - Gaddis
  - Gujjars
  - Kinnaras (Kinnauras)
  - Lahaulas
  - Pangwalas, and some other smaller tribes.
- The bulk of the tribal population lives in remote, high-altitude areas in the districts of Lahaul, Spiti, Kinnaur, and Chamba.
- The tribal population of the state was 3.92 lakh (about 6% of the total) in 2011.

### Hatti community

- The Hattis are a close-knit community.
- **Harris people take their name from their traditional occupation** of selling home-grown crops, vegetables, meat, and wool at small-town markets known as 'haats'.
- Hatti men traditionally dress in distinctive white headgear on ceremonial occasions.
- In Himachal Pradesh, Hattis people live in 154 panchayat areas, and according to the 2011 census; members of the community are around 2.5 lakh.
  - The present-day population of the Hattis is around 3 lakh.
- **They live near the Himachal-Uttarakhand border area in the basin of the Giri and Tons rivers,** both these rivers are tributaries of the Yamuna.
- **The Tons River marks the border between the two states.**
  - Hattis live in the Trans-Giri area in Himachal Pradesh and Jaunsar Bawar in Uttarakhand.
  - Both have a similar tradition, and inter-marriages are common among them.
- A rigid caste system operates in the community;
  - The Bhat and Khash are so-called upper castes people.
  - The Badhois are so-called lower caste people.
  - Inter-caste marriages between these 2 castes are discouraged.
- The Hattis people are governed by a traditional council called 'khumbli' which is similar to the 'khaps' of Haryana, they decide community matters.

### Tribal Area

- The **Indian Constitution states two types of areas:**
  - Scheduled Areas in terms of the 5th Schedule of the Constitution.
  - Tribal Areas in terms of 6th Schedule.
- "The "Tribal Areas" are also mentioned under Article 244(2) of the Constitution.
- **For declaration of Scheduled Areas, the criteria followed are:**
  - The predominance of the tribal population.
  - Closeness and reasonable size of the area.

- Presence of a viable administrative unit such as a district, block or taluk.
- Economic backwardness of the area as compared to neighbouring areas.

# Simultaneous Elections

### In News

- The Union Law Minister has stated in the lok sabha that the **matter of conducting simultaneous elections of Lok Sabha and Assembly elections had been referred to the Law Commission.**

### Significance of Simultaneous Elections

- **Save Public Money.**
- Allow political parties to **focus more on policy and governance.**
- Reduce unnecessary expenditures.
- Reduce the unnecessary use of manpower.
- **Stop the drain on the administrative setup** and security forces.
- Ensure better implementation of government policies on time.

### Challenges

- A **massive increase in demand for electronic voting machines (EVMs)** and voter-verifiable paper audit trail (VVPAT) units.
- Ensuring the availability of VVPATs everywhere poses a Logistic challenge.
- **Political consensus**, as well as legislative Cooperation from various parties at the centre and in the states, is required.

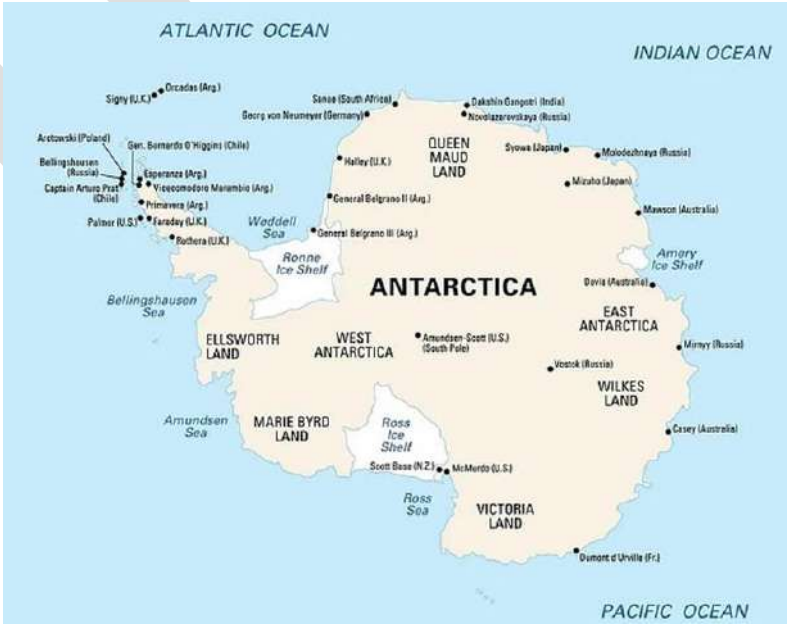
### Way Forward

- It would be far more productive for political parties to **focus on the basic electronic reforms and find ways to curb excessive election expenditure.**
- Achieved by introducing constitutional amendments and with the ratification of the states.
- Law Commission recommended holding simultaneous elections to the Lok Sabha and state assemblies to save public money.
- Simultaneous polls can be achieved if there is political will and if the states agree to voluntary.

# Indian Antarctica Bill 2022

### In News

- **The Parliament of India has passed the Indian Antarctic Bill, in 2022.**
- The Bill aims to extend the application of domestic laws to India's research stations in the Antarctic region.
- The bill prohibits Indian expedition to Antarctica without a permit or written authorisation of another party to the Antarctic Treaty.




### Details

- The bill aims to **ensure the de-militarization of the region along with getting rid of mining or illegal activities**.
  - It also aims that there should not be any nuclear test/explosion in the region.
- The bill is pursuant to **India's accession to the Antarctic Treaty**, the Protocol on Environment Protection (Madrid Protocol) to the Antarctic Treaty and the Convention on the Conservation of Antarctic Marine Living Resources.
- The Bill provides a **harmonious policy and regulatory framework for India's Antarctic activities** through well-established legal mechanisms and will help in efficient and elective operations of the Indian Antarctic Programme.
- It will also **facilitate India's interest and** proactive involvement in the management of growing Antarctic tourism and sustainable development of fisheries resources in Antarctic waters.
- It will also help in increasing the international visibility, and credibility of India in Polar governance leading to international collaboration and cooperation in scientific and logistics fields.
- The enforcement of such laws will confer Jurisdiction on the courts of India to deal with any dispute or crimes committed in parts of Antarctica.
- The Bill also proposed to **set up Indian Antarctic Authority (IAA) under the Ministry of Earth Sciences**, which shall be the apex decision-making authority and shall facilitate programmes and activities permitted under the Bill.

### Present status

- India today has **two operational research stations in Antarctica named;**
  - Maitri (Commissioned in 1989).
  - Bharati (Commissioned in 2012).
- India has successfully launched 40 annual scientific expeditions to Antarctica till date.
- With Himadri station in Ny-Alesund, Svalbard, Arctic, India now belongs to the elite group of nations that have multiple research stations within the Polar Regions.
- The Antarctic Treaty was signed in Washington D.C. in 1959 and was initially signed by 12 countries. India signed the Antarctic Treaty in 1983 and received consultative status in 1983.
- The **Convention on the Conservation of Antarctic Marine Living Resources was signed at Canberra in 1980**, for the protection and preservation of the Antarctic environment and, in particular, for the preservation and conservation of marine living resources in Antarctica.
- India signed the Protocol on Environmental Protection to the Antarctic Treaty in 1998. Antarctica lies south of 60 ñ South Latitude, which is a natural reserve, devoted to peace and science and should not become the scene or object of any international discord.

# Irrational Freebies

### In News

- Recently the **Supreme Court of India has asked the Union government to find out a way to restrain political parties from promising and distributing "irrational freebies"** during election campaigns.
- A Bench led by the Chief Justice of India has raised concern over the issue as "serious" and asked the union government to control the promise of "freebies" to entice votes.
- The Election Commission of India (ECI) stated that "whether such policies are financially viable or its adverse effect on the economic health of the State is a question that has to be considered and decided by the voters of the State".
- The court said that freebies are a "serious issue" and had to be tackled at the level of the States.

### Details

- **During election time, Political parties make promises to the voters to provide free electricity/water supply, monthly allowance** for the unemployed, laptops, smartphones, etc.
- These steps are justified as there has been **rising inequality in our country**, therefore some kind of **relief to the population needs to be provided**.
- It promotes socio-economic Growth: **Public Distribution System, employment guarantee schemes, and support for the social sector: education** and health.

### Concern

- Freebies can hurt macroeconomic stability, it distorts expenditure priorities.
- **Negative i**mpact on the public exchequer and most of the states of India do not have strong financial health.
- **Against Free and Fair Election**
- **I**t would lead to the overuse of natural resources, Ex- Free water, electricity, etc.

### Way Forward

- **Need to understand the** socio-economic impact of state support on the economy, life quality, and social cohesion in the long run.
- Need to **Differentiate between Subsidies and Freebies,** as targeted subsidies are justified to promote socio-economic development and reducing inequality and for promoting sustainable development, however, irrational freebies need to be regulated as they could challenge the economic stability of the nation.

# Kangaroo Courts

### In News

- The Chief **Justice of India has raised concern over rising incidents of media kangaroo courts**, Ill-informed and agenda-driven debates that are hurting Indian democracy.
  - Biased views promoted by the media are affecting the people, weakening democracy, and harming the system.
- Chief Justice of India has **urged the media, particularly electronic and social media, to behave responsibly.**

### Kangaroo Court

- It is defined as an **unofficial court managed by a group of people to try someone as guilty even without good evidence**.
- It ignores acknowledged standards of law or justice.
- The first kangaroo courts originated in the United States in 1849.
- It was first mentioned in 1853 in a book in the USA.
- It undermines the importance of the Judiciary and poses a serious challenge to the law and order situation.

- It also goes against the **principle of "Rule of Law".**

**Concern**

- The media is far from being independent. This is because of the Control of Government over the media Called Censoring and because big business houses Control the media.
- **Corporate Funding -** A lot of money is spent on maintaining People and getting the latest technology. To meet this Cost, it needs money.
  - Media, therefore, uses advertising as a tool to raise revenue.
- **Manipulating News for TRPs is not only a financial scam but also morally and ethically wrong.**
- Some Channels are **spreading a hate narrative** which is a violation of the fundamental right of the citizen to know the truth through the media.
- The media has become a source of disinformation, and this is also an ethical issue.
  - Both legal and ethical dimensions are equally serious.

# GOVERNANCE

## Global Sustainable Development Report 2022

**In News**

- **India ranked 121 among 163 countries in the recently released United Nations-mandated Sustainable Development Reports (SDG).**
  - The report is published by a group of independent experts at the Sustainable Development Solutions Network (SDSN).
- Since 2015, the Sustainable Development Reports (SDG) has been **tracking and ranking the performance of 163 United Nations member states.**

**Key Points of the Reports**

- The report was **based on the NITI Aayog's index on SDGs.**
- India's continues to face major challenges in achieving 11 of the 17 SDGs.
- **India made some progress in;**
  - SDG 2 on ending hunger.
  - SDG 3 on good health and well being.
  - SDG 6 on clean water and sanitation.
- In the 2022 Global Index of Sustainable Development Goals, India ranked 121 among 163 countries.
  - India had ranked 117 in 2020 and 120 in 2021.
- The report highlighted that **India is on the track to achieving SDG 13 on climate action.**
- Telangana is the top overall performers in the country.

**About Sustainable Development Goals (SDGs)**

- To bring sustainable development into the mainstream **United Nations (UN) launched the 2030 Agenda for Sustainable Development and SDGs.**
- This universal, integrated and transformative agenda aims to spur actions that will end poverty and build a more sustainable world over the next 15 years.
- There are **17 goals and 169 targets** specific targets to be achieved by 2030. Reaching the goals requires action on all fronts – governments, businesses, civil society and people everywhere all have a role to play.
- SDGs are **not legally binding.**

## State of Food Security and Nutrition in the World

**In News**

- The United Nations has recently published "The State of Food Security and Nutrition in the World (SOFI) Report 2022".

- **The report was jointly published by;**
  - The Food and Agriculture Organization of the United Nations (FAO).
  - The International Fund for Agricultural Development (IFAD).
  - The United Nations Children's Fund (UNICEF).
  - The UN World Food Programme (WFP).
  - The World Health Organization (WHO).

### Key Points of the Report

- The report highlights that the **world could miss its goal of ending hunger, food insecurity and malnutrition in all its forms by 2030.**
- Globally, the **number of hungry people increased to 828 million in 2021.**
  - An increase of about 46 million since 2020.
- Global hunger levels have increased by 150 million since the outbreak of the COVID-19 pandemic.
- The report Projected that nearly 670 million people or 8 % of the world population would face hunger in 2030, even if the global economy recovers.
- Around 2.3 billion people worldwide (29.3 per cent) were moderately or severely food insecure in 2021 — 350 million more compared to before the COVID-19 pandemic. Nearly 924 million people (11.7 per cent of the global population) faced food insecurity at severe levels, an increase of 207 million in two years.
- **In 2021, the gender gap in food insecurity reached at 31.9%.**
  - 31.9% of women in the world were moderately or severely food insecure, compared with 27.6% of men.
- According to the report, **almost 3.1 billion people could not afford a healthy diet in 2020, reflecting the effects of inflation on consumer food prices.**
  - The Russia-Ukraine war, pushing up the prices of grain, fertiliser, energy, and ready-to-use therapeutic food.
- The report suggested that if governments incentivise the production, supply and consumption of nutritious foods, then it will make healthy diets less costly, more affordable and equitably for all.
- The report highlighted that governments could do more to reduce trade barriers for nutritious foods, fruits, vegetables and pulses.

### How serious is the food crisis?

- Many countries were facing **growing food insecurity even before Russia's war.**
- Climate shocks, conflicts and the COVID-19 pandemic had disrupted supply chains, pumping up prices of both commodities and crops.
- As of June 1, 2022, the Agricultural Price Index was 40% higher compared to January 2021, according to the World Bank.
- Maize and wheat prices rose 42% and 60%, respectively, from the levels of January 2021.
- Global food, fuel and fertilizer prices are projected to be sharply higher this year and will remain elevated into 2024, the Bank estimates.

# National Institutional Ranking Framework (NIRF), 2022

### In News

- The **Union Minister of Education has recently released the National Institutional Ranking Framework (NIRF) on their official website 'nirfindia.org'**.
- Indian Institute of Technology, Madras (IIT-M) has again topped the list in the overall educational institutes and engineering categories.
- All India Institute of Medical Science in Delhi emerged as the best medical college in India.

### National Institutional Ranking Framework (NIRF)

- The **National Institutional Ranking Framework** (**NIRF**) is a methodology adopted by the Union Ministry of Human Resource Development (Now Ministry of Education).
  - It was **started in 2015** to rank institutions of higher education in India.
- The Union Ministry of Education has released the National Institutional Ranking Framework (NIRF) Ranking 2022 **for 11 categories, this includes:**
  - Overall
  - University
  - Management
  - College
  - Pharmacy
  - Medical
  - Engineering
  - Architecture
  - ARIIA (Atal Ranking of Institutions on Innovation Achievements)
  - Law Institutions
  - Research institutions.
- **The ranking framework analyses institutions under 5 broad categories of parameters**;
  - Teaching, Learning and Resources.

- Research and Professional Practice.
- Graduation Outcomes.
- Outreach and Inclusivity.
- Perception.

- **Ranks are allocated based on the sum of marks** assigned for each of these 5 categories of parameters.
- The ranking helps in assessing the institution, this also promotes a sense of competition among the institution, which encourages them to take more steps to promote quality education and education-related services to perform better in the next ranking.

# SOCIAL ISSUES

## Extension of Beti Bachao Beti Padhao Scheme

### In News

- The Union Ministery of Women and Child Development (WCD) has announced to extend the Beti Bachao Beti Padhao programme across the country.
- Currently, the programme is operational in 405 districts.
- The Programme aims to promote women's empowerment, by focusing on the girls' education and improving the sex ratio.

### Background

- The Census of 2011 reflects a declining trend in the Child Sex Ratio (CSR) between 0-6 years with an all-time low at 918.
- A decline in CSR reflects:
  - Pre-birth discrimination through gender-biased sex selection.
  - Post-birth discrimination against girls (in form of their health, nutrition, and educational needs).

### Beti Bachao Beti Padhao (BBBP) programme

- In 2015, the Union Government has launched the *Beti Bachao Beti Padhao (BBBP)* programme.
- It is a tri-ministerial effort of;
  - Ministry of Women and Child Development.
  - Ministry of Health & Family Welfare.
  - Ministry of Education (Earlier Ministry of Human Resource Development).
- Since 2021 the Ministry of Skill Development and Entrepreneurship and Ministry of Minority Affairs have also been added as partners.
- The programme only focuses on awareness campaigns and no provision of individual cash transfers by the Government.
- The scheme is now subsumed into Mission Shakti.
- **Objectives of the Scheme;**
  - Prevent gender-biased sex selective elimination.
  - Ensure the survival and protection of the girl child.
  - Ensure education and participation of the girl child.
  - Increase girls' participation in the fields of sports.
- **The scheme aims to achieve:**
  - Improvement in the Sex Ratio at Birth (SRB) by 2 points every year,
  - Improvement in the percentage of institutional deliveries or sustained at the rate of 95% or above.
  - 1% increase in enrolment at secondary education level and skilling of girls/women per year.
  - To check the dropout rate among girls at secondary and higher secondary levels.
  - Raising awareness about safe menstrual hygiene management (MHM)

## Mission Buniyad

### In News

- The Delhi government has stated that under the Mission Buniyaad; the students of government schools and Municipal Corporation of Delhi schools have shown 20%-30% improvement in literacy and numeracy skills.
- Mission Buniyaad started **to bridge learning gaps caused by COVID-19 lockdowns.**
- The Mission also focused on making a road map to strengthen the foundational learning skills of students.
- The Mission **aims to develop the foundational skills of students in Hindi, English literacy, and mathematics.**

# Global Gender Gap Index

### In News

- **India ranked 135 among 146 countries in the recently released Global Gender Gap Index 2022**.
  - In 2021, India ranked 140 out of 156 nations.
- **Iceland ranked at the top** and it is the only country to have closed more than 90% of its Gender gap.
- Global Gender Gap Index was **releasedby the World Economic Forum (WEF).**

### Details

- In the **sub-index of "health and survival", India has ranked (146th) as the worst performer in the world.**
- According to the report, India will take more than 132 years to reach gender equality.
- **India has ranked poorly among its neighbours** and it is behind:
  - Bangladesh (71)
  - Nepal (96)
  - Sri Lanka (110)
  - Maldives (117)
  - Bhutan (126).
- In South Asia, only the performance of Iran (143), Pakistan (145) and Afghanistan (146) was worse than India.
- India's scored 0.629 (out of 1), and this was the 7th-highest score in the past 16 years.
- The report mentioned that the labour force participation shrunk for both men (by 9.5%) and women (3%).

### Global Gender Gap Index

- It is **released by the World Economic Forum (WEF).**
- The Global Gender Gap **Index measure gender equality across 4 key dimensions**:
  - Economic Participation and Opportunity.
  - Educational Attainment.
  - Health and Survival.
  - Political Empowerment.
- It measures scores on a 0-to-100 scale, and the score can be interpreted as the distance covered towards achieving gender equality.

### Important Reports released by World Economic Forum

- Travel and Tourism Competitive Report.
- Global Competitiveness Report.
- Global Gender Gap Report.
- Global Risks Report.
- Global Social Mobility Index.
- Energy Transition Index

# Population Growth

### In News

- Recently the **Health Ministry released the Family Planning Vision-2030 document** which raised concern over High teenage fertility in some areas, however, the overall fertility rate has stabilised across the country.

| World Population | Year |
|---|---|
| 1 billion | 1804 |
| 2 billion | 1927 |
| 3 billion | 1959 |
| 4 billion | 1974 |
| 5 billion | 1987 |
| 6 billion | 1998 |
| 7 billion | 2011 |
| 8 billion | 2022 |

*Source: United Nations Population Fund*

### Key Points of the document

- Participation of men will be encouraged in the family planning programme.
- **Lack of access to contraceptives** had been identified as the major challenge.
- Low contraceptive use among married adolescents and young women results in teenage pregnancy.
- **Nearly 118 districts reported a high percentage of teenage pregnancies**; Bihar (19), West Bengal (15), Assam (13), Maharashtra (13), Jharkhand (10), Andhra Pradesh (7), and Tripura (4).
- Over 44% of the districts in India reported a high percentage of women marrying before the age of 18 years.
- Male contraceptive methods were largely limited to condoms. Male sterilization was at 0.3%.
- India will continue to have one of the youngest populations in the world until 2030.

### Related News

- **On the occasion of World Population day (11th July)** the United Nations Department of Economic and Social Affairs, Population Division **has released the** World Population Prospects 2022.
- **According to the report;**

- **In 2022, India's population stands at 1.412 billion, compared to China are 1.426 billion.**

### Key Points of the Report

- The study projected that **next year India will surpass China as the world's most populous country.**
  - India will become the world's most populous nation by 2023 and by 2050 India's population would be 1.668 billion.
- The report has also mentioned that the **world's population would cross 8 billion by mid-November 2022.**
- The global population is growing at its slowest rate since 1950; the **current rate is under 1% annually**.
- At Present, **the world's two most populous regions are;**
  - Eastern and South-Eastern Asia, with 2.3 billion people, represents 29% of the world population.
  - Central and Southern Asia, with 2.1 billion, represents 26% of the total global population.
- The report highlighted that the **world's population could cross 8.5 billion in 2030 and 9.7 billion in 2050.**
- More than 50% of the projected increase in global population by 2050 will be concentrated in just 8 countries:
  - The Democratic Republic of Congo
  - Egypt
  - Ethiopia
  - India
  - Nigeria
  - Pakistan
  - Philippines
  - Tanzania.
- **The world's population would reach a peak of around 10.4 billion people during the 2080s and after that, it would remain at that level until 2100**.
- The report has also highlighted that 10 countries experienced a net outflow of more than 1 million migrants between 2010 and 2021.
  - In some countries, these outflows were due to temporary labour movements.
  - In some countries, it was due to insecurity and conflicts that have driven the net outflow of migrants.
- **Global life expectancy at birth reached 72.8 years in 2019**; it will reach around 77.2 years in 2050.
  - Life expectancy in the least developed countries is about 7 years behind the global average.

# INTERNATIONAL RELATIONS

## Finland and Sweden to join NATO

### Context

- The **30 NATO allies signed off on the accession protocols for Sweden and Finland, sending the membership bids of the two nations to the alliance capitals for legislative approvals**.

### More on the news

- The move further **increases Russia's strategic isolation in the wake of its invasion of neighbouring Ukraine in February and military struggles there since.**
- **Despite the agreement in the alliance, parliamentary approval in member state Turkey could still pose problems for their final inclusion as members.**
- Ankara could still block the process if the two countries fail to fully meet Turkey's demand to extradite terror suspects with links to outlawed Kurdish groups or the network of an exiled cleric accused of a failed 2016 coup in Turkey.

### What is NATO?

- The North Atlantic Treaty Organization is a **military alliance** created in 1949.
- **Aim:** to provide collective security against Soviet expansionism and to encourage European political integration in the aftermath of World War II.
- It serves as a **collective security system**, wherein its member states agree to mutually defend any attack on a member party.
- **Membership**: There are **30 countries** that are currently part of NATO. **Two** countries in **North America** and **28European countries**, including several former Soviet nations.

### What does it take to become a member of the alliance?

- It employs an "**open door policy**" for aspiring members.
- Any European country can become a member of the Alliance at the invitation of the North Atlantic Council.
- Aspiring nations have to **meet certain political, economic, and military standards to join.** That includes
  - New members must **uphold democracy**, including tolerating diversity
  - New members must be making progress toward a **market economy**
  - Their military forces must be **under firm civilian control**

- They must be **good neighbors and respect sovereignty** outside their borders
- They must be **working toward compatibility with NATO forces**

# Countering America's Adversaries through sanctions Act (CAATSA)

### Context

- US Democratic Representative Ro Khanna said **the US government must not impose sanctions on India under the Countering America's Adversaries through Sanctions Act (CAATSA) for its purchase of S-400 missile weapons system from Russia.**

### Details

- In the past, other American lawmakers have demanded India should not be sanctioned
- The Biden administration has not yet issued a clear statement on whether India might be subjected to sanctions under CAATSA, even as India began receiving the weapons from Russia in late 2021.

### What is the CAATSA, and could it apply to India?

- CAATSA is a law that came into effect in the US in **2017, meant to punish countries having deep engagements with Russia, North Korea, and Iran using economic sanctions**.
- The US flagged issues of Russia's alleged interference in the 2016 Presidential elections, and its role in the Syrian war as some of the reasons for punishing engagement with it.
- It said **countries having a "significant transaction" with Russian intelligence and military agents will be subject to at least five kinds of sanctions.**
- Ordinary transactions will not invite sanctions, and the **decision of who has sanctions imposed on them comes down to the interpretation of "significant transaction".**
- **This is one of the various waivers or exemptions mentioned, such as the transaction not affecting US strategic interests, not endangering the alliances it is a part of, etc.**
- Section 231 of the law notifies 39 Russian entities, transactions with whom could invite sanctions. **Almaz-Antey Air and Space Defence Corporation JSC, who have made the S-400 system, are in this list.**
- India has purchased the S-400 Triumf missile systems, which have advanced capabilities to judge the distance from a target and launch a surface-to-air missile attack.
- **Five such systems were bought by India in 2018 for US$ 5.5 billion and in November last year, their delivery began.** They were deployed in Punjab.
- In 2020, Turkey was sanctioned for its purchase of the S-400 system.

### So why has India not faced CAATSA sanctions yet?

- The US has never categorically stated whether CAATSA would apply to India.
- India is a really important security partner of US now. And US values moving forward that partnership
- With the ongoing conflict in Ukraine and the US hardening its stance against Russia, India has continued its neutrality and not joined any of the sanctions against Russia imposed by Western countries.
- India has mentioned the need for the S-400 missiles for its border defence several times in the past.

# Digital Nomad Visas

### Context

- **As Indonesia deals with the economic impacts of Covid the country has announced "Digital Nomad Visas" for travellers, to attract more foreign tourists.**

### Who are digital nomads?

- Digital Nomads are people who work remotely while travelling to different places and spending their earned income in the country they are travelling to.
- As the pandemic took place most of the workspaces were shifted online, while some offices have begun to open, most organisations have declared remote work.
- Now as the world has moved towards getting vaccinated and international borders have opened up, people can continue doing their regular jobs remotely from anywhere in the world.
- **Digital nomads are defined as people who choose to embrace a location-independent, technology-enabled lifestyle that allows them to travel and work remotely, anywhere in the Internet-connected world.**
- **Unlike regular remote workers, who tend to stay in one geographic area, digital nomads travel and explore while working.**

### What is the "Digital Nomad Visa" Indonesia has proposed?

- The Digital Nomad Visa **would allow remote workers to stay in Indonesia, including Bali, tax-free.**
- Through the visa, Indonesia aims to bring in over 3.6 million overseas travellers into the country over the next year to explore spiritual retreats as well as the eco-tourism of Indonesia.
- Under the visa, as long as the remote workers earn from companies outside Indonesia, they can live tax-free inside the

country, including on islands like Bali.

### What are some other countries that provide nomad visas?

- **Italy** in March, released a new permit for non-EU nationals, or digital nomads, who can stay in the country for up to 90 days without a visa.
- **Antigua and Barbuda** offer a digital nomad visa for two years where the travellers will be required to maintain their own health insurance.
- **Barbados** offers a year-long remote working visa which can be extended further.
- Other countries offering nomad visas are **Croatia, Costa Rica, Georgia, Hungary, Iceland, Mauritius, Norway, and Spain among many others.**

## I2U2 Summit

### Context

- **Prime Minister Narendra Modi will participate in the first-ever I2U2 Virtual Summit along with the heads of state of Israel, the UAE, and the US.**

### What does I2U2 stand for?

- I2U2 stands for **India, Israel, the UAE, and the US**, and was also referred to as the **'West Asian Quad'** by Ahmed Albanna, Ambassador of the UAE to India.
- Back in October 2021, a meeting of the foreign ministers of the four countries had taken place when External Affairs Minister S Jaishankar was visiting Israel. At that time, the grouping was called the **'International Forum for Economic Cooperation'.**
- The **aim is to discuss "common areas of mutual interest, to strengthen the economic partnership in trade and investment in our respective regions and beyond".**
- **Six areas of cooperation have been identified by the countries mutually, and the aim is to encourage joint investments in water, energy, transportation, space, health, and food security.**
- With the help of "private sector capital and expertise", the countries will look to modernise infrastructure, explore low carbon development avenues for industries, improve public health, and promote the development of critical emerging and green technologies.
- The grouping also points to India's growing engagement with countries in West Asia including Israel, with whom India has developed closer ties under PM Modi in the last few years.
- Two weeks ago, PM Modi also made a short visit to the UAE after attending the G7 Summit, soon after Vice-President Venkaiah Naidu's trip in May this year.
- About US President Biden's ongoing visit to the Middle East, a US official had earlier said: "The visit will also focus on Israel's increasing integration into the region, both through the Abraham Accords with UAE, Morocco and Bahrain…and also an entirely new grouping of partners including Israel, India, UAE and the United States — what we call I2U2."
- The **Abraham Accords of 2020 had led to Israel formally normalising diplomatic ties with the UAE and two other countries in the region, marking an important shift in the stance of West Asian countries on Israel.**

# HEALTH

## Lumpy Skin Disease

### Context

- More than 1,500 animals, mainly cows and buffaloes, have died in Gujarat due to the infectious lumpy skin disease.

### About

- Lumpy skin disease (LSD) is an infectious disease in cattle caused by a virus of the family Poxviridae, also known as Neethling virus.

### Transmission

- LSD infects cattle and water buffalo mainly through vectors such as blood-feeding insects.

### Symptoms

- The disease is characterized by fever, enlarged superficial lymph nodes and multiple nodules on the skin and mucous membranes. Infected animals immediately start losing weight and may have fever and lesions in the mouth, along with a reduced milk yield. Other symptoms include excessive nasal and salivary secretion. Pregnant cows and buffaloes often suffer miscarriage and, in some cases, diseased animals can die due to it as well.

### Prevalence

- The disease has been endemic in most African countries, and since 2012 it has spread rapidly through the Middle East, Southeast Europe and West and Central Asia. Since 2019, several outbreaks of LSD have been reported in Asia.

### Economic Implications

- The virus has important economic implications since affected animals tend to have permanent damage to their skin, lowering the commercial value of their hide. Additionally, the disease often results in chronic debility, reduced milk production, poor growth, infertility, abortion, and sometimes death.

### Prevention

- Successful control and eradication of LSD relies on early detection…followed by a rapid and **widespread vaccination campaign.**

**Other steps:**

- Sanitise cattle-sheds by eliminating vectors through application of insecticides and spraying disinfectant chemicals.
- Isolate the infected cattle immediately from the healthy stock and contact the nearest veterinarian for treatment of the infected animal. This is necessary as otherwise the virus may prove fatal.
- Report the outbreak to the state government so that the rest of the healthy herd can be vaccinated using goat pox vaccine.
- Proper disposal of the carcasses can include incineration or burning of the bodies at high temperatures, along with disinfection of premises.

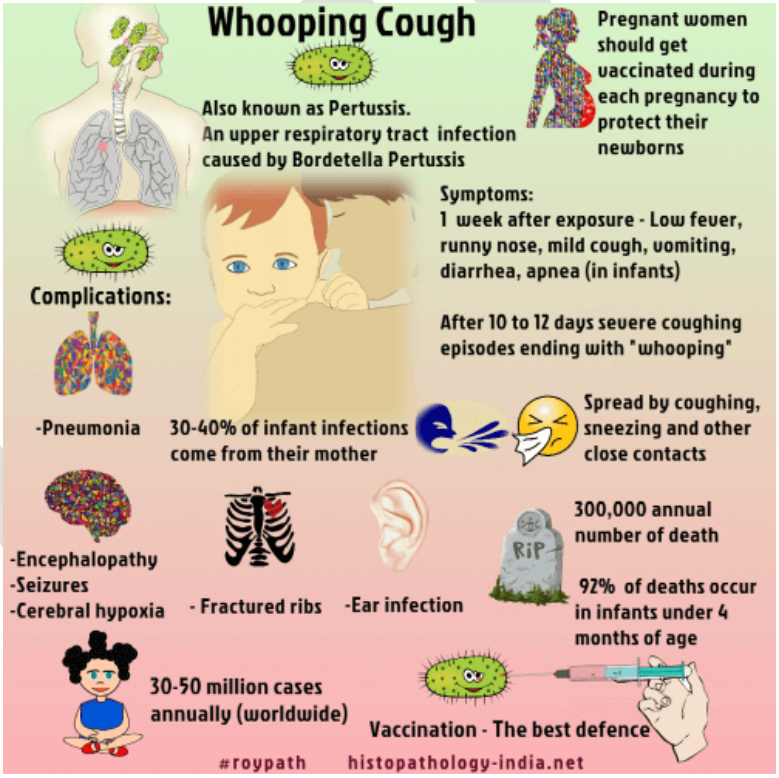
# DPT Vaccine

### Context

- According to UNICEF three million children in India missed DPT dose in 2020 because of pandemic.

### DPT vaccine

- The DPT vaccine is a class of combination vaccines against three infectious diseases in humans: **diphtheria, pertussis (whooping cough), and tetanus.**
- The vaccine components include diphtheria and tetanus toxoids and either killed whole cells of the bacterium that causes pertussis or pertussis antigens.




### Diphtheria

- Diphtheria is an infection caused by strains of bacteria called **Corynebacteriumdiphtheriae** that make a toxin (poison).
- Complications include **myocarditis, inflammation of nerves, kidney problems, and bleeding problems due to low levels of platelets**.
- Diphtheria bacteria **spreads from person to person**, through respiratory droplets, like from coughing or sneezing.
- Antibiotics, such as penicillin help kill bacteria in the body, clearing up infections.

### Tetanus

- Tetanus, also known as lockjaw, is a bacterial infection caused by *Clostridium tetani*, and is characterized by muscle spasms.
- **C. tetani** is commonly found in soil, saliva, dust, and manure. The bacteria generally enter through a break in the skin such as a wound by a contaminated object. They produce toxins that interfere with normal muscle contractions. The disease does not spread between people. Tetanus can be prevented by immunization.

# Aneurysm

### Context

- Actor Emilia Clarke, who played in the series Game of Thrones, recently told that she had suffered two brain aneurysms.

### Aneurysm

- **About**: Aneurysm is a **swelling of the arteries and veins in any part of the body**.
- **Cause:** It is caused by **weakening of the walls**.
- **Occurrence:** It occurs most commonly in the aorta, back of the knees, brain or intestines. Blood vessels of the brain and the heart are the most common locations to get seriously affected.
- **Fatality:** If the aneurysm gets ruptured, it can even cause internal bleeding and stroke.

- **Types of swelling:** The swelling can be of two types. Either the complete blood vessel is swollen or a specific side of the blood vessel can bulge out from the sides.
- **Risk factors:** Potential risk factors for aneurysm **include smoking, age, high cholesterol, obesity, hypertension or tissue disorders**. Pregnancy can also increase risk of aneurysm of the spleen.

### Screening & diagnosis

- Usually, an aneurysm remains undetected and screening may be required for patients needing monitoring or treatment.
- MRI scans are useful for identifying aneurysms that do not rupture but the symptoms are prevalent.
- In case the aneurysm gets ruptured and leads to the risk of bleeding in the brain, CT scans are preferred. An angiogram may be performed in extreme cases with severe rupture and bleeding in the brain to identify the exact area for treatment.

### Treatment innovation

- A device called flow diversion stent is a new innovative intervention for treatment of aneurysm for the initial stages, when it has not ruptured.
- A cylindrical, metallic mesh stent is placed inside the sac of the parent blood vessel to divert the blood flow from the aneurysm. The diversion is aimed at preventing rupture. Flow diversion can be used to treat large or giant wide-necked brain aneurysms.

### Risk reduction

- Most cases being congenital, it is not always possible to prevent aneurysm, but certain lifestyle changes can help reduce risk. These include **quitting smoking; maintaining a healthy blood pressure by sticking to a balanced diet; maintaining a healthy body weight; and avoiding a high cholesterol diet.**

## Marburg Virus Disease

### Context

- Ghana has reported its first-ever suspected cases of Marburg virus disease.

### Details

- **About:** Marburg virus disease is a highly virulent disease that causes haemorrhagic fever, with a fatality ratio of up to 88%. It is **in the same family as the virus that causes Ebola virus disease i.e family Filoviridae.**
- **Origin:** The virus was initially detected in 1967 after simultaneous outbreaks in Marburg and & Frankfurt in Germany; and in Belgrade, Serbia.
- **Cause:** In this there is severe illness of humans and non-human primates caused by either of the two Marburgviruses**: Marburg virus (MARV) and Ravn virus (RAVV). MVD is a viral hemorrhagic fever (VHF),** and the clinical symptoms are indistinguishable from Ebola virus disease (EVD). Marburgvirions contain non-infectious, linear nonsegmented, **single-stranded RNA genomes.**
- **Prevalence:** Marburgviruses are **endemic in arid woodlands of equatorial Africa.**
- **Symptoms:** The common symptoms of **a virus are fever, headache, fatigue, abdominal pain and gingival haemorrhage.**
- **Transmission: Fruit bats of the Pteropodidae Family are the key carriers of the disease**. It typically infects humans following prolonged exposure to mines or caves inhabited by Rousettus bat colonies. The home range of the fruit bats includes India, parts of Africa and the Middle-East, South-East Asian countries and some parts of Australia. Human-to-human transmission takes place through **direct contact with the blood, secretions, organs or other bodily fluids of infected people**. Surfaces and materials contaminated with these fluids are other vital sources. Its incubation period ranges from two days to three weeks.
- **Vaccine and Treatment:** There are no **approved vaccines** or antiviral treatments for the virus yet. **Early supportive care with rehydration and symptomatic treatment** improves survival rates.

## 'Public Health Emergency of International Concern' (PHEIC)

### Context

- The WHO has declared the global monkeypox outbreak a 'public health emergency of international concern' (PHEIC), one step below that of a 'pandemic.'

### Public health emergency of international concern (PHEIC)

- A public health emergency of international concern (PHEIC) is a formal d
- eclaration by the World Health Organization (WHO) of "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response".
- It is formulated when a situation arises that is "serious, sudden, unusual, or unexpected", which "carries implications for public health beyond the affected state's national border" and "may require immediate international action".
- Under the 2005 International Health Regulations (IHR), states have a legal duty to respond promptly to a PHEIC.
- The declaration is publicized by an IHR Emergency Committee of international experts, which was developed following the 2002–2004 SARS outbreak.

- Between 2009 and 2022, there were seven PHEIC declarations: the 2009 H1N1 (or swine flu) pandemic, the 2014 polio declaration, the 2013–2016 outbreak of Ebola in Western Africa, the 2015–16 Zika virus epidemic, the 2018–20 Kivu Ebola epidemic, the ongoing COVID-19 pandemic, and the ongoing 2022 monkeypox outbreak. The recommendations are temporary and require reviews every three months.
- A PHEIC is **not only confined to infectious diseases, and may cover an emergency caused by exposure to a chemical agent or radioactive material.** It can be seen as an "alarm system", a "call to action", and "last resort" measure.

# GS-III
# ECONOMY

## Financial Services Institutions Bureau (FSIB)

### Context

- The **Centre has transformed the Banks Board Bureau (BBB) into Financial Services Institutions Bureau (FSIB) by making some amendments.**

### Details

- Guidelines for selection of general managers and directors of public sector general insurance companies have been made part of FSIB.
- The amendments were required as the Delhi High Court in its order last year said the BBB is not a competent body to select the general managers and directors of state-owned general insurers.

### About

- The Government has constituted a new authority named Financial Services Institutions Bureau (FISB).
- The FISB **will recommend persons for appointment as Whole-Time Directors (WTDs) and Non-Executive Chairpersons (NECs) on the Boards of various financial service institutions like Public Sector Banks, financial institutions and Public Sector Insurers**
- . FISB will also advise on certain other matters relating to personnel management in these institutions.
- **A fee of Rs. 50,000 per sitting shall be payable to the chairperson and part-time members.**
- **The functions of the FISB will include the following:**
  - To recommend persons for appointment as whole-time directors (WTDs) and non-executive chairpersons (NECs) on the Boards of various financial institutions.
  - To advise the Government on matters relating to appointments, transfer or extension of term of office and termination of services of the said directors.
  - To advise the Government on the desired management structure at the Board level for the various financial institution.
  - To advise the Government on a suitable performance appraisal system for WTDs and NECs and formulation and enforcement of a code of conduct and ethics for them.
  - To build a databank containing data related to the performance of the financial institutions
  - To advise the Government on evolving suitable training and development programmes for management personnel in financial service institutions
  - To help financial service institutions in terms of developing business strategies and capital raising plans etc.

## Digital Banks

### Context

- Recently, the National Institution for Transforming India ("NITI Aayog") has released a discussion paper titled Digital Banks A Proposal for Licensing & Regulatory Regime for India ("Licensing Framework").

### Details

- The Discussion Paper has tried to resolve some of the above issues by the introduction of a full-stack digital bank license proposal that would mitigate the gaps in the existing Neo Bank Model.
- The proposed Licensing Framework creates an enabling environment for Digital Banks to overcome the limitations by allowing them to offer a full suite of banking services including issuing deposits and making loans. This would enable Digital Banks to offer innovative and efficient products and services with unique user experiences.
- The framework also would enhance regulatory oversight over Digital Banks, prevent uncontrolled replication of business models and protect the interest of the consumers.

### Digital Banking

- Banking that is **done through the digital platform without any paperwork** is referred to as digital banking.
- Digital Banking is the **automation of traditional banking services**. Digital banking enables a bank's customers to access

banking products and services via an electronic/online platform. Digital banking means **to digitize all of the banking operations and substitute the bank's physical presence with an everlasting online presence, eliminating a consumer's need to visit a branch.**

### Digital Product services

| Digital banking services | Utility |
|---|---|
| 1. Obtain bank statements | View and download your bank statements for any specified period. |
| 2. Transfer of Funds | With alternatives such as NEFT, RTGS, and IMPS available, the need to issue cheques and DDs has been eradicated. |
| 3. Mobile banking | Mobile banking is digital banking through an application optimized for smartphones and tablets. |
| 4. Cash withdrawals | ATMs facilitate cash withdrawals at any point in time. Moreover, ATMs are widely present in every locality. |
| 5. Bill payments | Auto-debit feature for bill payments lets a user setup monthly debits in favor of regular utility payment. |
| 6. Finance | Invest, raise loans, open fixed deposit accounts – all through digital banking. De-mat accounts can be linked to your bank accounts to provide a seamless flow of funds so you can invest promptly. |
| 7. Manage cheques | Intervene in the cheque clearing process using digital banking to stop the cheque if the need arises. |
| 8. Monitor transaction records | Banks send transaction alerts to the linked mobile number or email addresses. Transactions are updated almost as soon as executed. Digital banking also lets you monitor account balances or outstanding at the click of a button. |

### Benefits of Digital Banking

Digital banking aims to make life easier for the customers of a bank. Some of its benefits are

- The convenience of banking from the comforts of home
- 24*7 availability of access to banking functions
- Paperless banking
- Enables set up of automatic payments for regular utility bills
- Facilitates online payments for online shopping etc
- Extends banking services to remote areas
- Reduces the risk of counterfeit currency with digital fund transfers
- Strengthens privacy and security for customers
- Allows misplaced credit cards to reported and blocked instantly
- Restricts the circulation of black money
- Lowers the minting demands of currency

### Digital bank license roadmap in India

- In the first phase, a restricted digital bank license should be given to an applicant with restrictions in terms of volume/value of customers serviced and the like.
- In the second stage, the licensee will be put in a regulatory sandbox framework by the RBI.
- Finally, issue of a 'full-scale' digital bank license will be contingent on satisfactory performance of the licensee in the regulatory sandbox, including salient, prudential and technological risk management.

# National Agricultural Market

### In News

- **Under the National Agriculture Market (e-NAM) the Union Minister of Agriculture and Farmers Welfare has launched the Platform of Platforms (POP).**
- The Minister launched the Platform during the State Agriculture and Horticulture Ministers' Conference in Bangalore, Karnataka.
- On this occasion, a grant of more than Rs 37 crore was released to 1,018 Farmer Producer Organizations (FPOs) that will benefit about 3.5 lakh farmers.
- The Ministry has also released a Coffee Table Book to showcase the work and journey of e-NAM in bringing transparency and efficiency to agricultural trade practices through innovation and technology.

### Significance of Platform of Platforms (POP)

- It will be facilitated the farmers to **sell their products outside their state borders without any inconvenience.**
- It will increase farmers' digital access to multiple markets, buyers and service providers.
- It will also **bring transparency to business transactions.**
- It will **improve the price search mechanism and quality of the products.**
- More than 40 service providers from different platforms are covered under Platform of Platforms (POP).
- It will provide integrated services like trading, quality checks, warehousing, fintech, market information, transportation etc.
- It will **create a digital ecosystem** that will be benefited from the expertise of different platforms of the agricultural value chain.
- It will enable farmers, FPOs, traders and other stakeholders to access a variety of goods and services across the agricultural value chain through a single window.
- It will provide more options to the stakeholders and also saves the time and labour of the stakeholders.
- **Integration with e-NAM would ensure**:
  - Holistic services for the trading of agricultural produce including quality analysis, trading, and payment systems.
  - Logistics Service.
  - Quality Assurance Service.
  - Cleaning, Grading, Sorting and Packaging Service.
  - Warehousing Facility Service.
  - Agricultural Input Service.
  - Technology Enabled Finance and Insurance Service.
  - Advisory Services, crop forecasting, weather updates, capacity building for farmers etc.

### E-NAM

- **National Agriculture Market (e-NAM)** is an online trading platform for agricultural commodities.
  - It was launched by the Union Ministry of Agriculture in 2016.
  - The e-NAM portal is managed by Small Farmers' Agribusiness Consortium (SFAC).
- It encourages farmers, traders and buyers with online trading in commodities.
- It **helps in better price discovery and provides facilities for the smooth marketing of agricultural produce**.
- The Platform helps traders and exporters in procuring quality products in bulk and also ensures transparent financial transactions.
- The e-NAM is **linked with more than 1000 Agricultural Produce Market Committees (APMC**) in 18 states and 2 union territories, with over 50 lakh farmers' membership.

## Extended Fund Facility

### Context

- Staff-level talks between Pakistan and the International Monetary Fund (IMF) concluded for the seventh and eighth review under Extended Fund Facility (EFF).

### More on the news

- The talks were originally aimed at releasing a tranche of $900 million.
- IMF team reached an understanding with Pakistan to release $1.17 billion, subject to the board's approval.
- This brings the total disbursement under the current EFF to $4.2 billion so far, to support policy actions under FY 2023 budget, power sector reforms, and monetary policy to restrain inflation.

### What was the Extended Fund Facility (EFF)?

- The 39-month EFF between the two was signed in July 2019 to provide funds amounting to Self-Drawing Rights (SDR) – $4,268 million.
- **The EFF was signed by Pakistan to address the medium-term balance of payment problem, and work on structural impediments and increase per capita income.**
- The IMF placed demands including fiscal consolidation to reduce debt and build resilience, the market-determined exchange rate to restore competitiveness, eliminate 'quasi-fiscal' losses in the energy sector and strengthened institutions with transparency.

### How important is the IMF support to Pakistan?

- Pakistan's economic situation is dire.
- According to the Economic Survey of Pakistan 2022, the fiscal deficit in FY 22 was $18.6 billion, and the net public debt at $252 billion, which is 66.3% of the GDP.
- The power sector's circular debt is $14 billion.
- According to the State Bank of Pakistan's latest report, the current account deficit has peaked to $48.3 billion.

### Why have the Pakistan-IMF relations remained complicated?

- Structural reforms require long-term commitment, which have been sacrificed due to Pakistan's short-sighted political goals;

hence the urge to go to the IMF for fiscal stability has been repeated over time.
- Pakistan has signed various lending instruments with the IMF, and sought support from IMF around 22 times.
- However, only once has a programme been completed.
- Despite the latest agreement, the road ahead for the IMF and Pakistan is not an easy one.
- Political calculations and the elections ahead will play a role in Pakistan's economic decision-making.

# Zero-Coupon, Zero-Principal Instruments

### Context

- The government declared the so-called **zero-coupon, zero-principal instruments as securities that can be listed on particular exchanges.**

### Details

- According to the gazette notification, "zero coupon zero principal instrument" is an **instrument issued by a not-for-profit organisation that will be registered with the social stock exchange segment of a recognised stock exchange in accordance with the Securities and Exchange Board of India (Sebi) regulations.**
- These are financial instruments that any non-profit organisation can use to raise funds.
- Usually, such organisations raise money through donations from individuals or corporates. Now, they can issue a zero-coupon, zero-principal security through a social stock exchange (SSE) and those willing to donate money to their cause can buy these securities.
- Social stock exchanges were first cleared by Sebi in September 2021. **They are meant to be exchanges–like the NSE and BSE–except they will list only securities that raise money for non-profit or for-profit social enterprises. These exchanges are still in the works.**
- SEBI has come up with a broad framework for them to operate under the current stock exchanges. Therefore, even this new instrument will take a while to come into the market.
- **With its zero-coupon, zero-principal structure, it resembles a debt security like a bond**.
- **But with this new financial instrument, when an entity issues these securities and raises money, it is not a loan but a donation. So, the borrowing entity does not have to pay interest—therefore zero coupon—and it does not have to pay the principal (zero principal) either**.
- Like any other debt instrument, it will come with a time duration.
- It has been proposed that the issue size will need to be a minimum of Rs 1 crore and the application size a minimum of Rs 2 lakh.
- There is no clarity yet on whether the security will be transferable.
- Any individual or corporate can buy the security through any of the social security exchanges, once they are open for business.

### Concerns

- There have been concerns around lack of transparency in the way donations are used by non-profit or for-profit social enterprises.
- The organisations listed on the exchange will need to do regular audits of social impact and these will be disclosed to all stakeholders.
- Also, if an organisation issues these instruments and has few takers, it can be a red flag for other donors.

# 11th Agriculture Census 2021-22

### Context

- Ministry of Agriculture & Farmers Welfare launched the 11th Agriculture Census in the country.

### Agriculture Census

- A census of agriculture is a statistical operation for collecting, processing and disseminating data on the structure of agriculture, covering the whole or a significant part of a country.
- Typical structural data collected in a census of agriculture are number and size of holdings, land tenure, land use, crop area, irrigation, livestock numbers, gender of holders, number of household members, labour and other agricultural inputs.

### Agricultural census in India

- Agriculture Census in India is **conducted every 5 years.**
- The **1970/1971 Census was considered the first comprehensive census** of agriculture to be conducted in the country.
- Quinquennial censuses of agriculture were successively undertaken in 1976/1977, 1980/1981, 1985/1986, 1990/1991, 1995/1996, 2000/2001, 2005/2006, 2010/2011 and 2015/2016. Thus, so far, ten Agriculture Censuses have been conducted.

### 11th Agricultural Census

- The fieldwork of the Eleventh Agricultural Census (2021-22) which is being undertaken now after a delay due to corona pandemic will start in August 2022 itself.
- This is the **first time that data collection for the agricultural census will be conducted on smart-phones and tablets** so that

data is available in time.

- The new initiatives highlighted in the presentation include use of digital land records like land title records and survey reports, collection of data through app/software using smartphone/tablet, complete enumeration of all villages in states with non-land records during Phase-I as done in states having land records, and real time monitoring of progress and processing.

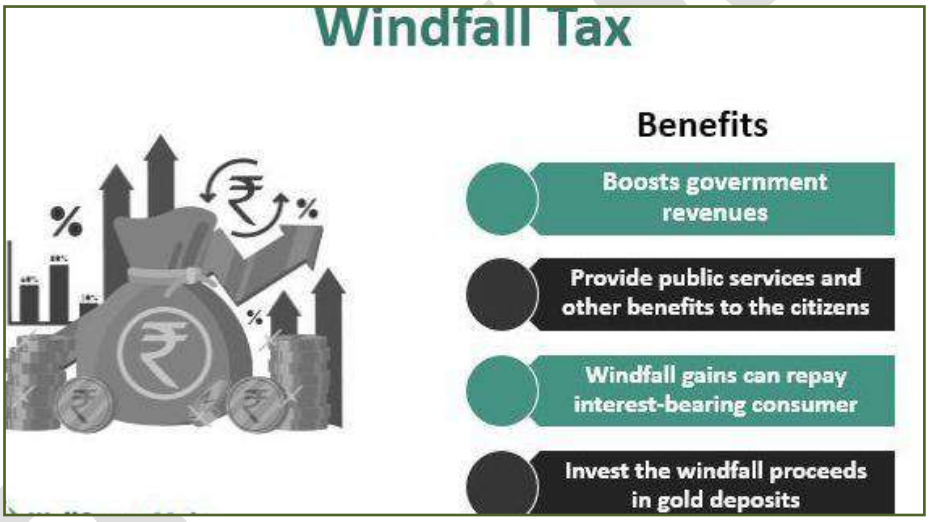
### Significance

- The agricultural census is the **main source of information on a variety of parameters, such as the number and area of operational holdings, their size, class-wise distribution, land use, tenancy and cropping pattern, etc.**
- Plus, the use of digitised land records and the use of mobile apps for data collection this time **will enable the creation of a database of operational holdings in the country.**
- There is a need to change their standard of living, organize small farmers in order to empower them, attract them towards remunerative crops and ensure the quality of the produce at par with global standards.
- Agricultural statistics are useful for planning such polices monitoring and evaluation purposes as well as research and development. They promote investment opportunities and increase farmer's income.

# Windfall Tax

### Context

- With global oil prices easing, the Centre slashed the windfall tax levied on crude oil producers, reduced the export tax on Aviation Turbine Fuel (ATF) and diesel and scrapped the duty on petrol exports.




### What is a Windfall Tax?

- A windfall tax is a one-off tax imposed by a government on a company. It is levied on an unforeseen or unexpectedly large profit, especially unfairly obtained.

### Why did Government Implement Windfall Taxes?

- The central government slapped export duties on petrol and ATF (Rs 6 per litre or USD 12 per barrel) and diesel (Rs 13 a lire or USD 26 a barrel) and imposed a windfall tax on domestic crude production (Rs 23,250 per tonne or USD 40 per bbl). The **aim was to garner more revenue and limit export to address the fuel shortage in the country.**

### Example

- Three of Indian upstream oil companies — ONGC, Oil India and GAIL. All three declared all-time high net profit in the fiscal year 2021-22. ONGC said its net profit grew by 258 per cent to reach Rs 40,306 crore. Oil India announced net profit of Rs 3,887.31 crore, which is 123 per cent higher than in the preceding year. GAIL reported a 112 per cent surge in its net profit, at Rs 10,364 crore. This was possible as crude oil and gas prices shot up due to the Russia-Ukraine conflict.
- Governments, typically, levy a one-time tax over and above the normal rates of tax on such profits and that is called windfall tax.

### Will such a tax increase price of fuel?

- Very unlikely, as this tax is not part of the input or output cost, but levied only on profit.

# SCIENCE & TECHNOLOGY

# 'POEM'

### Context

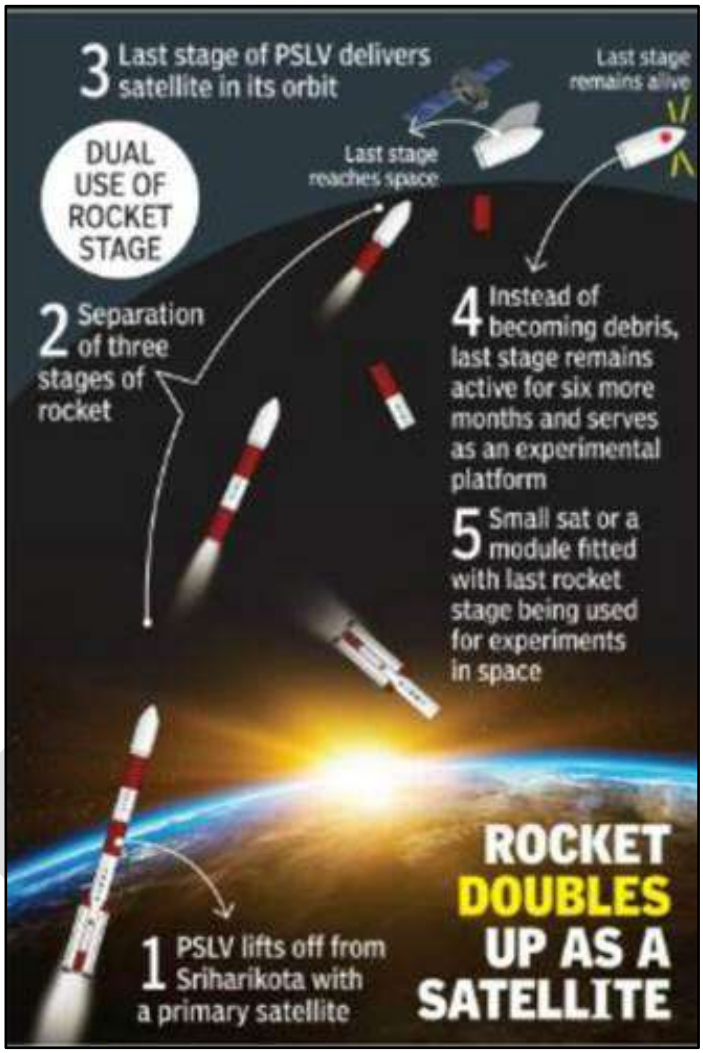
- Indian Space Research Organisation (ISRO) recently achieved the feat of successfully launching the PSLV Orbital Experimental Module or 'POEM'.

### Background

**PSLV Rocket**

- Polar Satellite Launch Vehicle (PSLV) is the **third generation launch vehicle/rocket of India**.
- It is the **first Indian launch vehicle to be equipped with liquid stages.**

- It is an **expendable medium-lift launch vehicle.**
- It was developed to allow India to launch its Indian Remote Sensing (IRS) satellites into sun-synchronous orbits – a service that **until the advent of the PSLV in 1993**, was commercially available only from Russia.
- PSLV can also launch small size satellites into Geostationary Transfer Orbit (GTO).
- Some notable payloads launched by PSLV include India's first lunar probe **Chandrayaan-1, India's first interplanetary mission, Mars Orbiter Mission (Mangalyaan) and India's first space observatory, Astrosat.**




### PS4 of PSLV

- PSLV has a four-stage system comprising a **combination of solid and liquid-fuelled rocket stages**. The first stage at the very bottom is solid fuelled having six strap-on solid rocket boosters wrapped around it. Second stage is liquid fuelled whereas the third stage has a solid fuelled rocket motor. At the fourth stage, the launcher uses a liquid propellant to boost in the outer space.
- After getting launched the first three spent stages fall back into the ocean. But **the final stage (PS4) — after launching the satellite into orbit — ends up as space junk.** Thus, PS4 is usually a discarded, stage.

### PSLV-C53 Mission

- PSLV-C53 is the **second dedicated commercial mission of NewSpace India Limited** (NSIL). It is **designed to orbit DS-EO satellite** along with two other co-passenger satellites from Singapore.
- The mission **proposes to demonstrate the utilization of the spent 4th stage of the launch** vehicle as a stabilized platform for performing experiments subsequent to the separation of the satellites.

### POEM

- **About:** The PSLV Orbital Experimental Module is a platform that will help **perform in-orbit experiments** using the final, and otherwise discarded PS4 stage.
- **Payloads:** POEM is carrying six payloads, including two from Indian space start-ups.
- **Navigation:** POEM has a dedicated Navigation Guidance and Control (NGC) system for **altitude stabilisation**, which stands for controlling the orientation of any aerospace vehicle within permitted limits. It navigates using four sun sensors, a magnetometer, gyros &NavIC.
- **Power requirement:** POEM derives the power from the solar panels mounted around the PS4 tank and a Li Ion battery.

### Significance

- The significance lies in the fact that it is the first time that the PS4 stage would orbit the earth as a stabilized platform.

## Capstone

### Context

- Recently, NASA launched CAPSTONE, a microwave oven-sized CubeSat weighing just 55 pounds (25 kg).

### Cubesats

- CubeSats are a class of research spacecraft called **nanosatellites**. CubeSats are **built to standard dimensions of 10 cm x 10 cm x 10 cm**.
- CubeSats **have a mass of no more than 2 kg (4.4 lb) per unit.**

### CAPSTONE

- **About:** CAPSTONE, short for **Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment**, is a cubesat.
- **Mandate:** It is designed to **test a unique, elliptical lunar orbit**. The rocket is heading toward an orbit intended in the future for Gateway –GATEWAY isa Moon-orbiting outpost that is part of NASA's Artemis program.
- **The Orbit**: The orbit is known as a **near-rectilinear halo orbit (NRHO).** It is significantly elongated, and is located at a precise

balance point in the gravities of Earth and the Moon. This offers stability for long-term missions like Gateway.

- **Mission:**At the Moon, CAPSTONE will enter NRHO, where it will fly within 1,600 km of the Moon's North Pole and 70,000 km from the South Pole at its farthest. CAPSTONE will repeat the cycle every 6.5 days & maintain this for six months to study orbit dynamics.

# Large Hadron Collider

### Context

- The Large Hadron Collider (LHC), began smashing protons into each other at unprecedented levels of energy.

### Large Hadron Collider

- **About:** The Large Hadron Collider is a giant, complex machine built to study particles that are the smallest known building blocks of all things.
- **Structure:** Structurally, it is a 27-km-long track-loop buried 100 metres underground on the Swiss-French border.
- **Working:** In its operational state, it **fires two beams of protons almost at the speed of light** in opposite directions inside a ring of superconducting electromagnets. The magnetic field created by the superconducting electromagnets keeps the protons in a tight beam and guides them along the way as they travel through beam pipes and finally collide.
- **Temperature requirements:** LHC's powerful electromagnets must be kept chilled. The LHC **uses a distribution system of liquid helium to keep its critical components ultracold at minus 271.3 degrees Celsius**, which is colder than interstellar space.
- **Contribution:** Besides the **Higgs boson**, the LHC experiments produced a wide range of results, including the discovery of exotic new particles such as **Ξcc++ and pentaquarks**, and the unveiling of so-far unobserved phenomena in proton–proton and proton-lead collisions.

**Higgs boson**

The Higgs boson is the fundamental particle associated with the Higgs field, a field that gives mass to other fundamental particles such as electrons and quarks. The Higgs boson is often called "the God particle" because it caused the "Big Bang" that created our universe.

# Fields Medal

### Content

- Ukrainian mathematician Maryna Viazovska, was named as one of four recipients of the 2022 Fields Medal.

### About

- The Fields Medal is **awarded to one or more mathematicians under the age of 40 every four years on the occasion of the International Congress of Mathematicians** to recognize outstanding mathematical achievement for existing work and for the promise of future achievement. The Fields Medal is regarded as one of the highest honors a mathematician can receive, and has been described as the **Nobel Prize of Mathematics.**

***Note: International Mathematical Union (IMU), an international non-governmental and non-profit scientific organisation that aims to promote international cooperation in mathematics.***

# Genetically Modified (GM) Cowpea

### Context

- Genetically modified (GM) cowpea has cleared the first of the three regulatory hurdles in the way of commercialization in Ghana. If it is commercialized, it will be the first GM crop grown in the country.

### Rationale behind it

- Cowpea – black-eyed pea in some parts of the world – is a major source of protein in Ghana and the rest of the sub-continent. It is integral to Ghana's food security. It is a staple, especially in the northern part of Ghana, where it is second only to groundnut in terms of area cultivated. Ghana is the fifth largest producer of cowpea in Africa.
- While cowpea production is essential for Ghana, farmers face many challenges, including an array of pests. The GM cowpea has been genetically engineered to resist the ***Maruca pod borer***. The **hope is that this resistance will help decrease the amount of insecticide farmers have been using to control pests and increase yields.** Insecticides are known to be deleterious to human health, but their use is on the rise throughout Africa.

***Must Read:*** *https://www.iasgyan.in/daily-current-affairs/gm-crops-26*

# Higgs Boson

### Context

- It's been ten years since the detection of Higgs Boson or God Particle.

**Details**

- **About:** The Higgs boson is **one of the 17 elementary particles** that make up the Standard Model of particle physics.
- **God Particle:** The Higgs boson particle is often called "the God particle" because it caused the "Big Bang" that created our universe many years ago.
- **Fundamental force**: Higgs boson is the fundamental force-carrying particle of the Higgs field, which is responsible for granting other particles their mass.
- **Mass:** The Higgs boson has a mass of 125 billion electron volts — meaning it is 130 times more massive than a proton.
- **Spin and Charge:** It is also **chargeless with zero spin** — a quantum mechanical equivalent to angular momentum. The Higgs Boson is the only elementary particle with no spin.

**What is the Standard Model?**

The Standard Model is a rigorous theory that predicts the behaviour of the building blocks of the universe.
It lays out the rules for six types of quarks, six leptons, the Higgs boson, three fundamental forces, and how the subatomic particles behave under the influence of electromagnetic forces.

# Gigamesh

**Context**

- A total of 15 villages in different parts of the country may soon be seamlessly connected through Gigamesh.

**About**

- GigaMesh, is **world's first multi-beam E-band Radio** that is able to communicate from one tower to multiple towers simultaneously while delivering multi GBPS throughput to each of these towers.
- A single GigaMesh device can provide up to forty links with 2+ Gbps capacity, communicating up to a range of ten kilometres. This flexibility in range makes it suitable for both decongesting the dense urban networks and extending rural coverage. With India's huge population in the rural segment, Gigamesh can help improve domestic internet connectivity.

**E Band**

The waveguide **E band** is the range of radio frequencies from 60 GHz to 90 GHz in the electromagnetic spectrum. At these high frequencies, the short wavelengths give the radiation a very directional quality, similar to visible light. Signals in this frequency range have very short wavelengths from 3.33 mm to 5 mm. The short wavelengths give signals at these frequency directional properties and thus this band is widely used for RF/Microwave backhaul links.

# Epstein Barr Virus (EBV)

**Context**

- Scientists have found that cancer-causing virus Epstein Barr Virus (EBV) can infect the neuronal cells and drive various changes in biomolecules such as fatty acids, carbohydrates, and protein components, leading to diseases of the central nervous system as well as brain cancer.

**Details**

- **About:** The Epstein–Barr virus (EBV) is one of the nine known human herpesvirus types in the herpes family. EBV is a **double-stranded DNA virus.**
- **Diseases:** EBV is best **known for causing mononucleosis**, but less often it can lead to other diseases, including: **Ear infections and diarrhea in children. Guillain-Barre syndrome. Certain cancers, including Burkitt's lymphoma and cancers of the nose and throat.**
- **Transmission:** It spreads primarily through saliva. Fatigue
- **Symptoms:** Fever, Lack of appetite, Rash, Sore throat, Swollen glands in the neck, Weakness and sore muscles.
- **Treatment:** Like other viruses, Epstein-Barr can't be treated with antibiotics. Mono should clear up on its own without treatment in a few weeks.
- **Prevention**: No vaccine can protect you against the EBV virus. The best way to avoid catching it is to stay away from anyone who has mono.

# James Webb Telescope

**Context**

- NASA's James Webb Space Telescope (JWST) has produced the deepest and sharpest infrared image of the distant universe that has ever been seen.
- Called the Cartwheel galaxy, it is a ring galaxy located 500 million light-years away that formed when a large spiral galaxy and a small galaxy violently collided.

### About

- The James Webb Space Telescope is the **largest, most powerful space telescope ever built**. The James Webb Space Telescope (JWST or "Webb") is a **joint NASA–ESA–CSA space telescope** and it succeeds the Hubble Space Telescope as NASA's flagship astrophysics mission. The James Webb Space Telescope **sees the universe in light that is invisible to human eyes. This light is called infrared radiation**, and we can feel it as heat.
- The James Webb Space Telescope will use its infrared cameras to see through dust in our universe. JWST will study various phases in the history of the universe, from the formation of solar systems to the evolution of our own Solar System.
- The telescope must be kept very cold in order to observe in the infrared without interference, so it will be deployed in space near the Sun–Earth L2 Lagrange point.
- Also, a large sunshield made of silicon-coated and aluminium-coated Kapton will keep its mirror and instruments below 50 K (−223.2 °C).

### Science Goals

- To look back around 13.5 billion years to see the first stars and galaxies forming out of the darkness of the early universe.
- Second, to compare the faintest, earliest galaxies to today's grand spirals and understand how galaxies assemble over billions of years.
- Third, to see where stars and planetary systems are being born.
- And fourth, to observe the atmospheres of extrasolar planets (beyond our solar system), and perhaps find the building blocks of life elsewhere in the universe. The telescope will also study objects within our own Solar System.

## Wormhole

### Context

- There is gathering support for the existence of entities such as the wormhole and others that have not yet been "seen".

### Wormhole

- A wormhole is a **speculative structure linking disparate points in spacetime**, and is based on a special solution of the Einstein field equations.
- A wormhole can be visualized as **a tunnel with two ends at separate points in spacetime** (i.e., different locations, different points in time, or both).
- Wormholes are consistent with the general theory of relativity, but whether wormholes actually exist remains to be seen.
- Theoretically, a wormhole might connect extremely long distances such as a billion light years, or short distances such as a few meters, or different points in time, or even different universes.
- The existence of wormholes has been predicted by Ludwig Flamm, in 1916, soon after Einstein proposed his General Theory of Relativity. However, the presence of wormholes has not yet been established through observation or inference by astronomers.
- With rapid advances in observational cosmology in recent times — such as the detection of gravitational waves by LIGO-VIRGO collaborations — more support for Einstein's theory is coming to the fore.

## Compact Reconnaissance Imaging Spectrometer for Mars (CRISM)

### Context

- Scientists released the first pieces of the multispectral maps made by the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM), according to National Aeronautics and Space Administration (NASA).

### About

- CRISM is a **visible-infrared spectrometer** whose **primary goal is to look for mineralogical evidence for past water on the surface and subsurface of Mars.** NASA's Mars Reconnaissance Orbiter (MRO) has been mapping minerals on the red planet for the last 16 years with the help of CRISM.
- It has managed to map 86 per cent of Mars' surface with its multispectral mode, detecting nearly all of the minerals on the surface.
- CRISM's visible and infrared spectrometers track regions on the dusty martian surface and map them at scales as small as 18 meters (60 feet) across, from an altitude of 300 kilometers (186 miles).

# DEFENSE & SECURITY

## INS Vikrant

### Context

- **The fourth phase of Sea Trials for IAC has been successfully completed.** The ship's delivery is being targeted in end July 22, followed by commissioning of the ship in August 22 to commemorate 'AzadikaAmritMahotsav'.

### Details

- The Indigenous design and construction of Aircraft Carrier by Indian Navy and Cochin Shipyard Ltd is a shining example in the Nation's quest for 'AatmaNirbhar Bharat' and 'Make in India Initiative' with more than 76% indigenous content.
- This has led to growth in indigenous design and construction capabilities, besides development of large number of ancillary industries, with employment opportunities for over 2000 CSL personnel and about 12000 employees in ancillary industries.

### About

- It is country's **maiden indigenous aircraft carrier (IAC**-1).
- **Built by: Cochin Shipyard Ltd**.
- The IAC would be commissioned as **INS Vikrant in the first half of 2022,** which would be the most potent sea-based asset.
- **Capabilities:** can 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.
- It has a **STOBAR** (short take off but arrested recovery) system of aircraft launch and recovery on the flight deck.
- It 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.
- **Other specifications:**
- 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.
- **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.

### Significance of IAC

- 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.

# ENVIRONMENT & ECOLOGY

## Snow Leopard

### Context

- A recent study by the Zoological Survey of India (ZSI) on **snow leopard (Pantherauncia) has thrown up interesting insights on the elusive mountain cat and its prey species. The study under National Mission on Himalayan Studies revealed a strong link between habitat use by Snow Leopard and its prey species Siberian ibex and blue sheep.**

### About

- **The elusive and charismatic snow leopard feeds on hoofed animals (ungulates) including the Siberian ibex, blue sheep, urial and argali in the Himalayas.**
- The snow leopard detection probability was high if the site was used by its prey species, i.e., ibex and blue sheep.
- Whereas, in the case of the prey species, the probability of detection was low when the predator (snow leopard) was present and detected.
- **Snow leopards use rugged mountainous areas or non-forested areas covering an altitude between 3200m-5200m.**
- Habitat covariates, such as barren area, grassland, aspect, slope and distance to water were important drivers of habitat use for the snow leopard as well as its prey species.
- **Classified as 'Vulnerable' by the International Union for Conservation of Nature (IUCN) Red list and listed in Schedule-I species of the Indian Wildlife (Protection) Act, 1972**, snow leopards are elusive mountain cats whose survival depends on depends primarily on wild ungulates.
- **Higher up in the mountains, predators such as snow leopards regulated the populations of herbivores such as the blue sheep and Siberian ibex, thereby safeguarding the health of grasslands and a long-term absence of snow leopards could cause trophic cascades as ungulate populations would likely increase, leading to depletion of vegetation cover.**
- **Snow leopards have a vast but fragmented distribution across the mountainous landscape of central Asia, which covers different parts of the Himalayas such as Ladakh, Himachal Pradesh, Uttarakhand, and Sikkim.**
- This charismatic species is largely threatened because of the loss of natural prey species, retaliatory killing due to conflict with humans and illegal trade of its fur and bones.

# Ramsar Sites

**Context**

- India has added five more Ramsar sites, or wetlands of international importance, bringing the number of such sites in the country to 54, Environment Minister Bhupendra Yadav said.

**More on the news**

- These are the Karikili Bird Sanctuary, Pallikaranai Marsh Reserve Forest and Pichavaram Mangrove in Tamil Nadu, the SakhyaSagar in Madhya Pradesh and the Pala Wetlands in Mizoram.
- India's Ramsar wetlands are spread over 11,000 sq.km — around 10% of the total wetland area in the country — across 18 States.
- No other South Asian country has as many sites, though this has much to do with India's geographical breadth and tropical diversity.
- The U.K. (175) and Mexico (142) — smaller countries than India — have the most Ramsar sites, whereas Bolivia spans the largest area with 1,48,000 sq.km under the Convention protection.
- Being designated a Ramsar site does not necessarily invite extra international funds, but the States — and the Centre — must ensure that these tracts of land are conserved and spared from encroachment.
- Acquiring this label also helps with a locale's tourism potential and its international visibility.
- Until 1981, India had 41 Ramsar sites, though the past decade has seen the sharpest rise —13 — in designating new sites.
- Wetlands, according to the Environment Ministry, are an "area of marsh, fen, peatland or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres, but does not include river channels, paddy fields, human-made water bodies/ tanks specifically constructed for drinking water purposes and structures specifically constructed for aquaculture, salt production, recreation and irrigation purposes."
- To be Ramsar site, however, it must meet at least one of nine criteria as defined by the Ramsar Convention of 1961, such as supporting vulnerable, endangered, or critically endangered species or threatened ecological communities or, if it regularly supports 20,000 or more waterbirds or, is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks are dependent upon.
- The National Wetland Inventory and Assessment compiled by the ISRO estimates India's wetlands to span around 1,52,600 square kilometres.

**About**

- **Any wetland site which has been listed under the Ramsar Convention that aims to conserve it and promote sustainable use of its natural resources** is called a Ramsar Site.
- Ramsar Convention is known as the Convention of Wetlands. It was established in 1971 by UNESCO and came into force in 1975.
- **India is a party** to the Ramsar Convention. India signed under it on 1st February 1982.
- There are **49 Ramsar Sites** in India
- **Sundarbans is the largest**Ramsar Site of India
- **Chilika Lake (Orissa) and Keoladeo National Park (Rajasthan) were recognized as the first**Ramsar Sites of India
- **Uttar Pradesh has the most** number of Ramsar Sites in India.
- **Renuka Wetland in Himachal Pradesh is the smallest** wetland of India.

# Light-Mantled Albatross

**Context**

- **Rameswaram and adjoining islets of the Gulf of Mannar Marine National Park on the Adam's Bridge (Ram Setu)** are known for their unique marine ecosystem. But the region grabbed the attention of international researchers as **Asia's first sighting of Light-mantled Albatross (Phoebetriapalpebrate), a species native to the Antarctic seas, was recorded here.**

**Details**

- The location where the Albatross was spotted is part of the Palk Bay and near the Gulf of Mannar, an **'Important Bird Area' on India's southeast coast.**
- As the nearest recorded site of the bird is around 5,000 km away from Rameswaram, the researchers feel a change in atmospheric pressure could have been among the reasons for the Albatross to land on an Indian shore.
- **The Light-mantled Albatross, with broad pelagic habits, maintains a circumpolar distribution in the Southern Ocean.**
- It breeds on several sub-Antarctic islands, such as Macquarie Islands, Heard Island and McDonald Islands (Australia), South Georgia Island (British Overseas Territory), Prince Edward Islands (South Africa), Iles Kerguelen and Iles Crozet (France), and Auckland, Campbell, and Antipodes Islands (New Zealand).
- **The species forage over cold Antarctic waters as far south as the pack ice in summer.**
- **Listed as a 'Near Threatened' species by the International Union for Conservation of Nature, Light-mantled Albatross has a**

**worldwide population of 21,600 breeding pairs, according to an estimate in 1998.**

# India's Largest Floating Solar Power Project

**Context**

- **Bharat Heavy Electricals has successfully commissioned India's largest floating Solar PV plant rated at 100 MW at NTPC Ramagundam in Telangana.**

**About**

- The plant is installed across the natural raw water reservoir, saving valuable land resources, and also conserves water by reducing evaporation.
- With this, BHEL has achieved the unique distinction of **commissioning 3 floating solar projects - 25 MW at NTPC Simhadri, 22 MW at NTPC Kayamkulam and 100 MW at NTPC Ramagundam -** in the last 10 months.
- The 100-MW Floating Solar project at Ramagundam is endowed with advanced technology as well as environment friendly features.
- **Divided into 40 blocks, each having 2.5 MW**. Each block consists of one floating platform and an array of 11,200 solar modules.
- The floating platform **consists of one Inverter, Transformer, and a HT breaker**. The solar modules are placed on floaters manufactured with **HDPE (High Density Polyethylene) material.**
- The entire floating system is being anchored through **special HMPE (High Modulus Polyethylene) rope** to the dead weights placed in the balancing reservoir bed.
- This project is unique in the sense that all the electrical equipment including inverter, transformer, HT panel and SCADA (supervisory control and data acquisition) are also on floating ferro cement platforms.
- The anchoring of this system is bottom anchoring through dead weight concrete blocks.
- From environment point of view, the most obvious advantage is **minimum land requirement mostly for associated evacuation arrangements.**
- Further, with the presence of floating solar panels, the evaporation rate from water bodies is reduced, thus helping in water conservation.
- **Approximately 32.5 lakh cubic meters per year water evaporation can be avoided**
- **Similarly, while coal consumption of 1,65,000 Tons can be avoided per year; Co2 emission of 2,10,000 tons per year can be avoided.**

# Nairobi Flies (Species in News)

**Context**

- Recently many **students in Sikkim have reported skin infections after coming in contact with Nairobi flies.**

**About**

- Nairobi flies, a species of insect native to East Africa, are growing at a fast pace on campus of the Sikkim Manipal Institute of Technology (SMIT).
- Nairobi flies**, also called Kenyan flies or dragon bugs, are small, beetle-like insects** that belong to two species; PaederusEximius and Paederussabaeus.
- They are **orange and black and flourish in areas with high rainfall.**
- **They contain a corrosive substance known as pederin**, which **cause chemical burns if it comes into contact with can skin,** because of these burns, they are sometimes referred to as a "dragon bug."
- Like most insects, these beetles are also get attracted by bright light.
- These insects attack pests that consume crops and are also beneficial to humans, but when they come in contact with humans, they cause harm.
- In 19998, Major outbreaks happened in Kenya and other parts of eastern Africa. Outside Africa, outbreaks have happened in India, Japan, Israel, and Paraguay in the past.

# Chenkurinji (Species in News)

**Context**

- The **Shendurney Wildlife Sanctuary derives its name from Glutatravancorica, a species endemic to the Agasthyamala Biosphere Reserve known as 'Chenkurinji' in local parlance.** Belonging to the Anacardiaceae family, the tree was once abundant in the hills on the southern parts of Aryankavu Pass but its presence has been fast receding from the area over the years.

**About the tree**

- Glutatravancorica is **very susceptible to climate change** and the present condition of the species is quite bad with low

regeneration performance

- Though there are seemingly enough number of the trees, **most are not productive, generating a negative trend in its population.**
- Though the **flowering of Glutatravancorica usually happens in January**, of late, the species has reported a tendency to extend the process due to climate change
- Though the tree is also seen inside the shola forests near Ponmudi, effective pollination hardly takes place in the habitat.
- It's **reported to have medicinal properties and is used to lower blood pressure and treat arthritis. The heartwood is quite sturdy with deep red colour, and several trees were felled for wood during earlier days**

### About the biosphere reserve

- **Located in the Western Ghats** in the south of the country, the Agasthyamala Biosphere Reserve has peaks reaching 1,868 m above sea level.
- Consisting mostly of tropical forest, the site is home to 2,254 species of higher plants including about 400 that are endemic.
- It is also a unique genetic reservoir of cultivated plants, in particular cardamom, jamune, nutmeg, pepper and plantain.
- **Three wildlife sanctuaries, Shendurney, Peppara and Neyyar, are located in the site, as well as the Kalakad Mundanthurai Tiger reserve.**
- Core area(s): 113,500 ha, Buffer zone(s): 144,500 ha, Transition zone(s): 92,000 ha
- **It covers 3,500 km2 and encompasses tropical forest ecosystems that fall within the Tirunelveli and Kanniyakumari districts of Tamil Nadu and the Thiruvananthapuram and Kollam districts of Kerala, Southern India**.
- It hosts one of the most diverse ecosystems in peninsular India and constitutes an important biogeographical 'hot spot' within the Western Ghats.
- The reserve is **home to Kani tribes from both Tamil Nadu and Kerala**, which number in total approximately 30,000 inhabitants.
- In particular, **its prominence in the epic Ramayana has made it a famous site for Hindu pilgrimages.**

# Decriminalisation of Indian Forest Act, 1927

### Context

- The **Ministry of Environment, Forests and Climate Change has issued a public notice for decriminalisation of Indian Forest Act, 1927.**

### Details

- The notice says the Ministry is undertaking a review of the Act to decriminalise minor sections of the law, including carrying timber into the forest, trespassing by cattle, and felling a tree.
- The ministry note says that **at times there are "difficulties in differentiating between major and minor offences", and due to that "punishments are often not distinct".**
- This **abets habitual offenders to commit more crimes, as there is the same level of punishment for both first-time and repeat offenders.**
- **A person who "kindles, keeps or carries any fire" permits cattle to pasture or trespass or causes damage by felling a tree or dragging timber through the forest could earlier be penalised with six months imprisonment or a fine up to Rs 500, or both.**
- **At present, the penalty is only a fine of Rs 500.**

### Critical Analysis

- Imprisonment for such offences has never actually taken place, and is often used as a tool of harassment.
- So there is no problem in that aspect of decriminalisation. But the provision of imprisonment, whether actually carried out or not, acts as a deterrent.
- What this amendment will do, is **instead incentivise offenses, especially that of felling trees which is extremely dangerous.**
- The **proposed amendment further does not clarify whether the Rs 500 fine is the cost of felling one tree, or an entire forest can be felled and considered a single offence.**

### What the law entails?

- The Indian Forest Act, 1927, provides a legal framework for protection and management of forests, transit of forest produce and timber, and duty that can be levied on forest produce and timber.
- **Centre does not have the jurisprudence to carry out amendments in the Act, as it does not fall under the Central government, having been enacted before Parliament was established.** Instead, the Act is adopted by states as they feel fit.
- **Only Haryana, Punjab, MP, Bengal and Bihar actually follow the Act**
- Other states have their own forest Acts. So the Centre's move is actually an infringement on the rights of the states.

# Sandfish

### Context

- Sandfish were once abundant and widespread across the Olifants and Doring River systems, but have recently disappeared

from the Olifants. Their numbers in the Doring are in sharp decline.

**About**

- Sandfish are **migratory freshwater fish found only in South Africa that can grow to over half a metre in length.**
- They sport a **pronounced downturned mouth**, which is used to graze algae off rocks and to grub in mud and sand on the stream bed.
- As **one of the largest grazers in South Africa's Doring River system, sandfish keep the rivers clean and the food web balanced**.
- They also **act as an umbrella species** – protecting them indirectly protects river ecosystems and other species that inhabit them.
- Catastrophic unseasonal flows due to climate change during the 2013 spawning season likely catalysed the decline.
- The long drought that followed prevented population recovery.
- Adding to the problem was the presence of non-native black bass and bluegill sunfish. Where these were found, sandfish were all but absent,.
- These conditions, ubiquitous throughout the sandfish's remaining range, have resulted in bringing the species to the brink of extinction.

# IPBES Report on Wild Species

**Context**

- **According to a recent report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), 50,000 wild species meet the needs of billions of people around the world.**

**Details**

- People use approximately 7,500 species of wild fish and aquatic invertebrates, 31,100 species of wild plants, 7,400 of which are trees, 1,500 species of fungi, 1,700 species of wild terrestrial invertebrates, and 7,500 species of wild amphibians, reptiles, birds, and mammals.
- An estimated **one in every five people worldwide rely on wild plants**, algae and fungi for food, nutritional diversity and income.
- **Trade in wild plants, algae and fungi for food, medicine, hygiene, energy and ornamental use is increasing.**
- The report shows that humans rely on 50,000 wild species (of plants and animals) for a variety of reasons. This includes **food, energy, medicine, materials and other necessities.**
- **The over-exploitation of wild species is one of the primary causes of biodiversity loss**. For example, Unsustainable fishing is the main cause for the increased extinction risk of sharks and rays over the past half century.
- The accelerating global biodiversity crisis, which threatens the extinction of a million plant and animal species, jeopardizes these contributions to people.

**About Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES):**

- The IPBES is an **independent intergovernmental body established in Panama City**, in 2012. At present, it comprises 139 member Governments and is often described as the "IPCC for biodiversity."
- It **aims to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.**
- It is **not a United Nations body**, the UNEP provides secretariat services to IPBES.

# Red Pandas

**Context**

- **Darjeeling zoo to release Red Panda in Singalila National Park.**

**Details**

- Darjeeling Zoo has initiated an ambitious programme to expand the wild red panda population.
  - The Padmaja Naidu Himalayan Zoological Park in Darjeeling will release 20 Red Pandas into the forests.
- In recent decades, the number of red pandas has declined in the wild.
- **Singalila and Neora Valley National Parks in West Bengal are the two protected areas where the red panda is found,** even in these protected areas the panda population has declined.
  - According to recent studies, there are 38 of them in Singalila and 32 in Neora.
- The Padmaja Naidu Park is at a height of about 2,000 metres above sea level, is one of the high-altitude zoos in the country and has been quite successful in captive breeding of the Panda.

**About**

- **Red pandas are categorised as an endangered species** as per the IUCN Red List of Threatened Species.
- Red pandas **are shy, solitary and arboreal animals and are regarded as an important indicator species for ecological change**.
- The red panda is slightly larger than a domestic cat with a bear-like body and thick russet fur

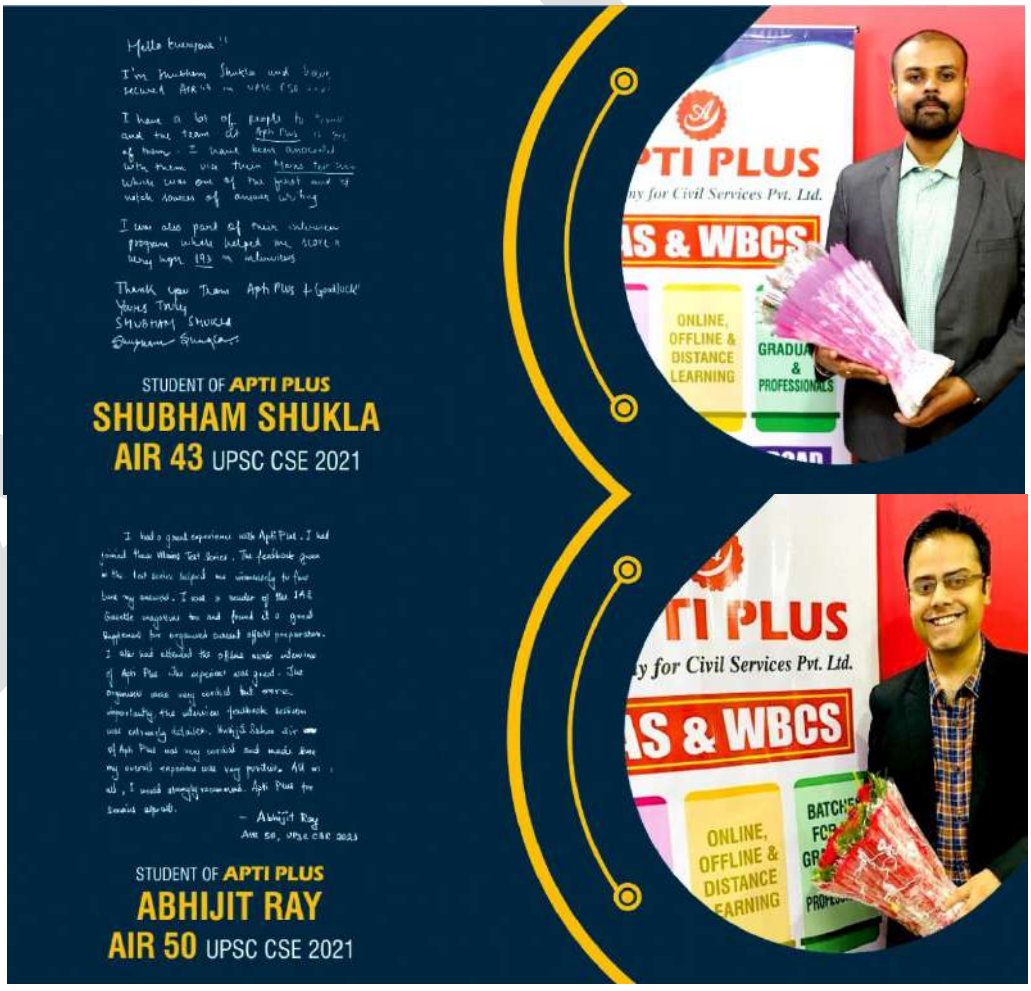
- Red pandas are very skillful and acrobatic animals that predominantly stay in trees. Almost 50% of the red panda's habitat is in the Eastern Himalayas.
- They use their long, bushy tails for balance and to cover themselves in winter, presumably for warmth.
- Primarily an herbivore, the name panda is said to come from the Nepali word 'ponya,' which means bamboo or plant eating animal.

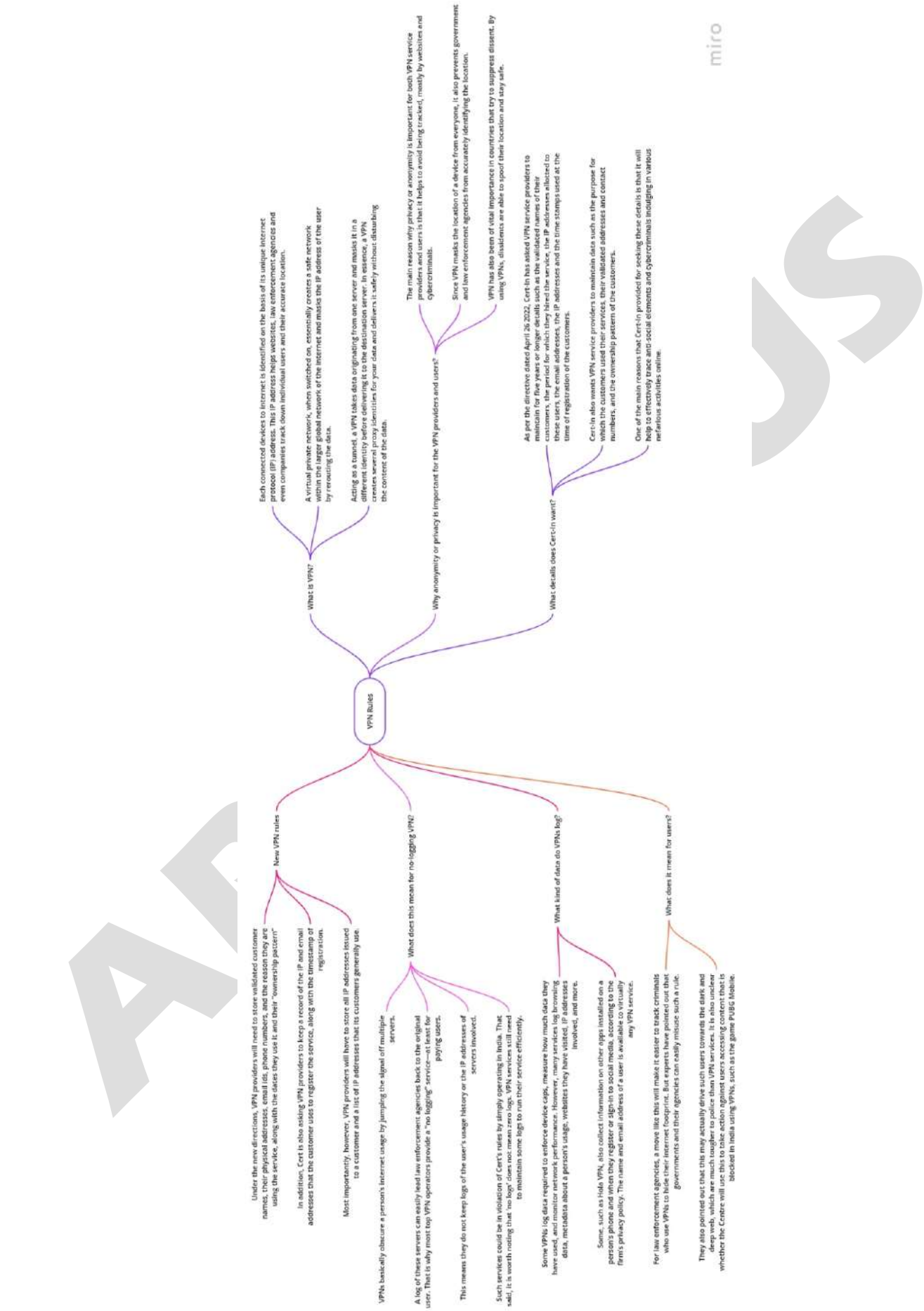
### Singalila National Park

- **Singalila National Park** is located on the Singalila Ridge at an altitude of more than 7000 feet above sea level.
- It is in the Darjeeling district of West Bengal.
- It is bordered **on the north by Sikkim and on the west by Nepal.**
- The park is part of the Eastern Himalayas.
- The Singalila Ridge runs roughly North to South and it **separates Himalayan West Bengal from the other Eastern Himalayan ranges.**
- The two highest peaks of West Bengal: Sandakphu (3630 m) and Phalut (3600 m), are located inside the park.
- Rammam River and Srikhola River flow through the park.
- **Flora** - Thick bamboo, oak, magnolia, rhododendron and numerous orchids.
- Sandakphu is also known as the "mountain of poisonous plants" due to the presence of large numbers of Himalayan cobra lilies (Arisaema).
- **Fauna** - Red panda, leopard cat, barking deer, wild boar, pangolin, Himalayan black bear, leopard, clouded leopard, Tigers, Himalayan Vulture, scarlet minivet, parrotbills, golden-breasted fulvetta, etc.

### Neora Valley National Parks

- **Neora Valley National Park** is in Kalimpong district, West Bengal.
- Place of Virgin natural forests, dense bamboo groves, the colourful canopy of Rhododendron trees, lush green valley.
- **It has a unique ecosystem where tropical, sub-tropical, sub-temperate, and temperate vegetative systems are found.**
- **Flora** - Mixed species like rhododendron, bamboo, oak, ferns, sal, etc. Numerous species of orchids.
- **Fauna** - Red panda, leopard, Asiatic black bear, sloth bear, Asian golden cat, wild boar, leopard cat, goral, barking deer, sambar deer, flying squirrel and tahr, clouded leopard, etc.




VPN Rules
What is VPN?
Each connected devices to Internet is identified on the basis of its unique Internet protocol (IP) address. This IP address helps websites, law enforcement agencies and even companies track down individual users and their accurate location.
A virtual private network, when switched on, essentially creates a safe network within the larger global network of the Internet and masks the IP address of the user by rerouting the data.
Acting as a tunnel, a VPN takes data originating from one server and masks it in a different identity before delivering it to the destination server. In essence, a VPN creates several proxy identities for your data and delivers it safely without disturbing the content of the data.
Why anonymity or privacy is important for the VPN providers and users?
The main reason why privacy or anonymity is important for both VPN service providers and users is that it helps to avoid being tracked, mostly by websites and cybercriminals.
Since VPN masks the location of a device from everyone, it also prevents governments and law enforcement agencies from accurately identifying the location.
VPN has also been of vital importance in countries that try to suppress dissent. By using VPNs, dissidents are able to spoof their location and stay safe.
What details does Cert-in want?
As per the directive dated April 26 2022, Cert-In has asked VPN service providers to maintain for five years or longer details such as the validated names of their customers, the period for which they hired the service, the IP addresses allocated to these users, the email addresses, the IP addresses and the time stamps used at the time of registration of the customers.
Cert-In also wants VPN service providers to maintain data such as the purpose for which the customers used their services, their validated addresses and contact numbers, and the ownership pattern of the customers.
One of the main reasons that Cert-In provided for seeking these details is that it will help to effectively track anti-social elements and cybercriminals indulging in various nefarious activities online.
New VPN rules
Under the new directions, VPN providers will need to store validated customer names, their physical addresses, email ids, phone numbers, and the reason they are using the service, along with the dates they use it and their "ownership pattern"
In addition, Cert-In also asking VPN providers to keep a record of the IP and email addresses that the customer uses to register the service, along with the timestamp of registration.
Most importantly, however, VPN providers will have to store all IP addresses issued to a customer and a list of IP addresses that its customers generally use.
What does this mean for no-logging VPN?
VPNs basically obscure a person's Internet usage by jumping the signal off multiple servers.
A log of these servers can easily lead law enforcement agencies back to the original user. That is why most top VPN operators provide a "no logging" service—at least for paying users.
This means they do not keep logs of the user's usage history or the IP addresses of services involved.
Such services could be in violation of Cert's rules by simply operating in India. That said, it is worth noting that 'no logs' does not mean zero logs. VPN services still need to maintain some logs to run their service efficiently.
What kind of data do VPNs log?
Some VPNs log data required to enforce device caps, measure how much data they have used, and monitor network performance. However, many services log browsing data, metadata about a person's usage, websites they have visited, IP addresses involved, and more.
Some, such as Hola VPN, also collect information on other apps installed on a person's phone and when they register or sign-in to social media, according to the firm's privacy policy. The name and email address of a user is available to virtually any VPN service.
What does it mean for users?
For law enforcement agencies, a move like this will make it easier to track criminals who use VPNs to hide their internet footprint. But experts have pointed out that governments and their agencies can easily misuse such a rule.
They also pointed out that this may actually drive such users towards the dark and deep web, which are much tougher to police than VPN services. It is also unclear whether the Centre will use this to take action against users accessing content that is blocked in India using VPNs, such as the game PUBG Mobile.
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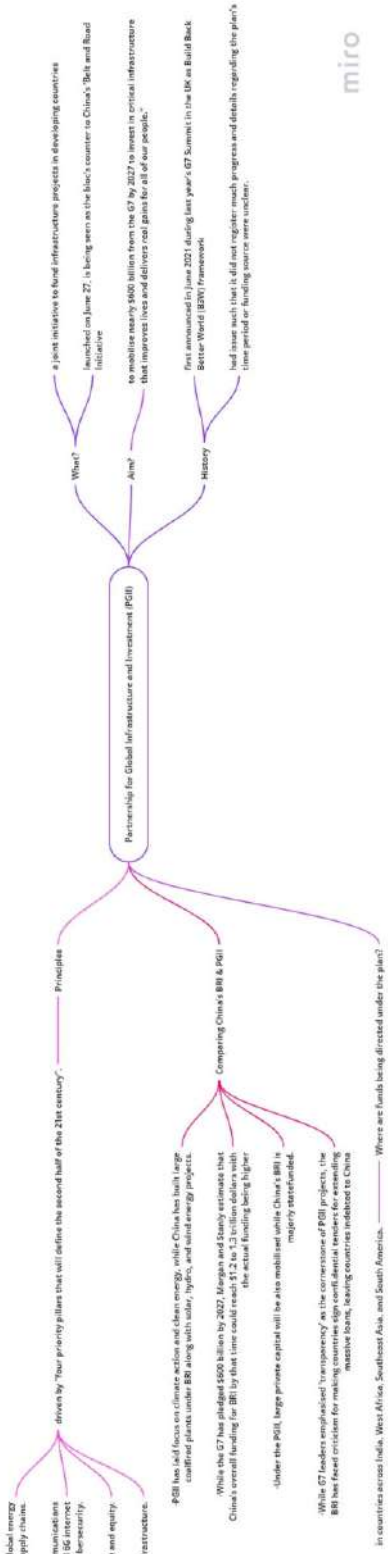
Partnership for Global Infrastructure and Investment (PGII)
What?
a joint initiative to fund infrastructure projects in developing countries
launched on June 27, is being seen as the bloc's counter to China's 'Belt and Road Initiative'
Aims?
to mobilise nearly $600 billion from the G7 by 2027 to invest in critical infrastructure that improves lives and delivers real gains for all of our people."
History
first announced in June 2021 during last year's G7 Summit in the UK as Build Back Better World (B3W) framework
had seen such that it did not register much progress and details regarding the plan's time period or funding source were unclear.
Principles
driven by "four priority pillars that will define the second half of the 21st century".
First, the G7 grouping aims to tackle the climate crisis and ensure global energy security through clean energy supply chains.
Second, the projects will focus on bolstering digital information and communications technology (ICT) networks facilitating technologies such as 5G and 6G internet connectivity and cyber security.
Third, the projects aim to advance gender equality and equity.
Fourth, to build and upgrade global health infrastructure.
Comparing China's BRI & PGII
PGII has laid focus on climate action and clean energy, while China has built large coalfired plants under BRI along with solar, hydro, and wind energy projects.
While the G7 has pledged $600 billion by 2027, Morgan and Stanly estimate that China's overall funding for BRI by that time could reach $1.2 to 1.3 trillion dollars with the actual funding being higher
Under the PGII, large private capital will be also mobilised while China's BRI is majority state funded.
While G7 leaders emphasised 'transparency' as the cornerstone of PGII projects, the BRI has faced criticism for making countries sign confidential tenders for extending massive loans, leaving countries indebted to China
Where are funds being directed under the plan?
in countries across India, West Africa, Southeast Asia, and South America.
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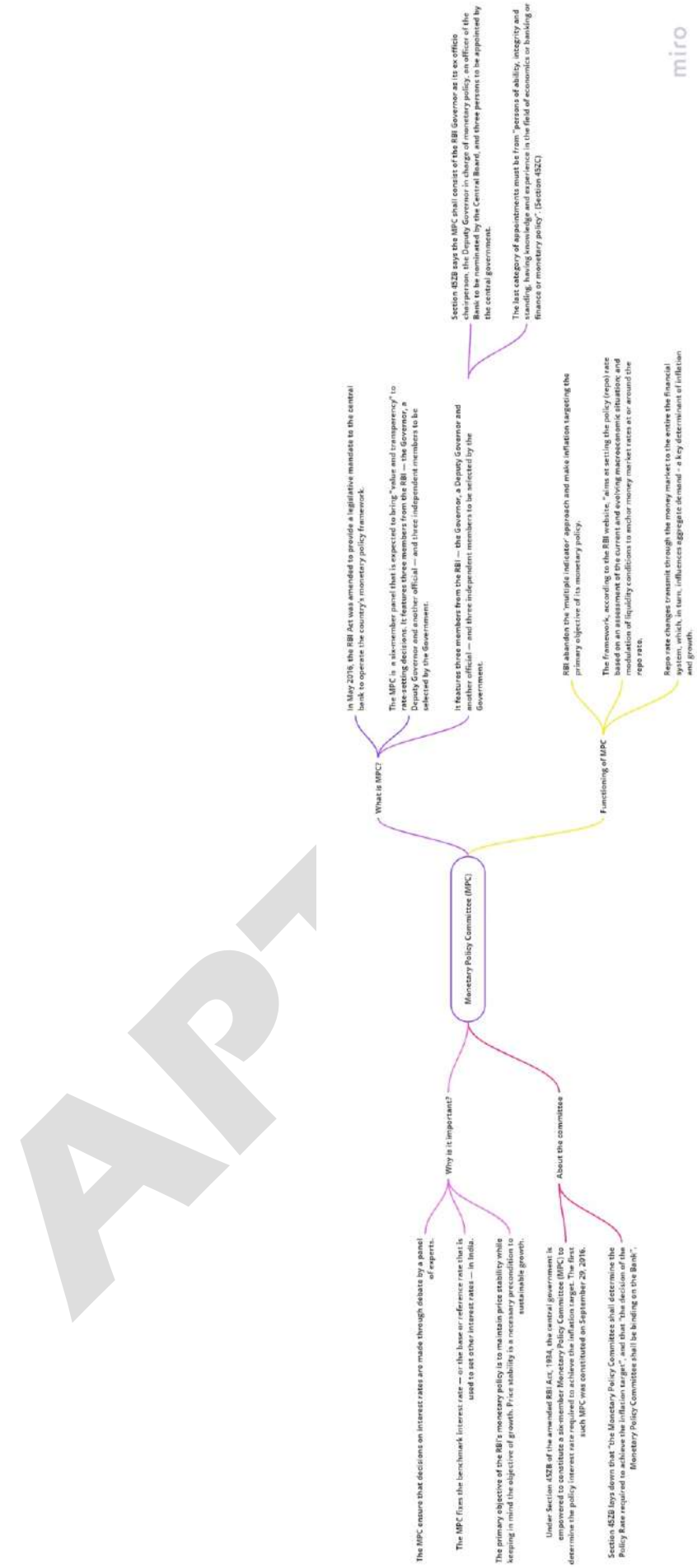
Monetary Policy Committee (MPC)
What is MPC?
In May 2016, the RBI Act was amended to provide a legislative mandate to the central bank to operate the country's monetary policy framework.
The MPC is a six-member panel that is expected to bring "value and transparency" to rate-setting decisions. It features three members from the RBI — the Governor, a Deputy Governor and another official — and three independent members to be selected by the Government.
It features three members from the RBI — the Governor, a Deputy Governor and another official — and three independent members to be selected by the Government.
Section 45ZB says the MPC shall consist of the RBI Governor as its ex officio chairperson, the Deputy Governor in charge of monetary policy, an officer of the Bank to be nominated by the Central Board, and three persons to be appointed by the central government.
The last category of appointments must be from "persons of ability, integrity and standing, having knowledge and experience in the field of economics or banking or finance or monetary policy". (Section 45ZC)
Functioning of MPC
RBI abandon the 'multiple indicator' approach and make inflation targeting the primary objective of its monetary policy.
The framework, according to the RBI website, "aims at setting the policy (repo) rate based on an assessment of the current and evolving macroeconomic situation; and modulation of liquidity conditions to anchor money market rates at or around the repo rate.
Repo rate changes transmit through the money market to the entire the financial system, which, in turn, influences aggregate demand – a key determinant of inflation and growth.
Why is it important?
The MPC ensure that decisions on interest rates are made through debate by a panel of experts.
The MPC fixes the benchmark interest rate — or the base or reference rate that is used to set other interest rates — in India.
The primary objective of the RBI's monetary policy is to maintain price stability while keeping in mind the objective of growth. Price stability is a necessary precondition to sustainable growth.
About the committee
Under Section 45ZB of the amended RBI Act, 1934, the central government is empowered to constitute a six-member Monetary Policy Committee (MPC) to determine the policy interest rate required to achieve the inflation target. The first such MPC was constituted on September 29, 2016.
Section 45ZB lays down that "the Monetary Policy Committee shall determine the Policy Rate required to achieve the inflation target", and that "the decision of the Monetary Policy Committee shall be binding on the Bank".
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Lightning
What is lightning?
Scientifically, lightning is a rapid and massive discharge of electricity in the atmosphere some of which is directed towards earth.
The discharges are generated in giant moisture-bearing clouds that are 10-12 km tall.
The base of these clouds typically lie within 1-2 km of the Earth's surface, while the top is 12-13 km away.
Temperatures in the top of these clouds are in the range of -35° to -45°C.
Mechanism of lightning
As water vapour moves upward in the cloud, the falling temperature causes it to condense.
As they move to temperatures below 0°C, the water droplets change into small ice crystals.
They continue to move up, gathering mass until they are so heavy that they start to fall to Earth.
This leads to a system in which, simultaneously, smaller ice crystals are moving up and bigger crystals are coming down.
Collisions follow and trigger the release of electrons, a process that is very similar to the generation of sparks of electricity.
As the moving free electrons cause more collisions and more electrons, a chain reaction ensues.
This process results in a situation in which the top layer of the cloud gets positively charged, while the middle layer is negatively charged.
In very little time, a massive current, of the order of 100,000 to a million amperes, starts to flow between the layers.
While the Earth is a good conductor of electricity, it is electrically neutral.
However, in comparison to the middle layer of the cloud, it becomes positively charged.
As a result, about 15%-20% of the current gets directed towards the Earth as well.
It is this flow of current that results in damage to life and property on Earth.
Direct lightning strikes are rare but even indirect strikes are fatal given the immense amount of charge involved.
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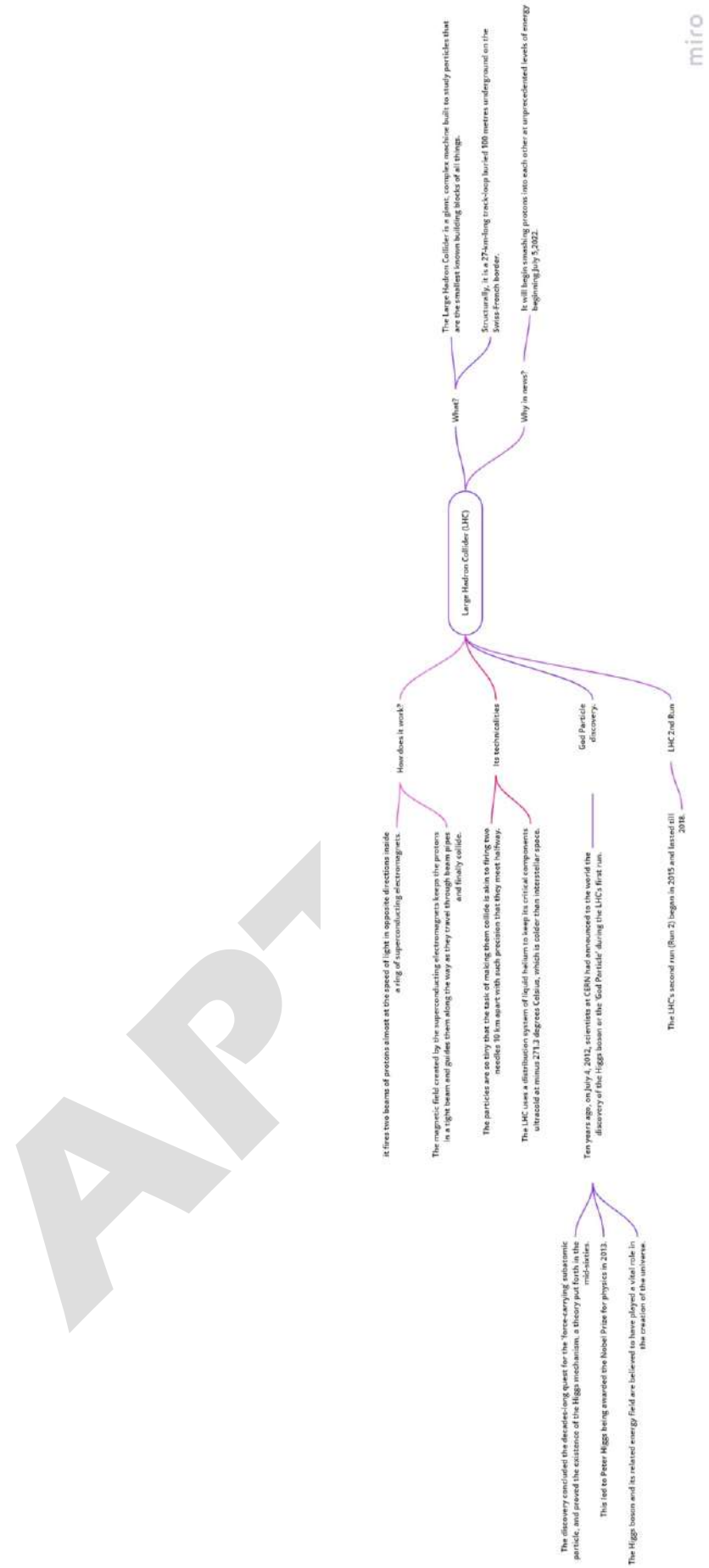
Lightning-prone areas
A recently released annual report on lightning by the Climate Resilient Observing Systems Promotion Council (CROPC), which works closely with government agencies like the India Meteorological Department, includes a lightning atlas which maps vulnerability at the district level.
According to the report, Madhya Pradesh has reported the largest number of cloud to ground lighting strikes, followed by Chhattisgarh, Maharashtra, Odisha and West Bengal.
Other states with high strike rate include Bihar, UP, Karnataka, Jharkhand and Tamil Nadu.
Lightning in India
Lightning is fairly common, though it is not often realised in the urban centres. In India, well over one crore lightning strikes have been recorded in recent years.
In 2019-20, about 1.4 crore lightning strikes were recorded, which increased to 1.85 crore in 2020-21.
In 2021-22, about 1.40 crore strikes were recorded across the country. The reduction, in line with the trend observed globally, has been attributed to the impact of the Covid-19 pandemic.
The reason attributed to reduction in lightning is due to Covid-2019 pandemic induced reduction in aerosol level, pollution, environmental upgradation and relatively stable weather system in Indian subcontinent.
But most of this reduction was seen in the cloud-to-cloud lightning. Of the strikes that reach the Earth, only a 2.5% reduction was observed.
Mitigation
Lightning is not classified as a natural disaster in India.
Recent efforts have resulted in the setting up of an early warning system, that is already saving many lives.
More than 90% of lightning deaths happen in rural areas. Most of the mitigation and public awareness programmes need to focus on these communities.
Lightning protection devices are fairly unsophisticated and low-cost. Yet, their deployment in the rural areas, as of now, is extremely low.
States are being encouraged to prepare and implement lightning action plans, on the lines of heat action plans.
An international centre for excellence on lightning research to boost detection and early warning systems is also in the process of being set up.


Large Hadron Collider (LHC)
What?
The Large Hadron Collider is a giant, complex machine built to study particles that are the smallest known building blocks of all things.
Structurally, it is a 27-km-long track-loop buried 100 metres underground on the Swiss-French border.
Why in news?
It will begin smashing protons into each other at unprecedented levels of energy beginning July 5,2022.
How does it work?
It fires two beams of protons almost at the speed of light in opposite directions inside a ring of superconducting electromagnets.
The magnetic field created by the superconducting electromagnets keeps the protons in a tight beam and guides them along the way as they travel through beam pipes and finally collide.
Its technicalities
The particles are so tiny that the task of making them collide is akin to firing two needles 10 kms apart with such precision that they meet halfway.
The LHC uses a distribution system of liquid helium to keep its critical components ultracold at minus 271.3 degrees Celsius, which is colder than interstellar space.
God Particle discovery.
Ten years ago, on July 4, 2012, scientists at CERN had announced to the world the discovery of the Higgs boson or the 'God Particle' during the LHC's first run.
LHC 2nd Run
The LHC's second run (Run 2) began in 2015 and lasted till 2018.
The discovery concluded the decades-long quest for the 'force-carrying' subatomic particle, and proved the existence of the Higgs mechanism, a theory put forth in the mid-sixties.
This led to Peter Higgs being awarded the Nobel Prize for physics in 2013.
The Higgs boson and its related energy field are believed to have played a vital role in the creation of the universe.
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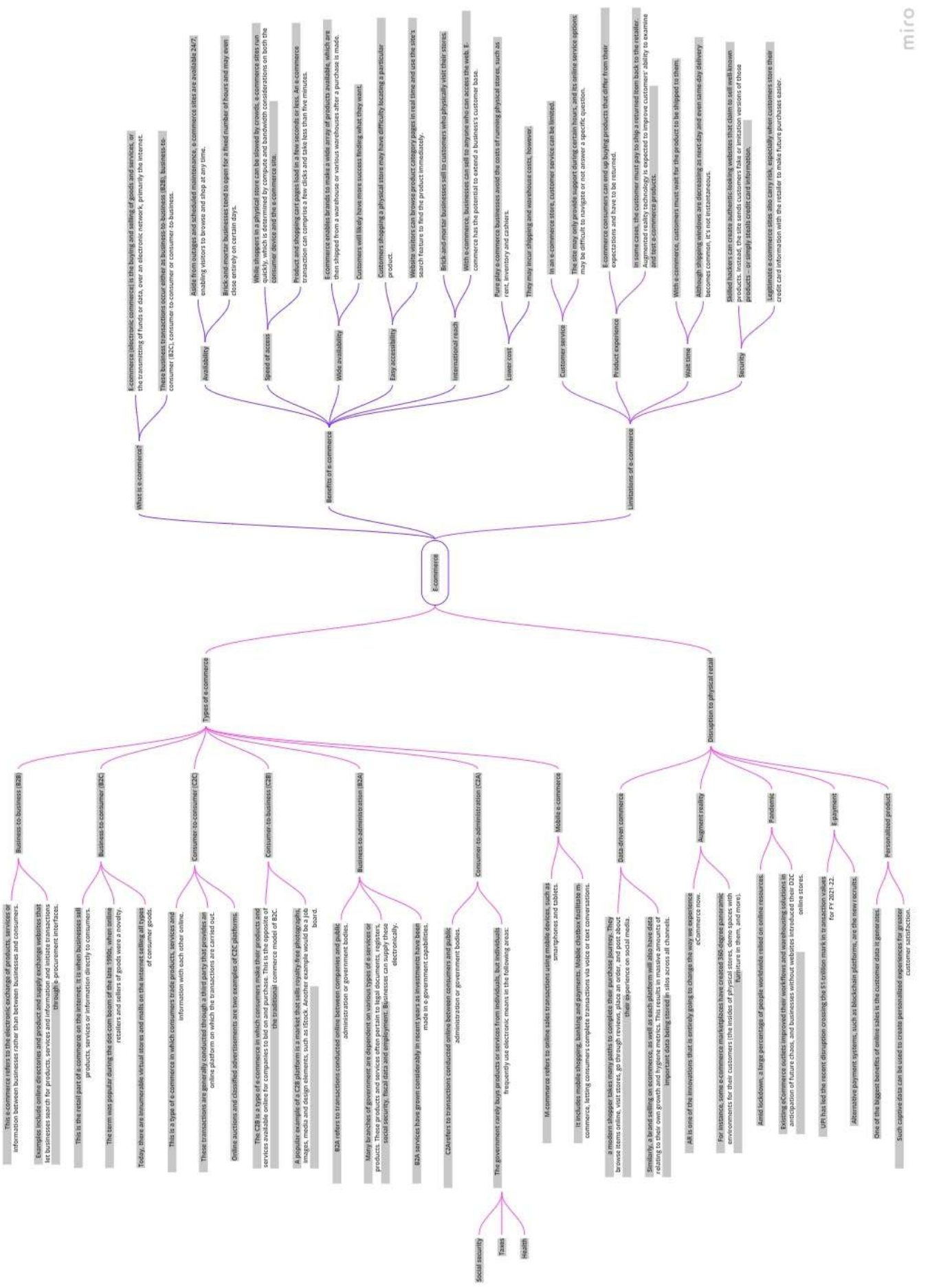
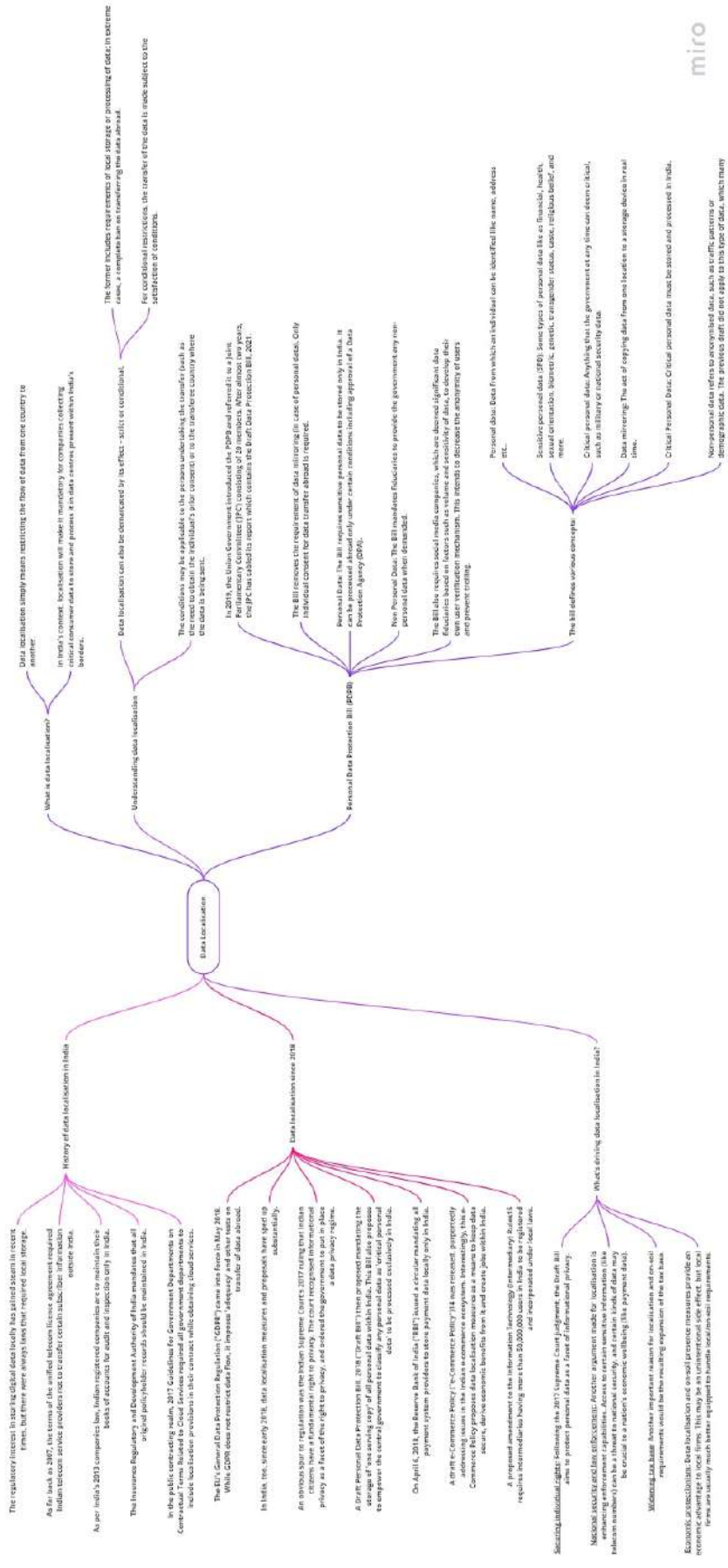

E-commerce
What is e-commerce?
E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet.
These business transactions occur either as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer or consumer-to-business.
Benefits of e-commerce
Availability
Aside from outages and scheduled maintenance, e-commerce sites are available 24/7, enabling visitors to browse and shop at any time.
Brick-and-mortar businesses tend to open for a fixed number of hours and may even close entirely on certain days.
Speed of access
While shoppers in a physical store can be slowed by crowds, e-commerce sites run quickly, which is determined by compute and bandwidth considerations on both the consumer device and the e-commerce site.
Product and shopping cart pages load in a few seconds or less. An e-commerce transaction can comprise a few clicks and take less than five minutes.
Wide availability
E-commerce enables brands to make a wide array of products available, which are then shipped from a warehouse or various warehouses after a purchase is made.
Customers will likely have more success finding what they want.
Easy accessibility
Customers shopping a physical store may have difficulty locating a particular product.
Website visitors can browse product category pages in real time and use the site's search feature to find the product immediately.
International reach
Brick-and-mortar businesses sell to customers who physically visit their stores.
With e-commerce, businesses can sell to anyone who can access the web. E-commerce has the potential to extend a business's customer base.
Lower cost
Pure play e-commerce businesses avoid the costs of running physical stores, such as rent, inventory and cashiers.
They may incur shipping and warehouse costs, however.
Limitations of e-commerce
Customer service
In an e-commerce store, customer service can be limited.
The site may only provide support during certain hours, and its online service options may be difficult to navigate or not answer a specific question.
Product experience
E-commerce consumers can end up buying products that differ from their expectations and have to be returned.
In some cases, the customer must pay to ship a returned item back to the retailer.
Augmented reality technology is expected to improve customers' ability to examine and test e-commerce products.
Wait time
With e-commerce, customers must wait for the product to be shipped to them.
Although shipping windows are decreasing as next-day and even same-day delivery becomes common, it's not instantaneous.
Security
Skilled hackers can create authentic-looking websites that claim to sell well-known products. Instead, the site sends customers fake or imitation versions of those products – or simply steals credit card information.
Legitimate e-commerce sites also carry risk, especially when customers store their credit card information with the retailer to make future purchases easier.
Types of e-commerce
Business-to-business (B2B)
This e-commerce refers to the electronic exchange of products, services or information between businesses rather than between businesses and consumers.
Examples include online directories and product and supply exchange websites that let businesses search for products, services and information and initiate transactions through e-procurement interfaces.
Business-to-consumer (B2C)
This is the retail part of e-commerce on the internet. It is when businesses sell products, services or information directly to consumers.
The term was popular during the dot-com boom of the late 1990s, when online retailers and sellers of goods were a novelty.
Today, there are innumerable virtual stores and malls on the internet selling all types of consumer goods.
Consumer-to-consumer (C2C)
This is a type of e-commerce in which consumers trade products, services and information with each other online.
These transactions are generally conducted through a third party that provides an online platform on which the transactions are carried out.
Online auctions and classified advertisements are two examples of C2C platforms.
Consumer-to-business (C2B)
The C2B is a type of e-commerce in which consumers make their products and services available online for companies to bid on and purchase. This is the opposite of the traditional e-commerce model of B2C.
A popular example of a C2B platform is a market that sells royalty-free photographs, images, media and design elements, such as iStock. Another example would be a job board.
Business-to-administration (B2A)
B2A refers to transactions conducted online between companies and public administration or government bodies.
Many branches of government are dependent on various types of e-services or products. These products and services often pertain to legal documents, registers, social security, fiscal data and employment. Businesses can supply these electronically.
B2A services have grown considerably in recent years as investments have been made in e-government capabilities.
Consumer-to-administration (C2A)
C2Arefers to transactions conducted online between consumers and public administration or government bodies.
The government rarely buys products or services from individuals, but individuals frequently use electronic means in the following areas:
Social security
Taxes
Health
Mobile e-commerce
M-commerce refers to online sales transactions using mobile devices, such as smartphones and tablets.
It includes mobile shopping, banking and payments. Mobile chatbox facilitate m-commerce, letting consumers complete transactions via voice or text conversations.
Disruption to physical retail
Data-driven commerce
a modern shopper takes many paths to complete their purchase journey. They browse items online, visit stores, go through reviews, place an order, and post about their experience on social media.
Similarly, a brand selling on commerce, as well as each platform will also have data relating to their own growth and hygiene metrics. This results in massive amounts of important data being stored in silos across all channels.
Augment reality
AR is one of the innovations that is entirely going to change the way we experience eCommerce now.
For instance, some e-commerce marketplaces have created 360-degree panoramic environments for their customers (the insides of physical stores, demo spaces with furniture in them, and more).
Pandemic
Amid lockdown, a large percentage of people worldwide relied on online resources.
Existing eCommerce outlets improved their workflows and warehousing solutions in anticipation of future chaos, and businesses without websites introduced their D2C online stores.
E-payment
UPI has led the recent disruption crossing the ₹1 million mark in transaction value for FY 2021-22.
Alternative payment systems, such as blockchain platforms, are the new recruits.
Personalized product
One of the biggest benefits of online sales is the customer data it generates.
Such captive data can be used to create personalized experiences for greater customer satisfaction.


Data Localisation
What is data localisation?
Data localisation simply means restricting the flow of data from one country to another.
In India's context, localisation will make it mandatory for companies collecting critical consumer data to store and process it in data centres present within India's borders.
Understanding data localisation
Data localisation can also be demarcated by its effect – strict or conditional.
The former includes requirements of local storage or processing of data; in extreme cases, a complete ban on transferring the data abroad.
For conditional restrictions, the transfer of the data is made subject to the satisfaction of conditions.
The conditions may be applicable as the persons undertaking the transfer (such as the central government, individual's prior consent) or to the countries or entity where the data is being sent.
Personal Data Protection Bill (PDPB)
In 2019, the Union Government introduced the PDPB and referred it to a Joint Parliamentary Committee (JPC) consisting of 30 members. After almost two years, the JPC has called its report which contains the Draft Data Protection Bill, 2021.
The Bill removes the requirement of data mirroring (in case of personal data). Only individual consent for data transfer abroad is required.
Personal Data: The Bill requires sensitive personal data to be stored only in India. It can be processed abroad only under certain conditions including approval of a Data Protection Agency (DPA).
Non Personal Data: The Bill mandates fiduciaries to provide the government any non-personal data when demanded.
The Bill also requires social media companies, which are deemed significant data fiduciaries based on factors such as volume and sensitivity of data, to develop their own user verification mechanism. This intends to decrease the anonymity of users and prevent trolling.
The bill defines various concepts:
Personal data: Data From which an individual can be identified like name, address etc.
Sensitive personal data (SPD): Some types of personal data like as financial, health, sexual orientation, biometric, genetic, transgender status, caste, religious belief, and more.
Critical personal data: Anything that the government at any time can deem critical, such as military or national security data.
Data mirroring: The act of copying data from one location to a storage device in real time.
Critical Personal Data: Critical personal data must be stored and processed in India.
Non-personal data refers to anonymised data, such as traffic patterns or demographic data. The proposed draft did not apply to this type of data, which many companies use to fund their business model.
History of data localisation in India
The regulatory interest in storing digital data locally has gained steam in recent times, but there were always laws that required local storage.
As far back as 2007, the terms of the unified telecom license agreement required Indian telecom service providers not to transfer certain subscriber information outside India.
As per India's 2013 companies law, Indian registered companies are to maintain their books of accounts for audit and inspection only in India.
The Insurance Regulatory and Development Authority of India mandates that all original policyholder records should be maintained in India.
In the public contracting realm, 2017 Guidelines for Government Departments on Contracts of Cloud Services, issued by Office of Government of India, required tenders to include localisation provisions in their contract while obtaining cloud services.
Data localisation since 2018
The EU's General Data Protection Regulation ("GDPR") came into force in May 2018. While GDPR does not restrict data flows, it imposes 'adequacy' and other tests on transfer of data abroad.
In India, too, since early 2018, data localisation measures and proposals have sped up substantially.
An obvious spur to regulation was the Indian Supreme Court's 2017 ruling that Indian citizens have a fundamental right to privacy. The court recognised informational privacy as a facet of the right to privacy, and ordered the government to put in place a data privacy regime.
A Draft Personal Data Protection Bill, 2018 ('Draft Bill') then proposed mandating the storage of 'one serving copy' of all personal data within India. This Bill also proposed to empower the central government to classify any personal data as 'critical personal data' to be processed exclusively in India.
On April 6, 2018, the Reserve Bank of India ("RBI") issued a circular mandating all payment system providers to store payment data locally only in India.
A draft e-Commerce Policy ("e-Commerce Policy") 1.4 was released, purportedly addressing issues in the India e-commerce ecosystem. Interestingly, this e-Commerce Policy proposed that data localisation measures would help India secure, derive economic benefits from it and create jobs within India.
A proposed amendment to the information technology (intermediary) Rules 11 requires intermediaries having more than 50,000 users in India to be registered and incorporated under local laws.
What is driving data localisation in India?
Securing individual rights: Following the 2017 Supreme Court judgment, the Draft Bill aims to protect personal data as a facet of informational privacy.
National security and law enforcement: Another argument made for localisation is enhancing enforcement capabilities. Access to certain sensitive information (like telecom numbers) can be a threat to national security, and certain kinds of data may be crucial to a nation's economic wellbeing (like payment data).
Widening tax base: Another important reason for localisation and on-soil requirements would be the resulting expansion of the tax base.
Economic possibilities: Data localisation and on-soil presence measures provide an economic advantage to local firms. This may be an unintentional side effect, but local firms are usually much better equipped to handle localisation requirements.
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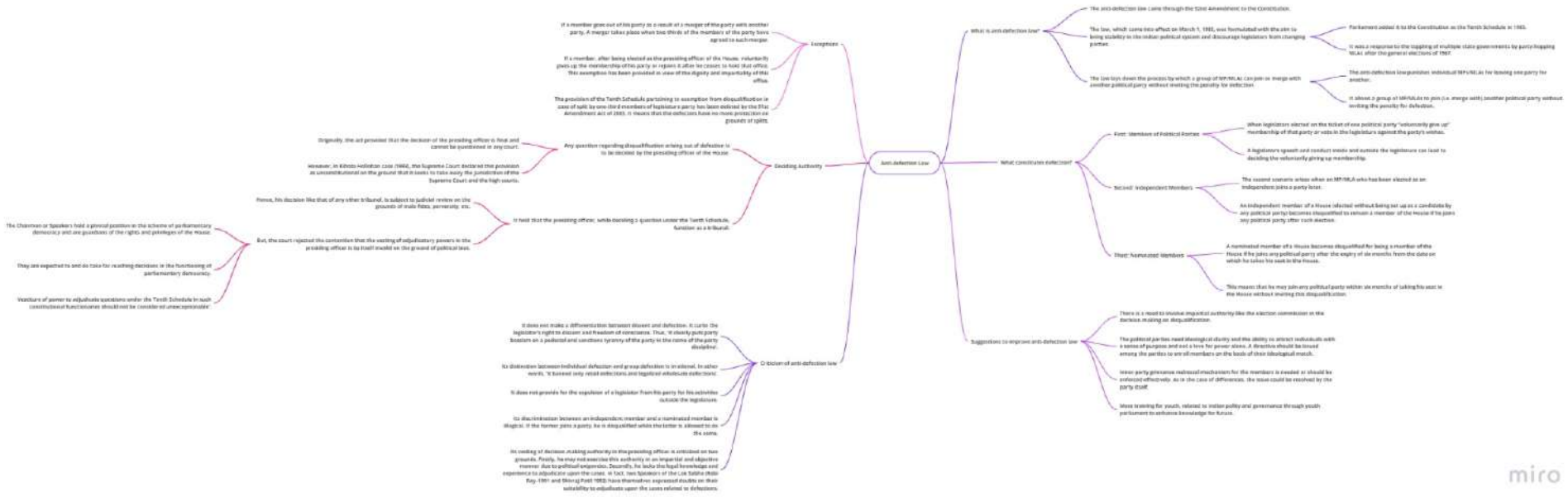
Anti-defection Law
What is anti-defection law?
The anti-defection law came through the 52nd Amendment to the Constitution.
The law, which came into effect on March 1, 1985, was formulated with the aim to bring stability to the Indian political system and discourage legislators from changing parties.
Parliament added it to the Constitution as the Tenth Schedule in 1985.
It was a response to the toppling of multiple state governments by party-hopping MLAs after the general elections of 1967.
The law lays down the process by which a group of MP/MLAs can join or merge with another political party without inviting the penalty for defection.
The anti-defection law punishes individual MPs/MLAs for leaving one party for another.
It allows a group of MPs/MLAs to join (i.e. merge with) another political party without inviting the penalty for defection.
What constitutes defection?
First: Members of Political Parties
When legislators elected on the ticket of one political party "voluntarily give up" membership of that party or vote in the legislature against the party's wishes.
A legislature's speech and conduct inside and outside the legislature can lead to deciding the voluntarily giving up membership.
Second: Independent Members
The second scenario arises when an MP/MLA who has been elected as an independent joins a party later.
An independent member of a House (elected without being set up as a candidate by any political party) becomes disqualified to remain a member of the House if he joins any political party after such election.
Third: Nominated Members
A nominated member of a House becomes disqualified for being a member of the House if he joins any political party after the expiry of six months from the date on which he takes his seat in the House.
This means that he may join any political party within six months of taking his seat in the House without inviting this disqualification.
Suggestions to improve anti-defection law
There is a need to involve impartial authority like the election commission in the decision making on disqualification.
The political parties need ideological clarity and the ability to attract individuals with a sense of purpose and not a love for power alone. A direction should be issued among the parties to are all members on the basis of their ideological match.
Inner party grievance redressal mechanism for the members is needed or should be enforced effectively. As in the case of differences, the issue could be resolved by the party itself.
More training for youth, related to Indian polity and governance through youth parliament to enhance knowledge for future.
Exceptions
If a member goes out of his party as a result of a merger of the party with another party. A merger takes place when two thirds of the members of the party have agreed to such merger.
If a member, after being elected as the presiding officer of the House, voluntarily gives up the membership of his party or rejoins it after he ceases to hold that office. This exemption has been provided in view of the dignity and impartiality of this office.
The provision of the Tenth Schedule pertaining to exemption from disqualification in case of split by one-third members of legislature party has been deleted by the 91st Amendment Act of 2003. It means that the defectors have no more protection on grounds of split.
Deciding Authority
Any question regarding disqualification arising out of defection is to be decided by the presiding officer of the House.
Originally, the act provided that the decision of the presiding officer is final and cannot be questioned in any court.
However, in Kihoto Hollohan case (1992), the Supreme Court declared that provision as unconstitutional on the ground that it seeks to take away the jurisdiction of the Supreme Court and the high courts.
It held that the presiding officer, while deciding a question under the Tenth Schedule, function as a tribunal.
Hence, his decision like that of any other tribunal, is subject to judicial review on the grounds of male fides, perversity, etc.
But, the court rejected the contention that the vesting of adjudicatory powers in the presiding officer is by itself invalid on the ground of political bias.
The Chairman or Speaker's held a pivotal position in the scheme of parliamentary democracy and are guardians of the rights and privileges of the House.
They are expected to and do take far reaching decisions in the functioning of parliamentary democracy.
Vesting of power to adjudicate questions under the Tenth Schedule in such constitutional functionaries should not be consider as unexceptionable.
Criticism of anti-defection law
It does not make a differentiation between dissent and defection. It curtis the legislator's right to discuss and freedom of conscience. Thus, it clearly puts party boasters on a pedestal and sanctions tyranny of the party in the name of the party discipline.
Its distinction between individual defection and group defection is irrational. In other words, 'it banned only retail defections and legalized wholesale defections'.
It does not provide for the expulsion of a legislator from his party for his activities outside the legislature.
Its discrimination between an independent member and a nominated member is illogical. If the former joins a party, he is disqualified while the latter is allowed to do the same.
Its vesting of decision making authority in the presiding officer is criticized on two grounds. Firstly, he may not exercise this authority in an impartial and objective manner due to political expansion. Secondly, he lacks the legal knowledge and experience to adjudicate upon the cases. In fact, two Speakers of the Lok Sabha (Rabi Ray, 1991 and Shivraj Patil 1992) have themselves expressed doubts on their suitability to adjudicate upon the cases related to defections.
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