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JULY 2024

News Analysis

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JULY 2024

1. IMPORTANT TOPICS OF THE MONTH

1.1   National Emergency in India

Why in news?

In 2024, India entered the fiftieth year of the imposition of the emergency.

What is national emergency?

- **Historical background** – Emergency provisions are borrowed from Government of India Act of 1935.

- **Indian Constitution** – Article 352 to Article 360 of the Indian Constitution allows for emergency arrangements.

- **Need** – The rationality behind the incorporation of these provisions is to safeguard the sovereignty, unity, integrity and security of the country, the democratic political system and the Constitution.

- **National Emergency** – The term 'national emergency' is not mentioned in the constitution.

- It is given by the **Article 352** as **'Proclamation of Emergency'** in the constitution.

- **Declaration** – The _President can declare_ a national emergency if he/she is satisfied that there is a threat to the security of India or any part of it due to _war, external aggression, or armed rebellion_.

- The President can declare it even before the actual occurrence of war or external aggression or armed rebellion, if he/ she is satisfied that there is an imminent danger.

- It can be imposed either in the whole country or in any part of it.

- **Approval** – The proclamation of Emergency must be approved by _both Houses of Parliament within one month_.

- This should done by a **_special majority_**, that is

   o   A _majority of the total_ membership of that house and

   o   A majority of _not less than two-thirds_ of the members of that house present and voting.

- **Time duration** – Once approved, the Emergency remains in force **_for six months_** and can be **_extended by further six-month_** periods with parliamentary approval.

- **Removal** - A proclamation of emergency may be revoked by the President at any time by a subsequent proclamation.

- Such a proclamation does not require the parliamentary approval.

- Further, the President must revoke a proclamation if the Lok Sabha passes a resolution disapproving its continuation

> _Emergency provisions are placed in Part XVIII of the Indian Constitution._

> _The phrase 'armed rebellion' was inserted by the 44th Amendment Act of 1978, replacing the original phrase 'internal disturbance'._

What are effects of national emergency?

- A proclamation of Emergency has drastic and wide ranging effects on the political system.

- **Disrupt centre-state relations** – **Article 250** deals with the power of parliament to legislate with respect to any matter in the state list during national emergency.

- **Dominant executive directions** – The Centre becomes entitled to give executive directions to a state on 'any' matter.

- Thus, the state governments are brought under the complete control of the Centre, though they are not suspended.

> _This kind of transformation of the political system from federal (during normal times) to unitary (during emergency) is a unique feature of the Indian Constitution._

- **Impact distribution of revenues** – As per **_Article 354_**, the President can modify the constitutional distribution of revenues between the Centre and the states.

- The President can _either reduce or cancel the transfer_ of finances (both tax sharing and grants-in-aid) from the Centre to the states.

- Such modification continues till the end of the financial year in which the emergency ceases to operate.

- **Superior legislative powers** – The _Parliament acquires the power to legislate_ with respect to goods and services tax or matters in the State List, while a proclamation of national emergency is in operation.

- The laws become _inoperative on the expiration of six months_ after the emergency has ceased to operate.

- Here also, the power of a state legislature to make laws on the same matter is not restricted but in case of repugnancy between a state law and a parliamentary law, the latter is to prevail.

> _Emergency provisions relating to suspension of Fundamental Rights were borrowed from Weimer Constitution of Germany._

- Notably, while a proclamation of national emergency is in operation, the _President can issue ordinances_ on the state subjects also, if the Parliament is not in session.

- **Effect on life of Lok Sabha and State Assembly** – The life of the Lok Sabha and State Assembly may be _extended beyond its normal term_ (five years) by a law of Parliament _for one year at a time_ (for any length of time).

- However, this extension cannot continue beyond a period of six months after the emergency has ceased to operate.

- **Suspension of Fundamental Rights** – _Articles 358 and 359_ describe the effect of a National Emergency on the Fundamental Rights.

- As per Article 358, the six rights guaranteed by Article 19 are automatically suspended _only when the emergency is declared on grounds of war or external aggression_ (external emergency) and not on the ground of armed rebellion (internal emergency).

- Article 359 deals with the suspension of other Fundamental Rights (except those guaranteed by **_Articles 20 and 21_**).

- This suspension _applies to both the legislative and executive_ actions taken during the Emergency period.

- However, the suspension of enforcement does _not mean that the rights themselves cease_ to exist.

- It only means that their _enforcement through courts is suspended_ for the duration of the Emergency.

What are declaration made so far in India?

- This type of Emergency has been _proclaimed three times_ so far-in **_1962, 1971 and 1975_**.

- **1962 proclamation** – It was issued in October 1962 on account of Chinese aggression in the NEFA (North-East Frontier Agency -now Arunachal Pradesh), and was in force _till January 1968_.

- Hence, a _fresh proclamation was not needed_ at the time of War against Pakistan in 1965.

- **1971 proclamation** – It was made in December 1971 in the wake of attack by Pakistan.

- **1975 proclamation** – Even when the 2nd emergency was in operation, a third proclamation of National Emergency was made in June 1975.

- **Cause of proclamation** - The _first two proclamations_ (1962 and 1971) were made on the _ground of 'external aggression'_, while the third proclamation (1975) was made on the ground of internal disturbance ', that is, certain persons have been inciting the police and the armed forces against the discharge of their duties and their normal functioning.

- **Revocation** – Both the second and third proclamations _were revoked in March 1977._

What are the impacts of the national emergency in 1975?

- **Suspension of Fundamental Rights** - This led to widespread censorship of the press.

- Newspapers were required to get government approval before publishing, and many journalists were arrested.

- **Civil Liberties** - The right to move the courts for the enforcement of fundamental rights was suspended.

- **Detention of Political Opponents** - Thousands of political leaders, activists, and dissenters were arrested and detained without trial under preventive detention laws such as the **_Maintenance of Internal Security Act (MISA)_**.

- **Centralization of Power** - Decision-making was concentrated in the hands of the Prime Minister and a small group of advisors, sidelining regular administrative and parliamentary processes.

- **Judicial Independence** - Judges who were perceived as not aligning with the government's stance were transferred or faced adverse consequences.

- **Forced Sterilizations** - Sanjay Gandhi pushed a *"five-point programme"* that included forced family planning and clearance of slums.

> *In ADM Jabalpur vs Shivkant Shukla (1976), the Supreme Court ruled that detention without trial was legal during an emergency.*
> *The Punchhi Commission which was constituted in 2007 recommended that Article 352 to be used only as a measure of 'last resort'*

- **Electoral Consequences** - In the general elections of 1977, the Congress party, led by Indira Gandhi, suffered a massive defeat, and the Janata Party came to power. This election is often seen as a public repudiation of the Emergency.

1.2 Santhal Hul

Why in news?

June 30 marks the 169th anniversary of the Santhal Hul, one of the earliest peasant uprisings against the British.

What is a Santhal Hul?

- *Santhal pargana is the region in present-day Jharkhand, more specifically, around the Rajmahal Hills of eastern Jharkhand's Sahibganj district.*

- **Santhul Hul** – It represents the _Santhal revolution that began in 1855_ in the Santhal pargana region, two years before the uprising of 1857.

- It was an **_organised war_** against colonialism and other forms of oppression they were subjected to by the British and their collaborators.

- It is one of the first _peasant uprisings_ against British colonial oppression.

- **Leaders** – It was led by four brothers, **_Sidho, Kanho,_** _Chand, and Bhairav Murmu_, along with sisters _Phulo and Jhano_.

- **Objective** – It was a revolt _against imperialism_ to safeguard the economic, cultural, and religious aspects of their lives.

- **Targets** – Apart from British, they also fought against the upper castes, zamindars, darogas, and moneylenders, described by the umbrella **_term 'diku' (outsiders)._**

Santhals
- **History of Santhals** – They were _not the original inhabitants of modern day Santhal Pargana_ which includes the six districts of Dumka, Pakur, Godda, Sahibganj, Deoghar and parts of Jamtara.
- They had _migrated from the Birbhum and Manbhum regions_ (present-day Bengal), starting around the late 18th century.
- **Migration** – The _1770 famine in Bengal caused the Santhals_ to begin moving and soon, the British turned to them for help.
- **Geographical distribution** – They spread across _Jharkhand-Bihar, Odisha and West Bengal_.
- **Population** – Today, the Santhal community is the _third largest tribal community in India_.

> *The state of Jharkhand celebrates June 30 as 'Hul Diwas'.*

What were the major causes of the revolt?

- **Permanent Settlement Act of 1790** – It allowed the East India Company to bring an ever-increasing area in its control under settled agriculture.

- They, thus, chose the **_area of Damin-i-Koh_**, at the time heavily forested, _to be settled by the Santals_, in order to collect a steady stream of revenue.

- It comprises present-day Sahibganj, Godda, Dumka, Deoghar, Pakur, and regions of Jamtara, in _present-day Jharkhand_.

- The area was allocated to the Santhals displaced from Birbhum, Murshidabad, Bhagalpur, Barabhum, Manbhum, Palamau, and Chhotanagpur, all areas the Bengal Presidency.

- **Repression by British** – While the Santhals were promised settlement and agriculture in Damin-i-Koh, they indulged in repressive practice of _land-grabbing and begari_ (bonded labour).

- **Worsened social conditions** – Zamindars, the police, the revenue court alas have exercised a combined system of

- o   Oppressive *extractions*

- o   *Forcible dispossession of property*

- o   *Abuse and personal violence* and a variety of petty tyrannies upon Santhals

- Willful and *uncharitable trespass by the rich* by means of their untethered cattle, tattoos, ponies or even elephants, on the growing crops of the poorer race.

- **Declining economic prosperity** – *Usurious interest* on loans of money ranging *from 50 to 500%*.

- False measures at the haut and the market.

- **Loss of traditional lands** – The introduction of *private property rights* and the *encroachment of non-Santhal settlers* led to the loss of traditional lands for the Santhals.

- Their traditional ways of life and livelihoods were disrupted, creating further discontent.

Elaborate the events of the revolt?

- **Rebellion** - By 1854, there was talk of rebellion in tribal councils and meetings.

- It finally began after a massive assembly of over 6,000 Santhals representing around 400 villages that took place *in 1855.*

- **Course of events** – *Moneylenders and zamindars were executed* or forced to flee.

- The police stations, railway construction sites and dak offices thus *all symbols of colonial rule were attacked*.

- **Diversified participations** – Apart from the Santal community it saw the participation from *32 communities (tribals and non-tribals both)*.

- **Participation of women** – The *sisters Phulo-Jhano* had led an army of 1,000 women.

- Their involved in providing food supply, *gathering information and also attacked* the East Indian camps during the night.

- **Repression by British** – They *invoked martial law* and killed thousands of locals and also *burned down villages*.

- The British *hanged Sidhu* to death in 1855, followed by Kanhu *in 1856* and thus the insurrection ended, but the impact it left was everlasting.

What are the significances of the revolt?

- **Broke the myth of British supremacy** – *British army was defeated twice* during the rebellion.

- The *first was in Pirpainti and the second in Birbhum*, all part of lower Bengal then and the narrative that the East India Company's army could not be defeated was exposed.

- **Santhal Pargana Tenancy Act of 1876** – It was enacted aftermath of the revolt.

- It *prohibits the transfer of Adivasi lands* (urban or rural land) to non-Adivasis, was the result of the Hul.

- The land can only be inherited as per the Act, thus retaining the *rights of Santhals to self-govern their land*.

> *The Chhotanagpur Tenancy Act 1908 was enacted as a result of the Birsa Movement that allowed land transfers within the same caste and certain geographical areas with the approval of the District Collector.*

- **Inspiration to other revolts** – This revolt motivated *many tribals' revolts* which emerged for claiming their ownership rights and other rights.

- **Heightened the nationalist sentiments** – The revolt and the subsequent harsh measures by the British authorities *fueled nationalist sentiments* among Indians.

- It highlighted the brutal nature of colonial rule and increased support for the independence movement.
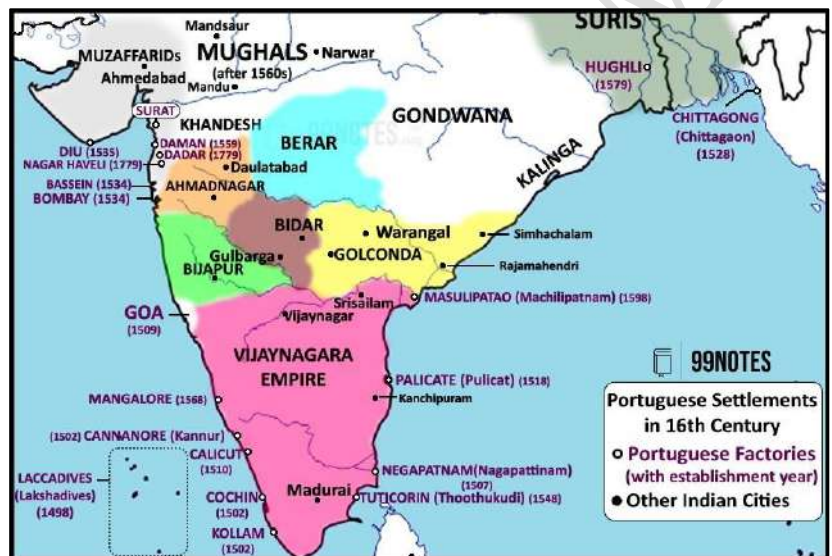
1.3   Portuguese in India

Why in news?

A closer study of Bengali cuisine, language, and culture shows a greater influence of Portuguese in the Bengali culture.

How did Portuguese invaded India?

- **Portuguese interests in India** – They had multipronged interests in India.
  - o Spices from Malabar
  - o Indigo from Gujarat
  - o Textiles from both Gujarat and Tamil ports.
- **Arrival** – The Portuguese, under King Manuel I, sought a direct sea route to India to bypass Arab and Venetian merchants dominating the lucrative spice trade.
- V*asco da Gama rounded the Cape of Good Hope*, and reached the Indian coast at Calicut (Kozhikode) in 1498.
- **Reaction of natives** - The arrival of the Portuguese was met with mixed reactions from the local population.
- He met the *Zamorin ruler of Calicut* and despite objections from the Arab raiders, obtained permission from the Zamorin to trade in Calicut.
- But Vasco da Gama was *unable to pay the custom duties* and price of his goods.
- He realized that the only way to establish a foothold in India was through force which began the rise of Portuguese rule in India.
- **Conquests in India** – In 1509, they defeated the combined fleet of Egyptians, Arab and Zamorin at the battle of Diu.
- In *1510, Alfonso de Albuquerque captured Goa*, which became the administrative and commercial center of Portuguese India.
- *Nino Da Cunha occupied Bassein and Diu* in 1534 and 1537 respectively.
- In 1539, they defeated a combined fleet of Ottomans, Mamluks of Egypt, the Gujarat Sultanate and the Zaomorin of Calicut at Diu.
- By the end of the 16th century, they had about fifty forts and a powerful naval fleet of 100 ships.

Portuguese Settlements in 16th Century
- ○ Portuguese Factories (with establishment year)
- ● Other Indian Cities

- **Settlements** – Initially, forts and trading posts were established *Cochin and Cannanore* in Malabar region.
- *Diu, Daman, Dadra & Nagar Haveli, Bassein and Goa* were the important settlements in India.

What are impacts of Portuguese rule in India?

Positive Impacts

> *Albuquerque (1509- 1515), the successor of Almeida, was the real founder of the Portuguese empire in India.*

- **Discovered alternate sea route to India** – A new sea route from Europe to India bypassing the Ottoman Empire was found.
- **Contained monopolistic trade of Arabs** – Bypassing Arabs helped in increased trade relations between Europeans and India.
- **Introduced new military tactics** – They used *gun powder and superior artillery* against the native rulers.
- Francisco d' Almeida followed '*Blue Water Policy*,' and accordingly, he added more ships to strengthen the navy.
- **Created new ethnic groups** – Alfonso de Albuquerque introduced the policies of *intermarriage between Portuguese men and Indian women*.
- **Social Justice** – Alfonso de Albuquerque *tried to ban the practice of sati,* the ritual of burning the widows on their husbands' funeral pyre.
- **Facilitated human development** – Christian missionaries helped in improving the living conditions of natives by establishing education institutions and health care facilities.
- **Developed printing press** – They brought the first printing press to India.
- *St. Paul's College in Goa* had its first printing press in 1556.
- **Introduced western education** – Establishment of early Western-style educational institutions, promoting European knowledge and science.

Negative Impacts

- **Paved way for European colonialism** – For the first time in the political history of India the _Europeans conquered and seized territories_ from the Indian rulers.

- **Followed divide and rule policy** – Initially, Vasco da Gama _used the enmity between the two Hindu rulers_ of Cochin and Calicut for establishing their power in India.

- **Exploited traders** - Under the **_cartaz system_**, they exacted money from the traders as price for protection against what they termed as piracy.

- **Social disruption** - Their involvement in _capturing and trading slaves_, caused social disruption.

- **Religious conflicts** – Their introduction of Christian missionaries which involved in _religious conversion lead to conflict_ with other native religious people.

What led to the downfall of Portuguese in India?

- **Resistance from local rulers** - The Portuguese faced strong resistance from local Indian rulers and kingdoms, such as the _Vijayanagara Empire and the Mughal Empire_.

- **Competition with other European powers** - The arrival of other European powers like the _Dutch, British, and French_ intensified competition for control of trade routes and territories, diminishing Portuguese influence and economic dominance.

- The Portuguese suffered significant _defeats, such as the Battle of Swally (1612)_ against the British, weakening their control over key territories.

    o In 1612, they lost _Surat to English_

    o In 1661, _Bombay was handed over to English_ over matrimonial alliance.

    o In _1663, they lost all their forts to Dutch_ on the Malabar Coast.

> **Mughal-Portuguese Relation**
>
> - **Battle of Diu (1509)** – A significant naval battle where the Portuguese _defeated a coalition_ that included the Sultan of Gujarat, _an ally of the Mughals_, asserting their dominance in the Indian Ocean.
>
> - **Embassy to Akbar (1572)** - The Portuguese sent an embassy to Mughal Emperor Akbar's court, aiming to secure trading privileges and political alliances.
>
> - **Jesuit missions in Mughal court** - Portuguese Jesuit missionaries, such as those led by Father Antonio Monserrate, were active _in Akbar's court,_ promoting Christianity and cultural exchange.
>
> - **Capture of Hugli (1632)** - Mughal forces under _Shah Jahan captured the Portuguese settlement at Hugli_ in Bengal, citing the Portuguese's illegal activities, including slave trading.

- **Technological and naval superiority of rivals** - Advanced ships and navigational techniques of rival European powers gave them a strategic advantage over the Portuguese fleet.

- **Limited resources and manpower** - Portugal's small population and limited resources made it difficult to maintain extensive colonization and military operations.

- **Internal conflicts and corruption** - Internal conflicts and rampant corruption among officials w_eakened their governance and operational efficienc_y in India.

- **Economic challenges** - The _high costs of maintaining and defending_ their coastal forts and trade routes strained the Portuguese economy lead to financial difficulties.

- **Cultural and religious factors** - Portuguese efforts to spread Christianity often led to conflicts with local populations, further undermining their influence and control.

How Indo-Portugal relations evolved after India's Independence?

- **Diplomatic relations** – Relations between India and Portugal began amicably in 1947 after India's independence and diplomatic relations were established in 1949.

- **Sovereignty issues** – Bilateral relations declined after 1950 as Portugal refused to surrender Goa, Daman and Diu, Dadra and Nager Haveli on India's West Coast.

- By 1955, diplomatic relations were cutoff between the two nations.

- **End of Portuguese colonialism** – Indian military forces **_liberated Goa in 1961 by Operation Vijay_**.

- The Governor of Portuguese India signed the Instrument of Surrender in 1961, Liberating Goa after 450 years of Portuguese rule in India.

- **Recognition of India's Sovereignty** – India and Portugal finally signed *a treaty in 1974* on recognition of India's sovereignty over Goa, Daman & Diu, Dadra & Nagar Haveli and related matters.

- This treaty came into force in 1975.

- **Indian community in Portugal** – The Indian origin diaspora in Portugal is estimated to number around 1,25,000.

> *Under Portuguese law, individuals born in Goa before December 19, 1961, and two subsequent generations have the option to register as Portuguese citizens.*

- **Political relations** - Portugal has consistently supported India's permanent membership in the United Nations Security Council (UNSC) and the Nuclear Suppliers Group.

- **Economic ties** - As per Government of India's data, India-Portugal trade in *FY 2022-23 amounted to US$1,201.41 million*.

- Indian exports stood at US$1,005.41 million and Portuguese exports at US$196 million.

- **Defence cooperation** - India and Portugal signed an MoU in defence cooperation in 2017.

- Both sides have regularly exchanged delegations and participated in the defence expos.

- **Academic and youth exchanges** - Regular academic exchanges were being held until the beginning of COVID-19 pandemic and the travel restrictions.

- Indian diaspora youth from Portugal have so far participated in the 'Know India' Programme(KIP) and in the *'Know Goa' Programme(KGP)*.

1.4 Domain Expertise in Governance

Why in News?

In the current central government, there's a push to align the educational qualifications of top Indian Administrative Services (IAS) officers with their assigned roles.

What is Governance?

- **Governance** - It is manner in which the power is exercised in the administration and management of a country's economic and social resources for growth and Development.

- It is the process of decision-making and implementing such decisions for the well-being of the people.

> *According to Word Bank, Good Governance is defined as "the manner in which power is exercised in the management of a country's economic and social resources for development".*

- **In India** – Governance Division deals with issues concerning the *policies* and programmes of Central Sector and Centrally Sponsored Schemes, *their implementation and monitoring* with respect to twelve Central Ministries and Departments.

- **Organs** – It is exercised by legislators and executives of the government.

> *IAS comes under All-India services which are services that are common to both Central and state governments. In 1947, the Indian civil Service (ICS) was replaced by IAS.*

- In both, it is the combination of political leaders or people's representative and the selected bureaucrats.

- Among bureaucrats, IAS occupies a significant position in the governance process.

- **Non-alignment with education** - The educational qualifications of IAS officers have *seldom been relevant to the roles* they perform in the government.
  - Former Gujarat-cadre IAS Hasmukh Adhia, who has a PhD in yoga became the finance secretary of India in the first NDA government.

Arguments in favour of existing system of Generalist
- **Grass root learning** – Many IAS officers *start their careers from the district level*, and learn the nuts and bolts of governance over three decades before they rise to top positions. - **Hands-on training** – What they *learn on the ground* through their tenure is far more important. - It is their *"on the job" learning* that is considered far more valuable than their educational background.

Why domain expertise in governance is needed?

- **Informed decision making** – Domain knowledge aid in taking effective decisions in their respective areas of expertise.

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- **Proficient policy formulation** – It supports in formulating policies to address the specific needs and challenges of their sectors.

- **Effective implementation** – It helps to streamline the implementation of programs and initiatives.

- **Promotes stakeholders engagement** – It enables for extended stakeholder engagement with industry experts, professionals, and the public.

- **Effective resource allocation** – It can ensure efficient allocation of resources within their sectors by understanding the needs and priorities of various stakeholders.

Status of Domain expertise within the Government (2024)
At secretary level – In economics and finance-related ministries, secretaries' educational qualifications now _broadly align_ with their ministerial roles.   - Of the six secretaries in the finance ministry, _four hold degrees in finance and economics_.   - Finance secretary T.V. Somanathan, who also heads the department of expenditure, has a PhD in economics.   **At Ministerial level** – It is for the _first time in almost three decades_ that Finance Ministry is being headed by a minister who has an _educational background in economics_.   - Nirmala Sitharaman, who has been the finance minister since 2019, has an MPhil in economics.   - A similar trend is visible in a few other ministries, too.   **Educational background** - Broadly speaking, a majority of the IAS secretaries serving in the government of India have related education background.   - Of 63 analysed   19 have a background in economics or finance   17 are engineers   12 have degrees in management, including MBA.   - Some of these are overlapping, for example, an engineering background as well as an MBA.   - There are at least _eight IAS secretaries who hold a PhD_, of whom six have done PhDs in economics.   "Both in terms of your academic training, as well as spending more and more time in the same ministry, there is a focus on ensuring that officials know their domain areas very well."   - Concerns - The secretary-level data is too vague to indicate a significant shift.   - The educational background of joint secretary-level officers matters far more because they are the ones to actually implement policy.

What is lateral entry initiative in government jobs?

- **Background**- The need for specialization was initially recommended by the _first Administrative Reforms Commission_ (ARC) as far back as in 1965.

- It was again recommended by the _Surinder Nath Committee and the Hota Committee_ in 2003 and 2004, respectively.

> _The last time the country had a full-time finance minister with an educational background in economics was in 1991-1996, when Manmohan Singh held the charge of the ministry._

- **Launch**- Lateral entry scheme was launched in _2018_.

- **Lateral entry appointment -** It is the appointment of private sector specialists in government departments who become part and parcel of the government system.

- **Aim**- It is aimed at bringing fresh talent and perspective into the government.

- **Recruitment**- They are made against the posts requiring domain specialisations either _from the private sector or from the state_ government/ autonomous bodies/public sector undertakings etc.

Lateral Entry: A Timeline

2017	2018	2019
Both NITI Aayog and a group of secretaries **recommend lateral induction of personnel** at senior level in GoI	**6,077 applications are received** for 10 posts of joint secretaries under the lateral entry scheme	Nine joint secretaries are selected and eight join

	2022	2021
Note: Lateral entrants inducted directly by NITI Aayog are not factored in
Source: GoI	Of the selected candidates, 30 (3 JS, 18 directors and 9 deputy secretaries) join in 21 ministries, 1 drops out	31 candidates, including 3 joint secretaries, selected out of 2,031 applicants

- **Appointment**- It is done through the _Appointments Committee of the Cabinet (ACC)_ headed by the Prime Minister.

- **Role**- Recruitments are made at the l_evel of joint secretary, director and deputy secretary_.

- **Current status** - At present, there are **_33 such specialists_**, including eight joint secretaries, 16 directors and nine deputy secretaries, working in key government departments.

What are the pros and cons of lateral entry?

Aspect	Pros	Cons
Expertise	Brings in domain-specific expertise from the private sector	Risk of _imbalance between generalists and specialists_
Policy making	Introduces fresh perspectives & innovative approaches	_Potential clash_ with existing bureaucratic culture
Efficiency	Can enhance efficiency in government functioning	_Possible resistance_ from career bureaucrats
Meritocracy	Promotes merit-based selection, _attracting top talent_	May _undermine the traditional UPSC selection_ process
Flexibility	Allows for _flexibility in hiring_ skilled professionals	Could lead to _short-term focus_ rather than long-term planning
Accountability	Professionals from outside may bring a higher degree of accountability	Accountability mechanisms for lateral entrants might be less stringent
Resource Utilization	Better utilization of human resources by _integrating private sector skills_	Could lead to _issues in coordination_ and integration with the existing system
Public Perception	Can improve public perception by demonstrating a commitment to modernization	Public skepticism regarding the fairness and transparency of the selection process
Training and Development	Injects experienced professionals who may need less training	Lateral entrants might lack understanding of government processes and protocols

What lies ahead?

- **For Specialist** - Ensure the lateral entry candidates bring expertise not readily available within the existing system.

- Focus on _familiarizing lateral entrants with government protocols_ and processes and ensure legal provisions support and protect the integration of lateral entrants.

- **For Generalists** - Promote _training and orientation_ of generalists with specific domains.

- Foster a _culture of acceptance and collaboration_ within government offices.

1.5	**Sustainable Tourism**

Why in News?

As per the United Nation World Tourism Organisation (UNWTO) Barometer, international tourism in Asia and the Pacific is rapidly recovering, with arrivals reaching 82% of pre-pandemic levels in Q1 2024.

What is sustainable Tourism?

- **Historical basis** – In 1992, the _'Earth Summit'_ in Rio established the triple principles of environmental, economic and social sustainability.

- Since then, the principles of sustainable tourism have been adopted by the tourism industry worldwide.

- **Need –** Tourism activities often lead to habitat degradation, pollution, and resource depletion.

- **Sustainable tourism –** UNWTO defines it as 'leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while _maintaining cultural integrity, essential ecological processes, biological diversity_ and life support systems'.
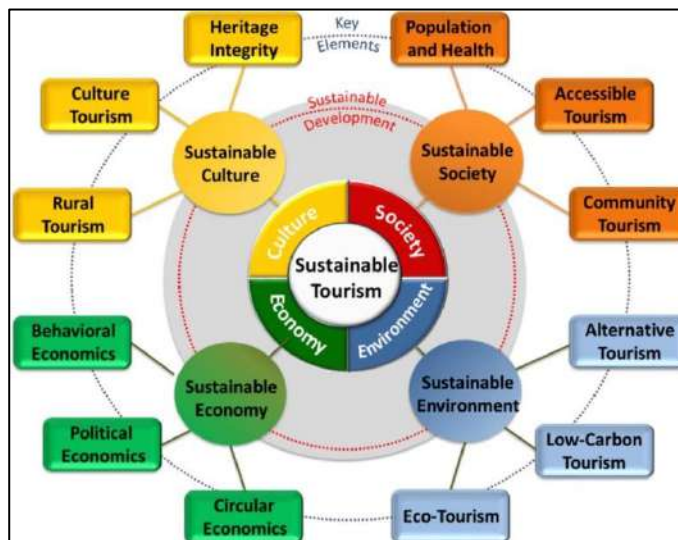
- **Aim**- To *minimizing the negative* and *maximizing the positive effects* of all forms and activities of tourism on environment, local communities, heritage and inclusive economic growth.

- **Components**

  o   Sustainable environment

  o   Sustainable society

  o   Sustainable culture

  o   Sustainable economy

> *Sustainable Tourism is in line with the UN's 17 Sustainable Development Goals (SDGs) to transform our world and continue to create positive impacts.*

What are the significances of sustainable tourism?

- **Biodiversity protection –** Sustainable tourism helps protect biodiversity by preserving natural habitats and endangered species.

- **Eco-friendly accommodations-** Using renewable energy, water conservation systems, and waste reduction practices in hotels and lodges.

- **Climate action -** It contributes to climate action by reducing greenhouse gas emissions and promoting the use of renewable energy sources.

- **Cultural preservation –** Helps maintain and promote local traditions and heritage.

- **Community development -** Empowers local communities through inclusive growth and equitable resource distribution.

- **Diversified income -** It helps diversify income sources for local communities, reducing reliance on traditional industries that may be environmentally harmful.

- **Social equity -** It promotes social equity by ensuring that the benefits of tourism are distributed fairly among all stakeholders.

- **Quality over quantity -** It emphasizes quality experiences over mass tourism, leading to more satisfying and enriching travel experiences.

- **Economic growth –** It supports local economies by creating jobs and generating income for local communities.

What are measures taken by India for sustainable tourism?

- **National Strategy for Sustainable Tourism** – It aims to *mainstream sustainability* in the Indian tourism sector and ensure more resilient, inclusive, carbon-neutral and resource-efficient tourism while safeguarding natural and cultural resources.

- It has identified *seven strategic pillars* to make India a global destination for sustainable and responsible tourism

  o   Promoting environmental sustainability

  o   Protecting biodiversity

  o   Promoting economic sustainability

  o   Promoting socio-cultural sustainability

  o   Scheme for certification of sustainable tourism

  o   IEC and capacity building

  o   Governance

> *Sustainable tourism practices in India are bound together by the twin travel dicta of Bharat Darshan and Atithi Devo Bhavah, now known the world over through the medium of the Incredible India campaign.*

- **National Strategy for Ecotourism** - It was designed to *develop an enabling ecosystem* for the growth of ecotourism in the country.

- It emphasised creating *synergies* amongst the 8 ministries of the Central government, State Governments, Panchayati Raj Institutions, conservation NGOs and the private sector.

- It also envisaged *ranking the States* based on the globally recognised parameters of ecotourism to foster competitiveness and encourage mutual learning among all states

- **Draft National Tourism Policy 2022-** It aims to promote sustainable tourism by *minimizing the negative impact of tourism* on social, environmental and economic aspects and *maximizing the positive impact*.

- **Travel for LiFE campaign** - It aims to encourage the 300 Mn domestic tourists in India to shift towards *responsible behaviour* and *mindful resource consumption* while travelling.

- **Swadesh Darshan Scheme 2.0** – It aims to develop *sustainable and responsible tourism* destinations in the country.

- **Challenge Based Destination Development** – A sub-scheme under Swadesh Darshan 2.0 aims to transform our tourist destinations as sustainable and responsible destinations.

- 42 destinations has been shortlisted under *4 categories*
  - Culture & Heritage Destinations
  - Spiritual Tourism
  - Ecotourism and Amrit Dharohar Destinations
  - Vibrant Villages Program Destination

Promoting Sustainable and Responsible Tourism

Under the Swadesh Darshan 2.0 Scheme, the States & UTs will be encouraged to:

- Consult local communities and stakeholders in planning projects
- Use renewable energy, eco-friendly material in project interventions
- Develop accessible infrastructure and services at the selected destinations
- Undertake capacity building of local communities, youth and women to enable them to take up jobs and opportunities
- Enable local entrepreneurship and self-employment opportunities in the tourism value chain
- Launching a sustainability campaign
- Sensitizing tourists to respect the environment and behave responsibly

- **STCI Certification** – *Sustainable Tourism for India Criteria and Indicators,* sets guidelines for sustainable practices in tourism.

- It aims to benchmark sustainable tourism practices for various tourism business enterprises, mainly *accommodation units and tour operators.*

- It makes it mandatory to ensure effective
  - Sustainable management, heritage protection, sharing social & economic benefits with the locals, conserving the environment, carrying capacity, and minimising negative impacts

- **State government policies** – Uttarakhand, Sikkim, and Himachal Pradesh have made policies to promote sustainable tourism while protecting rich biodiversity and natural wealth.
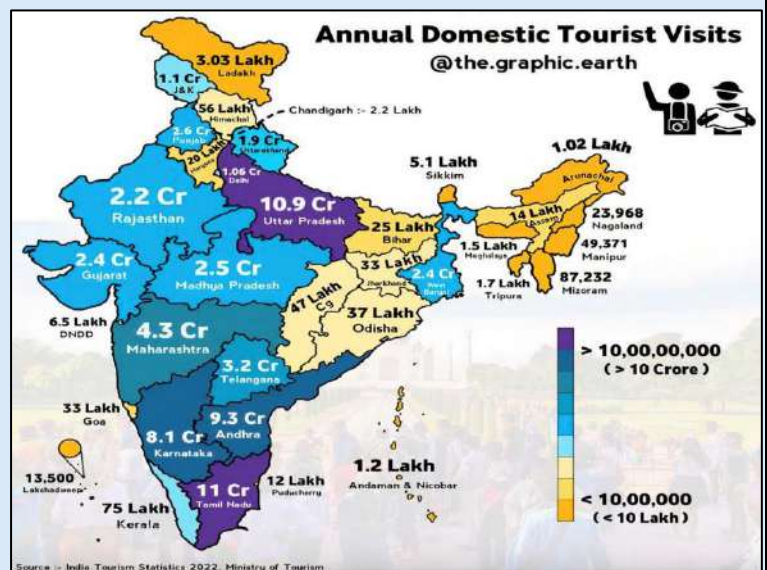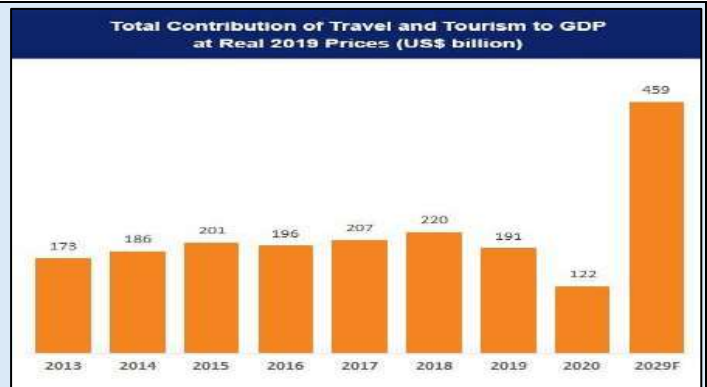
What lies ahead?

- Educate tourists, stakeholders and local communities about sustainable tourism benefits and practices.
- Enhance policies and regulations to ensure compliance with sustainable practices.
- Collaboration between the government and private sector can drive investment, innovation, and efficiency in the tourism sector.
- Improve sanitation, waste management, and accessibility at tourist destinations.
- Use technology for efficient resource management and visitor monitoring.

Tourism in India

- With over 17 million foreign tourist arrivals in 2019 and domestic tourism contributing substantially to the economy, the potential for growth is immense.

- **Job creation** – Tourism is creating 78 jobs per million rupees invested, compared to 45 in manufacturing.

- **Revenue generation** – By 2028, India's tourism and hospitality industry is expected to generate over $59 billion in revenue, with FTAs anticipated to reach 30.5 million.

- **Foreign tourists** - The top source countries in 2023 were France, USA and Turkey.

- **FOREX** – In 2023, foreign exchange earnings from tourism stood at $28.07 billion.

- **Domestic tourism** – The states with the highest domestic tourist visits in 2022 were Uttar Pradesh (317.91 million) and Tamil Nadu (218.58 million).

- Gujarat and Maharashtra received the most foreign tourists with 1.78 million and 1.51 million visitors respectively.

Initiatives taken by India

- **PRASAD** – Pilgrimage Rejuvenation and Spiritual Augmentation Drive, aims to enhance infrastructure and amenities at pilgrimage sites, focusing on improving accommodation, transportation, sanitation, and connectivity at key religious destinations.

- **Atithi Devo Bhavah** – To sensitize key stakeholders about the importance of hospitality and cleanliness.

- **Swadesh Darshan scheme** – To develop _thematic tourist circuits_ across India, enhancing infrastructure and services in areas such as cultural, religious, and coastal tourism.

Total Contribution of Travel and Tourism to GDP at Real 2019 Prices (US$ billion)

- **Dekho Apna Desh** – To encourage domestic tourism through webinars & virtual tours, promoting awareness of local destinations.

- **Adopt a Heritage scheme** – Promotes public and private sector participation in the preservation and maintenance of heritage sites and monuments.

- **Central Financial Assistance** – For developing sustainable tourism infrastructure, such as way-side amenities and biodegradable toilets.

- **Capacity building for service providers** – Training programs aimed at enhancing the skills of individuals in the tourism sector, such as a 150-hour homestay course to support rural tourism.

- **Hunar Se Rozgar** – To provide training for the unskilled workforce, enhancing service quality.

- **Visa simplification** – To make it more accessible for foreign tourists, including the implementation of online visa systems and expanding visa-on-arrival programs.

Annual Domestic Tourist Visits @the.graphic.earth

G.S PAPER I

2. HISTORY

2.1   Tajikistan's Hijab Ban

Why in news?

After years of unofficial curbs on religious clothing, the Tajikistan government has recently moved to formally ban the wearing of the hijab in the country.

Somonis is the currency of Tajikistan.

What does the new law say about hijab ban?

- **Hijab** – It is the head covering worn by Muslim women, as well as other garments associated with Islam.

- **Ban** – It forbids the "_import, sale, promotion and wearing_ of clothing deemed foreign to the national culture".

- It is done by amending the existing law on Regulation of Holidays and Ceremonies.

- **Fine for violations** – It may attract fines ranging from 7,920 somonis ($747) for individual offenders to 39,500 somonis.

What are the arguments in favor of hijab ban?

- **Secularism and Neutrality** – A ban on hijabs in public institutions can help maintain a secular and neutral environment, ensuring that no religious symbols are promoted or given preference over others.

- **Gender Equality** – Some argue that the hijab is a symbol of female oppression, and banning it can promote gender equality and empower women.

- **Social Cohesion** – Proponents of the ban believe it can enhance social cohesion and integration, reducing visible differences between individuals and fostering a sense of unity.

- **Security Concerns** – In certain contexts, the hijab and other face-covering garments can pose security concerns by concealing identities, making it difficult to enforce safety measures.

- **Cultural Assimilation** – A ban may encourage cultural assimilation, helping immigrants and minority groups to integrate more fully into the host society.

What are arguments against a hijab ban?

- **Freedom of Religion** – Banning the hijab infringes on individuals' rights to freedom of religion and expression, as guaranteed by various human rights laws and constitutions.

- **Discrimination and Exclusion** – A ban can lead to the marginalization and discrimination of Muslim women, exacerbating social tensions and fostering an environment of exclusion.

- **Personal Choice** – Many women choose to wear the hijab as a personal or religious expression.

- A ban undermines their autonomy and right to make personal decisions about their attire.

- **Cultural Diversity** – Allowing the hijab promotes cultural diversity and acceptance, enriching society by acknowledging and respecting different cultural practices.

- **Counterproductive** – Banning the hijab might have the opposite effect, strengthening religious identity and resistance among Muslim communities, leading to further alienation and division.

What is the status of hijab ban in India?

- **High Court** – In _2024, Bombay High Court_ held Chembur college hijab ban was in 'larger academic interest'.

- In _2022, Karnataka High Court_ stated that donning the hijab or niqab was "not an essential religious practice" for women professing Islam.

- **Supreme Court** – In 2022, it delivered a _split verdict_ in the Karnataka hijab case.

- **Support for hijab wearing** – One of the judges held that 'secularity' meant _'tolerance to diversity'_.

The Essential Practices Doctrine

- The essential practices doctrine owes its existence to B.R. Ambedkar's speech in the Constituent Assembly.

- Ambedkar strived to distinguish "religious" from "secular" by arguing that the state should be allowed to intervene in matters that are connected to religion but are not intrinsically religious.

- In _Shirur Mutt case (1954)_, the Supreme Court held that the term "religion" will cover all rituals and practices integral to a religion.

- The test to determine what is integral is termed the "essential religious practices" test.

- He said that asking a pre university schoolgirl to take off her hijab at her school gate is an invasion on her _privacy and dignity_.

- It is _violative of Article 19(1)(a) and 21_ of the Constitution of India.

- He referred to submissions that the hijab ban has l_ed to dropout or transfer of students_ affecting their education.

- He also countered that although _school was a public place_, it was not correct to draw a parallel between a school and a jail or a military camp.

- **Support for hijab ban** – The other judge said 'secularity' meant '_uniformity'_ and upheld the Karnataka HC ruling validating the ban on wearing hijab in classrooms.

- He views that hijab would _affect the creation of a homogenous group_ of students and would create a segmented society.

- He held that _adherence to uniform was a reasonable restriction_ to free expression that reinforced equality.

Freedom Of Religion Under Indian Constitution

- **Article 25 to 28** – Right to freedom of religion.

- **Article 25(1) –** It guarantees the "freedom of conscience and the right freely to profess, practise and propagate religion".

  o It is a right that guarantees a negative liberty which means that the state shall ensure that there is no interference or obstacle to exercise this freedom.

  o However, like all fundamental rights, the state can restrict the right for grounds of public order, decency, morality, health and other state interests.

- **Article 26 –** It talks about the freedom to _manage religious affairs_ subject to public order, morality and health.

- **Article 27** – It states that _no person shall be compelled to pay any taxes_ for the promotion or maintenance of any particular religion.

- **Article 28** – It states that the _freedom to attend religious instruction_ or religious worship in certain educational institutions.

What lies ahead?

- **Dialogue and Inclusivity** – Encourage open and respectful dialogue between different communities to understand the significance of the hijab and the concerns of those who support a ban.

- **Contextual Policies –** Develop policies that are sensitive to the specific context and needs of the community, avoiding one-size-fits-all solutions.

  o For example, distinguish between educational institutions, workplaces, and public spaces.

- **Education and Awareness** – Address misconceptions and stereotypes about the hijab through awareness campaigns and educational initiatives.

- **Legal Frameworks** – Ensure that any policies or laws regarding the hijab align with national and international human rights standards, protecting freedom of religion and expression.

> _In S R Bommai vs Union of India (1994), the Supreme Court said that the state should free itself from religious affinity._

- **Cultural Sensitivity Training** – Implement cultural sensitivity training for public servants, educators, and law enforcement to handle situations involving religious attire respectfully and appropriately.

- **Monitoring and Evaluation** – Regularly monitor the impact of any policies on the hijab and conduct evaluations to ensure they are achieving intended outcomes without unintended negative consequences.

3. GEOGRAPHY

3.1 Impact of Heatwaves on children

Why in News?

Climate change and heatwaves in particular is limiting the time children get to engage with their peers and the world around them through play.

> _UNICEF's Children's Climate Risk Index (CCRI) report 2021 suggests that with a rank of 26 out of 163 countries, India is among the countries where children are most at climate risk._

How heatwave affects children in India?

- India has been experiencing more frequent and severe heat waves, with temperatures soaring to record levels.

- **Heat wave** – It is a period of abnormally high temperatures, more than the normal maximum temperature that occurs.

- They typically occur between March and June, and in some rare cases even extend till July in India.

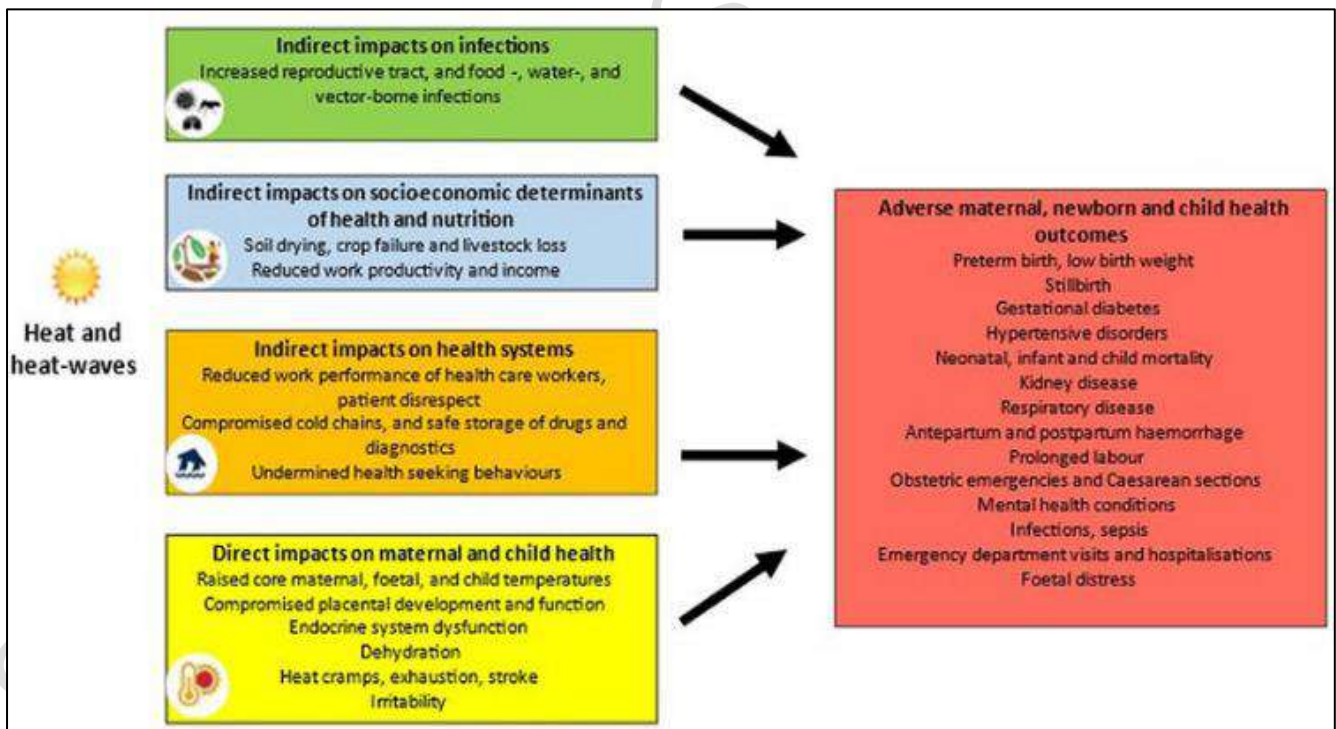- **Reduces outdoor activities** - Heatwaves, in particular, are making _outdoor play increasingly unsafe._

Playing for Children's development

- **Play activity** – They are a means to process and explore the world.

- According to UNICEF, play is vital for children to build social connections, develop physical and mental health, and enhance creativity.

- **Significance** - Playful interactions contribute to the positive mental health of parents, caregivers, and children, offering respite from adverse experiences.

- **Recognition** – Enshrined in Article 31 of the *United Nations Convention on the Rights of the Child*, the right to play underscores its significance for a child's well-being and development.

- June 11, 2024 was declared as *International Day of Play by UN*.

- **Threatens health** – These extreme conditions not only limit a child's ability to play outdoors but also pose significant *health risks*.

- This can have long-term impacts on their *physical and mental health*.

> *A recent analysis by UNICEF revealed that South Asia has the highest % of children exposed to extreme high temperatures compared to other regions.*

- **Disturbs sleep pattern**- Heat waves can di srupt children's sleep patterns, affecting their overall health and daily functioning.

- **Increases mortality risk**- Extreme heat increases the risk of mortality in children, especially those with pre-existing health conditions.

- **Disrupts education** – Heatwaves have also led to school closures.

- **Widens inequality** - The lack of play opportunities also disproportionately *affects children from disadvantaged backgrounds*, exacerbating existing inequalities and perpetuating cycles of poverty.

- **Affects individual development** - Impact on child's physical and cognitive development leads to long-term economic impacts such as a *less skilled workforce and higher social welfare costs*.

To know more about heat wave, click here

What are the adaptive measures need to be done?

- **Implement bioclimatic designs** – It can be used while *designing playground infrastructure* and integrate in urban planning strategies.

  o It involves *introducing green spaces and cooling corridors* within cities, which will help mitigate urban heat island effect and provide safe-play environments for children.

- **Increase access to green spaces** – *Expand opening time and access* to existing infrastructure and green spaces such as parks.
- **Delineate age-specific green spaces** – There is often user conflict in public parks along the lines of age *– older citizens versus children* and along socio-economic classes.
- **Encourage community participation** – Local communities can also come together to create shaded areas in parks where children can meet and play on warmer days.
- **Preserve architectural knowledge** – Long-term solutions should priorities preserving and adapting *vernacular architectural techniques* to implement passive heating and cooling methods.
- **Regulate play spaces** – The places earmarked for playgrounds often become dumping grounds for solid waste.
- This leads to children spending more time inside their houses with limited avenues for socialisation and recreation.
- **Policy changes** – This dimension of planning should also find its way into State Action Plans on Climate Change and city master plans.
- **Priorities vulnerable children**- Special attention needs to be given to the needs of low-income communities.
  - *Slum rehabilitation colonies*, for instance, in outer Delhi, have extremely sparse green cover.
- **Encourage Children's participation**- Providing students with hands-on activities like biodiversity mapping and pollution assessments empowers them to address environmental issues.
  - Engaging students in local initiatives around climate, such as *carbon neutral panchayats in Kerala*, could be a promising starting point.

3.2 Changing Monsoonal Rainfall across India

Why in News?

Currently, multiple favourable weather systems have kept the monsoon either active or vigorous (with respect to rainfall events) over southern peninsular, east, northeast, and central India regions.

What is monsoon?

- **Monsoon** – It is a seasonal change in the direction of the prevailing, or strongest, winds of a region.

- **Features** – It causes wet and dry seasons throughout much of the tropics.

- It always blow from cold to warm regions.

- The summer monsoon and the winter monsoon determine the climate for most of India and Southeast Asia.

- **In India** – There are three prominent seasons influencing rainfall which are

  - **Southwest Monsoon** – June to September

  - **Northeast Monsoon** – October to December

  - **Summer Monsoon** – march to May

- **Rainfall in India** - India experienced on an average 1,257 millimeters (125 cm) of rainfall in 2022.

Rainfall Distribution in India	
Annual Precipitation Levels	**Regions**
Extreme (>400cm)	Northeastern India and windward side of Western Ghats.
Heavy (200-300 cm)	Eastern Areas and Sub-Himalayan belts
Moderate (100-200 cm)	Leeward side of Western Ghats and Parts of Central and Eastern India
Scanty (50-100 cm)	Parts of Gujarat, Maharashtra, Punjab, Haryana, Western UP, TamilNadu, Andhra Pradesh
Very less (<50 cm)	Majorly in Rajasthan, Gujarat, some parts of Jammu & Kashmir

- **Southwest monsoon**- It brings *about 70-90% of India's annual* precipitation.

- Regions like the Western Ghats and northeastern areas receive heavy rainfall during this season.

- **Northeast monsoon**- It is also known as the *retreating monsoon* and affects peninsular India.

- It isn't as intense as the southwest monsoon.

How climate change impacts rainfall pattern in India?

- **Altered cyclonic activity**- Climate change has altered the frequency and intensity of cyclones in the Indian Ocean, *impacting coastal regions* with intense rainfall and storms.

- **Increased variability**- Climate change has led to increased variability in rainfall patterns, resulting in *unpredictable monsoon seasons* and *irregular distribution of rain* across the country.

- **Intensified monsoon**- The intensity of the monsoon has increased, with *heavier rainfall over shorter periods*, causing *flash floods* and waterlogging in various regions.

- **Increase in Northeast monsoon rainfall**- In the past 10 years, retreating monsoon rainfall *increased by over 10%* in about 80% of tehsils in Tamil Nadu, 44% in Telangana, and 39% in Andhra Pradesh.

- Odisha, West Bengal, Maharashtra, and Goa also experienced a rise in rainfall during this period.

- **Extended droughts and dry spells**- It have become more common due to the shifting monsoon patterns, adversely *affecting agriculture and water resources*.

- **Regional disparities**- Recent study reveals over 30% increase in southwest monsoon *rainfall in traditionally dry areas* like Rajasthan, Gujarat, Konkan, central Maharashtra, and parts of Tamil Nadu since 1981–2011 baseline.

INDIA
Seasonal Rainfall
(June - September)

Rainfall in cms
- Above 400
- 200-400
- 100-200
- 60-100
- 40-60
- 20-40
- 0-20

Andaman & Nicobar Islands

Lakshadweep

*Not to Scale

- While traditionally high rainfall areas like Assam and Meghalaya experienced a 30% reduction in rainfall.
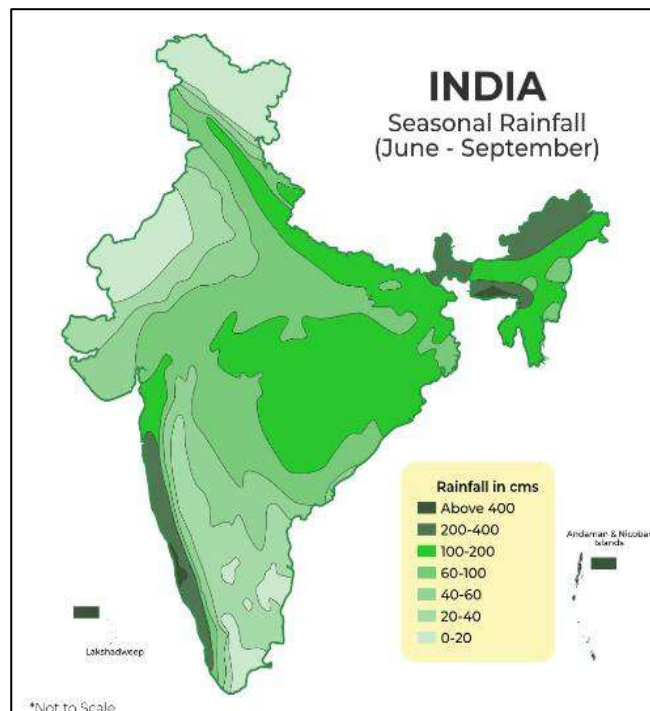
What are the factors causing widespread monsoonal rainfall across India in recent times?

- **Continuous westerly winds –** Continuous incoming of *moisture-laden* strong westerly winds *from the Arabian Sea.*

- **Presence of monsoon trough in south** – It gives *more rainfall* can take place *in central, eastern and peninsular India*.

- When it shifts towards the north, the Himalayan foothills are likely to receive more rainfall but the rest of India sees a drop in rainfall.

- **Persistence of an off-shore trough** - A *shallow trough of low pressure* developed along India's coast during the monsoon *between south Gujarat and north Kerala* for more than a week now.

- **Intermittent development of a wind shear zone** – It causes the winds to move in different velocities and directions along latitudes 20 ° N between central and peninsular India.

> **Impacts of Changing Rainfall Patterns in India**
>
> - Extreme rainfall events increased the frequency of *flash floods*.
>
> - Uneven distribution of rainfall give rise to *pest attacks and diseases*.
>
> - Changing rainfall pattern makes it *difficult for forecasting* the monsoon pattern.
>
> - Heavy rainfall in growing and harvesting season can *reduce the yield of crops.*
>
> - Irregular rainfall can *affect the supply of drinking water* and also can have implication in electricity production.

> *Monsoon trough is a semi-permanent, low-pressure area extending between Pakistan and the Bay of Bengal during the monsoon season which usually oscillates between north and south within the season.*

- **Development of a low-pressure system** – It is present over the west-central Bay of Bengal, off the Odisha coast.

What lies ahead?

- **Improve forecasting** – *Satellite monitoring* and sophisticated climate models are developed to better predict rainfall patterns and prepare for extreme weather events.

  o *National Monsoon Mission (NMM)* aims to improve monsoon prediction capabilities through research and development of weather forecasting technologies.

- **Proper implementation of MGNREGA projects** – Develop water conservation projects, such as check dams and ponds, to improve water availability and resilience against erratic rainfall.

- **Follow CRZ notifications** – It is to regulate developments along India's coastline to protect coastal ecosystems & communities from the impacts of climate change related cyclonic activities.

- **Promote climate resilient activities** – Initiatives like rainwater harvesting, sustainable agricultural practices, and afforestation projects, to adapt to changing rainfall patterns are encouraged.

3.3   Illegal Coal Mining in India

Why in news?

Recently, three workers died of asphyxiation inside an illegal coal mine in Gujarat's Surendranagar district.

How coal mining is regulated in India?

> *Coal is a sedimentary deposit composed predominantly of carbon that is readily combustible. Anthracite, Bituminous, Lignite and Peat are different types of coal.*

- **Coal mining** – Extracting coal from open cast mines or underground mines.

- **NCDC –** National Coal Development Corporation (NCDC), was **_formed in 1956_** for _exploring new coalfields_ & expediting development of new coal mines.

- **MMDR Act 1957 -** Mines and Minerals (Development and Regulation) Act _regulates mining_ sector _except minor minerals and atomic_ minerals in India.

- **Nationalisation of coal mines –** It was done in two phases
    - In 1971-72 - Coking coal mines
    - In 1973 - Non-coking coal mines

- **Coal Mines (Nationalisation) Act, 1973** – With this act, all coal mines were nationalized.

- It determines eligibility for coal mining in India.
    - _1993 amendment_ enabled the _entry of the private sector_ to mine coal for captive use.

> *Illegal mining is defined under Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 as "any exploration or mining operation undertaken in any area without holding a mineral license." It is often carried out using techniques like surface mining and rat-hole mining without safety equipment.*

Why is illegal coal mining rampant in India?

- **Insufficient legal supply of coal** - Deficit in meeting high energy demand by legal supply of coal, illegal mining is carried out.

- **Economic deprivation** - Poverty & Unemployment in areas near to coal mining regions contributes to illegal mining in these areas.

- **Profitable business** - _Minimal operational costs_ makes illegal mining lucrative for perpetrators.

> *Coal is the most abundant fossil fuel in India, accounting for 55% of the country's energy needs.*

- **Prevalence of unused mines** – It is carried out in abandoned mines in remote or isolated places.

- It is also done in mines which are not scientifically or economically feasible for coal extraction.

- **Weak mining regulations** – Inadequate monitoring and lack of resources leads to weaker enforcement.

What are the impacts?

- **Health issues** - Acute poisoning or long-term chronic medical conditions due to toxic gas release such as carbon monoxide, lead and arsenic poisoning.

- **Fatalities** – Higher number of deaths due to lack of safety equipment and protocols.

- **Structural damages** – It can cause _cave-ins, landslides_, and even collapse of the entire mines.

- **Law and Order issues** – It leads to _illegal activities, growth of mafias_ and law and order problem in the regions.

- **Financial issues** - _Revenue loss_ to State and Central government due to illegal sale of coal.

What are the measures taken?

- **Regulation** – The *Mineral Conservation and Development Rules, (MCDR) 2017* mandates the registration of mining activates with State Government(s) and Indian Bureau of Mines.

- **Surveillance –** Installation of *check-posts* at vulnerable points.

- A *task force* has been constituted at different level (block, sub-divisional, district, state) in some subsidiaries of Coal India Limited (CIL) to monitor different aspects of illegal mining.
    - **MSS** - Mining Surveillance System, a *satellite-based* monitoring system.
    - **CMSMS** – Coal Mine Surveillance and Management System, a *web app* for reporting unauthorized coal mining activities
    - **Khanan Prahari** - A *mobile app* for reporting illegal mining

- **Tracking** – State Governments to submit *quarterly reports* of illegal mining to Indian Bureau of Mines as per MMDR Act.

- **Preventing access** - *Concrete walls* have been constructed on the mouth of the openings of the underground abandoned mines to prevent access and illegal activities in these areas.

- **Capacity building** – Training of existing security/CISF personnel, refresher training and basic training of new recruits in security discipline for strengthening the security setup.

- **Punishment for non-compliance** – MMDR Act provides for punishing illegal mining activities with the
    - **Penalty** – Rs. 5 Lakh per hectares
    - **Imprisonment** – 5 years

- **Quick disposal of cases** – Special courts are formed in respective states for providing speedy trial of the offences.

What are the challenges in curbing illegal coal mining in India?

- High demand for coal as a fuel makes illegal mining rampant.

- Lack of coordination between Union and State governments.

- Complex legal framework in mining governance leads to bureaucratic hurdles and inefficiency in governance.

- Nexus among criminals, police, and politicians systemizes illegal mining in the region and it makes it difficult to curb.

What lies ahead?

- Adopting *alternatives to coal* in energy intensive industries.

- Promoting *private sector participation* to increase coal production.

- Increasing the *import* of coal to meet the rising the demands.

- Filling the unused mines with water or soil to prevent illegal mining or can be used for facilitating carbon capture and storage.

- Educating people about the hazards of illegal mining.

- Creating *alternative livelihood* for people in the coal mining regions.

- Monitoring the potential illegal mining regions with drones.

4. SOCIAL ISSUES

4.1   Elderly Population in India

Why in news?

Amidst the focus on demographic dividend, the country is seeing a silent rise in its elderly demographic and increased problems caused by loneliness in later life.

What is the Status of Elderly Population in India?

- **Demographic ageing** – It is a global phenomenon of increasing elderly population which has hit Indian shores as well.

- It is possible due to
    - Easy availability of life saving drugs
    - Control of famines and various communicable diseases
    - Better awareness and supply of nutrition and health facilities
    - Comparatively better overall standard of living.

- **Elderly population** – The WHO defines those aged 60 -74 years as elderly.

- In 1980 the UN recommended 60 years as the age of transition for the elderly segment of the population, and has been categorized as follows:
    - **Young Old**- between the ages of 60-75 years.
    - **Old-Old**- between the ages of 75-85 years.
    - **Very Old**- 85 years and above

- **In India** – According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India
    - 53 million females and 51 million males.

- It is expected to rise significantly from 100 million in 2011 to 230 million by 2036.
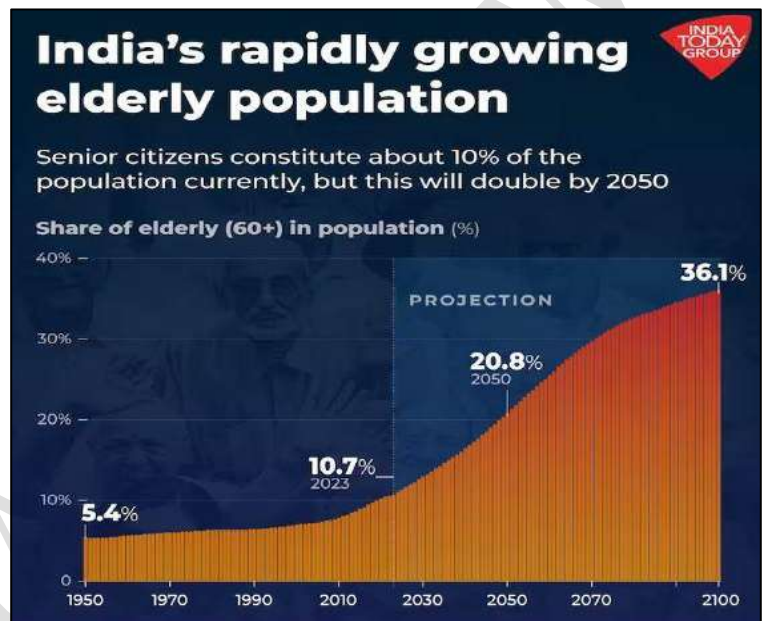
- By 2050, they are projected to make up nearly 20% of the total population.

- **Old age-dependence ratio** – It measures the number of people aged 60-plus per 100 persons aged 15-59, has been steadily increasing.

- **Elderly in India 2021' report** – According to this report of Ministry of Statistics and Programme Implementation, the old-age dependency ratio increases in the following manner
    - 1961 – 10.9%
    - 2011 – 14.2%

The number of people 60 years and over in the globe is 673 million in 2005 and is expected to increase to 2 billion by 2050, almost a triple increase and the 1st quarter of 21st century is going to be called as 'The age of ageing'.

India's rapidly growing elderly population

Senior citizens constitute about 10% of the population currently, but this will double by 2050

Share of elderly (60+) in population (%)

- It is anticipated to have reach 15.7% in 2021 and 20.1% by 2031.

What are the concerns of elderly population?

- **Disabilities** – Old age implies increasing physical, mental and psychological disabilities.

- **Health concerns** - Health issues like blindness, locomotor disabilities and deafness are most prevalent.

- Absence of geriatric care facilities at hospitals in rural area.

- **Economic problems** - Economic dependence is one of the major factors that very often affects the wellbeing of older persons.

- The functional ability status of the care receiver and care giver is an additional factor that appears to contribute to the burden.

- **Exacerbated class disparities** - The market offers a wide and innovative array of eldercare services.

- However, this is not accessible to those who cannot afford these services.

- **Increased loneliness** – The Longitudinal Ageing Study in India (LASI) in 2017-18 surveyed 72,000 people from 35 States and Union Territories.

- 20.5% of adults aged 45 years and above reported moderate loneliness, and 13.3% were severely lonely.

To know more about Loneliness, click here

How loneliness can be addressed among elderly population?

- **Encouraging familial responsibilities** – Families shall be encouraged to undertake the *maximum amount of care work* possible.

- **Moving to care homes** – In this way, one can *live with others from similar backgrounds* and be free from arranging daily care for oneself.

- **Joining social forums** - Joining offline or online forums to *socialise with those from the same age group*.

- **Promoting intergenerational bonding**- Many old people in care homes believed *interacting with young students was enjoyable and alleviated feelings of loneliness* to some extent.

- **Purchasing companionship services** – It involves younger people to provide companionship services to older clients.

    o **For example**: *Pronam* is a public-private partnership in Kolkata, catering to the needs of older people who do not live with their relatives.

> **Companionship Services**
>
> - **Companions** – Younger people
>
> - **Function** – These companions function as *proxies for people's children* and undertake different types of work.
>
>   o **For instance**: Paying electricity bills, providing reminders for medicines and taking them out on walks or to the doctor.
>
> - **Establishing trust** – Care companions build an *emotional connection* with the people they look after and many clients look forward to their visits and become dependent on them.
>
> - *Regular visits* to check on the wellbeing of older people even without forming strong bonds can also be a useful measure to tackle loneliness.

What are the initiatives taken by India?

- **Constitutional measures** - Article 41 and Article 46 are the constitutional provisions for elderly persons.

- **Legislative measures** - *Maintenance and Welfare of Parents and Senior Citizens Act, 2007* provides legal sanctions to the rights of the elderly.

- Section 20 of *Hindu Marriage and Adoption Act, 1956* makes it obligatory provisions to maintain an aged parents.

> *Article 41* of the Indian Constitution directs the state to secure the right to work, education and public assistance in certain cases such as unemployment, old age, sickness and disablement.
> *Article 42* of the Indian Constitution direct the State to make provision for securing just and humane conditions of work and for maternity relief.

- Under *Section 125 of Criminal Procedure Code*, the elder parents can claim maintenance from their children.

- **Financial measures** – The expenditure for implementation of the various scheme is being met from the *"Senior Citizens' Welfare Fund"*.

- **Policy measures** - National Policy for Older Persons Year 1999 – It is launched for accelerating welfare measures and empowering the elderly in ways beneficial to them.

- **Atal Vayo Abhyudaya Yojana (AVYAY)** – It is a comprehensive initiative aimed at ensuring a *dignified life for senior citizens* in India.

- It *recognizes the contributions made by the elderly* to society and seeks to ensure their well-being and social inclusion.

- **Senior care Ageing Growth Engine (SAGE)** – It aims to *help startups* interested in providing services for elderly care.

- **Integrated Programme for Senior Citizens** – It primary objective is to *improve the quality of life* of the old-age population.

- It provides *financial support* for running and maintaining elderly Homes, Continuous Care Homes, Mobile Medicare Units, etc.

- **Rashtriya Vayoshri Yojana-** It aims to *provide Physical Aids and Assisted-living Devices* for Senior citizens belonging to BPL category.

> *Under Article 94 (and Article 179 for state Assemblies), the Deputy Speaker "shall vacate his office if he ceases to be a member of the House of the People".*

Way forward

- Recognizing loneliness as a public health concern and adapt strategies to support those affected by this growing issue.

- Enhance mental health awareness by improving healthcare facilities, and addressing social disparities.

- Take a comprehensive surveys in local languages can uncover the extent of loneliness across India's diverse population.

> *The year 1999 was declared by the UN as the International Year of Older Persons.*

G. S. PAPER II

5. INDIAN POLITY

5.1 Deputy Speaker

Why in News?

The Opposition of 18th Lok Sabha is demanding the post of Deputy Speaker in Lok Sabha.

What is the position of Deputy Speaker in India?

> *Sachidanand Sinha was the Deputy Speaker of the central legislative assembly in 1921.*

- **Origin in India** – The post of Speaker and Deputy Speaker *originated in India in 1921* under the provisions of *Government of India Act of 1919* (Montague-Chelmsford Reforms).

- **Nomenclature** – In 1921, Deputy Speaker was *called as Deputy President* but the *Government of India Act of 1935 changed* the nomenclatures of Deputy President to Deputy Speaker.

- However, the old nomenclature *continued till 1947* as the federal part of the 1935 Act was not implemented.

- **Constitutional provisions** – *Article 93* states that "The House of the People shall, as soon as may be, choose two members of the House to be respectively Speaker and Deputy Speaker".

- *Article 178* of Indian Constitution mentions about the position of *Deputy Speaker of the Legislative Assembly*.

> *Ananthasayanam Ayyangar was the first Deputy Speaker of Lok Sabha in independent India.*

- **Election** – Deputy Speaker is *elected by the Lok Sabha itself* from amongst its members after the election of the Speaker has taken place.

- The Deputy Speaker is elected once a motion proposing his or her name is carried.

- **Timing of appointment** – The Rule 8 of the *Rules of Procedure and Conduct of Business in Lok Sabha* says that the election of Deputy Speaker "shall be held on such d*ate as the Speaker may fix"*.

- The election *usually takes place in the second session*, even though there is no bar on having this election in the first session of the new Lok Sabha or Assembly.

- But it is generally not delayed beyond the second session unless there are some genuine and unavoidable constraints.

- **Oath** – While assuming the office of Deputy Speaker, he/ she do *not make and subscribe any separate oath* or affirmation.

To know more about **Parliamentary Oath**, Click here

- **Term** – Once elected, the Deputy Speaker usually continues in office until the dissolution of the House.

- However, he/she may vacate his/ her office earlier in any of the following three cases

   o If he/ she *ceases to be a member* of the Lok Sabha

   o If he/she *resigns by writing to the Speaker*; and

   o If he/ she is *removed by a resolution* passed by a majority of all the then members of the Lok Sabha (i.e., an effective majority). Such a resolution can be moved *only after giving 14 days' advance notice*.

- Further, when a resolution for the removal of the Deputy Speaker is under consideration of the House, he/ she cannot preside at the sitting of the house, though he/ she may be present.

- Whenever the office of the Deputy Speaker falls vacant, the Lok Sabha elects another member to fill the vacancy.

- **Remuneration** – *Article 97* says that the salary and allowances are determined by the parliament which also includes sumptuary allowances.

- Thus, the Parliament enacted the *Salaries and Allowances of Officers of Parliament Act in 1953.*

- Deputy speaker comes under the *ambit of 'officers of parliament'.*

- They are *charged on the consolidated fund of India* and thus not subject to the annual vote of parliament.

What are powers and functions of Deputy Speaker?

- *Article 95* of the Indian Constitution mentions about the power of the Deputy Speaker.

- **Relation with speaker** – Deputy Speaker is *not subordinate to the Speaker* but is directly responsible to the house.

- When the Speaker presides over the House, the Deputy Speaker is like any other ordinary member of the house.

- Speaker can resign from the post by writing to the Deputy Speaker.

- **Presiding power** – According to *Article 95(1),* the Deputy Speaker performs the duties of the Speaker if the post is vacant or when the latter is absent from the sitting.

- In both the cases, he/ she assumes all the powers of the Speaker.

> *After the first Speaker, G V Mavalankar, died in 1956 before his term ended, the then Deputy Speaker M Ananthasayanam Ayyangar filled in for the remaining tenure of Lok Sabha from 1956 to 1957.*

- **Role during joint sessions** – He/she also *presides over the joint sitting* of both the houses of parliament, in case the speaker is absent from such a sitting.

- **Voting power** – While presiding over the house, he/she cannot vote in the first instance and can *only exercise* a casting *vote* in the case of a tie.

> *The Indian Parliamentary Group (IGP) is an autonomous body, was formed in the year 1949 in pursuance of a motion adopted by the Constituent Assembly.*

- **Special privileges** – Whenever he / she is appointed as a member of a parliamentary committee, he/she *automatically*

- Deputy Speaker acts as a *chairman of "Committee on becomes its chairman.Private Members' Bills and Resolutions."*

- **Role in IPG** – The Deputy Speaker of Lok Sabha is an *ex-officio vice-president* of Indian Parliamentary Group.

What is current position of Deputy Speaker?

- The previous Deputy Speaker was *Thambi Durai during the 16th Lok Sabha (2014-19).*

- **Vacant** – This constitutional post was *vacant during the entire period of 17th Lok Sabha* from 2019 to 2024.

- The Opposition had the post of Deputy Speaker continuously from 1990 through 2014.

> *Usually, the post of Speaker comes from the ruling party (or ruling alliance), the post of Deputy Speaker goes to the opposition party (or opposition alliance) saving some exceptions.*

- **Challenges** – The *Constitution does not specify a time frame* for making the appointments.

- It is this gap in the provision that allows governments to delay or avoid appointing a Deputy Speaker.

- **Way forward** – Constitutional experts have pointed out that both Article 93 and Article 178 use the words "shall" and "as soon as may be" – indicating that not only is the election of the Speaker and Deputy Speaker mandatory, it must be held at the earliest.

5.2   Science of Protest

Why in News?

A global study stated that protests are increasingly seen as a way to express disagreement or a lack of faith in institutions.

What is a protest?

- **Protests** – A protest is an action which involves the _occupation of space over a long period of time_ by camping, usually in public places, to express _strong disagreement with something_.

- **Objectives** – To publicly express views on unfair policies and laws, to dissent from them, to shape minds & form public opinion against them, to speak to and against the government, to challenge it.

- **Causes** – It may be due to the political decisions, social injustices to people, climate change impacts among others.

- **Short term impacts** – It can influence media coverage, public opinion, policy, and politics.

- **Long term impacts** – Protests can also help to spur longer-term changes in public opinion yet such influences are harder to trace.

  - **For example:** C_ivil-rights protests in the 1960s_ and the _Black Lives Matter demonstrations in 2020_ changed voting behaviour and even flipped elections.

- **Success factors –** The study by Pearson suggest some factors that are responsible for success of protests.

- _Large protests_ seem more effective than small ones

- _Non-violent protests_ appear to be more potent than violent ones

  - **For instance**, Non-violent protests such as the _Philippines' People Power Revolution_, were successful in ousting Dictator Ferdinand Marcos in 1986.

- _Unified goals_ might achieve more than diffused demands do

- _Repression by police_, for instance can win more support for protesters.

  - **Example:** The _repression by Columbia University in New York City_ to arrest student protesters for Gaza peace reportedly sparked an escalation in media coverage, resulting in a wave of student protests across parts of the US and abroad.

- Conversely, violent protests are often labelled as riots and disorder by the media.

What is the status of protests across the world?

- **Increase of protests** – The study reveals that global tally of _**protests tripled since 2006**_.

- **Higher political protests** – _300 protests_ and revolutionary campaigns between 1900 and 2006 aimed to dethrone national leaders.

- **Success of mass movements** – Every movement that mobilised _at least 3.5% of a population_ was successful as mass participation enables political leverage.

  - **For instance:** The _Take Back Parliament campaign in 2010 in UK_ saw success that influenced the UK referendum in 2011 for electoral reforms.

- **3.5% Rule** – Any protests require this level of participation to ensure change but the figure can be misleading.

- A much larger number of people are probably supporting a successful revolution even if they aren't visibly protesting.

- **Non-violent disruptive protests** – Little is known about this methods.

  - **For example:** _Just Stop Oil and Extinction Rebellion_, which include throwing soup on paintings, glueing themselves to government or oil company offices, and blocking traffic.
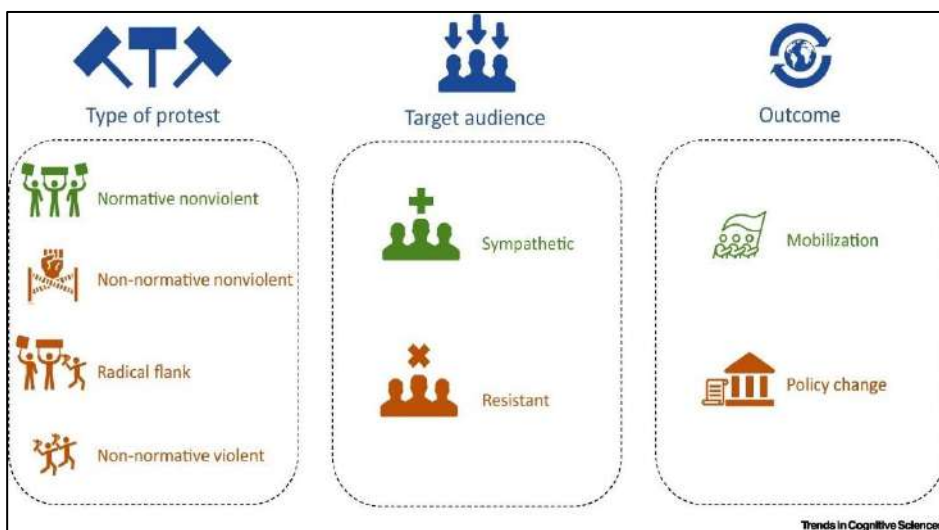
- Multiple surveys suggests that *disruptive methods can stimulate negative opinions* on an issue.

- **Major protests** – It include the *Arab Spring* and Occupy movements of the 2010s and the global *Black Lives Matter protests in 2020*.

- *Farmer protests* have erupted in countries such as *Germany, Belgium, and India* over new regulations.

What is status of protest in India?

- **Historical protests** – The background of the Indian Constitution is formed by its anti-colonial struggle.

  - **For instance:** Gandhi's satyagraha movements including *civil disobedience movement in 1930* (salt satyagraha).

> *The International Day of Non-Violence is observed on 2 October, the birthday of Mahatma Gandhi, leader of the Indian independence movement and pioneer of the philosophy and strategy of non-violence.*

- Protests have also offered points of inclusion and participation to the voices that are not part of the mainstream as seen in the protests for *creation of Andhra* or the *Chipko movement*.

- **Constitutional recognition** – The Right to protest peacefully is enshrined in the Indian Constitution

- **Article 19(1)(a)** – It guarantees the freedom of speech and expression.

- **Article 19(1)(b)** – It assures citizens the right to assemble peaceably and without arms.

- **Article 19(2)** – It imposes reasonable restrictions on the right to assemble peaceably and without arms.

- **Article 51A** – It makes it a fundamental duty of every citizen "to safeguard public property and to abjure violence".

- **Reasonable restrictions on protests** – They are imposed in the interests of

  - The sovereignty and integrity of India

  - The security of the State

  - Friendly relations with foreign States

  - Public order, decency or morality or

  - In relation to contempt of court, defamation or incitement to an offence.

- **Supreme Court** – In ***Ramlila Maidan Incident v. Home Secretary, Union of India & Ors. Case (2012)***, it had stated, 'Citizens have a fundamental right to assembly and peaceful protest which cannot be taken away by an arbitrary executive or legislative action.'

- **Recent protests** – The *farmers' protest in India during 2020* was the largest among those studied between 2006 and 2020, with an estimated 250 million participants.

- *2020 strike against the CAA-NRC citizenship* matrix in India involved 250 million.

What lies ahead?

- The Right to protest is one of the core principles on which democracy survives and thrives.

- However, when a protest turns violent, as seen in some places in recent protests, it defeats the very purpose of the protest.

- While enjoying the rights, one must adhere to one's duties and responsibilities in a democratic society.

5.3   Leader of Opposition in the Parliament

Why in News?

The 2024 general election is historic as it resulted in the numerically largest Opposition in the Lok Sabha and also saw the debate on the Leader of the Opposition (LoP) come alive.

Who is leader of opposition?

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- **Historical background** – Though the leader of the Opposition are *not mentioned in the Constitution* of India, they are mentioned in the Parliamentary Statute.

- The post of the Leader of the Opposition in the Indian Parliament has been a *statutory position since 1977*.

- However, this statute does *not define the functions* of the Leader of the Opposition.

- Traditionally, he will be a very *senior member of the principal Opposition in the House* who commands great respect and has wider acceptability among the parties in the Opposition.

- **Official recognition** – The position of Leader of Opposition was officially described in ***The Salary and Allowances of Leaders of Opposition in Parliament Act, 1977***.

- For the first time, it *defined the term* Leader of the Opposition.

- **Leader of opposition** – He/she is "the Leader in that House of the party in opposition to the Government having the *greatest numerical strength* and *recognised as such by the Chairman* of the Council of States *or the Speaker* of the House of the People, as the case may be".

- **Criteria for recognition** – There are *two conditions* that need to be fulfilled to recognise a person as LoP.

    o The party should be *numerically the biggest one* in opposition to the government.

    o The party should be recognised by the Speaker as a party, as such if it has *10% of the strength* of the House.

- But this provisions is a direction issues to Speaker *to recognise the party in a Parliament* and *not about the Leader of Opposition.*

> ### Recognition of an Party in Lok Sabha
>
> - Under a direction of the Speaker issued in the 1950s, in (Direction 121).
>
> - **Directions 121** – This direction was issued in 1950s, for the *recognition and categorisation of parliamentary parties* for the sake of providing them certain facilities in Parliament.
>
> - In order to get recognition as a party in the House, it should have a *minimum of 10% members in that House*.
>
> - **Concerns** – Some say that, only a party which has 10% of the strength of the House can put forth its claim to the post of LoP.
>
> - But this direction *does not deal with the recognition of the LoP* rather it recognises the party in the house.
>
> - **10th Schedule of Indian Constitution** – With this enactment, the categorisation of parties into parties and groups by the Speaker/Chairman (Lok Sabha/Rajya Sabha) irrelevant.
>
> - Under this schedule, all political parties, irrespective of the number of Members that they have in the Houses, are "parties".
>
> - The *term 'group' is not recognised* by the Schedule.

To know about **Tenth Schedule (10th schedule)**, click <u>here</u>

What position does the Leader of Opposition have in India?

- He/she enjoys the status of a minister and is paid by the government.

- **Seating in the house** – The Leader of Opposition sits in the *front row to the left of the Chair.*

- **Special privileges** – He/ she enjoys certain privileges on ceremonial occasions like *escorting the Speaker-elect* to the rostrum.

- The Leader of Opposition is also entitled to a *seat in the front row* during *the Address by the President* to both Houses of Parliament.

- **In order of precedence** – The Leaders of Opposition in Lok Sabha and Rajya Sabha **come at No. 7,** along with Union Cabinet Ministers, the National Security Advisor, the Principal Secretary to the PM, the Vice-Chairperson of the NITI Aayog, former PMs, and Chief Ministers.

- **Role** – The main duty of the Leader of Opposition is to serve as the *voice of the opposition* in the House.

- **Representative in selection committee** – The Leader of Opposition is the opposition's *representative in the high-powered committees* headed by the Prime Minister *for appointment* to key posts such as the

- o Director of CBI
- o Central Vigilance Commissioner
- o Chief Information Commissioner
- o Chairperson and Members of the National Human Rights Commission
- o Lokpal

> *An official booklet on Parliament published in 2012 says the Leader of Opposition in Lok Sabha "is considered as a shadow Prime Minister with a shadow Cabinet, ready to take over the administration if the Government resigns or is defeated on the floor of the House".*

What are significance of having a strong opposition in the parliament?

- **Improves quality of governing** – Strong opposition would be reflected in improved quality in the

  - o Admission of questions
  - o Content of the answers
  - o Debate on Bills

  > *Where the Leader of Opposition in the Lok Sabha has not been recognized as such, the Leader of the single largest group in opposition of the Government in the Lok Sabha shall be deemed to be the Leader of the Opposition.*

  - o General debates such as the debate on the motion of thanks, urgent matters of public interest
  - o Admission of adjournment motions
  - o Reference of Bills to the committees for detailed scrutiny, and so on

- **Bringing awareness to civilians** – As the prime minister in waiting, he has the responsibility to inform the nation about the failures of the government based on truth and with a great sense of responsibility.

- **Promotes discussion and deliberation** – In the House he has primacy in debates and other interventions.

- He can demand the presence of the Prime Minister in the House when it debates serious issues.

- **Channel of communication** – According to the British tradition, the Prime Minister directly informs the Leader of the Opposition about major policy initiatives.

- **Upheld accountability of the government** – It is the well-accepted parliamentary tradition that the Speaker permits the Leader of the Opposition to make interventions on any matter without any notice.

Status of LoP in recent times
- **Vacancy in the 16th & 17th Lok Sabhas** – There was no LoP because of following 10% criteria.
- The Congress, the largest opposition party, won 44 and 52 seats in the 543-member House after the elections of 2014 and 2019 respectively.
- Thus it got less than *54 seats which is the threshold* to secure the post of LoP
- **2024 general election** – It is perhaps for the first time that the Lok Sabha has such a huge number in the Opposition.
- With over 234 Members in the Opposition benches, the House is almost evenly divided.
- This has, no doubt, boosted the morale of the Opposition which, to a great extent, can influence the running of the House.

What lies ahead?

- The people of India have given the political class a great opportunity to restore normalcy in Parliament.
- The Leader of the Opposition should constantly remind the ruling Benches of the need to normalise Parliament.

5.4 Coalition Government

Why in news?

Recently, Coalition politics has made a comeback at the national stage after 10 years of a de facto one-party rule.

What is a coalition government?

- **Coalition** - The term 'coalition' is derived from the Latin word *'coalitio-' which means 'to grow together'*.

- Thus, technically, coalition means the act of uniting parts into one body or whole.

- Politically, coalition means an alliance of distinct political parties.

> *Ivor Jennings described the leader of Opposition as the 'alternative Prime Minister'.*

- **Coalition government** – When several political parties join hands to form a government and exercise political power on the basis of a common agreed programme or agenda.

- **Basis of coalition** – It is a direct descendant of the exigencies

- of multi-party system in a democratic set-up.

- It is a *phenomenon of a multi-party government* where a number of minority parties join hands for the purpose of running the government.

- **Forms of alliance** – It can be formed in two ways

   o Pre-poll alliance

   o Post-election alliance

	Majoritarian democracy	Consensus democracy
1. *Executive*	Concentration of power in one-party and bare-majority cabinet	Power-sharing in broad coalition cabinet
2. *Relations between government and parliament*	Cabinet dominance	Balance of power
3. *Political parties*	Two-party system	Multi-party system
4. *Electoral system*	Majoritarian and disproportional	Proportional representation
5. *System of interest groups influence*	Pluralism	Corporatism
6. *Government structure*	Unitary and centralised	Federal and decentralised
7. *Parliament*	Concentration of legislative power in unicameral legislature	Strong bicameralism
8. *Type of Constitution*	Flexibility, simple procedure of amendment or unwritten constitution	Rigidity, complex procedure of amendment
9. *Judicial review*	Absent or weak	Strong
10. *Central bank*	Controlled by executive	High degree of autonomy

- **Power Sharing** - Power is distributed among the coalition partners, with key positions such as the Prime Minister or Chief Minister and various ministerial roles shared according to pre-agreed terms.

- **Features** - Coalitions are formed for the *sake of some reward, material or psychic*.

- It implies the existence of *at least two partners*.

- The underlying principle of a coalition system stands on the simple fact of *temporary conjunction of specific interest*.

- It is not a static but *a dynamic affair* as coalition players and groups dissolve and form new ones.

- The keynote of coalition politics is *compromise*, and rigid dogma has no place in it.

- A coalition government works on the *basis of a minimum programme*, which may not be ideal for each partner of the coalition.

HISTORY OF COALITION GOVERNMENT

PERIOD	COALITION	PRIME MINISTER	PARTY IN SUPPORT
1977-1979	JANTA PARTY	MORARJI DESAI	CONGRESS PARTY (O)
1979-1980	JANTA PARTY	CHARAN SINGH	JANTA (S)
1989-1990	NATIONAL FRONT	V P SINGH	JANTA DAL
1990-1991	SAMAJWADI JANTA PARTY	CHANDRA SHEKAR	JANTA DAL (S)
1996-1997	UNITED FRONT	H.D DEVEGOWDA	JANTA DAL
1997-1998	UNITED FRONT	I.K GUJRAL	JANTA DAL
1998-1999	BJP-LED COALITION	A.B VAJPAYEE	B.J.P
1999-2004	NDA	A.B VAJPAYEE	BJP
2004-2009	UPA-I	MANMOHAN SINGH	CONGRESS
2009-2014	UPA-II	MANMOHAN SINGH	CONGRESS
2014-2019	NDA	Narendra Modi	BJP
2019-2024	NDA	Narendra Modi	BJP
2024-current	NDA	Narendra Modi	BJP

- *Pragmatism* and not ideology is the hallmark of coalition politics.

- The purpose of coalition adjustment is *to seize power*.

What are factors for emergence of coalition government in India?

- **Decline of single-party dominance** - The decline of the Indian National Congress's dominance in the late 1960s and 1970s led to a *more fragmented political landscape*, requiring coalition arrangements to form governments.

- **Rise of regional parties** - The emergence of strong regional parties with significant voter bases contributed to the fragmentation of national parties, making coalition necessary to achieve a majority.

- **Diverse electorate** - India's diverse electorate, with varying regional, linguistic, and cultural interests, led to the formation of coalitions to address the interests of different groups and regions.

- **Internal party fragmentation** - Fragmentation within major parties, often results in the formation of splinter groups that align with others to form a coalition.

- **Strategic political alliance** - Strategic alliances between parties, either *to counter common rivals* or to leverage shared interests, have led to the formation of coalition governments.

- **Post-Emergency political landscape** - After the Emergency

- period (1975-1977), there was a push for more inclusive and representative governance, leading to the rise of coalition politics as a way to reflect a broader spectrum of political views.

- **Electoral system** – At times, the first-past-the-post electoral system may ensure that no single party wins an outright majority thus prompting for coalition partnerships.

What are the implications of coalition government?

Coalition Government	
Merits	**Demerits**
- Diverse and *inclusive government.* - Strengthens centre-state relations and *federalism*. - Promotes *deliberations and discussion* in decision making. - Develops unified agendas and ensure more *balanced policy making*. - Regional and minorities parties *can have a say*. - It can *enhance accountability* by ensuring that different viewpoints and interests are represented and scrutinized.	- Holding multiple parties together are prone to *unstable government*. - Competing interests and agendas can *affect national aspirations*. - Shifting political alliances can *impact policy decisions*. - Negotiations can lead to *delayed decision making* process. - Reconciling to different parties can result in *policy gridlock*. - It can sometimes *dilute the core ideologies* of participating parties.

5.5	Election system of India and France

Why in news?

A French left-wing coalition recently won the most seats in the elections but fell short of a majority and faces a hung parliament and potential political paralysis.

How the elections are held in France?

- France holds two national elections for the general public to participate in
  - The Presidential election
  - The Legislative election

- **Two-round system - -** It is a simple election of candidates. Usually, *2 rounds of voting is held*.

- The first round sees voting between all candidates.

- Should a candidate achieve the majority, they are elected President immediately.

- If not, a second round is held between the two candidates with the highest vote percentage.

- In order to be eligible for the second round, candidates must have obtained a number of votes equal to **at least 12.5%** of the total number of registered voters.

- The winner is elected president for a term of 5 years.

- **Term -** The elected representatives hold the position for a *period of 5 years*.

- **Qualification -** Polling stations are open to any French citizen *over the age of 18* and on the electoral roll.

What are the similarities between Indian government system and French government system?

- **Term –** The President is elected for 5 years in both India and France.

- **Multiple rounds of voting -** In case of no majority in the first round both systems undergo multiple rounds of voting to gain a majority party to win the elections.

- **Electoral College –** Both the systems have the electoral colleges to choose their presidents and legislative assembly heads.

- **Ballot system –** Both the countries uses the secret ballot system to not reveal the identity of the voter.

- **Absolute Majority –** Both the systems requires absolute majority (50%+1) to form a government, if no party attains majority during the rounds then it is a hung parliament.

- **Role of the President -** In both systems it is similar as the president is the head of state and commander-in-chief of the armed forces.

- The President in both countries also has the power to grant pardons, appoint judges, and to sign bills into law.

What are the difference between Indian government system and French government system?

Feature	Indian System	French system
System of Government	Parliamentary	Semi-presidential
Executive	The President is the ceremonial head, the real executive power is with the Prime Minister and Council of Ministers	The President has significant executive powers along with the Prime Minister
President's Role	Largely ceremonial, elected indirectly	Significant powers, elected directly
Prime Minister	Leader of the majority party in the Lok Sabha, real head of government	Appointed by the President, must have support of Parliament
Parliament Structure	Bicameral (Lok Sabha and Rajya Sabha)	Bicameral (National Assembly and Senate)
Election of Upper House	Elected by members of State Legislative Assemblies and by the President for nominated members	Elected by an electoral college including local elected officials
Dissolution of Lower House	Can be dissolved by the President on the advice of the Prime Minister	Can be dissolved by the President
Amendment Process	Requires a special majority in Parliament and, in some cases, ratification by half of the State Legislatures	Requires a simple majority in both houses of Parliament or a referendum

What is Hung Parliament?

- A Hung Parliament refers to a Parliament wherein ***no party has a working majority***.

- It occurs when neither of the parties has gained an outright majority and the Parliament is equally balanced.

- Hence, no party can automatically assume control over the executive.

- When this situation occurs, the government has ***3 choices*** left -

    o   Form a coalition government

    o   Form a minority government

    o   Conduct re-elections.

- A Hung Parliament is not a time-specific phenomenon.

- Even when a party or a pre-electoral alliance has gained the majority and formed the government, a reduction in the membership of this party of alliance can cause a Hung Parliament.

Majority needed in India	Majority needed in France
- To register majority in the Indian Parliament, a party or a coalition ***must bag more than 50% seats in the Lower House***, which is the Lok Sabha.	- In the first round candidate must secure absolute majority (50%+1). - If no person qualified in the first round, second round is held between the two candidates with the highest vote percentage.
- **Members -** There are a total of **543 seats** in the Lok Sabha, with two nominated members making it ***545***.	- **Members -** *577 members* are elected to the National Assembly. - A party needs a majority of 289 to form the executive body and elect their prime minister.

What are the reasons for a hung parliament?

- **Strength of regional parties** - Regional parties have dominated national politics thereby making it difficult for the national parties to form a government.

- **Low election turnout** - India has an election turnout of 60% since the first elections and this percentage is not rising. Due to low turnout, the possibility of a hung parliament enhances.

- **International scenario** - In India, the concept of Hung parliament has been inspired by international situations. 90% of the governments formed in Denmark have resulted in a hung parliament. Norway, Sweden, Germany and many other European nations have seen Hung Parliaments.

- **Defection** - The 10th Schedule of the Indian Constitution permits political parties to change their parties after the elections if one-thirds of the party decides to split.

What are the impacts of Hung parliament?

- **Political instability** - With no party having a majority, forming a stable government becomes challenging. This can lead to frequent changes in government, political alliances, and coalitions, causing uncertainty.

- **Policy Paralysis** - Legislative decision-making can become sluggish as coalition partners may have divergent views and interests. This can lead to delays in policy formulation and implementation.

- **Compromised Governance** - In a bid to maintain coalition support, the ruling party may have to make concessions, potentially compromising on key policy decisions and governance standards.

- **Economic Uncertainty** - Political instability and policy paralysis can lead to economic uncertainty, affecting investor confidence, stock markets, and overall economic growth.

- **Frequent Elections** - If coalition governments fail to sustain, it can lead to repeated elections, imposing a financial burden on the exchequer and causing voter fatigue.

- **Checks and Balances** - a hung parliament can enhance checks and balances, preventing any single party from exercising unchecked power and encouraging more inclusive governance.

5.6   RTE in Private Schools

Why in News?

The Bombay High Court recently quashed Maharashtra's rule exempting private schools within one kilometer of government schools from reserving 25% seats for weaker sections as per Right to Education.

Why there is a trend of exempting RTE mandate in private schools?

- **Right to education** – Every child of the age group of *6 to 14 years* shall have the right to free and compulsory education in a neighbourhood school till the completion of his or her elementary education.

- It mandated by
    - **Indian Constitution** - *Article 21A* of Fundamental Rights
    - **Legal provision** – The Right of Children to Free and Compulsory Education (RTE) *Act, 2009*.

To know more about Right to Education, click here

- **RTE mandate in private schools** – It is dealt by Section 12(1)(C) RTE Act.

- **Section 12 (1)(C)**- It mandates *25% reservation of seats to children from socio-economically backward sections* in private schools.

- Students admitted under this quota are given *fee concessions, with the state government meant to reimburse* private schools for the same.

- **Significance** – It strives to bring parity and equality of opportunity for all children.

- **Exemptions** – The private schools ***within a one km radius of a government or government-aided school*** would not have to set aside 25% of seats for students from disadvantaged backgrounds.

- Instead, students in these neighbourhoods *considered for admission into said government* or government-aided schools first.

- This exemption also applied to private schools established in the future satisfying the requisite criteria.

- **Reasons for exemption** – Allowing admission to private schools near the vicinity of government or government aided schools *reduce the enrolment in government/ aided schools.*

> *Previously, Kerala in 2011 and Karnataka in 2018 had also exempted private schools from following the 25% Quota under Right to Education.*

- Private schools and teachers' organisations have also highlighted that state governments have often *failed to reimburse the fees* for students admitted through this quota.
    - In 2023, the Maharashtra English School Trustees Association (MESTA) threatened to boycott RTE admissions citing *pending payments of Rs 1,800 crore in reimbursements.*
- **Judiciary** – The Bombay High Court had quashed and set aside the Government of Maharashtra notification of exempting private schools.
- It held that the provision was *"ultra vires (beyond legal authority) of RTE Act, 2009 and Article 21 of* Constitution and declared the notification to be 'void'.
- It noted that "Section 12 (1) (c) of the RTE Act casts a duty on every unaided school *irrespective of its distance* from the government/aided schools" and the same is 'unconditional.'
- While state government argued by noting to 'save public money' as it is already spending substantial amounts on expenses for state-run and private schools, the HC noted that the *financial constraint cannot come in the way of statutory mandates.*

What are called as neighbourhood schools?

- **Neighbourhood school** – It is a school *located within the defined limits or area of neighbourhood,* as notified by the state government under the RTE rules.
- It relates to the availability of a school within safe and accessible distance from the habitation where a child lives.
- It means the nearest primary/upper primary school within walking distance from the child's residence.
- **Legal provisions** – Section 3(1), 6, 8(b), 9(b), 10, 12(1)(C) of RTE Act deals with neighbourhood schools.
    - **Central RTE Rules** - It contain the position of the Central Government in regard to neighborhood school which is applicable to Union territories without legislature for opening new schools.
    - **State/UT Rules** – It is applicable in all other states and UT's.
- **Distance parameters** – The central RTE Rules have notified the area or limits of neighbourhood to factor in distance norms of
    - **1 kilometer** – For children in *classes I-V*
    - **3 kilometer** – For children in *classes VI-VIII*
- **Distance relaxation** – In places with difficult terrain where there may be risk of landslides, floods, lack of roads and in general, danger for young children in the approach from their homes to the school.
- **Implementation** – The Government has to ensure availability of neighbourhood schools for all children within *3 years of the implementation* of the Act.
- **Importance** – According to RTE Act, it is meant to be a *site for inclusion*, so that the school becomes a *common space for education*, and children's education and schooling does not get differentiated on caste, ethnic group and class lines.
- **Freedom of choice** – The RTE Act does not restrict the choice of the child to seek admission in school which may not be in immediate vicinity, or the neighbourhood of the child's residence.

What lies ahead?

- Establish a streamlined and transparent process for reimbursing private schools for RTE quota students.
- Ensure all schools have basic facilities such as functional toilets, boundary walls, and adequate classrooms.
- Develop a standardized framework for the implementation of RTE provisions to ensure consistent quality of education across all states.

6. GOVERNMENT POLICIES AND INTERVENTIONS

6.1   Internationalization of Rupee

Why in news?

India is strategically planning to enhance bilateral trade with Russia to $100 billion by 2030 in an effort to reduce its rising oil import costs and dependency on the US dollar.

What is internationalization of rupee?

- **Internationalisation** – It is a process that involves the _use of a currency_ for more and more _cross-border transactions_.

- **Internationalisation of rupee** – It is a process that involves increasing the use of the rupee in cross-border transactions.

- It involves _promoting the rupee for import and export trade_ and then other current account transactions, followed by its use in capital account transactions.

- These are all transactions _between residents in India and non-residents_.

- **Pre-requisite** – It requires further _opening up of the currency settlement_ and a _strong swap and forex market_.

- More importantly, it will require _full convertibility of the currency on the capital account_ and cross-border transfer of funds without any restrictions.

- India has allowed only full convertibility on the current account as of now.

> _According to the BIS Triennial Central Bank Survey 2022, if rupee turnover rises to equal the share of non-US, non-Euro currencies in global forex turnover (4%), it will be regarded as an international currency._

> _Currently, the US dollar, the Euro, the Japanese yen and the pound sterling are the leading reserve currencies in the world._

What are the significances of internationalization of rupee?

- **Mitigates risks** - The use of the rupee in cross-border transactions _mitigates currency risk_ for Indian businesses.

- **Promote businesses** – Protection from currency volatility _reduces the cost of doing business_.

- It also enables better growth of business, improving the chances for Indian businesses to grow globally.

- **Reduce forex dependences** – Internationalisation of the rupee _reduces the need for holding foreign exchange reserves_.

- While reserves help manage exchange rate volatility and project external stability, they impose a cost on the economy.

Factors Determining the Global Position of a Currency
- Size of the economy
- The reach of its trade and financial networks
- The depth and liquidity of financial markets
- A history of macroeconomic stability
- Currency convertibility

- **Insulate from external shocks** - Reducing dependence on foreign currency will make India _less vulnerable to external shocks_.

- **Higher bargaining power** - It will provide India with _higher bargaining power_ in international markets.

- **Improve global status** – Higher bargaining power of Indian businesses add weight to the Indian economy and enhances India's global stature and respect.

What are the challenges in internationalization of the rupee?

- **Regulatory constraints** – Stringent regulations and policies may not support or facilitate the international use of the rupee.

- **Liquidity issues** - Limited liquidity of rupee-denominated assets in global markets can be a barrier to its wider acceptance.

- **Unbalance trade** – India's meagre exports to Russia mean could force India to use the Chinese yuan.

- **Exchange rate volatility** – It can deter international investors and trade partners from using the currency.

- **Economic stability concerns** – Issues like inflation, fiscal deficits, and political factors, can affect confidence in the rupee.

- **Infrastructure & technological barriers** – It hinders the progress for seamless cross-border rupee transactions.

- **Smaller market depth and size** - The relatively smaller size and depth of India's financial markets can be a limiting factor.

- **Lack of international financial centers** - India's limited number of globally recognized financial centers can hinder the rupee's internationalization.

- **Limited global acceptance** - The rupee is not widely accepted in global trade.

What are the measures taken by India?

- **Rupee-denominated bonds** - _Masala bonds_ allows Indian entities to raise funds from overseas markets in Indian rupees, reducing dependency on foreign currencies.

RBI's Nod for 18 Countries to Trade in Indian Rupee

18 countries banks are now eligible to open Special Vostro Accounts (SVRAs) to settle payment in Indian Rupee.

Tanzania, Kenya, Israel, Guyana, Oman, Russia, Uganda, Botswana, Malaysia, Mauritius, Fiji, Singapore, Seychelles, Germany, Myanmar, UK, Sri Lanka, N. Zealand

- **Special Rupee Vostro Accounts (SRVAs)** - The RBI has allowed 20 banks, operating in India, to open 92 Special Rupee Vostro Accounts (SRVAs) with partner banks from 22 countries to _promote bilateral trade in a local currency_.

- **Rupee accounts for non-residents** - Encouraging non-residents to open rupee accounts both _within India and abroad_ to facilitate international transactions in rupees.

- **International use of RTGS** - Promoting the use of Real Time Gross Settlement (RTGS) systems f_or cross-border trade transactions_ to facilitate quicker and more secure payments.

- **Currency swap agreements** -

> **Indian currency beyond India**
>
> - **Gulf rupee** - In 1959, the Centre allowed the RBI to issue special notes only for the Gulf region.
> - It had the same value as the Indian rupee and was known as the Gulf rupee or external rupee.
> - It was the legal tender in the Gulf countries, including Kuwait, Bahrain, Qatar and UAE, till the early 1970s.
> - **Haj notes** - Indians could also take the Indian rupee notes when they went on the Haj pilgrimage and exchange them freely for Saudi riyals.
> - Later, the Centre introduced special notes for the pilgrimage with the word "HAJ" inscribed on it called "Haj notes".

Establishing currency swap agreements with various countries to _provide liquidity_ and promote the use of the rupee in international trade.

- There are rupee deals with Singapore and the UAE.

- **Liberalized remittance schemes** - Easing regulations on remittances to allow more outward flow of rupees, which helps in increasing its international use.

What lies ahead?

- Strength financial market by fostering a global 24×5 rupee market.

- Recalibrate the FPI (foreign portfolio investor) regime.

- Include Indian government bonds in global indices would boost the internationalization of the rupee.

- Review taxes on masala bonds.

- Take efforts for the inclusion of the rupee in IMF's (International Monetary Fund) SDR (special drawing rights).

6.2	**Internationalisation of Education**

Why in news?

The latest trend of increasing number of Indian students studying abroad and the decline in foreign students in India have led to a $6 billion deficit in the country's current account balance.

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What is internationalization of education in India?

- **Internationalization of education** – It is the ability *for teaching and learning* to be increasingly *involved with international cultures* in order to enhance globalized learning.

- **Significance** - Internationalisation of higher education *promotes sharing of best academic and research practices* through interactions between diverse education systems.

- It helps in *developing global citizens* through mobility of students and scholars

> *The Special Drawing Rights (SDR)* is an international reserve asset created by the IMF to supplement the official reserves of its member countries. Its value is based on a basket of 5 currencies (U.S. dollar, Euro, Chinese renminbi, Japanese yen and the British pound sterling).

Status of Internationalization of Higher Education in India

- It be based on the All-India Survey on Higher Education (**AISHE) 2022 report** *released by the Ministry of Education*.

- **Enrolment of foreign students**- It had *increased by only 16.68% from FY15 to FY20* in different courses in higher educational institutions of India.

- It had *declined to in FY21 and FY22* as the pandemic hit the Indian economy.

- **Diversity of students** - Students *from 170 countries* studied in India.

- Most of India's education exports are *directed to South Asian and African countries*.

- *Nepal sends the largest* contingent of students.

- USA has the 3rd largest share of foreign students in India followed closely by Bangladesh and the UAE.

  - The share of Afghanistan, Bhutan, Malaysia, Sudan, and Nigeria has plummeted since 2014-15.

How education impacts BoP of India?

- **Education and BoP** – Education related expenses by students affects the forex reserve.

- **Increased outflow of Indian students** – Over the past decade, *education related travel expense has **more than doubled***, rising from $2.46 billion in FY15 to $6.3 billion in FY24.

> **When Indians move Abroad for Education**
> • India's FOREX decreases
>
> **When Foreigners visit India for Education**
> • India's FOREX Increases

- There are multiple factors contributing to this trend such as

  - Rise in income level of Indian middle class

  - Better employment opportunities with higher wages outside India

> *Forex* means foreign exchange reserves, which are assets held by a central bank in foreign currencies. It includes foreign currencies, government bonds, treasury bills, and other government securities. It facilitates International Trade and Payments for imports and service its external debt.

- **Decreased inflow of foreign students** – The travel to India by foreigners for education purposes has **more than halved** from $519 million in FY15 to $247 million in FY24.

- **Reduced foreigners' spending in India**– The *foreigner's spending on education in India started declining* sharply before the pandemic began.

- This can be corroborated by the fact that foreign spending in FY18 was $479 million, which fell to $186 million in FY19.

- **Reduced forex revenue** - The *forex revenue accruing f*rom education-related travel into India has reached the *lowest point of $109 million in FY22.*

- From FY16 to FY22, there has been ***a consistent trend of declining expenditure by foreigners*** on education in India.

- Despite some recovery in FY23 and FY24 after a sharp drop during the COVID-19 pandemic, the revenue from foreign education-related travel remains below pre-pandemic levels.

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Balance of Payment (BoP)

- **BoP** - Balance of Payments is a comprehensive record of a country's economic transactions with the rest of the world over a specific period, usually a year.
- **Coverage** - It includes all transactions made by individuals, companies, and government bodies.
- **Components** – It is divided into Current account, Capital account and financial account
- **Current account** – It records the trade of goods and services, income, and current transfers.
- **Capital Account** – Capital accounts include flow of taxes, sales and purchases of fixed assets for a migrant moving in or out of the country.
- It includes Borrowing and Loans, Investment, Change in foreign exchange reserves.

Components of BoP

Current Account
→ Export & Import of Goods
→ Export & Import of Services
→ Unilateral Transfers
→ Income Receipts & Payments

Capital Account
→ Borrowings & Lendings
→ Investments
→ Change in Foreign Exchange Reserves
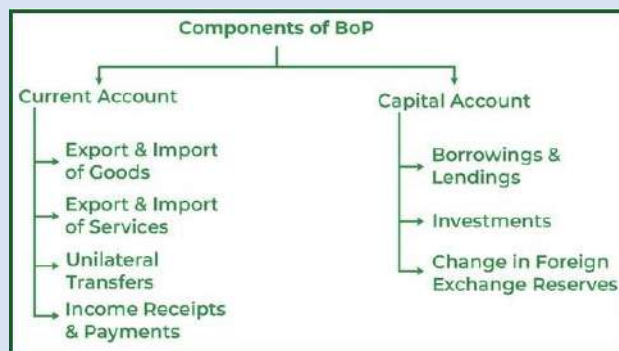
What are the steps taken by India to internationalise education?

- National Education Policy 2020 focusses on internationalisation of education in India.
- **Academic collaboration** - University Grants Commission has issued regulations on academic *collaborations between Indian and foreign higher education* institutes (HEIs), offering dual and/or joint degrees.
- It had also brought about guidelines regarding the establishment of the *Office for International Affairs in HEIs* to serve as a single point of contact for facilitating foreign students.
- **Foreign universities in India** – Highly ranked foreign universities have also been allowed to set up their campuses inside India.
- This allows *domestic students to avail of the internationally relevant and quality curriculum* without going outside India.

> In FY2024, Deakin University from Australia became the first foreign university to be granted final registration for their International Branch Campus in GIFT IFSC (International Financial Services Authority) in Gujarat under IFSCA.

- **Study In India' scheme** – It was launched in 2018 with the aim of having *2 lakh foreign students studying in India by 2023.*
- It will help to foster the growth of foreign students studying in Indian universities.
- **Financial support to students** – The government has regularly offered *scholarships and fee waivers* for meritorious foreign students.
- **Student exchange programs** – India has facilitated regular student exchange programs by *signing Memorandums of Understanding (MoUs)* with friendly countries to promote a conducive environment for global learning.
- **Reserving seats for students** – UGC, through its notification in 2022, had also allowed HEIs to create *up to 25% seats for international students.*
- This is over and above their total sanctioned enrolment for undergraduate and postgraduate programs.
- **Challenges** - Notwithstanding the COVID pandemic, which led to a global lockdown-like situation with negligible movement of people across countries, the above-mentioned steps haven't had much impact yet.

Way forward

- Efforts need to be taken to improve the quality of government run higher education in India.
- Regulate the cost of quality education offered at private universities.

7. GOVERNANCE

7.1	Education Governance

Why in News?

India's education system is currently navigating a turbulent phase marked by significant challenges in exam administration, particularly highlighted by recent controversies surrounding the National Testing Agency (NTA).

How education is governed in India?

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- **During British India** – The *Government of India Act, 1935* during the British rule created a federal structure for the first time in our polity.

- The legislative subjects were distributed between the federal legislature (present day Union) and provinces (present day States).

- Education which is an important public good was kept under the *provincial list*.

> *Article 246* *deals with the 7th Schedule of the Indian Constitution that mentions three lists named as Union List, State List and Concurrent List which specify the divisions of power between Union and States.*

- **After independence** – The earlier practice was continued and education was *part of the 'State list'* under the distribution of powers.

- **Education in concurrent list** – The **Swaran Singh Committee** constituted during the national emergency recommended to place 'education' in the concurrent list in order to evolve all-India policies on the subject.

- This was implemented through the **42nd constitutional amendment (1976)** by shifting 'education' from the State list to the concurrent list.

- A**rguments in favour of this shift –** Education in the concurrent list promotes efficient administration of education and holding higher standards throughout India.

  o A uniform education policy

  o Improvement in standards

  o Improved synergy between Centre and States.

> *The concept of 'Concurrent List' in the Indian Constitution has been borrowed from the Constitution of Australia. While both Central and State Government can legislate on subjects mentioned under Concurrent List, however, in case of any conflict, the law made by the Central Government prevails*

What are challenges of education in concurrent list?

- **Historical issues** – There was no detailed rationale that was provided during the switch of education into concurrent list.

- The corresponding constitutional amendment was *ratified by various States without adequate debate*.

- **Inconsistent strategy** – The *UGC-NET was changed* from an offline exam to an online format in 2018 was ostensibly aimed at modernising and streamlining the process.

- However, *2024 saw a regressive shift back to pen-and-paper testing*, a move that has raised eyebrows given its potential vulnerability to leaks and malpractices.

> *The National Testing Agency (NTA) is an autonomous agency under the Department of Higher Education of the Ministry of Education of India. It was established in November 2017 to conduct entrance examination admissions and recruitment.*

- **Inefficiency of NTA** – Similar irregularities have marred other prominent *exams like NEET-UG and JEE*, raising serious questions about the NTA's ability to conduct fair and secure assessments.

- **Corruption** – *Technical glitches, leaks, and allegations of malpractice* have tarnished exams under its purview, eroding trust and questioning the agency's ability to uphold assessment integrity.

- **Systematic flaw in centralised control** – Centralization's primary flaw lies in its *struggle to manage the scale and diversity* of India's educational landscape effectively.

- **Bureaucratic bottlenecks** – The slow bureaucratic machinery often hampers swift corrective actions, as witnessed in the delayed responses to past exam irregularities.

- It undermines the credibility of the entire examination system.

> *The report on 'Analysis of Budgeted expenditure on Education' of the Ministry of Education in 2022, shows that out of the total revenue expenditure by education departments in India estimated at ₹6.25 lakh crore (2020-21), 15% is spent by the Centre while 85% is spent by the States.*

Why do we need decentralisation of education?

- **Arguments in favour of decentralisation** – *One size fits all approach is neither feasible nor desirable* in a diversified India.

- *Higher share of education expenditure is done by state* governments.

- Decentralisation could *spur innovation* in exam administration and evaluation methods *tailored to local educational contexts*.

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- This flexibility not only *promotes educational diversity* but also encourages continuous improvement in exam administration practices.

- States are often *better equipped to address local nuances* and challenges, thereby potentially *reducing logistical hurdles* and enhancing responsiveness to regional needs.

- It is about ensuring *greater transparency, accountability,* and effectiveness in the examination process.

- It would empower states to explore alternative assessment models that align more closely with their educational objectives and student demographics.

What lies ahead?

- It is essential to strike a balance that *preserves national standards* while *harnessing the strengths of regional expertise* and governance.

- This approach could pave the way for a more resilient and inclusive examination system that inspires confidence among students and ensures fair opportunities for all aspiring learners.

- Decentralisation, with increased state-level involvement, offers a promising path forward to address challenges and uphold India's educational assessment integrity.

> **International Practices of Education Governance**
>
> - **In the U.S.** – State and local governments set the overall educational standards, mandate standardised tests and supervise colleges and universities.
> - The federal education department's functions primarily include policies for financial aid, focussing on key educational issues and ensuring equal access.
> - **In Canada** – Education is completely managed by the provinces.
> - **In Germany** – The constitution vests legislative powers for education with landers (equivalent of States).
> - **In South Africa** – Education is governed by two national departments for school and higher education.
> - The provinces of the country have their own education departments for implementing policies of the national departments and dealing with local issues.

7.2   Fiscal Federalism

Why in News?

Recently, the Chief Minister of Bihar and Andhra Pradesh have demanded special financial packages for their respective States.

How States receive finance from centre?

- **Distribution of revenues** – *Articles 268 to 272* of the Indian Constitution define the distribution of revenues between the Union and the states.

- As per *Article 268,* certain duties are levied by the Centre but collected and retained by the States.

- *Article 269* mentions about those taxes and duties that are levied and collected by the Centre but assigned in whole to the States.

- *Article 270* deals with sharing of the proceeds of all Union taxes between the Centre and the States.

- **Grants-in-Aid –** The Constitution provides for grants-in-aid to the states from the Central resources.

- **Statutory grants** – *Article 275* provides for compulsory statutory grants-in-aid to the revenues of States.

- **Discretionary grants – *Article 282*** empowers both the Centre and the states to make any grants for any public purpose, even if it is not within their respective legislative competence.

- Under this provision, the Centre makes grants to the states.

> *Fiscal federalism deals with the division of governmental functions and financial relations among levels of government.*

> *Centrally Sponsored schemes (CSS) are designed and partially funded by the central government, are implemented by state governments in accordance with the terms fixed by the Centre.*

> **15th Finance Commission on fiscal devolution**
>
> - **Vertical devolution (between centre and states)** – States should be given 41% of the divisible tax pool.
> - **Horizontal devolution (between states)** – Uttar Pradesh and Bihar in 2020-21 got the largest amount of funds and Karnataka and Kerala saw the largest decrease in the share of funds.
> - There is a formula applied by the commission which is based on
>   - Income
>   - Population
>   - Area
>   - Forests and ecology
>   - Demographic performance, etc.
> - So, in other words, the criteria that the Finance Commission use can change the amount of funds going to different States.

- **Other grants** - These grants were to be given for a period of ten years from the commencement of the Constitution.

- These sums were charged on the Consolidated Fund of India.

- **Finance through schemes** – A significant proportion of fiscal transfers to states from the Centre is taken up by *centrally sponsored schemes (CSS)*.

- CSSs have been ***implemented via Article 282*** of the Indian Constitution.

What is the role of finance commission in fiscal federalism?

- **Finance Commission** – It is a constitutional body set up under Article 280.

- It is constituted *by the President every fifth year or even earlier*.

- **Role in fiscal federalism** – It is constituted, mainly to give its recommendations regarding revenue sharing between centre and states and also regarding allocation of grants to the states.

- **Distribution of net proceeds of taxes**- Finance commission recommends the distribution of the net proceeds of taxes to be shared between the Centre and the States.

- **Principles governing grants-in-aid**- Finance commission determines the principles which should govern the grants-in-aid to the states by the Centre out of the Consolidated Fund of India.

- The statutory grants under Article 275 (both general and specific) are given to the states on the recommendation of the Finance Commission.

- Other temporary grants-in-aid were also made to the states on the re commendation of the Finance Commission.

Critically analyse on special financial packages?

- **Special financial packages** – They are financial support to the states which are in need rather than to all the states.

- They are granted under Article 282 ('Miscellaneous Financial Provisions')

- **Need** – It is demanded by a specific state for a specific purpose concerned to that state.

- **Recent demands** – *Bihar's demand* for a special financial package often revolves around the need to address backwardness, improve infrastructure, boost agricultural productivity, and enhance educational and healthcare facilities.

> *70% of the funds that the Centre spends is non- discretionary. But the remaining 30% are discretionary.*

- Bihar, being one of the less developed states in India, seeks additional funds to bridge the development gap with more prosperous states.

- *Andhra Pradesh* demand for a special financial package is primarily linked to the state's bifurcation in 2014, which resulted in significant economic and infrastructural challenges.

Pros of Special Financial Packages
• **Address specific needs** – Certain states might face unique challenges like natural disasters, insurgencies, or economic disadvantages.
• This targeted approach helps in delivering quicker and accurate relief measures.
• **Promote regional equity**- It can help in bridging the development gap between richer and poorer states, promoting regional development and ensuring that no state is left behind.
• **Promotes development** – It can incentivise states to undertake significant reforms or projects that align with national priorities (like green energy, digital infrastructure, or health initiatives).

Cons of Special Financial Packages
• **Undermine the fiscal discipline** – It can lead to *misuse of funds* with the already growing concern of corruption.
• **Creates inequity and favouritism**- Special packages could be allocated *based on political considerations* rather than genuine needs, leading to favouritism and inequity among states.

- **Lead to duplication**- It can overlap with existing schemes and can *reduce the overall effectiveness* of government spending.
- **Macroeconomic instability** – Unplanned and Outside budget expenditures can *strain the centre's finances* and contribute to fiscal deficits.
- This can have a cascading effect on the entire economy.

What lies ahead?

- Channelise more resources for higher capital investment in the poorer regions of the country for balanced regional development.
- Reduce leakages and collect a lot more from direct taxes and reduce collections from indirect taxes, which are having a negative effect on the backward States as compared to the advanced ones.
- Deliberate at the national level involving all the stakeholders to understand which schemes the Centre should intervene in, and which it should leave to the States.
- Follow the recommendations of the 14th Finance Commission, the Centre should intervene in schemes where there are large externalities or national priorities involved.
- Improve governance of states and the quality of expenditures on various development activities.

7.3   Financial Health of Municipal Bodie

Why in News?

As the monsoon sweeps across India, Cities in particular, bear the brunt of the fury of rains and Municipal corporations find themselves perennially underprepared for these seasonal crises.

What are urban municipal bodies?

- **Urban Local Self-Governance** – It is a system of governance of urban areas through the representatives elected by the people.
- **Urban Municipalities** – They are *lowest unit of governance* in cities and towns.
- They are also known as *Urban Local Bodies* (ULBs)
- **Indian Constitution** - The *original constitution doesn't contain* the provisions for Municipal bodies.
- ***74th Constitutional Amendment Act of 1992*** established a framework for Municipalities
    - **Part** – IX A
    - **Articles** – 243P to 243ZG
- This amendment, also known as *Nagarpalika Act*, came into force on 1st June 1993.
- **Constitution of Municipalities** - ***Article 243Q*** deals with the constitution of Municipalities in urban areas in every state
    - **Nagar Panchayat** – For a transitional area, an area in transition from a rural area to an urban area.
    - **Municipal Council** – For a smaller urban area
    - **Municipal Corporation** – For a larger urban area
- According the constitutional mandate, they are constituted under specific laws enacted by the state legislature to govern cities, towns, and other urban localities.

    - **Powers and functions** – They are constituted for *local planning, development and administration* in the urban areas.

    - They are tasked with *providing essential civic amenities* such as water supply, sanitation, roads, public health, and urban planning within their jurisdiction.

Revenue	Expenditure
• Tax Revenue	• Public Services
• Non-tax Revenue	• Social services
• Other receipts	• Infrastructure Development
• Shared Revenue	• Administrative costs
• Grants in aid	• Maintenance Costs
• Loans	• Debt Servicing

How do they manage their finances?

- Fiscal governance – It involves managing revenue and expenditure to ensure ***effective governance and service delivery*** at the local level.

- State legislatures may authorize a Municipality to levy, collect, and appropriate taxes, duties, tolls, and fees.
- It may assign to a Municipality taxes, duties, tolls, and fees levied and collected by the State Government.

Revenues Sources of Municipal Bodies
• **Tax revenues** – Property taxes, advertisement taxes, taxes on animals, vacant land taxes, taxes on carriages and carts.   • **Non-tax revenue** – User charges, municipal fees, sale and hire charges, lease amounts.   • **Other receipts** – Fees, fines, lapsed deposits, rent on tools and plants, etc.   • **Shared revenue** – Entertainment tax, surcharges on stamp duty, professional tax, and motor vehicles tax.   • **Grants-in-aid** – Plan grants made available through planned transfers from upper tier of government under schemes.   • Non plan grants are made available to compensate for the loss of income and some specific transfers.   • **Loans** – They are borrowed for capital works from the central and state governments, banks and other government agencies.
Expenditures of Municipal Bodies
• **Public services**- Funding for emergency services, waste management, street lighting, and public transportation.   • **Social services**- Funding for social programs such as housing subsidies, public health initiatives, and recreational facilities.   • **Infrastructure development**- Construction and maintenance of roads, bridges, public buildings, parks, and utilities like water and sewer systems.   • **Administrative costs**- Salaries, benefits, and operational expenses.   • **Debt servicing**- Payments towards interest and principal on loans and bonds issued.   • **Maintenance costs** - Regular maintenance of public facilities, and infrastructure to ensure longevity and safety.

What are their financial challenges?

- **Financial inadequacy** – Until 2019-20, municipal corporations' revenue receipts accounted for _less than 1% of India's GDP_.

- **Decline in own revenue collection** – ICRIER study reveals that municipalities' ability to raise their own revenues saw a sharper _decline from 0.33% of GDP to 0.23%_ in the same period.

- A significant portion of these revenues, nearly one third comes from their own tax revenue (OTRs), with property taxes constituting almost half of this segment.

- _Property tax figures dwarfed the entire OTRs_ of municipal corporations in Delhi, Bangalore, Chennai, and Hyderabad.

- **Higher dependence on transfers** – Transfers from the central and state governments form a slightly larger share in revenue receipts than OTRs.

- The dependence on state and central transfers underscores a _persistent vulnerability_.
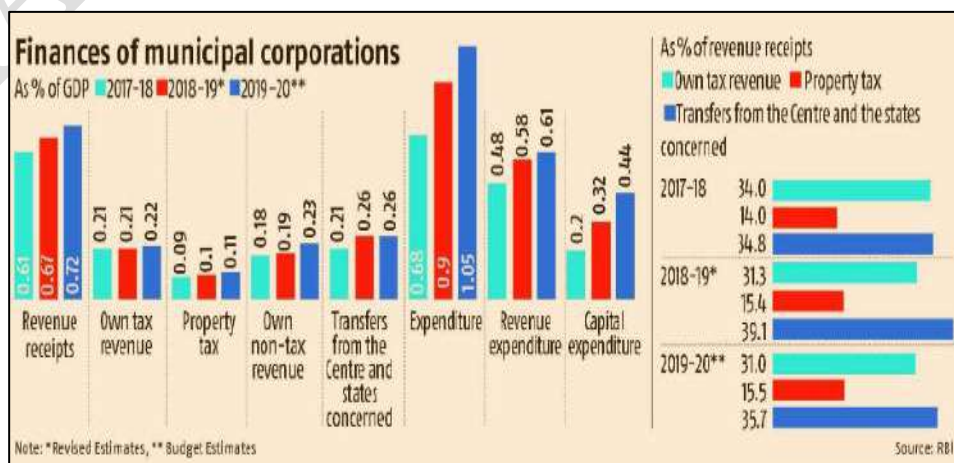
- **Impact of GST** - The implementation of Goods and Services Tax (GST) has _subsumed several taxes_, such as Octroi, which were the prerogative of municipal corporations, exacerbating their dependence on state and central transfers.

- **Lesser allocations** – While the 15th Finance Commission, in its 2nd report, recommended grants amounting to 4.36 trillion for local governments from 2021-22 to 2025-26, _up to 67% was earmarked for rural local bodies_.

> _Property taxes contributed just 13.19% of revenue receipts for the Brihanmumbai Municipal Corporation (BMC), India's wealthiest local body, over the past 5 years._

- **Lower disbursement of funds** – The actual disbursement has _lagged recommendations by about 15%,_ primarily due to municipalities failing to meet stipulated conditions, as per RBI report on municipal finances.

- **Non-constitution of SFCs -** Many states have not established State Finance Commissions in a timely and regular manner.

- **Insufficient capital expenditures** – Currently, capital expenditure constitutes about half of the total expenditure of most corporations, though it still _falls short in places like Chennai_.

- Capital expenditure, crucial for urban development and disaster preparedness, _remains a miniscule portion_ of the country´s economic size.

What lies ahead?

> _Municipal bonds are debt securities issued by municipal authorities to fund public projects such as infrastructure development, public schools, and utilities._

- _Increase the revenue assigned_ to urban local bodies from states as they are highly vulnerable during extreme weather events.

- Reduce the regulation norms for disbursing the full allocated funds.

- Promote selling of municipal bonds.

- Form partnerships with private sector entities can bring in expertise and funding for infrastructure projects.

7.4　Power of States to Tax Mines and Mining

Why in News?

A significant judgment delivered in a 8:1 ratio by a nine-judge Constitution Bench headed by Chief Justice of India (CJI) held that the power of State Legislatures to tax mining lands & quarries is not limited by the Parliament.

How mines and mining activities are regulated in India?

- **Mining** – It is the process of extracting useful materials from the earth.

- **Regulation** – It is listed under _both the Union List and the State List_ of the Seventh Schedule.

  - **List I (Union List)** – Entry 54

  - **List II (State List)** – Entry 23

- **Entry 54 of list I** – It _gives the Parliament the power_ to deal with regulation of mines & mineral development by law to be expedient in the public interest".

  - Accordingly, the Parliament enacted the _Mines and Minerals (Development and Regulation) Act, 1957_.

- **Entry 23 of list II** - It _allows state legislatures_ to deal with regulation of mines & mineral development _subject to the provisions of List I_ under the control of the Union.

- **Power of state** – The state governments could impose tax under Entry 49 and Entry 50 of the State List.

  - **Entry 49** – It is a general entry that allows states to collect tax on lands and buildings.

  - **Entry 50** – State can make laws for collecting tax on mines & minerals but allows the Parliament to impose any limitations.

- It can _impose cess on mining activities_, and this power is not restricted by Parliament's 1957 law.

What is the issue of taxing on mines?

- **Issue** – The question of taxing mining leaseholders in addition to the royalty paid them to the lease.

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- **Historical background** – The case has its roots in a dispute between India Cement Ltd. and the Tamil Nadu Government.

- India Cement had secured a mining lease in Tamil Nadu and was paying royalty to the State Government.

- The _State Government had imposed a cess in addition to royalty_ which India Cements contended that a cess on royalty meant a tax on royalty which was beyond the remit of the State Legislature.

> _Section 9 of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDRA) mandates that mining leaseholders pay royalty for any mineral removed to the landowner or corporation leasing the land._

- In **_1989, a seven-judge Bench_** of the SC held that the _Centre was the primary authority_ under the MMDRA with regard to regulating mines and mineral development and rule in favour of India Cements.

- **Current case** – Over 80 more petitions were filed in the Supreme Court over the years.

- Since the India Cement case was dealt with by a seven-judge Bench, the matter was **_referred to a nine-judge Bench_**.

- It had the task to decide _whether royalty was a type of tax_ or there was an error in the India Cement case judgment.

What is the judgement?

- **Majority argument** – State derive their _power to tax mines and quarries_ under Article 246 read with Entry 49 in the State List.
  - Mineral bearing lands fall within the description of 'lands' in Entry 49 in the State List.

- The Parliament, _through the MMDR Act, cannot limit_ the power of the State to legislate on the taxation of mines as there is _no specific stipulation in the Constitution_ to that effect".

- The Parliament _cannot use its residuary powers_ with respect to that subject matters.

- _Royalty_ paid by those who lease mines to the government **_is not tax_**.

**Royalty** is a contractual consideration paid by the mining lessee to the lessor for enjoyment of mineral rights.

- Even _arrears cannot be deemed to be a payment of tax_.

- The tax payable to the State Government depends on the "yield" of the mineral-bearing land.

- **Dissent opinion-** Royalty paid by a holder of a mining lease under the 1957 law is in the _nature of a tax paid on mineral rights_, the State legislature cannot, on the basis of royalty paid, levy any other tax, cess or surcharge on cess.

- It _relied on the Sarkaria Commission_ report on Centre-State relations.

What are the impacts of this judgement?

Positive Impacts
Promotes state autonomy – It ensures that states have full autonomy in managing natural resources and levying taxes on minerals and mineral-bearing lands.   **Boost revenues of states** – It is expected to boost the revenues of mineral-bearing states, particularly those in eastern India.   **Ensures financial sufficiency** – It empowers states to generate significant revenue from their natural resources, enhancing their ability to fund welfare schemes and services.
Negative Impacts
Overexploitation of minerals – It would result in mineral development in the country in an uneven and haphazard manner.   **Unhealthy completion** - It increase competition between the States to derive additional revenue.   - This would engage them into what has been termed by Louise Tillin in a 'race to the bottom' in a nationally sensitive market".

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- **Demote mining activities** - It could lead to a slump in mining activity in states which have mineral deposits owing to huge levies that have to be met by holders of mining licenses.
- **Induce inflation** - The steep increase in prices of minerals would result in a hike in prices of all industrial and other products dependent on minerals as a raw material or for other infrastructural purposes.
- **Impact economy** – The overall economy of the country would be affected adversely which may result in certain entities or even non-extracting States resorting to importing minerals which would hamper foreign exchange reserves of the country.
- **Double taxation** - There is a potential instances of double taxation by states and the Centre.

What lies ahead?

- **Clarity on division of powers**- It marks a significant step in clarifying the division of fiscal powers between the states and the Centre.

- **Future Projections**- Country's mining businesses can achieve the target of a _**2.5 per cent contribution**_ to the country's Gross Domestic Product (GDP) by _**2026-27**_.

> *Taxes are meant for public purposes such as welfare schemes and creating public infrastructure, whereas the payment of royalties is to a lessor in exchange for parting with their exclusive privileges in minerals.*

8. BILATERAL ISSUES

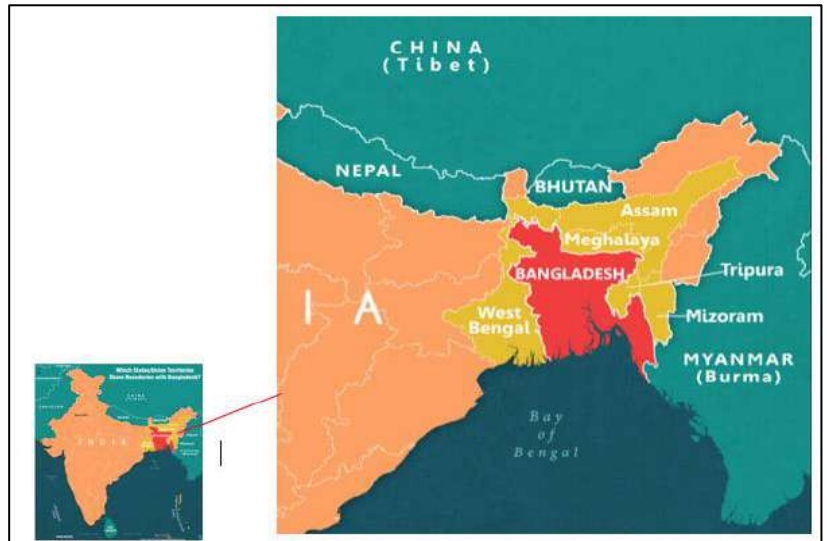## 8.1   India - Bangladesh relations

Why in news?

The third consecutive meeting between the Indian and Bangladesh Prime Ministers marks a pivotal moment in their relations.

What are the pillars India - Bangladesh relations?

- **Historical relations** – Both India and Bangladesh were _under erstwhile undivided India_ during the British colonial rule.

- Poet _**Rabindranath Tagore**_ wrote the national anthem for both countries.

- **Cultural relations** – Bangladesh has large number of Hindu Bengali population and has large number of religious-cultural sites associated with India.

- _Indira Gandhi Cultural Centre (IGCC), Dhaka_ plays an important role in the celebration of common cultural links between the two countries.

- **Geographical relations** – India shares about _**4096.70 Km land border a 180 km long marine border**_ with Bangladesh.

- The longest land border for India and the fifth-longest land border in the World.

- _Assam, West Bengal, Mizoram, Meghalaya and Tripura_ are the five Indian states that share their border with Bangladesh.

- _Land Boundary Agreement (2015)_ between them swapped the disputed islands and allowed the inhabitants to choose their country of residence.

- **Diplomatic relation** – India provided critical military and material support during _**Bangladesh Liberation War 1971**_.

- Bangladesh liberation day, 16th December, is celebrated as _"Vijay Diwas" in India_.

- India was the first to grant diplomatic recognition to Bangladesh as an independent and sovereign country and

  o **Maitri Diwas** – Bangladesh and India celebrate Friendship Day on 6th December.

  o **Sonali Adhyay** – Also, the current PM of India referred the current state of the bilateral relationship as golden phase.

- **Economic ties** – It has grown with bilateral trade reaching _**$15.9 billion in 2023**_ spanning across various sectors, including textiles, pharmaceuticals, agriculture and more.

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- The Shared Vision for India-Bangladesh *Digital Partnership* will boost collaboration in emerging digital economies.

- Commencement of negotiations for a *Comprehensive Economic Partnership Agreement* (CEPA) and operationalization of two *Special Economic Zones* (SEZs) offered by Bangladesh to India in Mongla and Mirsharai.

- Opening of new *border-haats* can transform our geographical proximity into new economic opportunities for our peoples.

- **Defence relations** – *Exercise Sampriti* and CORPAT 'Bangosagar' exercise and annual defence dialogue.

- The newly signed *MoU between the Defence Services Staff College* (DSSC), India and Defence Services Command and Staff College (DSCSC), Bangladesh for cooperation in military education.

- **Energy ties –** India has been *supplying power to Bangladesh*, with exports reaching 1,160 MW in 2023.

- Construction of *Rooppur Nuclear Power Plant* in Bangladesh with India-Russia cooperation.

- The *Maitree super thermal power plant*, a JV with its recently added Unit II, showcases collaboration in critical infrastructure.

- The MoU on Blue Economy and Maritime Cooperation to catalyse collaboration in maritime resources and ocean-based industries.

> *The Kushiyara Pact between India and Bangladesh was agreed to share the waters of a significant transboundary river, the Kushiyara.*

- **Infrastructure & Connectivity** – The ***Akhaura-Agartala***, and the Khulna-Mongla port rail line are landmark initiatives connects India's northeast to Bangladesh.

- **Development partnership** – Since 2010, India has approved three lines of credit to Bangladesh of $7.362 billion to finance development projects.

- A $500 million line of credit was extended by India for defence purchases.

- **Geopolitical relations** – Bangladesh is at the converging point of India's Neighbourhood First policy, Act East policy, SAGAR doctrine and the Indo-Pacific vision.

- India and Bangladesh have been cooperating on multilateral platforms such as SAARC, BIMSTEC, etc.

What are the major challenges?

- **Border issues** – Managing illegal cross-border activities while ensuring civilian safety remains a continuous challenge.

- The *Comilla–Tripura land border*, which stretches for 6.5 kilometers, has not been demarcated, leaving the border dispute unresolved.

- **Security challenges** – Having the long international border common challenges like terrorism, extremism, and transnational crimes persists.

- According to media sources, the United Liberation Front of Assam (ULFA), the National Democratic Front of Bodoland, and the National Liberation Front of Tripura all run *camps in Bangladesh*.

- **River water sharing issues – *Teesta River*** sharing remains a bone of contention as India currently controls 55% while Bangladesh claiming 50% during the dry season.

- *Farakka barrage dispute* is regarding the diversion of water from the Ganges to the Hooghly River by India.

- **Migrant issues –** India's ***National Register of Citizens (NRC)*** has left out 1.9 million Assamese from the list, who were labelled as 'illegal immigrants from Bangladesh' living in Assam post-1971.

- Bangladesh's stance is that no migrants travelled to Assam illegally during the 1971 war of independence.

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- **Rohingya issue** – India's remarks in 2017 that Rohingya refugee's infiltrate India through Bangladesh had upset the relations.

- India has been facing the challenge of providing shelter to more than a million Rohingya refugees.

- **Financial Constraints** – While India committed to credit Bangladesh of $7.362 billion to finance development projects, _only $442 million was been disbursed till 2018._

- China has already submitted a $1 billion proposal for the Teesta River Comprehensive Management and Restoration Project and India is now playing catch up by offering to fund it.

What lies ahead?

- Strengthen initiatives like the _BBIN motor vehicles agreement_, and the _BIMSTEC_ free trade agreement could further strengthen economic cooperation, regional integration, and stability across the subcontinent.

- Both should work together to achieve the common goal of _development and prosperity for their people_.

- Establish framework to resolve water sharing issues.

- India should launch initiatives like _"Operation Insaniyat"_ to provide relief assistance for the refugee camps in Bangladesh.

8.2   India-UK Bilateral Relations

Why in news?

The Labour party won in the recent UK elections, which throws up new challenges and opportunities for the India-UK relationship.

What are the pillars of India-UK relations?

- **Historical connections** – The _British East India Company_ established control over India in the 18th century, culminating in British Crown rule after the 1857 rebellion.

- The colonial period profoundly _impacted India's socio-economic and political landscape_.

- **Political relations** – At the International Atomic Energy Agency's general conference in 2022, _India backed AUKUS_ although it was opposed by Russia and China.

> _Aukus, is a trilateral security partnership for the Indo-Pacific region between Australia, the United Kingdom, and the United States._

- The UK government commits to _support India's permanent membership of United Nations_ Security Council.

- **Trade relations** - As of 2023, the _UK is India's 14th largest trade partner for goods_ and 3rd for services, while India is the UK's 12th largest overall trading partner.

- India is the second largest foreign investor in the UK.

- The _Joint Economic and Trade Committee_ (JETCO) was inaugurated aimed at boosting two-way bilateral investments.

- **Defence** - _India is among the top importers_ of UK defence equipment.

- **Education** – It is an important pillar as envisaged under _India-UK Roadmap 2023_, which was released in 2021.

- Since 2025-16, number of first year enrolment of Indian students in the UK universities have been increasing.

Exercise Name	Military	Frequency
Ex Ajeya Warrior	Army	Biennial
Ex Konkan	Navy	Annual
Ex Cobra Warrior	Air Force	-
Ex Indra Dhanush	Air Force	-

- Under _UK-India Education and Research Initiative_ (UKIERI) launched in 2005, Britain's universities collaborate with Indian partners and send UK students to India.

- **Science** – _Science and Innovation Council_ (SIC), is the apex body to review overall bilateral scientific cooperation between the two countries.

- It is being held once in two years alternatively in India and the UK.

- **Health** – India-UK bilateral cooperation in mitigating the effects of Covid-19 Pandemic has been significant.

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- UK-based AstraZeneca and Serum Institute of India had developed _Covishield vaccine_.

- **Climate change control** – The _India-UK Green Growth Equity Fund_ is attracting institutional investments into India's renewable energy, waste management, electric mobility, and environmental sectors.

- **Nuclear cooperation** - In 2010, both nations signed a _Civil Nuclear Cooperation Declaration_ to promote and facilitate nuclear trade and collaboration between their scientific institutions.

- **People to people connect** – The _Migration and Mobility Partnership (MMP) Agreement_ was signed in 2021 to allow swift movement of working professionals.

- In 2022, _Young Professional Scheme_ was announced to provide 3000 visas every year to graduates to get 2-year visa to live and work in either country.

> In 2024, as many as 26 Indian-origin UK politicians have been elected to the new UK parliament, including outgoing UK PM Rishi Sunak.

- **Diaspora** – The UK has a large Indian diaspora of 1.864 million as per 2021 Census and forms _3.1% of the total population of UK_.

- As per the census, 3.7 Lakh persons holding Indian passport.

What are the challenges in India-UK relations?

- **Historical legacy** – Legacy of British colonial rule in India creates a backdrop of _distrust and historical grievances_ that can occasionally influence diplomatic relations.

- A Parliamentary Standing Committee of India noted in its report to seek the _return of Kohinoor diamond_, which is currently embedded in the crown of British monarch.

Trade imbalances – There are _issues in concluding a Free Trade Agreement_ between the two countries.

- **UK's protectionist measures** – They have stringent labour and environmental standards for bilateral trade.

> The 108-carat Kohinoor diamond was presented to the then British monarch, Queen Alexandra, in 1850 after the Anglo-Sikh wars, in which Britain gained control over the Sikh empire in the then undivided Punjab.

- **BREXIT challenge** - Changes in visa and immigration policies may impact the mobility of Indian professionals and students.

- **Frictions in foreign policy** - Differences in foreign policy, especially regarding _issues like Russia, China, and climate change_ lead to different stances in global arena.

- **Climate issues** - India will likely face _tougher negotiations on climate_ from a Labour government, which has repeatedly cornered the Tories for deviating from the UK's 2030 net zero goals.

- **Controlling extremists** – There are increased activities of _anti-Indian elements in the UK._

What lies ahead?

- **Use post-Brexit opportunities** – It opens the potential for enhanced bilateral trade agreements with the UK, while also requiring adjustments to new trade and investment conditions.

- **Strengthen economic ties** - Promote a balanced trade relationship by addressing trade imbalances and reducing barriers.

- Encourage mutual investment opportunities and create conducive environments for businesses.

- **Promote strategic dialogue** - High-level strategic dialogues to manage and align divergent foreign policy interests.

- It should also focus on areas of common interest such as regional stability and global governance.

- **Improve visa and immigration policies** – This may facilitate easier travel for students, professionals, and tourists.

- **Enhance cultural ties** - Foster people-to-people contacts through cultural exchanges, educational programs, and tourism initiatives.

- **Collaborate on global issues** - Strengthen counter-terrorism efforts through intelligence sharing and joint operations.

- Support joint research and innovation in _green technologies and climate adaptation strategies_.

8.3	**India - Russia Ties**

Why in news?

The Prime Minister of India is on a 2-day official visit to Russia.

What are the pillars of India-Russia Ties?

- **Historical connections** –The early diplomatic relations between India and Russia (formerly the Soviet Union) were established in **1947**, shortly after India gained independence.

- The relationship evolved into a strategic partnership, marked by shared interests during the Cold War era.

- **Multilateral engagement -** India & Russia cooperate closely at several multilateral platforms such as the **United Nations, G20, BRICS & SCO.**

- **Trade & Economic relations** **-** The trade and economic relations have been identified as a priority area for both countries.

- In FY 2023-24, bilateral trade has reached an all-time high of **65.70 billion dollars.**

- There is a target of increasing bilateral investment to **$50 billion and bilateral trade to $30 billion by 2025.**

- **Export and Import—**Major exports from India include pharmaceuticals, organic chemicals, electrical machinery and mechanical appliances, and iron and steel.

Shangai Cooperation Organization	India's Presidency of the **G20 & SCO in 2023** afforded the opportunity for Officials and Ministers of both countries to meet on the sidelines of various events in India.
BRICS	Russia is the **BRICS Chair for 2024.**
United Nations Security Council	Russia has consistently expressed support for India's candidature for a **permanent seat at the UNSC.**
United Nations	Both the countries have a history of close cooperation in the UN.

- Major items of import from Russia include oil and petroleum products, fertilizers, mineral resources, precious stones and metals, vegetable oils, etc.

- **Bilateral investments—**India and Russia remain strong. In 2018, they surpassed the previous target of $30 billion, leading to a revised target of **$50 billion by 2025.**

- **Defence & Security Cooperation -** India has longstanding and wide-ranging cooperation with Russia in the field of defence.

> Russia's major bilateral investments in India are in the oil and gas, petrochemicals, banking, railways and steel sectors, while Indian investments in Russia are mainly in the oil and gas and pharmaceuticals sectors.

- India & Russia participate in bilateral and multilateral military exercises across the 3 services.

- **Bilateral projects-** It include the

  o Supply of S-400,

  o Licensed production of **T-90 tanks and Su-30 MKI, supply of mig-29 and Kamov helicopters,**

  o **INS Vikramaditya** (formerly Admiral Gorshkov),

  o Production of Ak-203 rifles in India and brahmos missiles.

- **Science & Technology Cooperation -** India and Russia have a long history of cooperation in the field of science and technology.

- The new Roadmap for Bilateral STI Co-operation has been developed and agreed by both sides to replace the erstwhile Integrated Long Term Programme (ILTP) co-operation program.

- **Space Cooperation -** India-Russia cooperation in the field of peaceful uses of outer space dates back to about four decades.

- The two countries are cooperating closely under India's first human spaceflight program **"Gaganyaan".**

- **Nuclear Energy - Kudankulam Nuclear Plant-** Kudankulam Nuclear Power Plant (KKNPP) is a flagship project between India and Russia in this sphere.

- **Education -** Indian students are enrolled in various courses in disciplines such as engineering, economics, sciences and other subjects in other universities.

- Medical students comprise the largest group among Indian students studying in Russia.

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- At the school-level, the ***Atal Innovation Mission of India and SIRIUS Center collaborate*** together as part of an initiative.

- **Cultural Cooperation -** India and Russia have deep and historic cultural linkages.

- The ***Jawaharlal Nehru Cultural Centre (JNCC),*** Moscow, maintains close cooperation with leading Russian institutions.

- Prominent Russian universities and institutions, teach Indian languages.

- The International Day of Yoga (2024) was celebrated in more than 60 regions of Russia.

- **Diaspora & people-to-people ties -** The people-to-people ties remain strong with gradual increase in bilateral tourism.

- The facility of e-visas for both countries has helped accelerate this process.

- Prominent Indians have been conferred Russian state awards for their contribution to building and strengthening Russia-India political, scientific, and cultural ties.

What are the limitations of India-Russia ties?

- **Deepening India-US Ties -** The India-US relations is rapidly deepening its relationship ties with foundational agreements like
    - Logistics Exchange Memorandum of Agreement (LEMoA),
    - Communications Compatibility and Security Agreement (COMCASA),
    - Basic Exchange and Cooperation Agreement (BECA).

- **Russia's Over Dependence on China -** Russia-Ukraine conflict has boosted Russia-China cooperation has grown in all directions.

- **Connectivity Issues -** China relishes direct connectivity, advanced logistics supply, a high level of trade, and profitability with Russia.

- **Defence Issues-** Due to the Ukraine War, the delivery of military spares and big-ticket weapon systems like S-400 to India has been delayed.

- **Economic Issues -** India's trade deficit with Russia touched ***$43 billion*** in 2022-23 as it imported goods worth $49.35 billion while its exports were at $3.14 billion.

What lies ahead?

- The bilateral relationship has remained strong and stable over more than 75 years.

- In the past two years, the bilateral trade has expanded significantly, far exceeding the target of $30bn set earlier for 2025.

- India-Russia relations remain robust despite global geopolitical shifts and countries continue to explore avenues for deeper cooperation across various sectors while navigating contemporary challenges.

8.4   India-Austria Relations

Why in News?

Recently, the Indian Prime Minister made a historic visit to Austria, the first by an Indian leader in 41 years since Indira Gandhi.

What are the key highlights of the PM's visit to Austria?

- **Commitment to peace and democracy-** Both vowed to strengthen cooperation on bilateral, regional, and international levels for a more stable and prosperous world.

- **Enhanced partnership**- *Joint projects* in green and digital technologies, infrastructure, renewable energy, and many more.

- India invited Austria to join the ***International Solar Alliance***.

- The *Start-Up Bridge initiative* and the exchange of start-ups between India and Austria were highlighted.

- **Skill development and worker mobility**- They welcomed the bilateral *Migration and Mobility Agreement* to facilitate exchanges and combat irregular migration.

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- **Respect for international laws** – Both leaders affirmed their commitment to a _free and open Indo-Pacific_, respecting international maritime laws.

- They discussed recent developments in Europe and West Asia, emphasizing peace and adherence to international law.

- **Support for UN seats** – _India supported Austria's UNSC candidature for 2027-28_, and Austria supported India's candidature for 2028-29.

- **Condemnation of terrorism** – They mutually condemned terrorism in all forms, urging decisive action against terrorists, including through UN sanctions.

- **Cultural exchanges and tourism**- They appreciated the rich tradition of cultural exchanges and the growing interest in _yoga and Ayurveda in Austria_.

- Efforts to promote bilateral cultural ties and tourism, including expanding _direct flight connectivity_, were encouraged.

- The _India-Middle East-Europe Corridor_ initiative and Austria's interest in it were also discussed.

What are the pillars of India-Austria Relationship?

- **Political relations**- Diplomatic relations were formally **_established in 1949_**.

- India intervened in favour of Austria during its negotiations with the erstwhile USSR that resulted in the _independence of Austria in 1955_.

- **_2024 marks the 75th year_** of establishment of bilateral relations.

- In _1955, Jawahar Lal Nehru_ became the first Indian Prime Minister to visit Austria and the previous last was by Indira Gandhi in 1983, her second visit there as Prime Minister, the first being in 1971.

- In 2021, a _Parliamentary delegation from India_ led by the Speaker Lok Sabha including Deputy Chairman of Rajya Sabha visited Vienna for the Fifth World Conference of the Speakers of Parliament.

- **Institutional mechanisms**- It is through the _Foreign Office Consultations (FOC)_ and the _Joint Economic Commission_ (JEC).

  o While the 16th India & Austria Joint Economic Commission (JEC) held in Vienna, the 7th round of Foreign Office Consultations were held in New Delhi in 2023.

- It includes discussions like trade, consular, skilling, migration, culture and people to people contacts.

- Both sides also discussed regional and multilateral issues including _UNSC reforms, Ukraine issue and India's G20 presidency_.

- **Economic cooperation**- The _bilateral trade is balanced_.

- According to the Statistik Austria, for 2021, Indian exports to Austria were USD 1.29 billion and imports were USD1.18 billion.

- The total bilateral trade for this period was USD 2.47 billion.

  o **Indian key exports to Austria** – Electronic Goods, Apparels, Textile, Footwear, Rubber articles, Vehicles & Railways parts, Electrical machinery and Mechanical appliances.

  o **India's key imports from Austria** – Machinery, Mechanical appliances, Railway parts, Iron and Steel.

- **Technological cooperation**- Jesuit Father Josef Tieffenthaler who is known as the "**_Father of Modern Indian Geography_**," was a notable figure.

- He created the _first exact cartographic records_ of the middle Ganges River and was an internationally renowned Sanskrit scholar, teaching at the Jesuit College in Agra from 1740 to 1770.

- **Space sector** – _Austria's first two satellites_ TUGSAT-1/BRITE and UniBRITE were launched _by India's PSLV–C20_ from Satish Dhawan Space Centre, Sriharikota in 2013.

- **Crime and Security** – In 2022 in New Delhi, _India handed over the INTERPOL flag to Austria_ that organized the 91st ITERPOL General Assembly in Vienna in 2023.

- **Cultural relations**- It dates back to _16th century_ when Balthasar Springer traveled in 1505 to India along with the Portuguese fleet.

- Between 1825-1920, the _Austrian tradition of Indology_ emerged.

> _India's philosopher-poet Rabindranath Tagore visited twice to Vienna in 1921 and 1926._

- In 1845, the teaching of _Sanskrit was started at Vienna University_ and in 1880 an independent chair for Indology was founded.

- _Ayurveda_, the Indian traditional system of medicine has been widely acknowledged and practiced in Austria.

- There are many _Yoga schools_ in Vienna and other Austrian cities.

- **People to people connect-** There are an estimated over _31,000 Indians_ (majority from Kerala and Punjab) living in Austria.

- There are _over 500 Indian students_ pursuing their higher education in Austria and the number is set to rise.

What is the significance of Austria for India?

- **Access to European markets** – Austria is a key partner in Europe's central region, providing India with access to European markets and fostering stronger diplomatic ties within the EU.

- **Boosts economy** – Bilateral agreements on migration and mobility facilitate the exchange of skilled workers, benefiting both economies and enhancing human capital development.

- **Supports India's growth** - Austria's advanced technology and expertise in sectors like renewable energy, infrastructure, and manufacturing complement India's growth needs.

- **Drives innovation** – Joint ventures and projects in green and digital technologies enhance India's technological capabilities, driving innovation and sustainable development.

- **Promotes India's global status** – Austria's support for India's candidature in international organizations like the UNSC and collaboration in multilateral platforms boost India's global influence and diplomatic reach.

G.S PAPER III

9. ECONOMY

9.1 Extreme Poverty

Why in News?

Indian Government is developing national indicator to measure "extreme poverty"
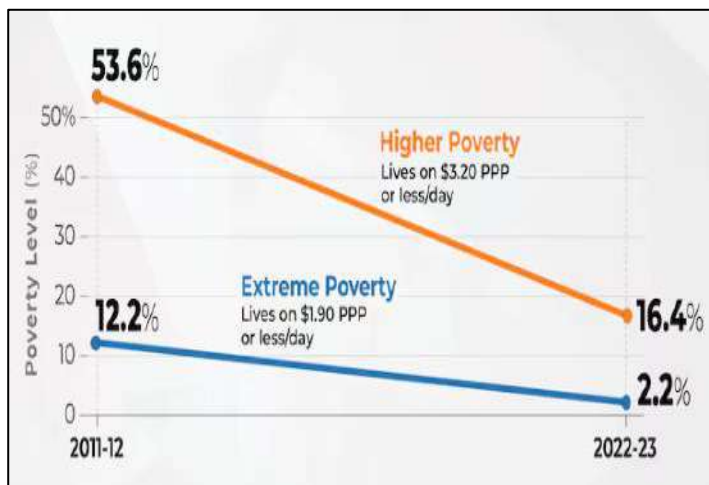
What is extreme poverty?

- **Definition** – According to _World Bank_, the people in extreme poverty is who live on **_less than $2.15 per day_**.

- Currently, _around 700 million people_ live on extreme poverty.

- **Vulnerability** – Extreme poverty remains concentrated in parts of _Sub-Saharan Africa_, fragile and _conflict-affected areas, and rural_ areas.

- **Global measures** – The _United Nations_ have adopted the Sustainable Development Goals (SDG) in 2015 and have set an explicit target of _eradicating extreme poverty by 2030_.

  o **SDG 1** – End poverty in all its forms everywhere

- **Challenges** – After decades of progress, the pace of global poverty reduction began to slow _by 2015, in tandem with subdued economic growth._

- **Impact of COVID-19** – Global poverty reduction was dealt a severe blow by the COVID-19 pandemic and a series of major shocks during 2020-22, causing three years of lost progress.

  o In 2022, a total of 712 million people globally were living in extreme poverty, an _increase of 23 million people_ compared to 2019.

- Low-income countries were most impacted and have yet to recover.

- **Impact of Climate change** – It is hindering poverty reduction and is a major threat going forward.

- The lives and livelihoods of poor people are the most vulnerable to climate-related risks.

- Millions of households are pushed into, or trapped in, poverty by natural disasters every year.

What is the status of Extreme Poverty in India?

- **Extreme poverty** – According to 'The World Poverty Clock' report in 2024, *__India's extreme poverty at less than 3%.__*

- It has taken $2.15 a day income to present the finding.

- The number of people living in extreme poverty has come *down to 2.4% from 3.3% in 2022.*

- **Extreme poverty line** – India has been *without an official poverty line for a while*, and the policy has shifted to from income-based poverty estimates to one based on multi-dimensional deprivations.

- Now, India government reckons anyone with *__income below $1.25/a day as living in "extreme poverty"__*.

- Interestingly, the *World Bank definition* of extreme poverty roughly *corresponds to the poverty line computed by Tendulkar committee* for 2004-05 (Rs 33 per day), if adjusted for inflation.

- **Niti Aayog** – It says that the proportion of men, women and children of all ages living in *poverty in "all its dimensions" reduced* to 14.96% in 2019-21 from 24.85% in 2015-16.

- An estimated *248.2 million people moved out of multidimensional poverty* between 2013-14 and 2022-23, a key SDG goal.

- Multidimensional poverty index (MPI) estimates between 2005-06 and 2015-16, the headcount ratio for the year 2013-14 comes to 29.17%.

- **Consumption expenditure data for 2022-23** – It provided the first official survey-based poverty estimates for India in over ten years.

- High growth and large decline in inequality have combined to eliminate poverty in India for the PPP$ 1.9 poverty line.

- **Reason for India's poverty reduction** - It has been possible due to *sustained economic growth* during the period (6.7% average growth between FY16-FY20), and implementation of several *welfare schemes focused on*

    o   Nutrition
    o   Health
    o   Education
    o   Housing
    o   Drinking water
    o   Sanitation
    o   Skill development
    o   Social protection

Poverty Headcount Ratio (HCR)
• It is a measure that indicates the *percentage of a population living below the poverty line*.
• It reflects the proportion of people in a specific region or country whose income or consumption levels fall below an established poverty threshold, such as $1.90 or $3.20 per day based on PPP.
• The HCR provides a clear *picture of the extent of poverty* and is used to *compare poverty levels* across different regions and over time.

- **Future prospects** – India is much ahead of the target of reducing poverty in all its dimensions by half, by the year 2030

Why India needs a new method to count its poor?

- **Different methodologies** – There is *vast difference in poverty estimates* is the difference in the methodology of each paper.

- No official data - There are *no official poverty figures in India* between 2013 and 2023.

- **Data mismatch** – Various research estimates suggest that the people living in poverty varies from 2.5% to 29.5% of the population, depending on the source and the time between 2013 and 2023.

- India's current official poverty line *does not match its status as a lower-middle-income country*.
- The World Bank's $3.20 PPP poverty line is designed for such countries and is suitable for measuring poverty, especially for international comparisons.

What lies ahead?

- There is a need to *address intertwined global challenges*, including slow economic growth, fragility and conflict, and climate change.
- Countries need to *improve people's well-being in a comprehensive wa*y, including through more equitable access to health, education, and basic infrastructure and services, including digital.
- Policymakers must intensify efforts to grow their economies in a way that *creates high quality jobs and employment*, while protecting the most vulnerable.
- Jobs and employment are the surest way to reduce poverty and inequality.
- Impact is further multiplied in communities and across generations by empowering women and girls, and young people.

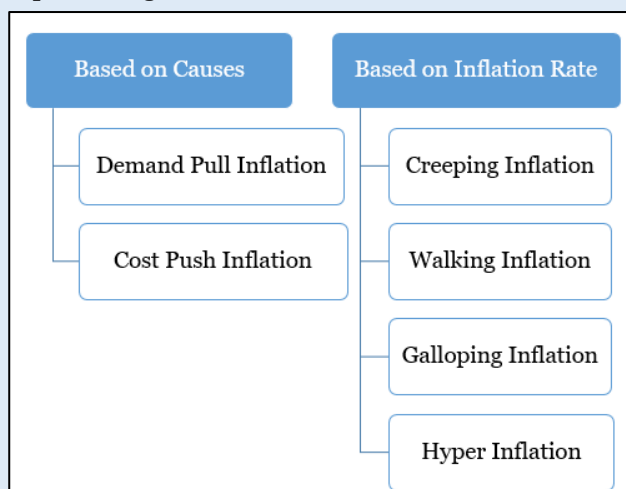| 9.2	Transition from WPI to PPI

Why in news?

The Department for Promotion of Industry and Internal Trade (DPIIT) in consultation with the Ministry of Statistics is close to finalise a model to launch a PPI in India that may eventually replace the WPI.

How inflation is measured in India?

Inflation
- **Inflation** – It refers to *consistent increase in the general prices* of goods and services. - **Inflation rate** – It is a metric used to gauge how fast the general prices rise over a defined period, often a year. - **Disinflation** – It is *decrease in rate of inflation*, whereby prices *continue to increase but at a slower rate*. - **Types of inflation** - **Impact of inflation** - Over time, the purchasing power of money diminishes as the cost of living rises. - This can impact consumers, businesses, and the overall economic landscape. - **Deflation** – It is a *sustained decrease in the general price level* of goods and services.

Based on Causes: Demand Pull Inflation, Cost Push Inflation

Based on Inflation Rate: Creeping Inflation, Walking Inflation, Galloping Inflation, Hyper Inflation

- **Calculation** – Authorities in India *use price indices* to determine the change of rates of commodities and services, thus the inflation or deflation is calculated.

	CPI	WPI
Definition	Measures changes in the price level of a basket of *consumer goods and services* purchased *by households.*	Measures changes in the *price of goods at the wholesale level*, before they reach the consumer.
Base Year	2012	2011-12
Frequency	Monthly	Weekly and monthly
Components	Food, beverages, housing, clothing, health, education, etc.	Primary articles, fuel and power, manufactured products.

| **Reflects** | _Cost of living and inflation_ experienced by consumers. | _Inflation at the wholesale_ level, affecting business costs. |
| **Measuring agency** | Central Statistics Office (CSO) | Office of Economic Adviser, Ministry of Commerce and Industry |

- o **For example**, if the rate of rice a year ago was Rs 20 a kilo and currently it is Rs 22 a kilo, the inflation in the rice prices would be at 10%.
- **Assigning weightage** – While calculating inflation, the weight of a product is considered higher if consumers expend larger share of their income on that product.
  - o **For example**, _household expenditure is higher on food and fuel_ than postcards or shaving creams, hence given more weights while calculating the inflation.

> _**BN Goldar Committee** is a 13 member committee to devise an all new barometer called Produce Price Index instead of Wholesale Price Index_

- **Evolution of measurement** – In India, generally, two kinds of indices are used to measure inflation—Wholesale Price Index (WPI) and Consumer Price Index (CPI).
- **Before 2014** – RBI had given more weightage to _WPI as the key measure of inflation_ for all policy purposes.
- The WPI was calculated by the Ministry of Commerce and Industry shows the combined prices of a _representative basket of wholesale goods_.
- It is _primarily used as a GDP deflator_.
- **After 2014** – Based on the Urjit Patel committee recommendations, RBI had adopted _CPI (combined) as a key measure of inflation_.
- CPI considers the weighted average value of a basket consisting of 299 items.

Why India needs a transition from WPI to PPI?

- **PPI** - Producer Price Index (PPI) measures the _average change in the selling prices received by producers_ for their goods and services.
- It is calculated based on the prices of goods and services at various stages of production.
- It _excludes indirect taxes_ from calculation and thus can avoid any tax fluctuations.

> _The lowest inflation rate, technically deflation, was recorded in May 1976 at (-) 11.31%. On the other hand, highest inflation rate observed was 34.68% in September 1974._

- **Need of PPI** – Unlike WPI, it _includes services_ along with goods and captures price changes from the _perspective of producers_, _offering a supply-side inflation measure_.

- **Better targeting** –It leads to _more targeted monetary and fiscal policies_ and also aids in understanding inflation transmission from production to consumption.
- **Global comparability** – It will _align India's inflation measurement standards with international practices._
- It facilitates better comparison with global economies, aiding in economic analysis and decision-making.
- **Improved economic analysis** - It enhances the understanding of _industry-specific inflation trends_ and also assists businesses in pricing strategies, contract adjustments, and financial planning.
- **Enhanced transparency** - It _promotes transparency_ in the pricing mechanisms and cost structures of industries.

	WPI	**PPI**
Scope	Domestic and International goods	Only domestically produced goods
Coverage	Only on goods	Both goods and services
Purpose	It looks at wholesale prices	It emphasizes on production costs
Tax fluctuations	Yes	No
Multiple Counting Bias	Yes	No

What are the challenges in transition to PPI in India?

- **Difficulty in data collection** - Gathering detailed data from diverse industries and services is complex and resource-intensive.

- **Lack of infrastructure** - Establishing and maintaining IT systems for comprehensive data reporting requires significant investment.

- **Lack of expertise** - Training personnel for accurate data collection and analysis is challenging due to lack of expertise.

> *India have taken the International Monetary Fund's advice on the methodology to devise PPI model and the National Statistical Commission (NSC) is examining a working group report on the roadmap for introducing PPI in India.*

- **Structural issues –** Bureaucratic hurdles and lack of cooperation can slow down the transition process.

- **Stakeholder resistance** - Businesses and industries may resist the transition due to increased reporting requirements and potential cost implications.

What lies ahead?

- **Enhance data collection** - Implement reliable and accurate data collection systems using advanced technology.

- **Standardize protocols** - Develop and enforce uniform data collection and reporting standards across sectors.

- **Upgrade infrastructure** - Invest in IT infrastructure and provide training to improve data management and analysis.

- **Broaden sectoral coverage** - Expand efforts to include informal and small-scale industries, ensuring comprehensive data representation.

- **Reform policies** - Create supportive policies and align regulations to facilitate the PPI transition.

- **Increase awareness and training** - Conduct training and awareness programs for stakeholders on PPI benefits and implementation.

- **Pilot and phased implementation** - Start with pilot projects and adopt a phased approach for gradual and effective PPI rollout.

9.3	Women in Unincorporated Sectors

Why in news?

The share of women owners and workers in unincorporated enterprises was relatively high in the southern States, according to the recent Annual Survey of Unincorporated Sector 2022-23.

What is unincorporated sector?

- **Unincorporated sector** – It includes a range of jobs that require *little to no capital and skills* and that involves *considerable investment and expertise*.

  - Little or no capital – street Vending

  - Higher investment & expertise – Tailoring and car repair

- **Operation** – The shop may be operated by *an individual or a self-employed entrepreneur*.

- **Employees** – The operator may enlist *unpaid family members or employ paid workers.*

- **Work location** – They may work from a *fixed location or in homes*, small shops, and workshops.

- **Surveying in India** - National Statistics Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI) publishes Annual Survey of Unincorporated Sector Enterprises (ASUSE).

- ASUSE aims to provide d*ata on all aspects of unincorporated non-agricultural enterprises* to supplement the corporate sector data.

Different Types of Establishments

- **Hired Worker Establishment (HWE)** – It is an establishment which is employing a*t least one hired worker on a fairly regular basis*.

- **Perennial establishment** – These are establishments that run *more or less regularly throughout the year.*

- **Seasonal establishment** – Those establishments which are usually run in a *particular season or fixed months* of a year.

- **Casual establishment** – These are establishments that run occasionally, for a *total of at least 30 days in the last 365 days.*

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- **Classification** - ASUSE divides such workers into *4 Broad Activity Categories (BAC)* which includes

    o Manufacturing

    o non-captive electricity generation

    o Trade

    o Other services

- **Exclusion** – The sector excludes establishments registered under the Companies Act and covered under the Annual Survey of Industries, and public sector/government companies.

To know about Annual Survey of Unincorporated Sector, click here

What is the status of women in unincorporated sector?

- **Female participation** – *Only 25.63% of the total workers* were female during ASUSE 2022-23.

- **In Broad Activity Categories** – Among 4 categories, it is participation of female workers is the *highest in manufacturing.*

- In manufacturing sector *43%* of the total workers are females.

- **Own Account Establishments (OAE)** – There is significant presence of female workers to the tune of 31% of the total workforce of the OAEs.

- **Unpaid Family Workers** - The share of women among unpaid family workers was much higher than other job-types in every State.

- Even in States where women did not play a major role in unincorporated enterprises in hired/ownership roles, their share among unpaid family workers was higher.

- **Regional disparities in participation**

    o **Highest** – In Southern states

    o **High** – In some Eastern states

    o **Low** – In the western, northern, and central States

- **Ownership** – M*ore than 30%* of the proprietary establishments have been run by women entrepreneur in 3 major states like Telangana, West Bengal and Karnataka.

- **Concerns** - In many cases, they *take no payment* and have *little say in how the enterprise is run.*

What are the significance of women in unincorporated Sectors?

- **Empowers women** - Engaging in business activities empowers women by enhancing their decision-making abilities, confidence, and social status.

- **Brings diversity** - Women bring *diverse perspectives* and *innovative solutions* to business challenges, fostering creativity and growth.

- **Alleviates poverty** - Women's participation in these sectors *helps lift families out of poverty* by providing additional income sources.

- **Promotes community development** - Women-led enterprises often invest in their communities, promoting social cohesion and community well-being.

- **Boosts economic growth** - They contribute substantially to the economy by generating income, creating jobs, and driving local economic growth.

- **Builds economic resilience** – Especially in rural areas and in marginalized communities, by diversifying income sources and reducing vulnerability to economic shocks.

- **Promote sustainable practices** – As they engage in sustainable practices, contributing to environmental preservation and resource management.

9.4   Karnataka Platform-based Gig Workers (Social Security and Welfare) Bill, 2024

Why in news?

Recently, the government of Karnataka has released a draft of the Karnataka Platform-based Gig Workers (Social Security and Welfare) Bill.

What is a gig worker?

- A gig worker is a person who works in the gig economy (labour market) that is characterized by ***temporary, contract, and freelance jobs.***

- Gig workers are also known as independent contractors, freelancers, or on-call workers.

- They typically work in the service sector and are paid based on completing one-time projects or gigs, rather than receiving a regular income.

- Gig workers often have ***more flexibility*** than full-time employees, such as being able to set their own hours, work from home, and be their own bosses.

- **Examples -** Swiggy, Zomato, Uber, Ola, Urban Company, Porter, Dunzo, Amazon, Flipkart.

What is a Gig economy?

- It is a labour market characterized by short-term employment, contractual jobs, and independent contractors as opposed to permanent jobs.

- It is also called freelancer economy, agile workforce, sharing economy, or independent workforce.

- The gig economy can benefit workers, businesses, and consumers by making work more adaptable to the needs of the moment and the demand for flexible lifestyles.

- Gig workers engage in livelihoods outside the traditional employer-employee arrangement.

- These types of arrangements are often called alternative or non-standard work arrangements.

What are the highlights of the Karnataka draft Bill?

- It aims to introduce protections against unfair dismissals, a two-tier grievance system for workers, and increased transparency in automated monitoring and decision-making on platforms.

> *Karnataka has become the 2nd Indian State to initiate such a move, the first being Rajasthan.*

- The bill is introduced as a ***'rights-based bill'***.

- **Contract Obligation -** The contract between the aggregator and the worker should contain an exhaustive list of grounds on which the contract would be terminated by the aggregator.

- **Valid reason for termination -** It also stipulates that the aggregator shall not terminate a worker without giving valid reasons in writing and prior notice of ***14 days.***

- **Right to refuse -** In response to concerns about arbitrary deductions, the draft requires aggregators to pay workers weekly and provide reasons for any deductions.

- **Unfair deductions -** The bill mandates aggregators to make payments at least every week and to inform the worker about the reasons for payment deductions if any.

- Workers can also refuse a set number of gigs weekly without negative consequences, provided they have a reasonable cause.

What are the key issues of the bill?

- Unlike the Rajasthan's law, the Karnataka Bill fails to mention digitally-mediated, labelling or even home-based services.

- This could lead to artificial distinctions rather than shared needs around welfare protections.

- The draft Bill does not clearly mention if it will protect the rights of warehouse workers because they fail to meet the criteria of workers engaged with 'platforms'.

What are the challenges in gig economy?

Status of Gig Economy in India

- According to NITI Aayog, 7.7 million workers were engaged in the gig economy in 2020-21 especially after the covid-19 pandemic.

- The workforce is expected to expand to 23.5 million workers by 2029-30.

- Nearly 60% of tech industry organisations are now investing in gig workers and 97% of these companies want to keep gig workers at their current level or hire more gig workers.

- It stated that gig work is expanding in all sectors, but 47% of the jobs are medium-skilled, about 22% are high-skilled, and about 31% are low-skilled.

- **Compound Annual Growth Rate (CAGR) -** India's gig economy is growing at a Compound annual growth rate of 17%.

- **Female labour force participation-** The Niti Aayog noted that female labour force participation in India has remained low, oscillating between 16% to 23% in the last few years.

- **Persons with disabilities-** PwD who make up for 2.11 to 10% of India's population, have a labour force participation rate of 36%.

- **Income Stability-** Fluctuating income due to irregular work opportunities and varying pay rates.

- **Long working hours -** It found that around 85% of gig workers, largely in the age group of 30- 50, put in 8 or more hours daily.

- **Lack of Benefits-** Limited access to traditional employment benefits such as health insurance, retirement plans, and paid leave.

- **Job Insecurity -** Uncertainty about future work opportunities and job continuity.

- **Legal Protections -** Often classified as independent contractors, gig workers may lack legal protections and rights that employees typically have.

- **Work-Life Balance -** Difficulty in managing work hours and personal life due to irregular schedules and high workload variability.

- **Skill Development -** Limited opportunities for skill development and career advancement compared to traditional employment.

- **Access to Support-** Challenges in accessing support systems like unions or advocacy groups for grievances and rights protection.

What are the laws related to gig economy in India?

- **Unorganised Workers' Social Security Act, 2008 –** It aims to provide for the social security and welfare of unorganised workers.

- **The Code on Wages, 2019 -** It provides for universal minimum wage and floor wage across organised and unorganised sectors, including gig workers.

- **The Code on Social Security, 2020 -** It recognises gig workers as a new occupational category.

- **Motor Vehicle Aggregator Guidelines, 2020-** It states that aggregators are obligated to obtain a health insurance and a term insurance for each driver engaged by them.

- It also ensures that such drivers are not logged in for an aggregate of more than _**12 hours**_ on any day.

What lies ahead?

- The gig economy has certainly led to the transformation of India's work culture, with enhanced flexibility and autonomy, overriding the traditional relationship.

- The biggest advantage of gig work lies in its integration with technology because, the future of India's start-ups and its gig economy lies in digital innovations.

- The government too has been endeavouring to democratise digital platforms across sectors.

- In a developing country like India, the potential advantages of the gig economy are going to be numerous especially for women to achieve financial freedom.

9.5   Government securities (G-Sec)

Why in news?

The latest inclusion of JP Morgan in the Indian bonds is expected to generate monthly inflows of around USD 2 billion for nine months, boosting demand for government bonds.

What are government securities?

> *A bond is a debt instrument in which an investor loans money to an entity (typically corporate or government) which borrows the funds for a defined period of time at a variable or fixed interest rate.*

- **G-Sec** - A Government Security is a _**tradable instrument**_ issued by the sovereign government.

- **Issuing authority** – The Central government and the state governments.

  - **Central government** - Both _treasury bills and dated securities/ bonds_

  - **State governments** - _Only dated securities/bonds_ which are referred to as _State Development Loans_ (SDLs).

- **Issue** – They are issued through _auctions conducted by RBI_.

Short term G-Sec's	Long term G-Sec's
• Original maturities of less than one year	• Original maturity of one year or more
• Also known as treasury bills or T-bills.	• Also known as government bonds or dated securities

- Auctions are conducted on the electronic platform called the **_E-Kuber_**, the Core Banking Solution (CBS) platform of RBI.

- All members of E-Kuber can place their bids in the auction through this electronic platform.

- **Significance** – It allow the _government to raise money_ by issuing bonds and thus acknowledges government's debt obligations.

What are the types of Government Securities?

- **Treasury Bills** – These short-term investment instruments which come in three variations _91 days, 182 days and 364 days_.

- It does not offer any interest but issued _at a discounted rate_.

- When you redeem them, you get them at the face value.

- RBI auctions T-Bills every week or fortnight.

- **Cash Management Bills (CMBs)** – It was introduced in the year 2010 whose maturity period is _less than 91 days_.

- They generally fulfil temporary cash flow requirements of the government.

- **Dated Government Securities** - They are long-term investment instruments with tenures ranging from _5 to 40 years_.

- These securities either have fixed or floating interest rates.

- **State Development Loans -** They are issued by the state government.

- They offer a higher interest rate in comparison to dated government securities.

Instruments of Dated Government Securities
- Fixed Rate Bonds
- Floating Rate Bonds
- Inflation Indexed Bonds
- Capital Indexed Bonds
- Bonds with Call/ Put Options
- Special Securities
- Separate Trading of Registered Interest and Principal of Securities (STRIPS)
- Sovereign Gold Bond
- 7.75% Savings (Taxable) Bonds, 2018

What is Fully Accessible Route (FAR) Bonds?

- **Existing routes** – Investments can be done through
    - Medium-Term Framework (MTF)
    - Voluntary Retention Route (VRR)
    - Fully Accessible Route (FAR)

- **FAR Bonds** – They were introduced by RBI in 2020.

- It opens certain specified categories of government bonds fully for non-resident investors.

- **Aim** – To allow non-residents to invest in specified government bonds without restrictions like investment limits.

- RBI regulates the investment limit by Foreign Portfolio Investors (FPI) in government securities.

> _Foreign portfolio investment_ (FPI) _consists of securities and other financial assets held by investors in another country. It does not provide the investor with direct ownership of a company's assets and is relatively liquid depending on the volatility of the market._

- **Recent trends** – Foreign portfolio investments (FPI) under the FAR have nearly doubled in nine months, reaching Rs 1.93 trillion as of July 16, up from Rs 94,709 crore on September 22, 2023.

- According to data from the Clearing Corporation of India (CCIL), this surge follows JP Morgan's inclusion of Indian debt in its index.

- **Significance** – Eases non-residents' access to Indian government securities.

- Aids inclusion in global bond indices.

- Encourages stable foreign investment in government bonds.

What are the risks involved in holding G-Secs?

- **Market risk –** Market risk arises out of _adverse movement of prices_ of the securities due to changes in interest rates.

- It will result in _valuation losses_ on marking to market or realizing a loss if the securities are sold at adverse prices.

- **Reinvestment risk** – There is a risk that the _investor may not reinvest_ these proceeds at the original investment yield if interest rates decrease by the time of cash flow receipt.

- **Liquidity risk** – It occurs when an i_nvestor can't sell due to a lack of buyers_, leading to no trades or a distressed sale at a low price, causing a loss.

- Over time, the maturity of a liquid bond shortens.

> _Liquidity in G-Secs means the ease of trading these securities, shown by available buy-sell quotes with narrow spreads._

What lies ahead?

- _Holding securities until maturity_ can avoid market risk._Rebalancing a_

- _portfolio_ by selling short-term securities and buying longer-term ones helps manage risk but incurs transaction costs.

- Asset Liability Management (ALM) can also manage risk by matching cash flows and durations of assets and liabilities.

- Caution is essential in derivatives transactions, which should only be undertaken with a full understanding of their risks and complexities.

Fixed Rate Bonds
• These are bonds on which the coupon rate is fixed for the entire life (i.e. till maturity) of the bond.
• Most Government bonds in India are issued as fixed rate bonds.
Floating Rate Bonds
• It does _not come with a fixed interest or coupon rate_, and the interest income changes as per the prevailing market conditions.
• These might be a good investment option for people who wish to protect their portfolio from any type of risk.
Treasury Inflation-Protected Securities (TIPs)
• They are available for a tenure of _5, 10 or 30 years_.
• It has the _dynamic principal_ issued to keep up with inflation.
• They offer _interest every six months_ and the _rates change once every year_ in case of rising inflation.
Zero-Coupon Bonds
• They can be invested in them at a discounted rate.
• They do _not offer any coupon rate or interest rate._
Capital Indexed Bonds
• The rate of interest is calculated as a _fixed percentage over the wholesale price index_.
• This offers investors effective protection against inflation.

9.6   India's Capital Goods Sector

Why in news?

To seize India's Capital Goods in the Global Electronics Revolution, there is need to embrace the innovative spirit that drove the Industrial Revolution.

What is a capital goods sector?

- It is also known as the **_industrial sector_**, a vital part of manufacturing and is the foundation for many industries.

- **Capital goods** - They are _tangible assets_ that are used to produce consumer goods or services.
  - For example: Buildings, machinery, and equipment

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- They are *durable items*.

- **Core capital goods** - They are a class of capital goods that excludes aircraft and goods produced for the Defense Department.

- However, *some capital goods can be considered consumer goods*, such as airplanes, used by airlines and some consumers.

- **Significance** – Investing in capital goods symbolise a nation's ability to innovate, produce, and lead.

- It enhances exports and enable the nation to compete globally in international completion.

What Are Capital Goods?

Tools | Buildings | Machinery | Equipment | Vehicles

- Capital goods are one of the four primary factors of production
- They are man-made, durable items that businesses use to provide goods and services
- In accounting, they are treated as fixed assets
- Production is measured by the monthly durable goods report, one of the most important leading economic indicators

How India's capital goods sector boosts electronic industry?

- **Relation of Capital goods with electronics** – Capital goods are central to the vision of expanding the electronics production.

- They enable us to produce high-quality electronics efficiently and at scale.

- **Electronic industry** - Globally, the electronics market, currently valued at $4.5 trillion, is anticipated to soar to $6.1 trillion by 2030.

- **India electronics production** – It has reached an impressive milestone of approximately $115 billion in FY24, growing by almost four times in the past decade.

- Projections for the next five years are even more promising, with expectations to multiply this figure by five times.

- **Need of robust capital sector** – As *India aims to increase its electronics production by five times* thus the demand for advanced manufacturing technologies will also surge, necessitating a robust domestic capital goods sector.

	Capital Goods	**Consumer Goods**
Definition	They are physical assets that are used in production process to produce consumer goods.	They are the finished products that consumers buy after the production process.
Users	Manufacturers	Final consumers
Examples	Plant, property, equipment, etc.,	Milk, appliances, clothes, etc.,

- Currently the sector contributes 12% of the total manufacturing output, and in turn manufacturing sector contributes around 17% to the GDP of the country.

What are the challenges faced by capital goods sector?

- **Lack of infrastructure**- Insufficient *transportation and logistics networks*, affects the efficiency and cost of manufacturing and delivery of capital goods.

- **Financial constraints**- Access to affordable finance is limited, and the *high cost of borrowing* affects investment in new technologies and capacity expansion.

- **Policy and regulatory challenges**- Frequent changes in government policies and regulations create uncertainty, making long-term planning difficult for businesses.

- **Lack of strong institutional mechanisms**- There is a *lack of adequate and timely financing*, insurance and marketing support for exporters of capital goods, especially for MSMEs.

- **Reduced skillset**- There is a *mismatch between the jobs and the people,* which is counter to the demographic dividend that India currently holds.

Direct and indirect employment expected to reach 5 Mn and 25 Mn, respectively by 2025.

India was the world's 8th largest consumer of machine tools globally, as of 2021

Indian Electrical equipment is the largest sub-sector followed by Plant equipment & Earth moving/ mining machinery.

- **Lesser demand**- The traditional markets for Indian capital goods, such as the US and Europe, have been experiencing low growth and reduced investment, affecting the export prospects of the sector.

- **High export transaction costs**- It increases the time and money required to export capital goods from India.

What lies ahead?

- *Close demand-supply gap* by meeting both the domestic demand and targeting the export market

- Create *dedicated centre* with a substantive corpus of minimum ₹1,000 crore focused on innovation in capital goods, potentially housed at the Central Manufacturing Technology Institute (CMTI).

- Promote strong *R&D ecosystem* to develop indigenous technologies that not only meet international standards but also set new benchmarks in quality and efficiency.

- Create a *dedicated funds* for acquiring and enhancing capital goods, including second-hand equipment.

- Strong *collaboration between industry and academia* can foster innovation and ensure that research aligns with industry needs.

- Formulate *supportive government policies* for the growth of the capital-goods industry by providing incentives for R&D, facilitating ease of doing business.

- Adopt *eco-friendly technologies* and processes.

- Embrace *digital technologies* for more efficient and cost-effective production.

- *Address technology and skill gaps* is also critical for India's ambitions in the electronics sector.

- Form *joint ventures* with global leading firms to facilitate skills and technology transfer.
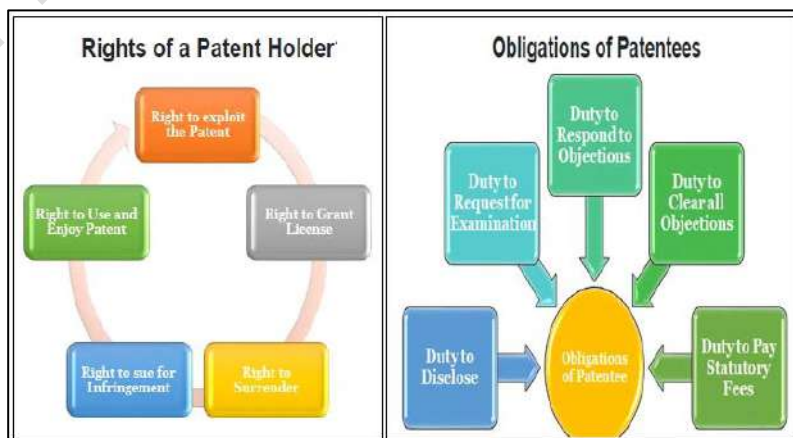
9.7   Patent Applications and Clearances in India

Why in News?

In FY24, domestic patent applications have outpaced foreign ones for the first time, an analysis of Indian patent data shows.

What is a patent?

- **Patent**- The word "patent," as used in the **Indian Patent Act of 1970**, refers to a patent issued *for a novel technique or item* involving an innovative step and suitable for industrial use.

- **Coverage** – It covers either the *product or a process*.

- **Patent Rights** – It provides the *inventor exclusive rights* to the patented process, design, or invention for a certain period in exchange for a complete disclosure of the invention.

- Evolution **of patent regime in India** - India inherited its patent regime from the British rule.

- At the time of independence, the **Indian Patents and Designs Act of 1911**, was in force.

Rights of a Patent Holder | Obligations of Patentees

- It had created a system of patent administration in India under an administrative office the Controller of Patents and Designs.

- Post-independence, India enacted its first independent patent law in 1970.

> *The Supreme Court of India in Novartis v. Union of India recognized the need to curb the "Evergreening" of patents while acknowledging the need to grant patent protection to incremental innovations.*

- **International obligations and commitments**- The Patents Act 1970 was amended to fulfill the obligations of international agreements and treaties to which India became a party

- o _TRIPS Agreement_ of WTO

- o _Paris Convention_ for the Protection of Industrial Property

- o The _Patent Cooperation Treaty_ (PCT)

- o The _Budapest Treaty_ on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure

> _Indian Patent Act of 1970 came in the backdrop of two committees namely the Bakshi Tekchand Committee in 1949 and, later, the Justice Rajagopal Ayyangar. Committee._

To know about Patent Rule in India, Click here

What are recent trends of Patents in India?

- **Granting authority** - _Indian Patent Office_ is responsible for the grant of patents in India.

- It is part of the office of the Controller General of Patents, Designs and Trademarks (CGPDTM) under the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry.

- **Timeline** - Patents granted today often stem from applications filed 4-5 years prior.

- **Recent trends in India** – _Controller General of Patents, Designs & Trade Marks (CGPDTM)_ data showed the recent trends of patent applications and approval granted in India.

- **Higher domestic patent applications** - In FY24, domestic patent applications have for the _first time outpaced foreign applicants._

- It is driven by increased applications in sectors such as chemicals, pharma, computer science and information technology.

- Domestic patent applications have been _steadily increasing since FY19,_ bridging the wide gap between domestic and foreign applicants.

- **Skewed patent approvals** – Patents _approved for non-resident Indians and entities stood at 74.46% in 2022,_ which is among the highest in any major economy globally.

  - o Patent approvals, continue to be skewed in favour of foreign entities like Qualcomm Inc., Samsung, Huawei Technologies and Apple taking top spots, edging out Indian companies.

In 2022 India was 6th worldwide in terms of patent grants wherein a total of 30,490 patents were granted.

- **Dominance of foreign entities** – There is a _wide gap between domestic and foreign patent holders_ reflects the inefficiencies in India's R&D capabilities.

- Foreign entities maintain a dominant share of patents granted in India, at _nearly two-thirds_ _of the overall applications cleared_.

Why Indian patent approval is lower?

- **Lower R&D activity in India** – India's poor patent approvals stems from lower R&D activities in India which results from _weak private investments_ and _stagnant government spending_.

- R&D spending as a percentage of GDP is lower than the levels of 0.83% seen in 2008, the highest in the last two decades.

  - o China spends 2.43% of its GDP on R&D, South Korea 4.93% and the United States 3.46%.

> _World Intellectual Property Organisation data showed that the countries with high spending on R&D had a lower share of foreign patent approvals._

- It has resulted in Indian manufacturing depending on imported machinery, parts, and foreign technicians to fulfil export orders.

- **Lower number of patent examiners** - The number of _full-time equivalent (FTE) examiners_ in India as per WIPO stands at 597 who approved over 1 lakh patents last year.

  - o Whereas, the EU has deployed 3,982 examiners, Germany 821 and the US over 8,000 examiners.

- **Foreign dependence**- Indian manufacturers are dependent on imported machinery, parts, and foreign technicians to fulfil export orders.

What lies ahead?

- Establish Patent facilitation centers (PFCs) to assist innovators in filing patents.

- Promote Startup India initiative that offers rebates and fast-tracking of patent applications for startups.

- Conduct IPR awareness campaigns to educate stakeholders about IPR, aiming to increase the filing of domestic patents.

- Encouraging public-private partnerships to leverage resources and expertise, facilitating joint research projects and innovation initiatives.

- Provide financial and technical support to Micro, Small, and Medium Enterprises (MSMEs) for patent filing, implementing schemes that reduce the cost burden of obtaining patents.
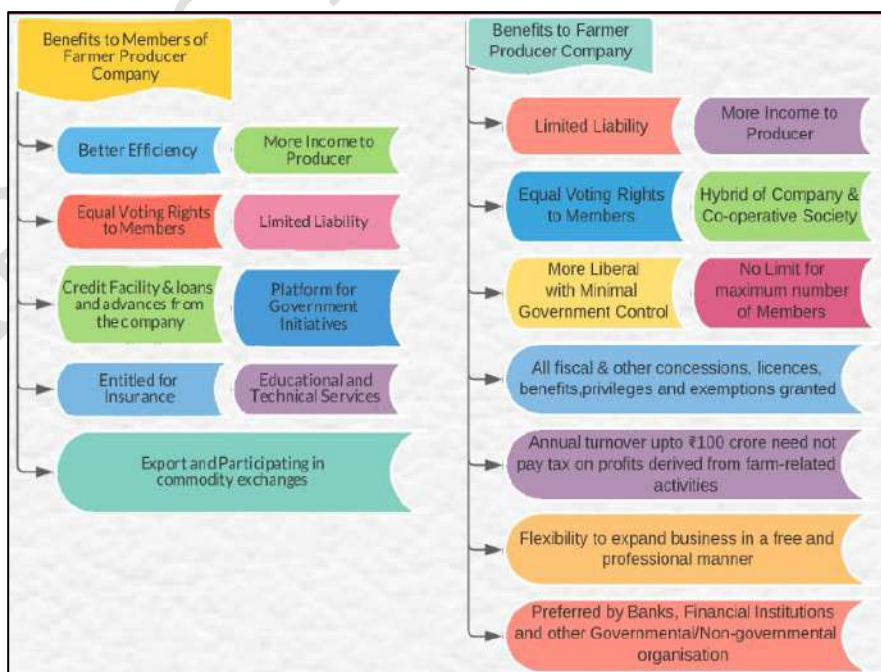
10.   AGRICULTURE

10.1   Draft National Policy on FPO

Why in news?

The Department of Agriculture & Farmers' Welfare (DAFW) has published a draft of a National Policy for Farmer Producer Organizations or FPOs.

What is Farmer Producer Organisation?

> *Y K Alagh committee suggested amending the Companies Act of 1956 to allow formation of farmer producer companies (FPCs), which combine the ideals of cooperatives with the more business-friendly regulatory framework of company law.*

- **Farmer producer** – It means a person individually, with or without land ownership, engaged in agriculture or producing fisheries & animal husbandry and their products.

- **FPO** – Farmer Producer Organisation is a generic name of collective of farmer-producers, owned, managed and governed by themselves.

- They are incorporated /registered as legal entity under Companies Act, 2013 or Cooperative Societies Act or any other law for the time being in force permitted for their incorporation /registration.

- FPOs allow farmers and producers to sell, trade, market and distribute their produce together, eliminating middlemen.

- **Characteristics** - It deals with the pre-production, production and post-production activities of agriculture and allied activities.

- It deals with multiple products and services that are required by farmers specifically small and marginal producers.

- Small Farmers' Agribusiness Consortium (SFAC) is providing support for promotion of FPOs.

To know more about Farmer Producer Organisation, Click here

What is draft National policy on FPO?

- **Need** – For creating a facilitative ecosystem for _consolidation of existing potential FPOs_ and formation of new FPOs to transform them into a functional and vibrant enterprise.

- **Vision** – To _build a prosperous and sustainable ecosystem_ for development of agriculture and allied sector/activities.

- To enable farmer-producers and agrarian community to _enhance productivity and realize higher returns_ through collective action facilitated by the government and fruitful collaboration with other stakeholders.

- **Mission** – To create an FPO ecosystem wherein a _minimum of 7-8 active primary level_ FPOs in each block are formed /consolidated **in next five years**, which may number roughly 50,000.

- **Guiding Values for sustaining FPOs** – _Voluntary mobilization_ of farmer-members based on common socio-economic interest _without any discrimination._

> _Currently, the country has over 7,000 functional FPOs, with many being established in recent years under the Central scheme to promote and form 10,000 FPOs._

- **Significance** – It would _directly benefit 2.50 crore farmers_ (17% operational holdings as per agriculture census, 2015-16)

What are the highlights of draft National Policy on FPO?

- **State-level FPO policies** – It suggests that states should have their own FPO policy.

- It calls to formulate such policies in states where they are not already in place, in line with the national policy.

- **Inter-ministerial collaboration** – It calls for the agriculture ministry to engage with ministries and departments concerned to simplify the incorporation process of FPOs.

- **Access to cheaper loans** - The policy urges the farm ministry to collaborate with the finance ministry to provide cheaper institutional loans.

- It advocates a special sub-set within primary sector lending norms of banks to make lending to FPOs easier.

- **Three-tier Amul-like model** - It advocates for a three-tier Amul-like model for Farmer Producer Organisations (FPOs).

- **Establishment target for FPOs** - The target is to establish _50,000 FPOs over the next few years_.

> _Ministry of Agriculture and farmers Welfare is the central nodal department (CND) for all FPOs._

- **Assessment of FPO schemes** - There is a call for an assessment of all schemes to promote FPOs, including one focused on setting up 10,000 FPOs.

- **Procurement** – Enabling FPOs to undertake procurement at Minimum Support Price (MSP) and be exempt from stock limits.

- **Authority and integration of FPO mandis** - Enable FPO mandis to grant trading licenses and integrate with eNAM and ONDC platforms.

- **Attracting top talent to FPOs** - Develop a scheme to attract and retain highly qualified CEOs and managers in FPOs.

- **Increase in farm productivity** - Studies indicate an 18.75 to 31.75% increase in farm productivity among member farmers associated with FPOs.
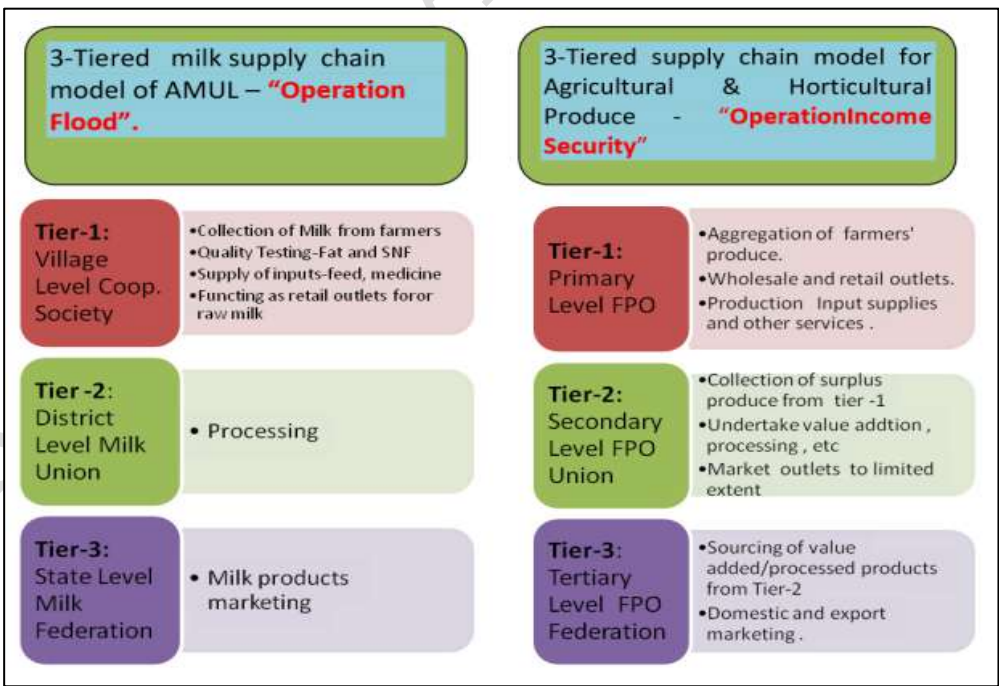
11.   ENVIRONMENT

11.1   Soil Degradation

Why in news?

In a recent conference, UNESCO warns 90% of Earth's land could be degraded by 2050.
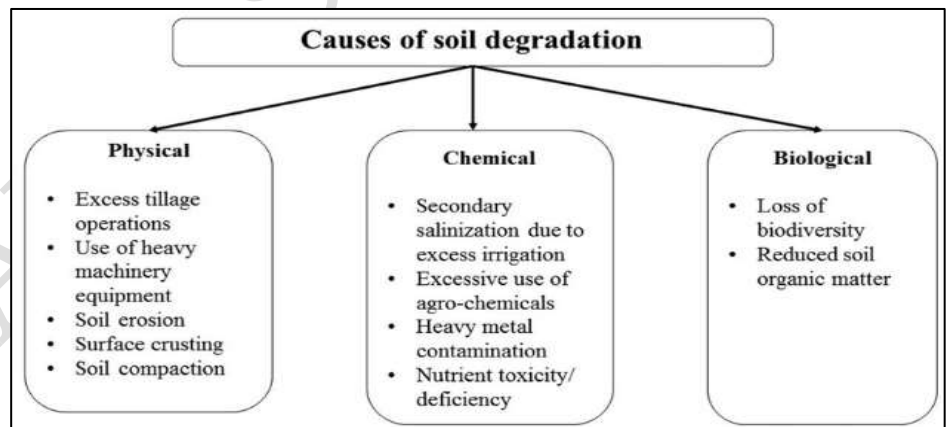
What is soil degradation?

- **Soil** – A material composed of minerals, living organisms, soil organic matter, gas, and water.
- **Soil degradation** – It is the *loss of the intrinsic physical, chemical, and/or biological qualities* of soil either by natural or anthropic processes, which result in the diminution or annihilation of important ecosystem functions.
- **Causes of soil degradation** – The leading causes of soil deterioration are wind and water erosion, deforestation, and urbanization.
- **Soil erosion** – It is the *displacement of the top layer of soil* and is often caused by wind and water forces.

> *A third of the world's soils are degraded and in India, around 29.7% land is degraded.*

- Although these are naturally-occurring elements of nature, *too much erosion can lead to soil depletion*.
- **Deforestation and overgrazing** – Overgrazing and deforestati on are the leading human activities that cause soil depletion.
- **Urbanization** – It creates mass amounts of pollution and less agricultural productivity, indirectly causing soil deterioration.

What are impacts of soil degradation?

- **Loss of fertile soil** – Degradation reduces the soil's ability to supply essential nutrients to plants, leading to decreased agricultural productivity.
  - **World Atlas of Desertification** – 75% of soils are already degraded, directly affecting 3.2 billion people.
- **Lead to soil compaction** - Heavy machinery, overgrazing, and deforestation can compact the soil, *reducing its ability to hold water and air*.
- Compacted soils *have poor drainage and root penetration*, which negatively impacts plant growth.
- **Affects the health of living** – The use of pesticides, herbicides, and industrial pollutants can contaminate the soil, affecting its health and the health of plants, animals, and humans that rely on it.

Importance of Soil
- It provides *plants nutrition* to grow and foothold for their roots.
- It *filters rainwater* and recharges groundwater.
- It regulates the discharge of excess rainwater.
- It *prevents flooding*.
- It can *store large amounts of organic carbon*.
- It can help *regulate emissions of carbon dioxide* and other greenhouse gases.

Causes of soil degradation

Physical	Chemical	Biological
- Excess tillage operations - Use of heavy machinery equipment - Soil erosion - Surface crusting - Soil compaction	- Secondary salinization due to excess irrigation - Excessive use of agro-chemicals - Heavy metal contamination - Nutrient toxicity/ deficiency	- Loss of biodiversity - Reduced soil organic matter

- **Loss of soil inorganic carbon** – This depletion could hurt the health of soil and its ability to regulate nutrient levels, foster plant growth and store carbon.
  - In India, soil acidification might lead to loss of 3.3 billion tonnes of soil inorganic carbon (SIC) from the top 0.3 metres of its soil over the next 30 years.
- **Depletes productivity** – Acidic soils *affect crop growth and productivity* by reducing the availability of plant nutrients.
- Low pH levels (acidic soils) dissolves solid carbonate and removes it either as carbon dioxide gas or releases them directly into the water.

Measures by UNESCO for Conserving Soil
- **World soil health index** – UNESCO has pledged to support its member states by establishing 'world soil health index'.
- The index will help to standardise measure for analysing and comparing soil quality in different regions and ecosystems.
- **Long-term soil and landscape management** – This is planned as a pilot project in ten natural sites supported by its Biosphere Reserves Programme.
- The initiative will assist in assessing the management methods used on these sites and ensuring that best practices are developed and implemented in other parts of the world.

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- It also predisposes plants to other biotic and abiotic stress factors.

- **Threat to food security** – Soil erosion and land degradation pose a major threat to global food security and to the achievement of the UN-mandated SDGs, compromising the well-being of at least 3.2 billion people around the world.

  - The loss of a few inches of topsoil has the potential to lower crop yields by 50%.

What lies ahead?

- **Practice conservation tillage** - Reducing the frequency and intensity of tillage helps preserve soil structure, reduces erosion, and maintains organic matter. Techniques such as no-till or minimum-till farming can be adopted.

- **Cover crops** - Planting cover crops during off-season periods helps protect the soil from erosion, improves soil structure, adds organic matter, and enhances nutrient cycling.

- **Promote Agroforestry** - Integrating trees and shrubs into agricultural landscapes provides multiple benefits, including improved soil structure, increased organic matter, reduced erosion, and enhanced biodiversity.

- **Follow terracing and contour Farming** - On sloped land, terracing and contour farming can reduce soil erosion by slowing down water runoff and promoting water infiltration.

- **Enhance soil testing** - Regular soil testing helps determine nutrient needs and prevent over-application of fertilizers.

- **Control usage of fertilizers** – Using balanced fertilization practices maintains soil fertility without causing pollution.

- **Create awareness** – The United Nations Food and Agricultural Organization (FAO) declared *December 5 as 'World Soil Day'*.

11.2   India's Water Crisis

Why in news?

Global rating firm Moody's has recently warned that India's growing water shortage and frequent climate change-driven natural disasters can negatively affect the country's sovereign credit strength.
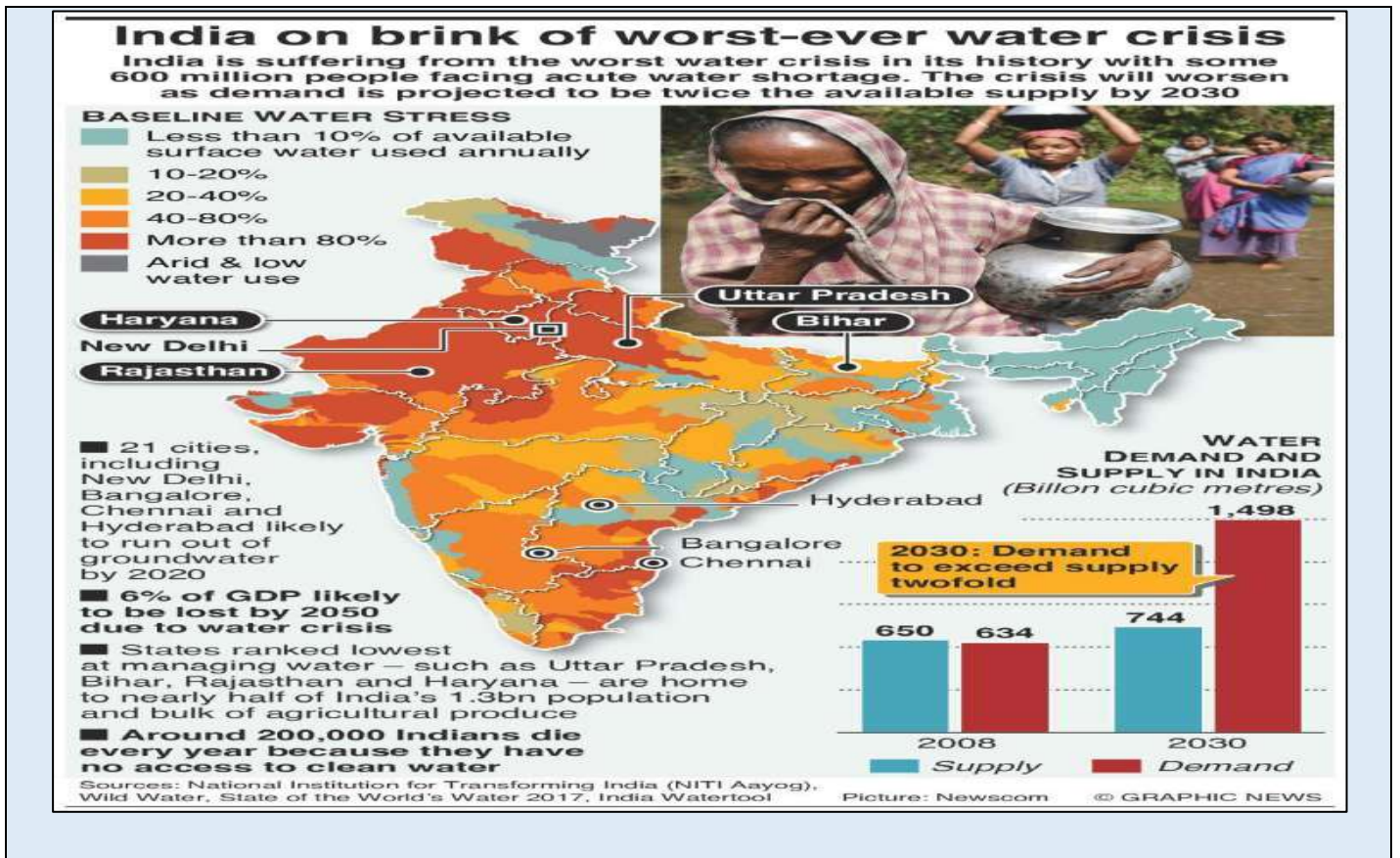
What is water crisis?

According to World Bank, 163 Million Indians lack access to safe drinking.

- India *only possesses 4% of the world's fresh water*.

- According to India's Ministry of Water Resources,

  - **Water Stress** – When water levels are below 1,700 cubic meters

  - **Water scarcity** – When water supply is below 1,000 cubic meters

- India's average annual water availability per capita is likely to drop to 1,367 cubic meters by 2031 from an already-low 1,486 cubic meters in 2021.

Water Shortage in New Delhi

- **Water sources** – Delhi depends heavily on its neighbouring States of Himachal Pradesh, Uttarakhand, Punjab, Haryana, and Uttar Pradesh to fulfil its drinking water needs.

- The capital's raw water supply comes from four sources with approximately 40% of it coming via Yamuna through Haryana.

- The raw water is treated in Delhi's Water Treatment Plants (WTPs) and sent across through its pipelines that covers over 15,000 kilometres.

- **Issues in Munak Canal** - The canal, which *falls under the Haryana government*, starts from Haryana and enters Delhi with raw water.

- The water shortage is due to a *leakage* in the Munak Canal, and the *lack of cleaning of pipelines* and WTPs.

- **Tanker economy** – The presence of *privately run tankers* which are finding illegal sources of water and *selling them at high rates* is adding to the issue.

India on brink of worst-ever water crisis

India is suffering from the worst water crisis in its history with some 600 million people facing acute water shortage. The crisis will worsen as demand is projected to be twice the available supply by 2030

Why there is rising water shortage in India?

- **Impacts of climate change** – Events like _irregular monsoons, prolonged droughts, and severe floods_, all of which disrupt the availability of water.

  - **Heat wave in 2024** – The temperature hitting 50 degrees Celsius in Delhi and the northern Indian States, strained water supply.

  - **Floods** – Flooding in northern India and Cyclone Biparjoy in Gujarat in 2023 caused economic losses of $ 1.2-1.8 billion and damage to infrastructure.

> _The Indian Ocean warmed at a rate of 1.2 degrees Celsius per century during 1950-2020, and this will intensify to 1.7-3.8 degrees Celsius during 2020-2100._

- **Rising population growth** – India's rapidly growing population _increases the demand for water_ for drinking, sanitation, and other domestic uses.

- **Rapid urbanization** – It puts immense _pressure on water resources_, with cities requiring more water for residential, commercial, and industrial purposes.

- **Higher agricultural demand** – Agriculture consumes a significant portion of India's water resources, especially through practices like flood irrigation, which are highly inefficient.
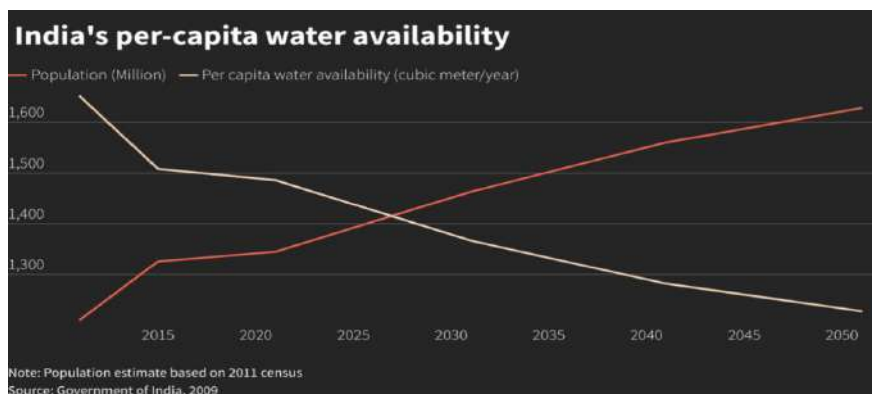

  - This sector accounts for _about 80% of the total water usage_ in the country.

- **Growing industrial activities** – This require substantial amounts of water, further straining the available resources.

- **Over-extraction of groundwater** – Excessive reliance on groundwater for agriculture and domestic use leads to _rapid depletion of aquifers._

  - India's groundwater use is roughly _one-quarter of the global usage_ with total usage surpassing that of China and the United States combined.

- **Water pollution** – Dumping of industrial discharge, agricultural runoff, and untreated sewage contaminates water bodies, _reducing the availability of clean and usable water_.

- **Conflicts and governance Issues** – Disputes over water rights and usage between states and regions can exacerbate water scarcity.

  o _Cauvery river water dispute_ between Karnataka and Tamil Nadu is conflicted between supplying drinking water and for irrigation.

India's Water Consumption by Sector
Water demand in billion cubic meters as % of total water demand

- **Heavy reliance on South-west monsoon** – India relies substantially on monsoon rain for its water supply, but is also prone to severe and extreme weather conditions.

  o Monsoon rainfall is lessening

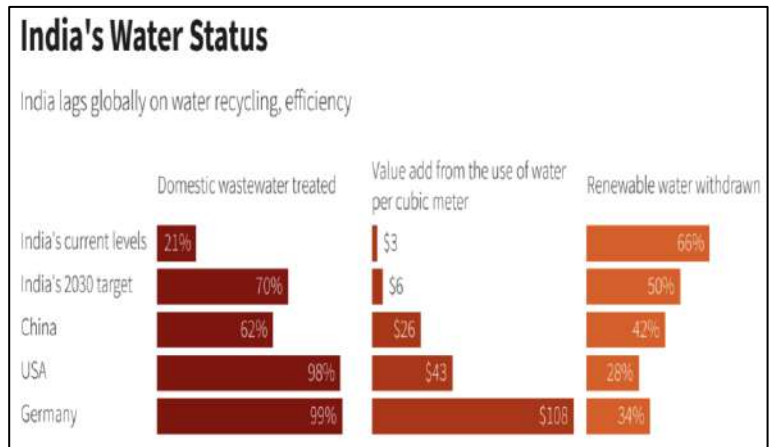 o In 2023, monsoon rainfall in India was 6% less than the average for 1971-2020.
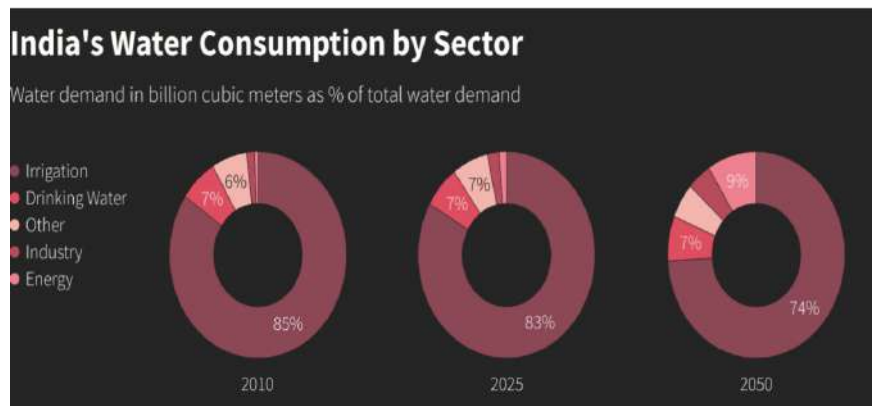
What are the impacts of water shortage?

- **Reduces agricultural productivity** – Water shortages lead to _reduced agricultural productivity_, affecting the livelihoods of millions of farmers.

  o It can exacerbate volatility in India's growth and undermine the economy's ability to withstand shocks, as more than 40% of the country's workforce is employed in agriculture.

- **Shrinks industrial growth** – Industries that depend heavily on water like textiles and manufacturing face _operational challenges and reduced output_, impacting economic growth.

- **Induce health issues** – Lack of access to clean water leads to the _spread of waterborne diseases_ such as cholera, dysentery, and typhoid.

  o The waters of the _Yamuna, Ganga and Sabarmati flow the dirtiest_ with a deadly mix of pollutants both hazardous and organic.

- **Creates social conflicts** – Competition for limited water resources can lead to conflicts between communities, regions, and even states, _exacerbating social tensions and instability_.

- **Loss of Biodiversity** – Water scarcity affects ecosystems, leading to the _loss of habitats for aquatic_ and terrestrial species, and threatening biodiversity.

- **Disruptions in electricity production** – Coal power plants in water-stressed areas can face operational disruptions thereby affecting electricity production.

- **Detrimental to credit health** – As rising food inflation and decline in income may spark social unrest.

What are measures taken by India?

- **Recycling waste water –** The government has planned to triple the _wastewater recycling to 70%_ by the end of the decade.

  o Experts say nearly 90% of water supplied to homes can be recycled.

- **Controlling fresh water extraction** – Steps are being taken to reduce the extraction of fresh water from groundwater, rivers, and lakes to less than 50% from the current 66%, the highest rate in the world, by the end of the decade.

- **Improving agricultural practices** – A national village-level program will be launched this year to _recommend crops to farmers based on local water availability_.

- **Lake Refurbishment and construction** – The government has ordered the building or refurbishing of at least 75 lakes in each of the 785 districts, with work started or completed on more than 83,000 lakes to help recharge the water table.

- **Rural tap water program** – Since 2019, the government has launched a nearly $50-billion program to provide all rural households with tap water, increasing coverage from 17% to 77% of over 193 million households.

- However, not all pipes have water, according to residents and experts.

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- **Urban sewage treatment capacity** – The government is expanding sewage treatment capacity to increase the recycling rate in urban areas from 44%, enabling more water to be used in industries, agriculture, and other sectors.

- **Investment in Water Distribution and Reuse** – Between 2021 and 2026, the government plans to invest about $36 billion to ensure equitable water distribution, wastewater reuse, and the mapping of water bodies.

India's Water Status — India lags globally on water recycling, efficiency

	Domestic wastewater treated	Value add from the use of water per cubic meter	Renewable water withdrawn
India's current levels	21%	$3	66%
India's 2030 target	70%	$6	50%
China	62%	$26	42%
USA	98%	$43	28%
Germany	99%	$108	34%

What lies ahead?

- **Increase financial support** - In the long term, investment in water management can mitigate risks from potential water shortages.

- **Modernize sanitation policies** - India needs modern sanitation policies *to conserve and wisely use water sources*.

- **Capacity building of users** - Common Sense Practices and Training can help protect groundwater sources.

- **Follow best practices** – Updating irrigation techniques and rainwater harvesting can help preserve freshwater sources.

11.3 Great Indian Bustards' Recovery Program

Why in news?

Recently, the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) has recently approved Rs 56 crore for the next phase of the conservation of Great Indian Bustard (GIB) and Lesser Florican.

Discuss about Great Indian Bustard (GIB)?

The shaded area shows GIB's habitat in the wild

- **GIB** – Great Indian Bustard is an avian species.

- **Scientific Name** – Ardeotis nigriceps

- **Population** – There are *currently less than 200 GIBs* in India.

- **Distribution range** – Over 120 Bustards are found in the desert and semi-arid landscape of ***Rajasthan*** alone.

- *Gujarat, Maharashtra, Karnataka, and Andhra Pradesh* are the other range states.

- *Madhya Pradesh*, another range state, has not recorded a Bustard sighting for several years.

- They are the largest among the four bustard species found in India and also the heaviest bird with flight.

- **Characteristic Features** –They have a *black crown on the forehead* contrasting with the pale neck and head.

- The *body is brownish* and the wings are marked with black, brown and grey.

- Dimorphism – Males and females generally grow to the same height and weight but *males have larger black crowns* and a black band across the breast.

- *Males have a gular pouch*, which helps produce a resonant booming mating call to attract females and can be heard up to a distance of 500 metres.

- These birds are opportunist eaters whose diet ranges widely depending on the seasonal availability of food.

- **Protection status**

  o **Indian Wildlife (Protection) Act, 1972** – Schedule I

  o **CITES** – Appendix I

Four Bustard Species in India
• Great Indian Bustard
• MacQueen's Bustard
• Lesser Florican
• Bengal Florican

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- o **IUCN Red List** – Critically Endangered

- **Significance** – It is a large bird found only in India.

- It is known to be a ***key indicator species of the grassland habitat***, which means its survival also signals the health of grassland habitats.

What are the major causes of decline of these species?

- **Loss of habitats** – *Conversion of grasslands and scrublands into agricultural fields* has resulted in the loss of natural habitats.

- **Disrupted migration route** – Infrastructure projects like roads, buildings, and wind turbines *disrupt the habitats and migration routes* of the GIB.

> *Over the past four decades, the population of Great Indian Bustard has declined steadily from being in the range of 700 individuals to less than 150 as of today, as per the Rajasthan Forest Department.*

- **Hunting and poaching** – Historically, hunting for sport and meat significantly reduced their numbers.

- Though hunting is now illegal, *occasional poaching still occurs*.

- **Predation** – Increase in population of predators like feral dogs and foxes in the bustard's habitat, often due to human activity, has led to *higher predation rates on eggs and chicks*.

- **Pesticides and agrochemicals** – The use of pesticides in agricultural fields can *poison the birds directly* or *reduce the availability of their insect prey*.

- **Collisions with Power Lines** – The poor frontal vision of the GIB's and their inability to swerve away from overhead power lines in their flying path are leading to their collision.
  - o A 2020 WII study estimated that ***18 GIB's die annually due to collision*** with overhead high-tension power lines in the Thar landscape.

- In the case of low-voltage lines, electrocution is often the cause of death due to smaller phase to phase separation distance.

- High voltage lines do not cause death due to electrocution but cause death due to collision.

What are the conservation measures taken by India?

- **National Bustard Recovery Plan** – It is the plan to recover the species which was first *started in 2013*.

- **Bustard Recovery Project** – It was launched *in 2016*, planned by the Rajasthan government as well as the Environment Ministry.

- The Compensatory Afforestation Fund, which consists of money collected for afforestation in lieu of diversion of forests for non-forest uses, funded this project.

- **Tripartite agreement** – In 2018, a tripartite agreement was signed between the Ministry of Environment, Forest and Climate Change, Rajasthan Forest Department and Wildlife Institute of India (WII).

- This involved the following conservation measures
  - o Opening long-term *conservation breeding centres* (CBC) in Ramdevra and Sorsan
  - o Implementing field research projects such as *telemetry-based bird tracking* and population surveys
  - o *Habitat management* as well as *outreach to local communities*.

> *The scientific reasoning behind creating a founder population is to have a minimum viable population to prevent the probability of extirpation of the captive population and to capture the genetic variability of the source population.*

- **Recovery program** – It was prepared by Wildlife Institute of India (WII), an autonomous body under the Union Environment Ministry.
  - o Rewilding Bustards bred in ex-situ conservation centers.
  - o Conducting detailed population studies in Rajasthan and other Bustard range states.
  - o Developing artificial insemination techniques

> *The WII has been collaborating with the Abu Dhabi-based International Fund for Houbara Conservation for the artificial insemination.*

- While the total length of the next phase of the GIB and Lesser Florican conservation **_is 2024-2033_**, the immediate _next phase will run till 2029._

- **Hotspot mapping** – WII has mapped the threats posed by power lines and renewable infrastructure across the 20,000 sq km GIB landscape.

- **Control of predators** – In collaboration with Humane Society International, _801 dogs were sterilized_ in 23 villages in and around the Desert National Park in 2018-19.

- Predators such as monitor lizards, foxes and dogs were also _captured and translocated_ from Bustard breeding areas, as per WII's annual report on the recovery program.

- **Supreme Court** – It had constituted an _expert committee_ to determine the "scope, feasibility and extent" of overhead and underground electric lines in the area.

- It also recognised the _right of the people against adverse impacts of climate change_ as part of the _fundamental right to life_ and _right to equality._

Conservation Breeding
- It is the process of artificial breeding where birds from the wild are caught and mating takes place in a natural habitat.
- The second generation of these birds are released into the wild.
- In case of Great Indian Bustard, second generation birds will be given to participating states like Gujarat.
- The states will then take up their own breeding programmes.

What lies ahead?

- Restoring degraded grasslands and traditional GIB habitats by controlling invasive species, reducing grazing pressure, and implementing sustainable land-use practices.

- Establishing breeding centers, such as the one in Jaisalmer, Rajasthan, focuses on increasing the number of GIBs through controlled breeding efforts.

- Installing bird diverters on power lines to make them more visible to the GIBs, reducing the risk of collision.

11.4 Environment and Climate Rights in India

Why in news?

In its recent judgment in M.K. Ranjitsinh and Ors. vs Union of India & Ors., the Supreme Court of India has made a significant impact on the developing field of climate change law in the country.

What encompasses environment and climate rights?

- **Environment & Climate rights** - It encompass the **_legal and ethical responsibilities_** related to climate change and environmental protection.

- **Objective** – It aims to ensure that individuals and communities have the _right to a healthy environment_ and that the government and corporations are held accountable for environmental degradation and climate impacts.

- **Facets of climate rights**
    o Right to life
    o Right to livelihood
    o Right to access clean water and sanitation
    o Right to health and well being
    o Right of migrated and displaced people
    o Right of indigenous people rights

What are measures taken by India in providing environment and climate rights?

- **Constitutional provisions** – Environment and climate rights are enshrined in the fundamental rights and directive principles of state policies (DPSP) and in fundamental duties.

- **Fundamental rights** – _Article 21_ guarantees the fundamental right to life, which has been expanded to include the right to a clean and pollution-free environment.

- **DPSP** - _Article 48A_ directs the State to protect and improve the environment and safeguard the forests and wildlife.

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- **Fundamental duties** - _**Article 51 A (g)**_ imposes a fundamental duty on citizens to protect and improve the natural environment, including forests, lakes, rivers, and wildlife.

- **Legal measures** – In pursuant to the Constitutional mandate, government have framed many statutory acts in this regard.

Constitutional Measures	Legal Measures
• Article 21 of Fundamnetal Rights • Artcile 48A of DPSP • Artcile 51A(g) of Fundamental Duty	• Environment Protection Act 1986 • Water Act, 1971 • Air Act, 1981 • Forest Conservation Act, 1980

- **The Environment Protection Act, 1986** – It provides the framework for the protection and improvement of the environment and the prevention of hazards to human beings, other living creatures, plants, and property.

- **Air (Prevention and Control of Pollution) Act, 1981** – It regulates air pollution and sets standards for air quality.

- **Water (Prevention and Control of Pollution) Act, 1974** – It regulates water pollution and aims to maintain or restore the wholesomeness of water.

- **Forest Conservation Act, 1980** – It provides for the conservation of forests and regulates deforestation.

- **Policy initiatives** – Central government have adopted _**National Environment Policy 2006**_ whose characteristics are as follows

  o The conservation of critical environmental resources

  o Intra- and inter-generational equity

  o The integration of environmental concerns in developmental policymaking

  o Efficient resource utilisation and good governance.

- **Judicial measures** – Through various judgements, Indian judiciary have introduced various principles that were integral to Indian environmental policy.

- The Supreme Court (SC) in the _**Oleum Gas Leak case**_ evolved the _"absolute liability" principle,_ which makes an enterprise engaged in hazardous or inherently dangerous activity accountable and absolutely liable for compensation, despite all reasonable care.

- **Regulatory bodies** – Several bodies administer and enforce environmental laws in India

  o _Ministry of Environment_, Forest and Climate Change (MoEFCC)

  o Central _Pollution Control Board_ (CPCB)

  o State Pollution Control Boards (SPCBs) of each state

- There are also _special regulators_ for biodiversity, clean development mechanism, coastal zone management and forest preservation.

- **Quasi-judicial bodies** – A _special tribunal, **the National Green Tribunal (NGT)**_, was established in 2010 to speedily dispose of cases relating to environment protection, conservation, and granting relief in environmental matters.

- It has taken a rather strict approach towards ensuring compliance with environmental law.

What are the Landmark Judgments in India regarding environment rights?

Judicial Cases	Climate Rights
Rural litigation and Entitlement Kendra vs. Uttar Pradesh (1985)	Right to decent environment
MC Mehta v. Union of India (1987)	Absolute liability for hazardous activities,
Subhash Kumar v. State of Bihar (1991)	Right to pollution-free water and air under Article 21.
Vellore Citizens' Welfare Forum v. Union of India (1996)	'Precautionary Principle' and 'Polluter Pays Principle'
T. N. Godavarman Thirumulpad v. Union of India (1996)	Forest conservation and judicial oversight
M.C. Mehta v. Kamal Nath (1997)	Public trust doctrine

S. Jagannath v. Union of India (1997)	Environment Impact assessments (EIA)
Narmada Bachao Andolan v. Union of India (2000)	Displacement people's rights
Indian Council for Enviro-Legal Action v. Union of India (1996)	Enforced the 'Polluter Pays Principle'
M.K. Ranjitsinh and Ors. vs Union of India & Ors. (2021)	Right to be free from the adverse effects of climate change

Discuss about various peoples movement in India for environment protection?

- **Chipko movement (1970s)** - Villagers _hugged trees_ to prevent deforestation in _Uttarakhand_, sparking global environmental activism.

- **Narmada Bachao Andolan (1985)** - Protested against large dams on the Narmada River, highlighting _issues of displacement and environmental impact_.

> _Article 14 of Indian Constitution establishes equality before law and provides equal protection of law to all._

- **Jal Satyagraha** - Farmers in _Madhya Pradesh_ protested the _Narmada Dam's_ effects on displacement, pushing for better rehabilitation.

- **Save the Western Ghats movement** - Campaigned to protect the Western Ghats from industrial threats, advocating for stricter environmental measures.

- **Climate Strike and Fridays for Future** - Indian youth joined global climate strikes to demand stronger climate action and policy changes.

- **Adivasi movements** – Indigenous communities defend their lands and forests from exploitation, emphasizing traditional knowledge and rights.

- **Ganga Bachao Andolan** - Focuses on _cleaning and conserving the Ganges River,_ involving local communities.

- **Green Thumb Movement** - Promotes _urban gardening_ and tree planting, encouraging local action for climate resilience and sustainability.

11.5   Waste Shipments and Waste Trafficking

Why in News?

India, Turkey, Indonesia raise concerns over EU's regulation on waste shipments at the WTO Committee on goods.

What is a waste shipment?

- **Waste** – It is any _unwanted or unuseful material_.

- These are objects that have been discarded since these materials aren't functioning anymore.

- Economic growth and globalisation have led to a worldwide increase of waste transport across borders, by road, rail and boat.

- **Waste shipment** - Waste exports and imports are called waste shipments.

- Waste shipments must follow rules called waste shipment controls.

- **Waste shipment controls** - Rules for importing and exporting waste apply in

  o   The country where the shipment starts

  o   The country where the shipment ends

  o   Any country the waste passes through on its intended journey (known as 'transit countries')

- **Significance** – _Exporting countries can sell their trash for money_.

- _Importing countries profit more_ from this waste material through recycling and up cycling.

- It also _enhances international ties_.

- Many wealthy countries transfer their recyclable waste to other countries because it is less expensive, helps them meet their recycling targets, and reduces local landfill.
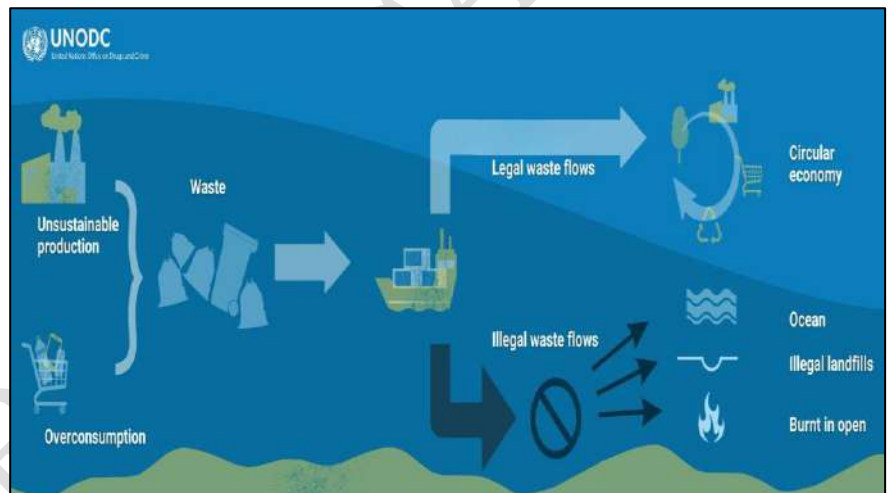
- It contributes to the *preservation of the Earth's natural equilibrium*.

What are the new EU regulation on waste shipments?

- **Waste exports from the EU to non-EU countries** – It have increased by 72% since 2004, amounting to 35 million tons per year in 2023, per the EU.

- **Importing countries** - *Turkey was the largest recipient* importing a volume of 12.4 million tonnes.

- *India was the second-largest destination* for waste exported from the EU in 2022, receiving 3.5 million tonnes of waste from the bloc, per EU data.

- **New regulations** – Exports of EU waste to non-OECD countries will *only be allowed* if these countries inform the European Commission that

   o They are *willing to import waste*

   o They demonstrate that they have the *ability to manage it in a sustainable manner*

- These new requirements will apply from May 21 2027.

- **Objective** – To ensure that countries importing EU waste are able to show that their regulations lead to a similar level of environmental protection.

- It has provisions would ensure that the conditions under which the waste imported by other countries were broadly equivalent to those in the bloc.

What is waste trafficking?

- **Waste trafficking** – It is *the illegal trade of waste* which is widely considered a high-profit, low-risk crime worth billions of dollars per year.

- **Trafficked waste** – It includes *plastic, e-waste, metal, and paper,* with mixed materials, *textiles, vehicle parts, industrial and medical* waste.

- **Flow of wastes** – Illegal waste typically flows *from higher-income countries* in Europe, North America and Asia to middle and lower-income countries in Southeast Asia, South Asia, and Africa.

- **Vulnerable regions** - The *ASEAN region* has been a prominent destination for illegal waste shipments in the past years.

- *Malaysia, Indonesia, Viet Nam and Thailand* in particular have faced challenges due to increased waste imports.

- **Impact on importing nations** – Upon arrival at destination, take-back or repatriation procedures are a major challenge as shipments often cannot be traced to their countries of origin.

- Abandoned or unclaimed containers at ports exacerbate the issue, further complicating enforcement and investigation efforts.

- **Environmental and health hazard** - Most waste ends up in illegal landfills, the ocean, or burnt in the open which can affect human health and damage ecosystems.

- **Hinders economic development** – It deters development, intensifying economic disparities, or hurting people's livelihoods.

> *The circular economy promotes the share, repair, reuse, recycling, and reduction of materials.*

- **Undermine transition to circular economy** – Waste trafficking can prevent waste from being re-used or re-purposed leaving the demand for raw materials unchanged.

What are the challenges in controlling waste trafficking?

- It is *hard to detect, investigate, and prosecute*.

- **A cyber-enabled crime** – *E-commerce platforms and social media* can help facilitate illegal waste trade transactions.

- **Lower penalties** – Penalties are *not as high* as those for the trafficking of other illicit goods like drugs, thus making it an attractive business for criminals.

- They are *usually unproportioned to the damage caused*.

- **Different definitions of waste** – *Different countries have different interpretations* of legal definitions of waste, leading to varying levels of enforcement.

- **Inconsistent waste regulations** - They are *complicated and inconsistent across borders*.

- Criminal actors exploit these loopholes to conduct their illicit activities.

- **Corruptions** – Common tactics include false declarations, a lack of or incorrect notifications to circumvent regulations and avoid controls, along with missing or inadequate licenses or documents.

> *India faces environmental and safety concerns as around 8.8 lakh million tonnes of waste tyres, mainly from developed countries, are dumped, burnt, or retreated for resale in the aftermarket.*

What are measures taken to control waste trafficking?

- **Global initiatives** – The UN Office on Drugs and Crime (UNODC) developed a Legislative Guide on Waste Trafficking.

- It is to support States in enacting or strengthening domestic legislation to prevent and combat waste trafficking.

- **UNODC Unwaste project** – It is funded by the European Union (EU) and implemented in cooperation with the UN Environment Programme (UNEP).

- It aims to fight waste trafficking between the EU and Southeast Asia by supporting the transition towards a circular economy.

- **Mapping waste trafficking** – A first-ever mapping of waste trafficking trends from Europe to Southeast Asia has been published *by the UNODC and the UNEP*.

- **Basel convention** – It controls the *transboundary Movements of hazardous wastes and their disposal*, which was adopted in 1989.

- It *aims to reduce hazardous waste generation* and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal.

What lies ahead?

- Pursue good environmental governance and robust environmental rule of law.

- Promote Projects such as Unwaste in tackling issues through a multi-sector, multi-disciplinary approach.

- There should be transparency on how a country could be listed as an eligible one for exports.

- Hindrances should be minimised for countries that want to obtain waste for reuse as raw materials and excessive administrative and certification requirements should be avoided.

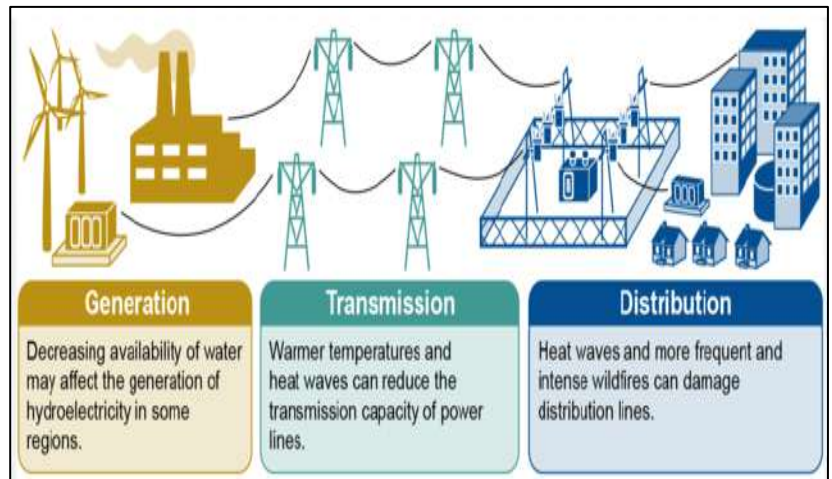## 11.6   Climate Change and Electricity

Why in news?

The Power Ministry needs to reassess the National Electricity Plan (NEP) due to increased electricity demand and consumption from rising heat waves and humidity in recent years.

What are the impacts of climate change on electricity?

- **Higher demand & consumption** - Warmer temperatures lead to increased use of air conditioning, raising overall electricity demand, especially during peak summer periods.

- **Increased transmission Losses** - Elevated temperatures increase resistance in power lines, leading to higher transmission losses.

- **Cooling water shortages** - Reduced water availability can lead to operational restrictions or shutdowns.

- Thermoelectric and nuclear power plants require significant amounts of water for cooling.

- **Damages infrastructure** - Hurricanes, storms, and floods can damage power lines, substations, and generation facilities, leading to outages and costly repairs.

- **Risk of blackouts** - Extreme weather increases the risk of blackouts and requires investments in grid resilience.

- **Reduces efficiency** - Higher temperatures reduce the efficiency of power plants.

Generation	Transmission	Distribution
Decreasing availability of water may affect the generation of hydroelectricity in some regions.	Warmer temperatures and heat waves can reduce the transmission capacity of power lines.	Heat waves and more frequent and intense wildfires can damage distribution lines.

What is National Electricity Plan (NEP)?

- **Launch** – The first NEP was *formulated in 2005*.

- **Preparation** - *Electricity Act, 2003* mandates that the central government shall prepare the NEP in consultation with the state governments and the Central Electricity Authority.

- **Aim** – To meet the energy needs of high economic growth & electricity consumption of about 1.3 billion people.

- The capacity additions forecasts considered the impact of factors like

    o Energy efficiency

    o Penetration of electric vehicles

    o Production of green hydrogen on peak and energy demands.

Status of Electricity in India (2005-2021)

- **Generating capacity** – Between 2005 and 2021, generation capacity (inclusive of renewable capacity) has *gone up by about 251 GW*.

- **Renewable energy** – The renewable generating capacity has *gone up to 94 GW* (from wind, solar, small hydro and biomass) from almost nothing.

- **Per capita consumption** – It has *almost doubled* from 630 units to *approximately 1,200 units today*.

- **Rural electrification** – It is almost complete with *near 100% electricity access* to households (not necessarily 24 hours supply).

- **Policy revision** – The Ministry of Power revisits the NEP every five years to forecast the country's power generation, transmission and demand trajectory for the coming decade.

- In May 2023, the Central Electricity Authority notified the NEP (Vol-I Generation) for the period 2022-32.

Why NEP needs to revised?

- The *constantly-evolving weather patterns* have skewed the government's electricity demand projections.

- **In 2024** – There has been an *exceptional rise of weather-related energy consumption*.

- April-June was marked by sweltering temperatures coupled with intense heat waves across North India leading to a higher requirement for pushing up electricity demand.

- **Increased power consumption** - During April 2024 power consumption rose 11% year on year.

    o The growth in May was steeper at 15% and in June, the usage rose roughly 9%.

- **Mismatch in the demand projections** – For instance, the Ministry projected a peak demand (day) of 235 GW during May, but it hit an all-time high of 250 GW on May 30.

- The projection for June was 240 GW, but the demand went up to over 245 GW.

- **Sector wise changes** - Farm sector is experiencing changes in consumption patterns because the country is trying to meet agriculture demand during the day, which means that *demand will shift from night to day*.

What lies ahead?

- **Evaluate requirements** – On how our demand is evolving and what sectors are likely to contribute significantly.

- **Assess overall capacity requirement** – This can address varying levels of demand on monthly, weekly, daily and hourly bases, including seasonal variations.

- This is crucial for ensuring grid stability and reliable power supply.

- **Analyse the mix of power plants** – Both scheduled and intermittent plants have to be analysed.

- **Increase the capacity** – The peak demand could surpass 400 GW by 2032 and thus we need to have 900 GW of total installed capacity by 2031-32 and that
- **Save energy** – Individuals and companies can take many actions to save energy.
  - For example, look for ENERGY STAR certified products, such as appliances and electronics.
- **Expand access to clean technologies** –Promote wind and solar power, so that all communities benefit.
- This transition will help reduce the emissions contributing to climate change.
- **Modernize infrastructure** - Utilities and government agencies can update energy infrastructure, such as _leak-prone pipelines and aging power lines_.
- These actions increase resiliency, improve safety, and protect public health.
- **Ensure energy equity** - Policymakers, industry leaders, and communities can take steps to improve energy affordability and ensure all people have a voice in energy planning.
- **Make infrastructure local** - Utilities, urban planners, and government agencies can use microgrids.
- These systems and other decentralized energy infrastructure help make electricity supplies more resilient to extreme weather.

11.7   Gas Based Power Plants

Why in news?

Heat waves push gas-based power plants capacity to a five-year high in May 2024.

What is Gas Based Power Plants?

- **Gas-based power plant** – They generate electricity by burning gas as their fuel and thus it is also known as a gas-fired power plant.
- **Sources** - Natural gas or methane gas primarily while sometimes other gases like propane or butane.
- **Power generation** – These plants generate almost 25% of world electricity.
- **Working principle**– They use gas turbines or gas engines to convert the energy from burning gas into mechanical energy, which is then used to generate electricity through an alternator or generator.

- **Components** – Air, gas fuel, compressor, combustion chamber, gas turbine, alternator and starting motor.
- **Working** – It takes in air from the atmosphere through air filter which is compressed to very high pressure.
- _Fuel and compressed air is fed to combustion chamber_ and burned inside.
- Compressed air expands inside gas turbine chamber and the _turbine rotates the generator coupled to it_.
- _Alternator_ connected to gas turbine _produces electricity_.
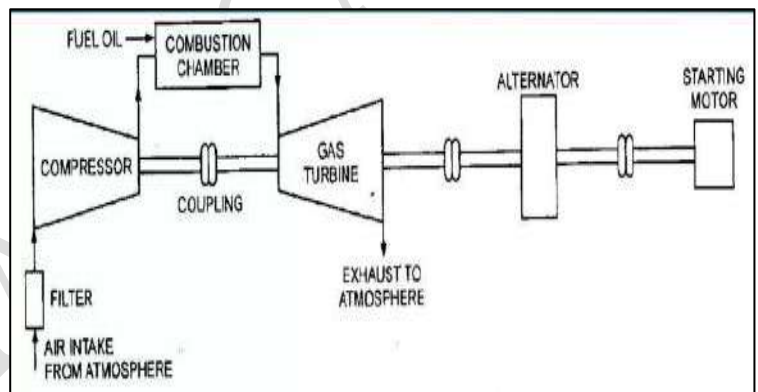
Advantages of Gas Based Power Plants
- **Less emissions**- It contributes to cleaner air and reduced environmental impact.
- **Higher efficiency**- It can achieve high efficiency rates, making them cost-effective for electricity generation.
- **Reliability**- Gas supply networks are generally more reliable than other fossil fuels, ensuring consistent power generation.
- **Less space requirement**- They typically require less physical space compared to coal plants, making them easier to site.
Disadvantages of Gas Based Power Plants

- **Dependence on fuel**- Gas availability and price fluctuations can affect operational costs and stability.

- **Infrastructure costs**- Initial setup costs can be high, especially for combined cycle plants that require additional equipment.

- **Environmental Impact**- While cleaner than some alternatives, they still produce greenhouse gases & contribute to global warming.

- **Higher water use**- Some gas plants require significant water for cooling purposes, impacting local water resources.

- **Noise Pollution**- Gas turbines can produce significant noise during operation, affecting nearby communities.

How gas based power plants differ from coal based plants?

	Gas-Based Plants	**Coal-Based Plants**
Fuel Source	Gas	Coal
Fuel Supply	Generally, more stable supply	Susceptible to supply chain disruptions
Efficiency	Higher efficiency in converting fuel to electricity	Lower efficiency compared to gas-based plants
Emissions	Lower emissions (CO_2, SO_x, NO_x)	Higher emissions, especially CO_2
Environmental Impact	Generally considered cleaner	Higher environmental impact due to emissions and mining
Flexibility	More flexible for rapid startup and shutdown	Less flexible, longer startup and shutdown times
Power Output	Typically, lower power output per unit compared to coal	Higher power output per unit

What is the status of gas based plants in India?

- **Needs** – India faces a surge in electricity demand, especially during the upcoming summer season.

- It can be an ideal transition fuel for the shift from coal-based generation to renewable energy in the Indian power sector.

- It helps India in achieving the target of increasing the share of non-fossil fuel, especially renewables, in power generation to 50% by 2030.

- **Rules** – These plants are mandated by the Government under the Electricity Act to operate as directed in exceptional circumstances.

- **Monitoring authority** - The Central Electricity Authority under Ministry of Power.

- It monitors 62 gas based power stations, with a total capacity of 23,845 MW using gas as primary fuel.

- Generation - Gas-based power generation spiked significantly, up 83% year-on-year and 39% month-on-month, totalling 2.8 billion units (BU) in June 2024.

- **Concerns** - A significant portion of the **Gas-Based Generating Stations (GBSs)** is currently unutilized, primarily due to commercial considerations.

The International Energy Agency forecasts India's gas demand to grow by 7% in 2024, while the Gas Exporting Countries Forum predicts a 6% increase.

Gas-based power generation

May	PLF (%)	Power generation (MU)	Gas consumed / supplied (MSCMD
2024	28.7	5,053.41	36.35
2023	15.9	2,818.90	21.20
2022	13.9	2,457.18	18.44
2021	20.4	3,446.45	24.86
2020	28.9	5,152.02	35.36
2019	25.0	4,439.81	31.68

What are challenges in implementing it in India?

- **Higher dependence on imports -** Dependence on imported liquefied natural gas (LNG) makes the cost of power generation vulnerable to global price fluctuations and supply chain disruptions.

- **Limited infrastructure-** India's current pipeline infrastructure is limited and needs expansion.

- **Environmental Concerns-** While cleaner than coal, gas-based plants still emit greenhouse gases.

- Meeting stringent emission norms adds to costs and operational complexities.
- **Policy & regulatory challenges-** Inconsistent policies, including pricing mechanisms, subsidies, and regulatory approvals, can deter investments and project viability.
- **Lack of technology and expertise-** Advanced technology is needed for efficient gas *__turbine operations and integrating renewable__* energy sources.
- There is also lag in significant expertise and investment.

What are the steps taken by India?

- India aims to attach all Indian states with the trunk natural gas pipeline network by 2027.
- **Policy reforms** – Regulations like New Domestic Gas Pricing Guidelines (2014) and the Hydrocarbon Exploration and Licensing Policy (HELP) aims to to offer pricing incentives for home fuel producers at the same time as balancing the pursuits of purchasers.
- **Infrastructure development** – Pradhan Mantri Urja Ganga (PMUG), launched in 2016 aims to increase the natural fuel pipeline infrastructure.
- **Funding** – Created Natural Gas Infrastructure Development Fund (NGIDF) to offer financial aid for the improvement of natural gas infrastructure in India.
- **Distribution network** – Measures taken to expand City Gas Distribution (CGD) network throughout India to increase access to piped natural gas (PNG) for families, industries, and business institutions.
- **Developing gas terminals** – Promoting of LNG imports terminals to diversify gas supply resources and decorate energy security.
    - Natural gas is imported across *__3 main hubs__* located at Dahej and Hazira in Gujarat, and Kakinada in Andhra Pradesh.
- **Indian gas exchange (IGX)** – It is India's first gas exchange, a digital platform allowing to buy and sell natural gas in the market.
- **Gas Index of India (GIXI)** – It is the first ever, nationwide price index to reflect benchmark natural gas price for India which is launched by IGX.

What lies ahead?

- Encourage the exploration and development of domestic gas reserves to reduce reliance on imported gas and mitigate price volatility.
- Develop infrastructure for transporting gas efficiently across the country to ensure a steady and reliable supply to power plants.
- Provide long-term policy certainty and incentives for investment in gas-based power generation, including tax breaks, subsidies, and assured purchase agreements

11.8	Plastic Recycling

Why in news?

Evidence shows that current recycling practices are insufficient and often counterproductive.

What is plastic recycling?

- **Plastic** – They are a wide range of synthetic or semi-synthetic materials that use polymers as a main ingredient.

- It can be molded, extruded or pressed into solid objects of various shapes.

> *To date, over 10 billion metric tons of plastic have been produced worldwide, with plastic production increasing by more than 18,300% in the past 65 years.*

- **Plastic recycling** - It is the process of *recovering scrap plastic* and *reprocessing it into useful products*.

- **Need** – Most of that plastic ends up *burned, buried in landfills or dumped* in the environment.

- Most plastics are made from petroleum products and are *non-renewable* making it difficult to decompose.

- Thus, recycling can extend the life of these materials and *decrease the need for new production*.

- **Mechanical recycling –** It is the process of recovering plastic waste by mechanical processes such as sorting, washing, drying, grinding, re-granulating and compounding.
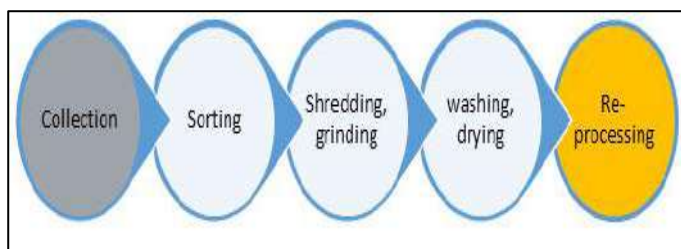
- **Chemical recycling** – A process where _plastic is broken down_ into its component parts and used to make new materials.

- It complements mechanical recycling processes by enabling the further _extraction of value from polymers_ that have exhausted their economic potential for mechanical processing.

    o **For example**: _Gasification, pyrolysis,_ hydrothermal treatment

- **Biological recycling** – A process of plastic waste transformation that implicate the action of microorganisms or molecules produced by those in useable resources such as compost or biogas.

- **Composting** – A process in which organic substance is degraded and stabilised in the _presence of oxygen_ through different microorganisms, obtained as a final product compost.

- **Anaerobic degradation** - A process in which the plastic substance is completely degraded in the _absence of oxygen_.

- **Enzymatic recycling** - A process in which plastic materials are _partially degraded_ by the action of different enzymes produced principally _by fungus and bacteria_.

    o **For Example**, the _bacteria Ideonella sakaiensis_ secretes a notable PETase enzyme that can break down PET plastic.

- **By-products** - Heat, carbon dioxide, water vapor, and humus, like composting.

- **Recyclable plastics** – _PET, or polyethylene terephthalate_ can be recycled into new bottles and containers, or it can be turned into other products like carpeting or clothing.

- _High-density polyethylene (HDPE)_ is another common type of recyclable plastic.

Category	India	Worldwide
Total Plastic Waste	Approximately 7.4 million tonnes per year (2024)	Approximately 220 million tonnes per year.
Plastic Waste Recycled	Only 8% of its plastic waste	Only around 9% of all the plastic waste generated globally
Plastic Waste Mismanaged	68.62% of generated plastics waste is being mismanaged	Oman tops the list of countries in terms of mismanaged plastic waste.
Single-Use Plastic Ban	Banned selected 19 single-use plastic items with effect from 2022.	Bangladesh became the first country to ban thin plastic bags in 2002.
Per Capita Plastic Waste	15 kilograms per person in 2021.	Global average is around 28 kg.

What are the benefits of plastic recycling?

- **Reduces pollution** - Recycling plastic helps reduce pollution caused by the disposal of plastic waste in landfills and oceans.

- **Reduces waste management costs** - Reducing the volume of waste sent to landfills lowers waste management costs for municipalities.

- **Conserves energy –** It also reduces the need for virgin materials to be used in producing new products, which can conserve resources and save energy.

- **Mitigates climate change** - It reduces the amount of waste plastic sent to landfill, where it can take hundreds or even thousands of years to decompose.

- **Promotes circular economy** - Recycling plastics promotes the concept of a circular economy where materials are reused and recycled, contributing to sustainable development.

- **Create employment opportunities** - Recycling plastic can create jobs in the recycling industry and help to boost the economy.

What are the challenges in plastic recycling?

- **Lack of R&D** - To restore some of the useful properties of recycled plastics, manufacturers often need to mix in virgin plastic and / or toxic additives.

> *It is estimated that only 9% of all the plastic ever produced has been recycled, with the remaining 91% ending up in landfill or being incinerated.*

- **Lack of standards** - There is a lack of uniform standards and regulations for plastic recycling, leading to inconsistencies in practices and outcomes.

- **Inefficient waste segregation** – Mixed waste streams often result in contamination, reducing the quality and value of recycled plastic.

- **Lower demand for recycled plastics** – It is due to concerns about quality and performance compared to virgin plastics.

- **Contains toxic materials** - Recycled plastics frequently contain a toxic cocktail of chemicals, making them unsuitable for many applications, particularly food and beverage packaging.

What is plastic waste trade?

Plastic Waste Trade	
	Details
Beginning	It began in 1988.
Definition	It is the international trade of waste between countries for further treatment, disposal, or recycling.

Global Export Statistics	More than 250 million tonnes have been legally exported across the world.
Impact on Global South	Shifts the burden of plastic waste to the Global South, often becoming dumping grounds.
Environmental Consequences	Plastic waste is frequently burned in the open, releasing toxic pollutants and disproportionately affecting vulnerable communities.
Import in India	India imported around 121,000 metric tons of plastic in 2019, leading to a ban on plastic imports due to environmentalist objections.
Impacts	Import of plastic waste leads to severe environmental and health impacts, including polluted air and water, increased disease rates, and degraded living conditions.
Environmental Injustice	Communities near recovery facilities and recycling plants, typically underserved, face increased health risks including polluted air, soil, and drinking water, frequent fires, and exposure to hazardous materials.

What lies ahead?

- Prioritize reducing plastic production and supporting sustainable, reuse-based solutions.
- Restrict single-use plastics, incentivise reusable alternatives and promote equitable waste management practices.
- Encourage plastic-free habits at individual level in daily life.
- Emphasize on indigenous knowledge to use alternatives for plastics.

11.9   Tree Planting for Restoring Ecosystem

Why in news?

According to the World Bank, the world has lost about 10 million square kilometres of forests since the 20th century due to uncontrolled and unsustainable practices, severely degrading forest landscapes.

What is Forest degradation?

- **Forest** – It is a large geographical area dominated by trees, animals of various species, aquatic biomes and microorganisms.

- **Forest degradation** – It refers to the *reduction in a forest's capacity* to provide goods and services due to human activities or natural disasters.

- **Causes** – It primarily caused by *environmental and anthropogenic changes*, has the potential to wipe out the whole forest cover and biodiversity.

    o Forest degradation, for example, can occur when acid rain or wildfires devastate a forest region.

- **Illegal Logging-** Uncontrolled logging for timber, firewood, and charcoal significantly degrades forests.

- **Agricultural Expansion-** Clearing forests for cash crops and cattle rearing leads to substantial deforestation.

- **Mining and Infrastructure-** Mining and infrastructure projects cause tree loss and forest degradation.

- **Climate Change-** Rising temperatures, shifting rainfall, and extreme weather contribute to forest decline.

What is Ecosystem restoration?

- Ecosystem restoration – It involves assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

- **Objective**- It aims to *restore natural habitats* and also to ensure that ecosystems can sustain their functions and services over time, benefiting both nature and human well-being.

- **Methods of restoration**

    o **Reforestation-** Planting native trees in areas where forests have been cut down or degraded.

    o **Afforestation-** Planting trees in areas where there were no previous forests, creating new forested areas.

    o **Wetland Restoration-** Restoring natural hydrology, removing invasive species, and reintroducing native vegetation to revive wetland ecosystems.

    o **Soil Restoration-** Using techniques like contour plowing, terracing, and the application of organic matter to restore soil health and prevent erosion.

- **Significance**- Ecosystem restoration is key to achieving multiple SDGs, such as climate action, life below water, life on land, and poverty alleviation.

What is Tree planting?

Status of Forest degradation

- **India-**According to the Food and Agriculture Organization (FAO), *India lost 668,000 hectares of forest per year* between 2015 and 2020, which was the second highest rate of deforestation in the world, after Brazil.

- **Globally-** Since 1990, *420 million hectares of forest* have been lost to other land uses.

- Deforestation declined from 16 million hectares per year in the 1990s to an expected 10 million hectares per year between 2015 and 2020.

Decade on Ecosystem Restoration

- **Decade on Ecosystem Restoration -** *year 2021 to 2030*

- **Declared by-** United Nations (UN)

- **Target-** It target for the *restoration of 350 million hectares* of degraded land to *generate $9 trillion in ecosystem services* and sequester an additional 13 gigatons-26 gigatons of greenhouse gases from the atmosphere.

Measures by India for Improving Green Cover

- India aims to *restore 21 million hectares* of forest by 2030 through the Bonn Challenge.

- India's national forest policy *targets 33% tree coverage*.

- **National Afforestation Programme** (NAP)- Launched in 2000, aims to increase the forest cover in the country through afforestation and reforestation activities.

- **Green India Mission**- A part of the National Action Plan on Climate Change, focusing on increasing forest cover, enhancing biodiversity, and improving ecosystem services.

- **Tree Plantation Drives** – Van Mahotsav (Tree Plantation Day) celebrated in the first week of July.

- **Haritha Haram Program**- It is launched by Telangana to increase the green cover of the state through extensive tree planting activities.

- It refers to the *process of transplanting tree seedlings,* usually for forestry, land reclamation, or landscaping purposes.

- **Aim-** It aims at *restoring forests, increasing green cover*, and combating climate change.

- **Purify air –** Trees *absorb pollutants and produce oxygen*, improving air quality.

- **Mitigate global warming** – Trees *sequester carbon dioxide*, helping *mitigate climate change*.

- **Regulate local weather** – They also *influence local weather patterns* and reduce the urban heat island effect.

- **Preserve water** – Trees improve water infiltration into the soil, reducing runoff and preventing soil erosion.

> *In 2023, U.S. President highlighted that India is the only G20 nation meeting its Paris Agreement commitments, achieving a carbon sink of 1.97 billion tonnes of CO2 equivalent.*

- They also help maintain groundwater levels.

- **Support biodiversity** – They provide habitat and food for various species, supporting wildlife and maintaining ecological balance.

- **Boost economic activities** - Tree planting and forestry activities can create job opportunities in rural and urban areas.

- **Challenges** - Planting trees in inappropriate areas like grasslands and animal habitats can *harm ecosystems, increase wildfire risk, and worsen global warming.*

What lies ahead?

- *Use nature-based solutions*, like forest landscape restoration, can help reverse deforestation and degradation, restoring ecological, social, climatic, and economic benefits.

- *Reorient innovations* and strategies, supported by public awareness, social media, and community incentives, can transform forest ecosystems.

- *Follow effective post-planting care* and monitoring are crucial

11.10 Status of Deforestation

Why in news?

According to the recent State of the World's Forests 2024, global efforts curb deforestation but threats to forests from wildfires and pests remain.

What is deforestation?

- **Deforestation** – It is the large-scale removal of forests or trees from land which is then converted to non-forest use.
- It can involve the clearing of land for agriculture, logging for timber, or urban development.
- **Causes -** *Conversion of forests into agricultural* land to meet the food and commodity demand.
- *Commercial logging* for timber & wood products and clearing of forests for *mining operations*.
- *Infrastructure developments* like Urbanization, road construction, and building of dams.
- Both natural and man-made *fires* can lead to significant forest loss.
- **Impacts -** It results in the *permanent destruction of forests* and woodlands, impacting the environment and biodiversity.
- *Destruction of flora and fauna habitats* leading to the extinction of species.
- Loss of habitat and resources for indigenous people.

> *The State of the World's Forests (SOFO) report of Food and Agriculture Organisation (FAO) provides highlights on the state of the world's forests and builds on the FAO Science and Innovation Strategy to explore the transformative power of evidence-based innovation in the forest sector.*

- It *reduces carbon dioxide absorption* leading to increased greenhouse gases in the atmosphere.
- It *disrupts the water cycle* and affects the rainfall patterns and water supply.
- Loss of trees leads to *soil erosion* and degradation and higher likelihood of *floods and landslides* due to lack of tree cover.

What is the current status in relation to deforestation?

- The report, titled The State of the World's Forests, provides a comprehensive analysis of forest conditions and trends.

> *Global Forest Resources Assessment (FRA) is an initiative of FAO. It provides essential information for understanding the extent of forest resources, their condition, management and uses.*

- It estimated that between 1990 and 2020, approximately 420 million ha of forest were converted to land use.

- **Decrease in Deforestation** – The preliminary data from the Global Forest Resource Assessment (2025) show an 8.4% decrease in deforestation in _Indonesia_ for 2021-22 compared to 2020-21, the overall reduction was _recorded to be 90%._

- _Brazil, too, registered 50% decrease_ in deforestation in 2023 compared to 2022 in the Legal Amazon region.

Decade	Deforestation Rate
1990-2002	15.8 million ha per year
2015-2020	10.2 million ha per year

- **Decline in deforestation rates** – It is _lower than previous decades,_ with several countries showing significant improvements.

- **Reduced net rate of change in forest area** – It is the _difference between forest expansion and deforestation._

- It is estimated to be _lower in 2010-2020_, which was significantly _lower than in the two previous decades_.

- **Increase in Forest area** – It noted _10 countries recording annual gains_ in forest area in 2020.
    o It include China, Australia, India, Chile, Viet Nam, Turkey, the United States of America, France, Italy and Romania.

Decade	Net Rate of Change in Forest Area
1990-2000	-7.8 million ha per year
2000-2010	-5.2 million ha per year
2010-2020	-4.7 million ha per year

- **Decreased mangrove losses** – The _rate of gross global mangrove loss decreased_ by 23% between the two recent decades (2000-2010 and 2010-2020).

- _Asia was the major contributor_ to mangrove loss and gains owing to aquaculture, natural retraction, conversion to oil-palm plantations, rice cultivation and other agriculture uses.

- **Decreased mangrove gains** – The _rate of gain in mangrove area also decreased_ slightly.

- Extreme weather events due to climate change and sea-level rise threaten mangroves.

- **Increased resilience of mangroves** - Although the net change in mangrove area globally was negative between 2000 and 2020, the extent of _natural expansion surpassed the area lost to natural causes_ by 63% (294,500 ha compared with 186,200 ha).

How climate change accelerates deforestation?

- **Impacts of Climate change** - It is making forests more vulnerable to **_abiotic and biotic stressors_** such as wildfire and pests.

- **Increased wildfires** – The _frequency and intensity_ of wildfires is increasing, including in areas not previously affected, particularly _due to climate change and land-use change_.
    o About 383 million ha (equivalent to less than half the land area of Australia) of land were affected by fire in 2023 alone.

- It noted that the increasing intensity and frequency of wildfires are having _impacts at local, national and global levels_.

- Satellite data revealed that total fires in 2023 _emitted 6,687 megatons of carbon dioxide globally_.
    o **For instance**, the **_boreal fire in 2021_** contributed to about 10% of global carbon-dioxide emissions.

- **Threats from pests** – Climate change is making forests more _vulnerable to invasive species_.

- It causing changes in their _geographic distribution, seasonal phenology_ and in aspects of population dynamics.

- Insect pests and disease pathogens can _reduce tree growth and survival, wood quality_ and the provision of ecosystem services such as carbon sequestration.

- o **Pine wood nematode** made a significant damage to native pine forests in China, Japan and the Republic of Korea.

What lies ahead?

- Given rapidly changing environmental conditions and rising demands on forests, _more innovation is needed_ in the forest sector.
- Use technological innovations like promoting _open access to remote-sensing data_ to access high-quality forest data and improve forest management processes.
- Take efforts to better engage women, youth and Indigenous Peoples in _developing locally led solutions_.
- Follow _new forest and land management approaches_.
- Innovations in _public and private-sector finance_ to enhance the value of standing forests, boost restoration efforts and increase access to loans for smallholders for sustainable production.

11.11	Taxonomy for Climate Finance

Why in news?

The 2024 Union Budget features a plan to create a climate finance taxonomy, aiming to boost capital for climate adaptation and mitigation.

What is climate finance?

- **Climate finance** – It refers to local, national or transnational financing, drawn from public, private and alternative sources of financing that seeks to support mitigation and adaptation actions that will address climate change.

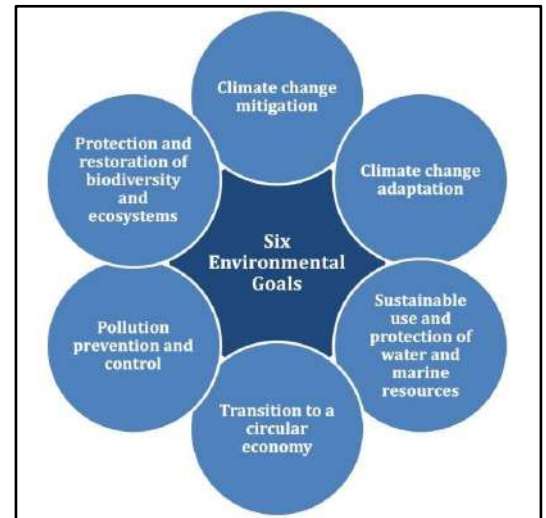| Sources of Climate Finance |
|---|
| • **Public Finance**- Government funds and international financial institutions (e.g., World Bank, IMF). |
| • **Private Finance**- Investments from private entities, including banks, corporations, and venture capitalists. |
| • **Blended Finance**- Combines public and private resources to leverage additional investment for climate initiatives. |
| Types of Climate Finance |
| • **Mitigation Finance**- Funds to re_duce or prevent greenhouse gas emissions,_ such as renewable energy projects, energy efficiency improvements, and sustainable agriculture practices. |
| • **Adaptation Finance**- Funds to projects that help communities & ecosystems _adapt to the impacts of climate change_. |
| • It is by building resilient infrastructure or developing drought-resistant crops. |

What is climate finance taxonomy?

- **Need of climate taxonomy**– _Diverse interpretations_ of what is considered "green" can _fragment markets and confuse_ investors.
- A _one-size-fits-all approach won't work_ in climate financing as local factors has to be considered.
  - o **For example**, different regions will have to adopt different pathways to reach the goal of limiting global warming to under 1.5 degrees C, as required under the Paris Agreement.
- **Climate finance taxonomy** – A system that classifies which parts of the economy may be marketed as sustainable investments.
- **Aim** – To _inform companies and investors_ on making impactful investments towards environmental conservation and combating the climate crisis.
- They are also known as _'green' taxonomies_.
- **Information provided** – It enlists about economic sectors & activities and corresponding criteria that determine if it aligns with larger climate goals.

- **Uses** – They are frequently used to _set standards_ for classifying climate-related financial instruments (e.g., green bonds).

- They serve other use cases where the benchmarking feature is viewed as beneficial, including in the areas of climate risk management, net-zero transition planning, and climate disclosure.

Why climate taxonomy is important?

- **Establish clear standards** – It ensures consistent definitions and classifications of what constitutes climate finance.

- **Guides investments** – It can _help investors and credit institutions_ based on how climate-aligned an entity or an activity is.

- It can also _help prevent greenwashing_ by companies by setting common standards based on scientific assessments.

- **Enable climate finances** – It helps in directing funds towards climate mitigation and adaptation projects.

- **Spur innovation** – By encouraging the development of new financial products and services that align with climate objectives.

- **Align with global goals** - A _localised climate finance taxonomy_ can also help align a country's climate goals _with the Paris Agreement_ and other international climate commitments.

- **Facilitate international cooperation** – It makes easier for countries and organizations to work together on climate finance initiatives.

> _According to the UNFCCC's first 'Needs Determination Report', financing of around \$5.8-5.9 trillion is required to implement developing countries' climate action plans by 2030, and this does not fully include adaptation costs._

- **Upholds transparency** – It ensures that investments are transparently & efficiently directed towards genuine green projects.

- **Enables accountability** – It help investors _compare investment_ opportunities and _measure their environmental impact_.

- **Promote social responsibility** – By encouraging investment in activities that support sustainable development like affordable housing, access to clean water, and sustainable agriculture.

> _Greenwashing is when an organization invests in marketing campaigns that position the company as environmentally friendly rather than actually minimizing its environmental impact._

How green taxonomy is relevant for India?

- **Need** – India needs a standardized framework
    - o To attract domestic and international investment
    - o To guide investments in sustainable projects
    - o To align funds with its national and global green transition commitments
    - o To boost economic growth while combating climate change

> _According to the International Finance Corporation (IFC), a member of the World Bank Group, India needs \$10.1 trillion to achieve net-zero by 2070_

- **Factors to be considered** – Cultural nuances, geographic issues, market intelligence, scientific temper and ability to keep it simple.

- **Steps taken** – In 2021, India formed a _task force on sustainable finance_ under the Ministry of Finance
    - o To develop a sustainable finance framework, roadmap, activity taxonomy, and risk assessment framework.

> _Many countries like China, Malaysia, and Sri Lanka have already issued green taxonomies to facilitate climate-sensitive investments. The European Union has a prominent Green Taxonomy._

- The Reserve Bank of India (RBI) *joined* the Central Banks and Supervisors Network for Greening the Financial System (*NGFS*).

- India has also become *part of a climate-related financial risks task force* under the Basel Committee on Banking Supervision (BCBS) and the International Platform on Sustainable Finance.

12.   SCIENCE & TECHNOLOGY

12.1   Digital Connectivity in Rural India

Why in News?

The Department of Telecommunications (DoT) has recently released draft rules to operationalise the Digital Bharat Nidhi.

What is Telecom and Digital connectivity?

- **Telecom & Digital connectivity** – A systems of *interconnected communication devices* and equipment that enable *people to communicate* with each other over long distances.

- They facilitate the transmission of *voice, data, and video* signals between devices, including smartphones, computers, and other communication devices.

- The foundation of digital transformation is telecom infrastructure.

  o   **Importance** – It allows extensive access, fast data transfer, and seamless communication.

- It propels the world's transition to a *digitally empowered society*.

- Integrating cutting-edge technologies like cloud computing, artificial intelligence, and the Internet of Things promotes *creativity* and *global connectedness* across sectors.

Status of Telecom and Digital Connectivity in India
• **Global position** – It secures 60th rank in Network Readiness Index 2023
• It secures 2nd rank in Mobile broadband internet traffic within the country and in International Internet bandwidth.
• **Telecom sector** – It is *2nd largest telecom industry* in the world.
• It is the *4th largest sector in terms of FDI inflows*, contributing 6% of total FDI inflow.
• 100% Foreign Direct Investment (FDI) has been allowed.
• It contributes directly to 2.2 Mn *employment* and indirectly to 1.8 Mn jobs.
• **Teledensity** - Telephone density is the number of telephone connections for every hundred individuals living within an area.
• India has an *overall tele-density of 85.76%*,
o   Rural market - 59.44%
o   Urban market - 133.42%.
• **Internet subscribes** - Till 2023, the total number of internet subscribers increased to 918.19 Mn (narrowband + broadband subscribers).
• Out of total subscribers, *40.91% belong to the rural areas*.
• **5G network** – It has been *rolled out in all 28 states and 8 UTs*.
• India, in terms of median mobile broadband speed, has reached 43rd position.
• **Data consumption** - India is one of the highest consumers of data per day with *approximately 5 hours of daily time* spend on smartphones.

What are the steps taken to promote digital connectivity in rural India?

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- **BharatNet** - _Connecting 250,000 village_ councils with high-speed broadband through optical fiber cables & Wi-Fi hotspots.

- **Digital India program** - Transforming India into a digitally empowered society by providing _e-governance services_ and establishing _Common Service Centers_ (CSCs) at the village level.

- **USOF** – Universal Service Obligation Fund is a pool of funds _generated by a 5% Universal Service Levy_ charged upon all the telecom fund operators on their Adjusted Gross Revenue (AGR).

- This money would be used to fund the expansion of telecom networks in remote and rural areas, where private companies resist to invest and develop.

- **PM-WANI** – Expanding _public Wi-Fi hotspots across rural areas_ with simplified processes for setting up Wi-Fi service providers.

- **Skill development and digital literacy** – Enhancing digital literacy through programs like _DISHA and PMGDISHA_, offering digital skills training to rural populations.

- **Financial inclusion** - Providing banking and financial services through digital means with projects like _Jan Dhan Yojana, Aadhaar, and promoting digital payments_.

- **Smart villages and digital villages** - Developing _model villages_ with comprehensive digital infrastructure and integrating digital technologies to improve rural life quality.

- **Digital Bharat Nidhi** – It is aimed at increasing telecom connectivity in rural areas.

Digital Bharat Nidhi

- It will _replace Universal Service Obligation Fund_ and has wider scope than USOF.

- **Objectives** - _Promoting access, affordability and delivery_ of telecommunication services in under-served rural, remote and urban areas.

- Providing _targeted access for underserved groups_ of society such as women, persons with disabilities and economically and socially weaker sections.

- _Funding research and development_ of telecommunication services, technologies, and products.

- Supporting pilot projects, consultancy assistance and advisory support for improving connectivity.

- Creation of regulatory sandboxes.

- Developing and establishing relevant standards to meet national requirements and their standardisation in international standardisation bodies.

- _Encouraging start-ups_ including the manufacturing of telecom equipment, among other things.

- **Funding** – As per the Telecom Act, contributions made by telecom companies towards this fund will _first be credited to the Consolidated Fund of India_ (CFI).

- The collected funds will be _moved to the DBN_ from time to time.

- **Implementation** – Centre will appoint an "administrator" who will select "DBN implementers" through "bidding" or invitation of applications from eligible persons.

- Any DBN implementer receiving funding from the DBN for establishing, operating, maintaining, or expanding a telecommunication network shall be delivered on an _open and non-discriminatory basis_.

What impedes rural digital connectivity?

- **Infrastructure deficit** – Still there are places which lack of basic infrastructure like electricity and roads, which can hinder the establishment and maintenance of telecom networks.

- **Geographical challenges** - _Difficult terrain_, such as mountains and forests, makes infrastructure development challenging and expensive.

- **High implementation costs** - The _cost of laying fiber optic_ cables and setting up telecom towers in remote areas is high.

- **Underutilisation of USOF** – It is primarily due to _underspending on the BharatNet project_ for village fiber connectivity.

- **Resistance by private companies** – They resist in offering their services in rural and remote areas as they are _not considered as revenue-generating markets._

- **Financial constraints** - _Lower income levels in rural areas_ limit the ability of residents to afford digital devices and internet services.

- **Security concerns** - _Vandalism and theft_ of telecom equipment and challenges in ensuring cybersecurity and protecting user data.

What lies ahead?

- **Enhance mobile connectivity** - Setting up mobile towers in remote regions and partnering with private operators to extend mobile network coverage.

- **Provide satellite connectivity** - Using satellite communication to provide connectivity in areas with challenging terrain for terrestrial infrastructure.

- **Develop localized content & applications** – Local languages and locally relevant digital content can increase engagement.

12.2 Sustainable Aviation

Why in news?

With the recent boom in the global aviation sector and rising air travel demand in India, concern for global carbon emissions due aviation is at the forefront.

What is Aviation?

- **Aviation sector** – It is concerned with the development and operation of _heavier-than-air aircraft_, such as airplanes, helicopters, gliders, and drones.

- **Importance** – It provides a rapid worldwide _transportation_ network that generates _economic growth, creates jobs_, and facilitates international trade and _tourism_.

- **Economic growth**- Air travel is essential for trade, business, and tourism, and every day, 128,000 flights carry 12.5 million passengers and $18 billion of world trade.

- It _enables $3.5 trillion in global GDP_ and supports 87.7 million jobs worldwide.

- **Connectivity**- They link major cities and small communities _24 hours a day_ and flying is considered one of the safest and quickest ways to get around.

- Air cargo _transports goods_ like electronics and fresh produce, ensuring timely deliveries and global trade growth.

- **India** – According to the International Air Transport Association (IATA), India poised to become the world's third-largest air passenger market by 2030.

Why there is a need to switch for sustainable aviation fuel?

- **Aviation is carbon-intensive activity** – Though this mode of travel contributes just 2.5% of the world's carbon emissions, it might increase with more population opting for air travel.

- **Increased demand for air travel** – A rising aspirational middle-class, especially in developing countries including India has spurred the growth of the aviation sector.

  - The Indian Brand Equity Foundation predicts the country will need over 2,800 new commercial aircraft in the next 20 years.

> _Aviation turbine fuel (ATF), also known as jet fuel, is a petroleum-based fuel that powers aircraft with gas-turbine engines. It consists of hydrocrabons like paraffins, cycloparaffins or naphthenes, aromatics, and olefins._

- **Increased Jet fuel demand** - It ran at 8 Mbpd (million barrels per day) in 2019, could rise to 18 Mbpd by 2050, as the global population rises 25%.

- **Pollution by aviation fuels** - Today's aviation fuels (mostly the widely-used Aviation Turbine Fuel - ATF) consist primarily of _hydrocarbon compounds and contain additives_ that are determined by the specific uses of the fuel.

- They _emit CO_2_ from burning fuel.

- **Alter the concentration of atmospheric gases** - They generate a _short-term increase_, but a _long-term decrease in ozone and methane_.

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- It has also *heightened emissions* of water vapour, soot, sulphur aerosols, and water contrails.

- **Net global warming** - While some of these impacts result in global warming, others induce a cooling effect.

- But *overall, the warming effect is stronger*, pegged at 4% by most estimates.

## What is Sustainable Aviation Fuel (SAF)?

- **SAF** – It is an *alternative fuel* made from *non-petroleum feedstocks* that reduces emissions from air transportation.

- **Criteria for to be a SAF** – They must be derived from a *low-carbon raw material* that can be continually and repeatedly sourced.

- They must *not deplete natural resources* or compete with other requirements such as food production, land and water use

- They must be an *alternative to traditional aviation energy* sources and be processed to create jet fuel in an alternative manner

> *The international aviation industry has set an aspirational goal to reach net zero carbon by 2050. Airlines and manufacturers are investing heavily in SAF, with giants Boeing and Airbus keen on tapping this disruptive trend.*

- They must meet the *same rigorous technical requirements* and share the *same properties as conventional jet fuel*, so that they

  o Can be blended with other fuel

  o Can be used in commercial aircraft without requiring changes to existing technology and fuel systems, all in a safe way

- **Source** – They are *derived from renewable resources* such as plant oils, waste oils, and agricultural residues.

- **Flexible production -** SAF is a replacement *for conventional jet fuel, allowing for multiple products* from various feedstocks and production technologies.

- **Compatible fuel –** It can be blended with conventional Jet that can be used in existing aircraft and infrastructure.

- It can be blended at different levels with limits between 10% and 50%, depending on the feedstock and how the fuel is produced.

- **Fewer emissions -** Compared with conventional jet fuel, *100% SAF has the potential to reduce greenhouse gas* emissions by up to 94% depending on feedstock and technology pathway.
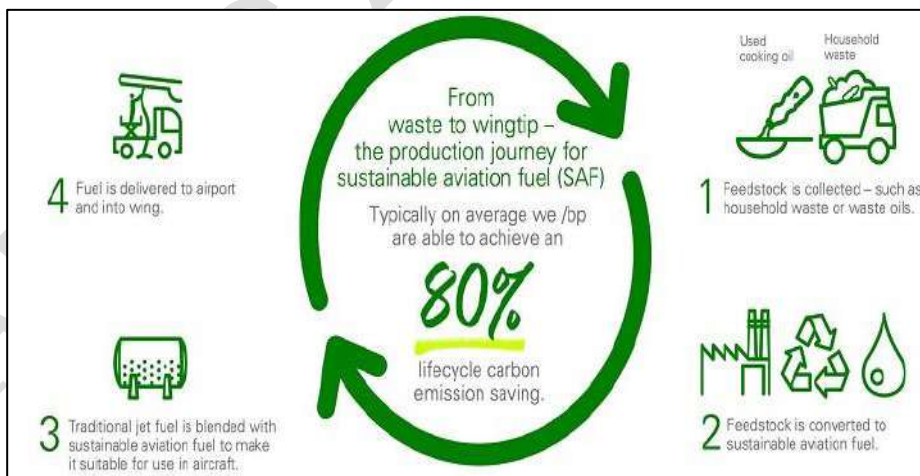
What lies ahead?

- The governments and international organizations need to implement regulations and standards aimed at reducing aviation's environmental impact.

- Investing in sustainable technologies can lead to long-term cost savings, create new job opportunities, and drive innovation within the aviation industry.

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