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**September 2023**

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A Strategic Programme Targeting Prelims 2024.

Course Fee: 35000 +GST

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- Focus on concepts and identifying patterns of Prelims: PYQ analysis, MCQ practice (4000+) and Discussions, Current Affairs update.
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# General Studies I

## 1. Hoysala Temples in World Heritage List

**Why in the news?**

Recently, 3 Hoysala-era temples were added as to UNESCO's World Heritage List thus becoming the 42nd site from India.

**What is UNESCO World Heritage Site?**

- **World Heritage Site (WHS)** – These are the sites that are designated as having "outstanding universal value" under the Convention Concerning the Protection of the World Cultural and Natural Heritage.
- It was adopted by UNESCO in 1972 and formally took effect in 1975.
- The list of WHS is maintained by the International World Heritage Programme, administered by the UNESCO World Heritage Committee.
- The 3 types of sites are Cultural, Natural, and Mixed.

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### World Heritage List of India

- India has 6th highest number of WHS in the world (Italy is 1st with 58).
- Total number of World Heritage Site - 42
- Total cultural heritage sites - 34
- Total natural heritage sites - 7
- Mixed heritage - 1 (Khangchendzonga National Park in Sikkim).
- 1st WHS from India - Tajmahal, Agra Fort, Ajanta and Ellora caves all listed in 1983.
- Latest addition in WHS List- 42nd is Sacred Ensembles of Hoysala Temples and 41st is Santiniketan in 2023.
- Dholavira in Gujarat is the only site of Indus valley civilisation in World Heritage List from India.

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**What is the procedure for including a site in the WHS list?**

- **Selection criteria** - To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of 10 selection criteria of UNESCO.
- Only countries that have signed the World Heritage Convention can submit nomination proposals for properties on their territory to be considered for inclusion in UNESCO's World Heritage List.
- **Tentative List** – The first step a country must take is to make an 'inventory' of its important natural and cultural heritage sites located within its boundaries, known as the Tentative List.
- The World Heritage Committee cannot consider a nomination for inscription on the World Heritage List unless the property has already been included on the State Party's Tentative List.
- **Evaluation**- A nominated property is independently evaluated by:
- The International Council on Monuments and Sites (ICOMOS)
- The International Union for Conservation of Nature (IUCN)
- The International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM)
- **Deciding authority** - Once a site has been nominated and evaluated, it is up to the intergovernmental World Heritage Committee to make the final decision on its inscription.

**What constitutes the Sacred Ensembles of Hoysalas?**

It includes 3 temples-

i. Chennakeshava temple (Belur),
ii. Hoysaleswara Temple (Halebidu), and;
iii. Keshava Temple (Somanathapura) of Karnataka.

**What makes Hoysala architecture stand out?**

- Unique confluence of styles – These temples are amalgamation of three distinctive temple styles prevalent in India.
  - Dravidian style represented in Pallava and Chola temples.
  - Vesara style, the variant of the Dravida style that emerged in the Chalukya and Rashtrakuta temples.
  - Nagara style of North India
- **Construction material** – The use of soapstone, a malleable stone, has made it easy to carve and contributed to abundant intricate sculptures on the temple walls.
- **Elevated platforms** – The temples are generally built on stellate (star-shaped) platforms.
  - Kesava temple in Somanathapura is built in the shape of a 16-point star.
- **Beautiful Sculptures** – The sculptures themes include animals, scenes of daily life, as well as depictions from the epics and the Puranas.
- It demonstrates their creativity in translating religious beliefs and stories into sculpture.
- **Differentiated Pillars** – The total number of pillars in Chennakesava temple at Belur is 46.
- All of them, except the four in the central bay, are of different designs.
- **Signed temples** - The temples are given information of the sculptors and masons who were involved in their construction.
- **Religious significance** – These Vaishnava and Shaivya shrines were built at the time Jainism was prominent in the region.
- It thus marks a turn towards Hinduism.
- **Social significance** – The jewellery, headgear, clothes, etc. of the detailed sculptures give an idea of the society of the times.
- One of the sculptures, Darpana Sundari (lady with the mirror), is modelled on Shantala Devi, the queen of Vishnuvardhana who had the built the Chennakesava temple.

- **Other details**– No known monuments other than temples, like palaces or forts, survive from the Hoysala period.
- The non-temple buildings were all built in either mud or brick or wood and not stone.
- So, except for some ruins in Hampi, nothing has survived in the form of architecture of Hoysalas.

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**Quick facts**

**Hoysalas:**

- **Origin** – Provincial governors under the Western Chalukyas established themselves as rulers, as the two dominant empires of the South - the Western Chalukyas and the Cholas, crumbled.
- **Geography** – Karnataka
- **Time period** – 10th century to the 14th century
- **Capital** – It was Belur earlier and moved to Halebidu or Dwarasamudra later.
- **Hoysala Emblem** - Figure representing Sala attacking the tiger.

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# 2. Why India's Cotton Production going down?

**Why in the news?**

The pink bollworm has taken a toll on the fibre crop, even as new "mating disruption" technologies to control the pest are showing promise.

**What is Cotton?**

- Cotton is one of the most important fiber and cash crop of India and plays a dominant role in the industrial and agricultural economy of the country.
- **Origin** - India is believed to be the home of cotton because the art of making cloth from cotton was first developed in India.

- **Cultivated Species** – There are four cultivated species of cotton viz.
  o Old World Cottons (or) Asiatic cottons - Gossypium arboreum, G.herbaceum,
  o New World Cottons - G.hirsutum (American Upland cotton), G.barbadense (Egyptian cotton)
- G.hirsutum represents 94% of the hybrid cotton production in India and all the current Bt cotton hybrids are G. hirsutum.

*India is the only country in the world where all the four cultivated species are grown on commercial scale.*

- **Climate & Soil**- Cotton is a semi-xerophyte that is grown in tropical & sub-tropical conditions.
- It is grown on a variety of soils ranging from well drained deep alluvial soils to black clayey soils.
- Cotton is a Kharif crop in the major parts of the country and also monsoon based in southern zone.

**Status of Cotton Production & Consumption**

- India is having 1st place in the world in cotton production.
- Gujarat is the largest producer of cotton in India followed by Punjab and Maharashtra.
- India is also the 2nd largest consumer of cotton in the world.
- India stands 1st in the world in cotton acreage.
- India is the 3rd largest exporter of Cotton.
- Around 67% of India's cotton is grown on rain-fed areas and 33% on irrigated area.
- In terms of productivity, India is on 38th rank with yield of 510 kg/ha.

**What is the significance of cotton?**

*Ginning is the process of separating the fibres from the seed. The raw un-ginned cotton harvested by farmers is called kapas which has the white fluffy fibre or lint (36%) and seed (62%).*

- Cotton has a roughly two-thirds share in India's total textile fibre consumption.
- It plays a major role in sustaining the livelihood of an estimated 6 million cotton farmers and 40-50 million people engaged in related activities such as cotton processing & trade.
- Cottonseed is the country's 3rd largest domestically produced vegetable oil (after mustard and soyabean)
- Cotton seedcake, a protein-rich feed ingredient for livestock and poultry, is the 2nd biggest feed cake/meal (after soyabean).
- Due to its economic importance in India, cotton is also termed as "White-Gold.

**What is the present issue with Cotton production?**

- Between 2000-01 and 2013-14, India's cotton production, in terms of lint, almost tripled from 140 lakh to 398 lakh bales of 170 kg each due to Bt technology.
- However, the Pectinophora gossypiella or pink bollworm (PBW) have developed resistance Bt toxins over time and to fall in yields.



Source: Ministry of Textiles; Figures for 2022-23 are provisional estimates.
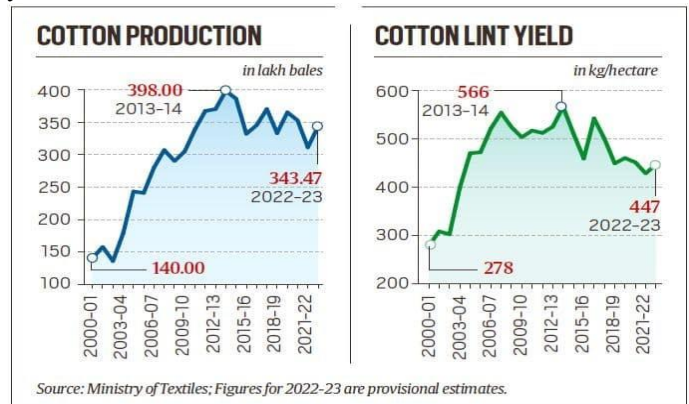
- This is because PBW is a monophagous pest that feeds mainly on cotton unlike American bollworm that is polyphagous, with alternative hosts.
- The PBW population that became resistant from continuously feeding on Bt hybrids, therefore, gradually overtook and replaced the ones that were susceptible.
- The pest's short life cycle (25-35 days) was conducive for it to complete at least 3-4 generations in a single crop season of 180-270 days, further accelerating the resistance breakdown process.

*Bt cotton is the only GM crop that is allowed in India. Bt cotton has been genetically modified by the insertion of one or more genes from a common soil bacterium, Bacillus thuringiensis.*

**Reasons for India's Falling Cotton Production**

- Large infestation of Pink Bollworm (PBW) feeds on the cotton bolls affecting lint quality and yields.
- Uneven rainfall and agricultural shrinkage in some of the key growing states.
- Rising cost of cultivation.
- Climate induced change in pest dynamics.
- Rampant sale of unauthorised seeds and unchecked pesticides sprays.
- Reduced local prices and declining demand from China.
- US embargo on cotton products from China's Xinjiang province.
- Impact of Russia-Ukraine conflict.

**How to control bollworm infestation?**

- Spraying insecticides – Such as profenofos, chlorpyrifos, indoxacarb, and cypermethrin.
- Mating disruption – It involves deploying Gossyplure, a pheromone signaling chemical which attracts the male adult moths into lures and prevent from mating with females.
- The Central Insecticides Board & Registration Committee under the Agriculture Ministry has approved two mating disruption products.
- PBKnot – It is a dispenser having a 20-cm hollow polyethylene pipe, into which Gossyplure is impregnated and gets released from over 90 days and reducing the scope for infestation.
- SPLAT-PBW - A flowable emulsion formulation technology for delivering Gossyplure.

**Steps taken to promote Cotton Production**

- Technology Mission on Cotton (TMC) – It is a Centrally Sponsored Scheme launched during 2000 to increase the production & productivity of cotton.
- National Food Security Mission-Commercial Crops (Cotton) Programme - Cotton Development Programme is being implemented under National Food Security Mission - Commercial Crops (NFSM-CC) from 2014-15 for enhancing production and productivity.
- Rashtriya Krishi VikasYojana (RKVY)- There is no earmarked allocation of funds for cotton under RKVY. However, the States can undertake cotton programme under RKVY.
- Minimum Support Price (MSP)- MSP, a guaranteed price for the produce is provided for cotton by the Government.
- Cotton Corporation of India Ltd. (CCI) – CCI, a central public sector undertaking was established in 1070 under the Ministry of Textiles to engage in diverse activities related to trade, procurement, and export of cotton.
- CICR - ICAR has established the ICAR-Central Institute for Cotton Research at Nagpur in 1976.

## 3. Ashoka, The Great

**Why in the news?**

Three Ashokan era edicts were recently found in Delhi.

**Who is Ashoka, the Great?**

- **Parents**- Mauryan King Bindusara and Devi Dhamma.
- **Year**- 273 BC - 232 BC
- In the initial phase of his life, Ashoka was a cruel and ruthless king. He applied brutal ideas to expand his kingdom.
- **Patron of Buddhism**- In 265 BC, he won the battle of Kalinga and after seeing the bloodsheds he had a change of heart. He started to follow the path of non-violence and Buddhism.
- He also made Buddhism as State religion around 260 BC.
- **3rd Buddhist Council**- It was held at Pataliputra (250 BC) under the patronage of King Ashoka and Chairman is Moggaliputta Tissa.
- A compilation of *Abhidhamma Pitaka* took place at this council.
- **Edicts** - Ashoka started to preach dhamma and wrote his philosophy through 14 edicts that spread throughout the empire. These were known as Ashokan edicts.
- Great Sanchi Stupa was inscribed as a World Heritage Site by UNECSO in 1989.
- **Sarnath Pillar**- The Ashokan Pillar at Sarnath has a four-lion capital, which was later adopted as the national emblem of the Indian republic post-independence.

**What are the edicts and inscriptions of Ashoka?**

> All rock edicts are inscriptions, but all inscriptions are not rock edicts.

- Edicts- It is a decree or announcement of law, which can be under any official authority. It can be issued in any number of physical forms.
  - o Major and Minor Pillar Edicts
  - o Major Rock Edicts- 14 edicts (termed 1st to 14th) and two separate ones found in Odisha.
  - o Minor Rock Edicts
- Inscriptions- It is a text produced by carving the letters into solid surfaces like stones, coins, buildings, and rocks.
  - o Major Rock Inscriptions
  - o Barabar cave inscriptions and
  - o Kandahar bilingual inscription
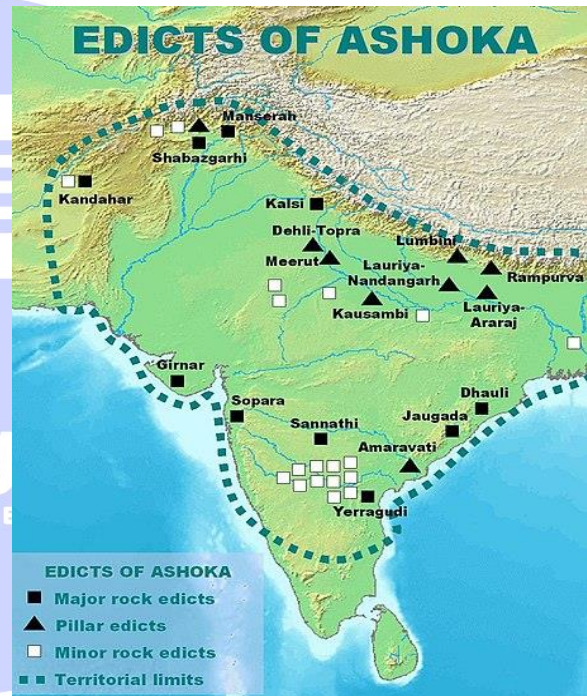


**What does Ashokan edicts and inscriptions say about?**

- Themes of inscriptions
  - o Ashoka's conversion and his efforts to spread Buddhism,
  - o Moral and religious precepts and
  - o Social and animal welfare programmes
- In these inscriptions, Ashoka refers himself as "Beloved Servant of the God" (Devanampiyadasi).

- The identification of Devanampiyadasi with Ashoka was confirmed by an inscription at Maski, found in the eastern part of India were written in Magadhi Prakrit using the Brahmi script.
- Edicts- The Edicts of Ashoka are a collection of 33 inscriptions on the Pillars of Ashoka as well as boulders and cave walls made by the emperor Ashoka.
- These inscriptions were dispersed throughout the country, and it represents the first tangible evidence of Buddhism. The edicts describe in detail the Ashoka's view about dhamma, to solve the severe problems faced by the complex society.
- It is mainly on social and moral precepts rather than specific religious practices or the philosophical dimension of Buddhism.

| Major Rock Edicts | About |
| --- | --- |
| I | • Prohibits animal slaughter.<br>• Bans festive gatherings |
| II | • Mentions the South Indian kingdoms such as Cholas, Pandya, Satyaputas and Keralaputras.<br>• Deals with social welfare measures |
| III | • Liberty to Brahmanas Every five years Yukatas, Pradesikas along with Rajukas.<br>• To visit all the areas of the kingdom to spread Dhamma. |
| IV | • Preference of Dhammaghosa (Sound of peace) over Berighosa |

| | (Sound of wandrums).<br>• Impact of Dhamma on society |
| --- | --- |
| V | • Humane treatment of slaves by their masters.<br>• Mentions about the appointment of Dhamma Mahamatras. |
| VI | • Deals with the welfare measures King's wish to know about the condition of the people |
| VII | Tolerance towards all religions and sects |
| VIII | • Mentions about Ashoka's visit to Bodh Gaya and Bodhi tree.<br>• Maintaining contact with rural people via Dhammayatras |
| IX | • Stresses on the moral conduct of people.<br>• Avoiding expensive ceremonies |
| X | Condemns the desire for fame and glory |
| XI | Elaborate explanation of Dhamma |
| XII | Appeal for developing tolerance towards all religious sects |
| XIII | Explains about Kalinga war and conquest through dhamma |

| | |
|---|---|
| XIV | Deals with the purpose of engraving inscriptions in various parts of the country |

| Pillar Edict | About |
|---|---|
| I | Ashoka's principle of protecting his people |
| II | Defines Dhamma as minimum of sins, many virtues, compassion, liberty, truthfulness, and purity. |
| III | Avoiding practices of cruelty, sin, harshness, pride, and anger among his subjects. |
| IV | Responsibilities of the Rajukas. |
| V | List of animals and birds that should not be killed on certain days. Another list mentions animals that should never be killed. Describes release of 25 prisoners. This pillar edict is also known as Delhi-Topra Pillar Edict. |
| VI | Dhamma policy of the State (welfare of the people). |
| VII | Ashoka's work for fulfilling Dhamma. Tolerance for all sects. Also, about Dhamma Mahamatta. |

| Inscription / Edict | About |
|---|---|
| Allahabad-Kosam/Queens Edict/Kausambi or Schism Edict | Ashoka asks the members of the Sangha to refrain from causing division in the ranks. |
| Kandahar Inscription | It is a famous bilingual edict in Greek and Aramaic. |
| Kalinga Edict | Mentions "all men are my children" |

**What is Ashoka's policy of Dhamma?**

- The word dhamma is the Pali form of the Sanskrit word dharma.
- Aim - To create a harmonious atmosphere in the state where all people irrespective of their religious and cultural diversities, lived in peace and harmony.
- Ahimsa- Ban on animal sacrifices, it reduced killing of animals for food in the royal kitchen.
- Good conduct- It emphasised good conduct and social responsibilities that were part of dhamma.
  - Proper courtesy to slaves and servants
  - Respectful behaviour towards elders
  - Restrain in one's dealing with all living beings.
- **Gift of dhamma-**
  - Obedience to mother and father
  - Liberality towards friends, relatives, acquaintances, and relatives
  - **Mutual respect- Religious toleration**
- **Dhamma as a king-**
  - To promote welfare of the people
  - Discharge the debt he owes to all beings.
  - Ensure people's happiness in this world.
  - Renunciation of warfare

**Mauryan Empire**

- The Maurya Empire (322 – 185 B.C.E.), ruled by the Mauryan dynasty, was a geographically extensive and powerful political and military empire in ancient India.
- Chandragupta Maurya was founded 322 BCE after overthrowing the Nanda Dynasty.
- Chanakya (also known as Kautilya and Vishnugupta) who wrote Arthashastra was the political mentor of Chandragupta Maurya
- Ashoka is the 3rd ruler of the Mauryan Empire.

MAURYA DYNASTY 265 BCE
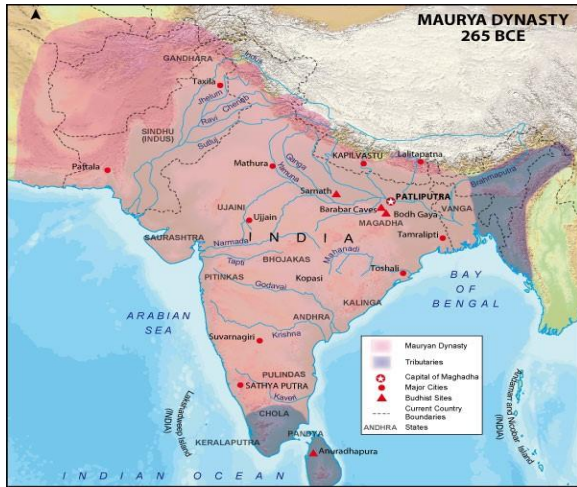
## 4. Horticulture Sector of India

**Why in the news?**

Though the production and productivity of fruits and vegetables quadrupled during the last three decades, the same has not been translated into comparable increases in the incomes of the cultivators.

**What is horticulture?**

Horticulture is an important branch of agriculture that deals with the cultivation of plants and vegetables for food, medicine, and other uses.

| Terms | Meaning |
|-------|---------|
| **Pomology** | It deals with cultivation of fruit and nut crops. |
| **Olericulture** | It deals with cultivation of herbaceous plants for the kitchen. |
| **Floriculture** | It deals with production of flowers and ornamental plants. |

**What is the status of horticulture sector in India?**

- **Production** - In 2022, total Horticulture produce is 341.6 million tonnes and total Agriculture produce is 314.5 million tonnes.
- Fruits and vegetables account alone account for almost 90% of the total horticulture production in the country.
- According to FAO 2021, India leads in the production of certain vegetables (ginger and okra) and fruits (banana, mangoes and papaya).
- **Areas of cultivation of flowers** - More than 50% of the floriculture products are produced in Karnataka, Andhra Pradesh and Tamil Nadu and Madhya Pradesh.
- **Areas of cultivation of fruits & vegetables** - Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal, Uttar Pradesh, and Odisha.
- **Contribution** - Horticulture contributes 30.4% of the agriculture Gross Domestic Product (GDP) using only 13.1% of gross cropped area.
- **Exports** - India is ranked 14th in vegetables and 23rd in fruits.
- However, the global horticulture market of India is at mere 1%.

**What is the significance of the horticulture sector?**

- Plays crucial role in providing food and nutritional security especially to rural and tribal population.
- Promotes diversifying the income of the farmers and aid in doubling their income.
- Acts as an important source of raw material for food processing industries, leading to the creation of value-added products.
- Helps in the development of the rural economy by generating income and employment.

- Acts as an important source of foreign exchange for India through exports

**What are the issues faced by the horticulture sector?**

- Production challenges- It is caused by small operational landholdings, lack of irrigation and poor soil management.
- Limited land availability- It affects crop rotation, and the use of sustainable agricultural practices is also impacted.
- Lack of Irrigation- It is due to insufficient access to water for irrigation.
- Poor soil management practices - Over-tilling, over-fertilising, and mono cropping will reduce soil fertility leading to low yields and low-quality produce.
- Lack of institutional credit- Lack of access to institutional credit for small and marginal farmers results in low investments.
- There is a limited outreach of farm insurance and farm mechanisation.
- Climate change- Changing weather patterns, droughts, floods, and other natural disasters lead to crop failures and losses.
- Others - Poor logistics and weak Farmer Producer Organisations are the other issues.

> *Around 15-20 % of the fruits and vegetables in India are wasted along the supply chain or at consumer level.*

**What steps were taken to promote the horticulture sector?**

- Mission for Integrated Development of Horticulture (MIDH) - It is a Centrally Sponsored scheme launched in 2014-15.
- The 5 sub-schemes under this mission are:

  o **National Horticulture Mission**- It is implemented by State Horticulture Missions in selected districts of 18 States and 6 Union Territories.
  o **Horticulture Mission for North-East and Himalayan States (HMNEH)**- It is implemented by State Horticulture Missions in the Northeastern and Himalayan States.
  o **National Horticulture Board**- It has a goal to improve the integrated development of Horticulture industry. (Headquarters-Gurugram, Haryana)
  o **Coconut Development Board**- It is implemented in all coconut growing States with the focus of productivity increase and product diversification. (Headquarters- Cochin, Kerala).
  o **Central Institute of Horticulture**- It provides adequate institutional support to the development of horticulture in the North-East region. (Headquarters-Medziphema, Nagaland)
- **Agriculture Infrastructure Fund**- It was launched in 2020 for creating community farming assets and integrated post-harvest management infrastructure.
- **Horticulture Cluster Development Programme**- It is a central sector program implemented by the National horticulture Board.

**How to address the challenges in the horticulture sector?**

- **Investment in agri-infrastructure**- There is a need to capitalise in MIDH and Operation Greens, horticulture produce can reach the airport cargo handling facility and improve the export.

*Operation Greens, launched in 2018 by the Ministry of Food Processing Industries, is a price fixation scheme to ensure farmers are given the right price for their produce. It has been implemented for the development of*

- **Focus on food processing**- This can be done by leveraging the One District One Product model, food processing of fruits and vegetables may be encouraged in order to expand the export basket.
- **Renaissance of co-operatives**-To harness market efficiency and boost exports, co-operatives in horticulture should be promoted.
  o For example, In Karnataka, HOPCOMS supplies inputs to farmers at reasonable prices and collects the horticultural produce directly from them.
- **Compliance with international standards** - Horticultural producers have to comply with world-class quality norms (Codex standards) apart from timely execution of export orders to avoid rejection from buyers.
  o Japan and the US banned import of mangoes and other fruits from India due to prevalence of fruit-fly pest infestation.

*The Codex Alimentarius or "Food Code" is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission.*

- **Digitalisation** - Climate-smart technologies, biotechnology, and nano technology should be promoted to boost exports.
- **Channelize Corporate Social Responsibility (CSR) grants**-CSR grants may be channelled to undertake advanced research for digitalisation of horticulture through artificial

intelligence, machine learning, and Internet of Things.
- **Institutional support**- Institutes like National Horticultural Board, Agricultural and Processed Food Products Development Authority, and NABARD need to provide liberal financial assistance for undertaking extension services in horticulture.
- **Training**- Exporters should be imparted training on good agricultural practices and in commodity derivatives to protect them against price volatility and exchange rate risks.

## 5. Himachal Pradesh floods led by cloud burst

**What is a cloud burst?**

*According to the Indian Meteorological Department, an event of extremely heavy rainfall is determined as a cloudburst when "10 cm rainfall is received at a station in one hour."*

- It is an extremely high amount of precipitation in a short span of time.
- It is a localised but intense rainfall activity that can cause widespread destruction, especially in hilly regions.
- **Region**- It usually occurs over a small geographical region (20-30 sq.km).
- Criteria- Rainfall of 10 cm or more in an hour over a roughly 10 km x 10-km area is classified as a cloudburst event.
- By this definition, 5 cm of rainfall in a half-hour period over the same area would also be categorized as a cloudburst.
- **Mechanism**- It happens when saturated clouds are unable to produce rain because of the upward movement of very warm current of air.

- **Cloud formation**- This updraft movement of warm wind along with clouds forms the Cumulonimbus clouds.
- It can grow up to 12-15 km in height through the entire troposphere (occasionally up to 21 km) and can hold huge amounts of water.
- Instead of dropping down, raindrops get bigger in size and get pushed up due to the air current.
- Eventually they become too heavy to hold and drop down, leading to more rain than usual.



**Orographic Lifting And Cloudburst**

3. **Violent upward** flow of air prevents the condensing raindrops from falling to the ground
4. **Lack of upward air** prevents dissipation of moisture
5. Whole of the stored **water falls at one time**
6. Steep slope causes flash floods
2. **Rising air cools** and condenses; clouds develop
1. **Moist air** encounters a mountain or hill and is forced to rise

**What are the causes of cloud burst?**

- **Monsoon**- It often occurs during monsoon season when the Southwest Monsoon winds bring in large amount of moisture which fuels the cloudburst.
- **Orographic lift**- It is affected by factors like local topology, wind systems, and temperature gradients between the lower and upper atmosphere.
- **Thunderstorm**- It is caused due to excessive amount of condensation in the cloud during thunderstorm.
- **Climate change**- Global warming is leading to more evaporation of water and because of this dense cumulonimbus clouds are forming, resulting in intense rainfall.

○ Even 1-degree Celsius rise in global temperature can cause change in monsoon extremes and frequent cloudburst.

**What are the areas prone to cloudburst?**

- Regions more prone-
  ○ The Himalayas
  ○ Western Ghats
  ○ Northeastern hill States of India
  ○ Coastal regions
- **Landslides**- The heavy spells of rain on the fragile steep slopes trigger landslides, debris flows, and flash floods, causing large-scale destruction and loss of people and property.
- **Coastal cities**- They are particularly vulnerable to cloudbursts since the flash floods make the conventional stormwater and flood management policies in these cities dysfunctional.
  ○ Example- Chennai Floods 2015.

**Recent cloudbursts**

- Himachal Pradesh-2003
- Ladakh-2010
- Uttarakhand-2013
- Northeastern states and Western Ghats- 2022 monsoon

**What are the consequences of cloud burst?**

- **Landslide**- The movement of rocks or debris on a slope downwards is called a Landslide.
- **Human loss and property loss** - There is a rise in death toll and loss of property due to cloudburst.
- **Spread of communicable diseases** - Waterborne diseases (cholera, typhoid fever etc.,), vector-borne diseases (dengue, malaria etc.,) spread rapidly during floods.
- **Impact on agriculture** - It destroys a large number of crops and impacts the

food security of the country. Livestock also get displaced during floods.

- **Disruption of communication** - It damages transportation links such as bridges, rail, and power plants thus causing communication disruption.
- **Economic and social disruption** - The economy comes to a standstill as people are forced to move to another place.

## What are the challenges associated in detecting cloudbursts?

- **Forecast** - Specific cloudburst events cannot be forecasted.
- The possibility of extremely heavy rainfall, which could result in cloudburst kind of situations, are forecast six to 12 hours in advance.
- **Failure of satellite**- They fail to detect cloudburst systems as the precipitation radars are much smaller than the areas of individual cloudburst events.
- **High cost**- Radars need to be installed in wide areas for wider coverage. Installing radars is expensive.
- **Technological hurdle-** It is difficult for any metrological agency to predict exactly how much rain is likely to fall at any given place.
- Although it is difficult to forecast cloudbursts, doppler radars can be helpful in predicting them.
- **Lack of feasibility** - It requires a very dense network of weather instruments, and computing capabilities that seem unfeasible with current technologies.

## What lies ahead?

- Multiple Doppler weather radars can monitor moving cloud droplets and help to provide forecasts for the next 3 hours.
- Proper community sensitisation regarding the causes, effects and safety

precautions of cloudbursts is the need of the hour.

## 6. Scheduled Tribe communities of the country

59% of India's STs remain outside the purview of Article 244.

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**Status of Scheduled Tribes (ST) in India**

- India has 705 ST communities in 26 States and 6 Union Territories making up 8.6% of the country's population.
- Highest number - As per Census 2011,
  - Madhya Pradesh- 14.7%
  - Maharashtra- 10.1%
- No STs - Punjab, Chandigarh, Haryana, NCT Delhi, Puducherry
- PVTGs- There are 75 PVTGs out of 705 STs, spread over 18 states and 1 Union Territory (A&N Islands)
- Characteristics of PVTGs- PVTGs have
  - Declining or stagnant population
  - Low level of literacy
  - Pre-agricultural level of technology
  - Economically backward
  - Generally, inhabit remote localities having poor infrastructure and administrative support.

---

## What are the constitutional provisions related to STs?

| Article | About |
|---------|-------|
| 366 (25) | It defined scheduled tribes as "such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution". |
| 342 | The President may, with respect to any |

| | |
|---|---|
| | State (after consultation with the Governor) or Union territory, specify the scheduled tribes |
| 244 | Application of the provisions of the Fifth Schedule and Sixth Schedule |
| **Fifth schedule** | It shall apply to the administration and control of the Scheduled Areas and Scheduled Tribes in any State other than Assam, Meghalaya, Tripura and Mizoram |
| **Sixth schedule** | It shall apply to the administration of the tribal areas in Assam Meghalaya, Tripura and Mizoram. |

## Educational, Economic and Public Employment Related Safeguards

| | |
|---|---|
| **Art. 15** | Prohibition of discrimination on grounds of religion, race, caste, sex, or place of birth |
| **Art. 16** | Equality of opportunity in matters of public employment |
| **Art. 19** | Protection of certain rights regarding freedom of speech etc., |
| **Art. 46** | Promotion of educational and economic interests of Scheduled Castes (SC), STs and other weaker sections |
| **Art. 335** | Claims of SCs and STs to services and posts |

## Political safeguards

| | |
|---|---|
| **Art. 330** | Reservation of seats for SCs and STs in the House of the People. |
| **Art. 332** | Reservation of seats for SCs and STs in the Legislative Assemblies of the States. |
| **Art. 334** | Reservation of seats and special representation to cease after 60 years |
| **Art. 243D** | Reservation of seats in Panchayats |
| **Art. 243T** | Reservation of seats in Municipalities |

## Agency for Monitoring safeguards

| | |
|---|---|
| **338A** | **National Commission for Scheduled Tribe** |

## What is the place for ST communities in India?

- **Scheduled Areas**- It cover 11.3% of India's land area, and have been notified in 10 States - Andhra Pradesh, Telangana, Odisha, Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan, Gujarat, Maharashtra, and Himachal Pradesh.
- However, 59% of India's STs remain outside the purview of Article 244.
- In 2015, Kerala proposed to notify certain scheduled areas, but it awaits the Indian government's approval.
- Denial of rights- They are denied rights under the laws such as the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 and the Biological Diversity Act 2002.
- **Bhuria Committee**- Constituted in 1995 to look into the extension of Panchayat Raj to

Scheduled Areas, it recommended the inclusion of these villages, but this is yet to be done.

- **STs as minority**- The absence of viable ST-majority administrative units has been used to demand the denotification of parts of Scheduled Areas where STs are now a minority due to the influx of non-tribal individuals.

## How is the Scheduled area governed?

*The President of India notifies India's Scheduled Areas.*

- **Role of President**- The Fifth Schedule confers powers exclusively on the President to declare any area to be a Scheduled Area.
- In 2006, the Supreme Court held that the identification of Scheduled Areas is an executive function, therefore it doesn't possess the expertise to scrutinise the empirical basis of the same.
- Tribal advisory council- States with Scheduled Areas need to constitute a Tribal Advisory Council with up to 20 ST members to advise the Governor on matters regarding ST welfare.
- The Governor will then submit a report every year to the President regarding the administration of Scheduled Areas.
- Role of Centre- It can give directions to the State regarding the administration of Scheduled Areas.
- Power of Governor- The Governor can repeal or amend any law enacted by Parliament and the State Legislative Assembly in its application to the Scheduled Area of that State.
- The Governor can also make regulations for a Scheduled Area, especially to prohibit or restrict the transfer of tribal land by or among members of the STs.
- The Panchayat Extension to Scheduled Areas (PESA) Act, 1996 - It was enacted to remove the bottlenecks of the authority that empowered the elected panchayat bodies.
- It states that the Gram Sabhas exercises substantial authority through direct democracy and stated that structures at the higher levels do not assume the powers and authority of the gram sabha.

## How are scheduled tribes identified?

*Neither the Constitution nor any law provides any criteria to identify Scheduled Areas.*

- **Dhebar Commission report 1961**- It provided the guiding norms to identify Scheduled Areas.
- No law prescribes the minimum percentage of STs in such an area nor a cut-off date for its identification.
- **Scheduled Areas and Scheduled Tribes Commission 2002**- It had recommended that all revenue villages with 40% and more tribal population according to the 1951 census may be considered as Scheduled Area on merit.
- Bhuria community- It recognised a face-to-face community, a hamlet or a group of hamlets managing its own affairs to be the basic
- **PESA Act**- The Act defined a 'village' as a habitation or a hamlet comprising a community and managing its affairs in accordance with traditions and customs.
- All those whose names are included in the electoral rolls in such a village constituted the Gram Sabha.
- The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act or FRA, 2006 adopted this definition.
- The PESA definition of a village expanded it beyond Scheduled Areas to forest fringes and forest villages as well.
- **FRA 2006** – It requires them to demarcate community forest resource.

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- The traditional or customary boundary within revenue and forest lands (where applicable) would constitute the territorial jurisdiction of the village in the Scheduled Area.

**What lies ahead?**

- All habitations outside Scheduled Areas in all States and Union Territories where STs are the largest social group will need to be notified as Scheduled Areas irrespective of their contiguity.
- The geographical limit of these villages will need to extend to the community forest resource area on forest land under FRA 2006, and to the customary boundary within revenue lands made possible through suitable amendments to the relevant State laws.
- The geographical limits of the revenue village, panchayat, taluka, and district will need to be redrawn so that these are fully Scheduled Areas.

# General Studies II

## 1. China Pakistan Economic Corridor (CPEC)

Recently, the External Affairs Minister has made a reference to CPEC by stating that connectivity projects should respect the sovereignty and territorial integrity of Member States and respect international law.

**What is the China Pakistan Economic Corridor (CPEC)?**

> *China Pakistan Economic Corridor (CPEC) is the part of China's Belt and Road Initiative (BRI).*

- **BRI**- A giant connectivity initiative speared by China to revive the ancient *Silk Road* across Eurasia and Africa.
- Project South Asia- The BRI project has 3 major undertakings.
  - o China-Myanmar Economic Corridor (CMEC)

  - o Nepal-China Trans-Himalayan Multi-Dimensional Connectivity Network (including Nepal-China cross-border railway)
  - o China Pakistan Economic Corridor (CPEC)



- **CPEC**- The China Pakistan Economic Corridor was announced in 2013 as a part of BRI.
- **Location** - Enters *Pakistan Occupied Kashmir (PoK)* through the Karakoram Highway in *Gilgit Baltistan*.
- **Aim**- It is 3000km long which is initiated to:
  - o To circumvent the Straits of Malacca and the South China Sea.
  - o To improve infrastructure within Pakistan for better trade with China and to further integrate the countries of South Asia.
  - o To connect the deep-sea Pakistani ports of *Gwadar and Karachi* to China's Xinjiang province and beyond by overland routes.
- CPEC has been compared to the *Marshall Plan* for the rebuilding of post-World War II Europe in its potential impact on the region.

### Belt and Road Initiative (BRI)

- It is often described as a '21st Century Silk Road' or 'One Belt One Road (OBOR)'.
- Silk Road is an ancient network of trade routes that connected China to the Mediterranean via Eurasia for centuries.
- **Aim** - To connect China with Europe by land and rail, and to Africa and Asia by sea.
- The project has expanded to Africa, Oceania, and Latin America, significantly broadening China's economic and political influence.
- **Components** - BRI is made up of
  - o Belt (Land-based 'Silk Road Economic Belt') - Trans-continental passage that links China with Central and South Asia, the Middle East, and Europe
  - o Road (Sea-based '21st century Maritime Silk Road') - Route that connects China to Southeast Asia, Middle East, Africa, and Europe.
- **Completion**-The initiative is planned to be completed by 2049, coinciding with the centennial of the founding of the People's Republic of China.
- Membership - Currently 147 countries
- BRI will eventually encompass 100 countries representing 70% of the world's population, 55% of GDP and 24% of global trade.

### What is the current status of CPEC?

- **Investment**- The current total investment made is 25 billion dollars, and it was 19 billion dollars five years ago.
- **Big ticket projects-** Gwadar port is delayed due to the location in terms of security and logistical terms. The railway line upgrade known as ML-1 has moved ahead much more slowly than planned.
- **Completed projects**- Energy (Coal fired power stations) and road projects (Eastbay Expressway) have been largely completed.
- **Special Economic Zone**- The number is reduced from originally envisaged SEZs, as Pakistani

businesses were concerned that China would be given special benefits that would disadvantage domestic firms.

- **Economic feasibility-** There are uncertainties with the economic feasibility of some of the larger projects such as hydro-electricity dams and railways.
- **Slowdown of projects**- There has been a backing away from the multi-stage, transformative plan, and nothing significantly new has been agreed over the last few years.
- **Strained iron clad relationship**- China refused to expand cooperation in the areas of energy, water management, and climate change under CPEC.
- **Impact of COVID-19**- The economic impact of the global COVID-19 pandemic also slowed progress on CPEC projects, exacerbated Pakistan's economic crisis, and left China hesitant to grant leniency on debt payments.
- **Debt trap diplomacy**- CPEC initiatives proved to be a significant burden on Pakistan's already strained balance of payments.

### Debt-Trap Diplomacy

It is used to describe the China's policy of providing large loans to developing countries often with the alleged intention of trapping those countries in a cycle of debt and dependency on China.

### What are the major reasons for India to oppose CPEC?

- **Infringe sovereignty**- India opposes this project as it passes through Pakistan occupied Kashmir, infringing on India's sovereignty and territorial integrity.
- **Debt trap-** India has also been concerned with the economic non-viability of many of the BRI projects that have led to "debt trap" situations in countries like Sri Lanka.
- **Adhere to international norms** - India is of firm belief that connectivity initiatives must be based on universally recognized international norms, good governance, rule of law, openness, transparency, and equality.

- **Strategic implication**- The development of the deep-water port of Gwadar, a key component of CPEC, raises suspicions about potential military usage by China, which could threaten India's strategic interests in the Arabian Sea.
- **Naval threats**- The Gwadar port's proximity to the Strait of Hormuz, a critical global trade route, adds to India's apprehensions as it could enable China to exert control over maritime trade and pose challenges to Indian naval operations.
- **Military collaboration**- Potential military presence along the corridor raises concerns for India's defence preparedness.
- **Regional stability**- The lack of transparency regarding the financing raises questions about the long-term implications of CPEC on regional stability.

## 2. Ayushman Bharat-5 years of the Great Mission

*ProdEgyIAS's Expert Perspective: This article is also relevant to the topics of **Social Justice and Development Administration** of Public Administration Optional.*

**Why in the news?**

The Ministry of Health and Family Welfare is organising Arogya Manthan to celebrate 5 years of Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PMJAY).

**What is Ayushman Bharat Scheme?**

- It is the world's largest health assurance scheme.
- **Year of Launch** – 2018 as recommended by the National Health Policy, 2017
- **Ministry** - Ministry of Health and Family Welfare (MoHFW)
- **Aim** – To achieve the vision of Universal Health Coverage (UHC) which encompasses promotive, preventive, curative, palliative and rehabilitative care.

- **Funding** – Centrally Sponsored Scheme (expenditure incurred in premium payment will be shared between Central and State governments)
- **Coverage** - Targets over 10 crore families (approximately 50 crore beneficiaries) based on SECC (Socio-Economic Caste Census)
- Implementing Agency – National Health Authority (NHA)
- **Components** - It has 2 components covering all 3 types of care to the people.
  o Health and wellness Centres (HWC) – It cover primary care hospitalisation by providing comprehensive health care, including for non-communicable diseases and maternal and child health services.
  o Pradhan Mantri Jan Arogya Yojana (PM-JAY) – To provide a health cover of Rs. 5 lakhs per family per year for secondary and tertiary care hospitalization.
  o It covers up to 3 days of pre-hospitalization and 15 days post-hospitalization expenses such as diagnostics and medicines.
  o There is no restriction on family size, age, or gender.
  o Benefits of the scheme are portable across the country i.e.; a beneficiary can visit any empaneled public or private hospital in India to avail cashless treatment.
- Ayushman Bharat Digital Mission (ABDM) – It was launched in 2021 to provide Unique Digital Health IDs (UHID) for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically when required.

> *Public Health* is a *State Subject*, so states are responsible for providing effective public health for the people.

**Status of Ayushman Bharat Scheme:**

- About 15.5 crore families are covered.

- It amounts to potential coverage of 50% of India's population.
- 11 states/UTs have pushed for 100% coverage of their respective population.
- 48% of treatments under the scheme have been availed by women.
- More than 24 crore Ayushman Cards have been created.
- It has resulted in savings of more than Rs 1 lakh crore for the beneficiaries which is often cited as Out of Pocket Expenditure (OOPE).
- According to the World Bank, proportion of out-of-pocket expenditure on healthcare in India, at 50.59 %, is the highest among emerging economies.

**What attributes to the success of AB-PMJAY scheme?**

- **Private sector participation** – To elicit the participation of private service providers, health benefit packages (HBPs) are given.
- **Quicker settlement of claims** – Efforts are being made to settle the claims within a defined standard of 15 days.
  o A few states like Uttarakhand have brought down the claims settlement time to less than 7 days.
- **Rewarding service providers** – Reward to hospitals with a trustworthy record with an upfront payment of 50% of the claim without adjudication.
- In 2023, Uttar Pradesh received 2 awards for excellent work in PM-JAY and on the Ayushman Bharat Digital Mission (ABDM) from the Centre.
- **Guidance mechanism** – Every hospital is mandated to have dedicated _Pradhan Mantri Arogya Mitras (PMAMs)_ who guide the beneficiaries.

_Ayushman Mitra initiative_ is a part of PM-JAY where _any citizen of India_ can voluntarily enroll themselves as Ayushman Mitra to assist patients and to coordinate with beneficiaries and the hospital.

- **Interstate portability** – A patient registered in one state is entitled to receive care in any other state that has an AB-PMJAY programme.
- This has proved helpful to migrants, especially in emergencies.
- **Digitalised service delivery** – NHA has deployed a public dashboard that tracks implementation on a day-to-day basis.
- Ensures privacy – Beneficiary details are published without compromising their privacy and has faceless claim processing.
- **Real-time monitoring** – The National Anti-Fraud Unit (NAFU) and state level Anti-Fraud Units oversee anti-fraud incidences.
- Artificial Intelligence (AI) and Machine Learning (ML) technologies are used to detect suspicious transactions/potential frauds.
  o Aadhaar-based authentication for card creation and registration for treatment has been mandated.
- **Feedback mechanism** – The NHA's call centre makes calls to every beneficiary within 48 hrs of discharge to verify the quantity and quality of the treatment.
- **Inclusive treatment** –Around 50 packages were designed specifically for the transgender community, including packages on Sex Reassignment Surgery (SRS).
- **Holistic treatment** – It provides cashless secondary and tertiary inpatient care for almost all health conditions to its beneficiaries.

_The scheme has taken the country closer to **Sustainable Development Goal 3.8**, which envisions universal health coverage._

**What issues were noted by the CAG report for 2018 to 2021?**

- **Registration of beneficiaries** - The identification of beneficiaries based on the SECC could be irrelevant by now.

- The CAG audit shows that matching of beneficiaries with the SECC in the online portal was not done and registrations and rejections of applications was done in an arbitrary manner.
- The audit brought to light that there were large numbers of beneficiaries registered against the same mobile number or Aadhar.
- **Malpractices** - The auditors found large scale corruption in insurance claims settlement.
- **Hospital empanelment done without checks** - An Empanelled Healthcare Provider (EHCP) has to fulfil criteria like the presence of round-the-clock support systems like pharmacy, blood bank, laboratory, dialysis unit, ICU care etc.
- Many hospitals, after being empanelled for a certain set of fixed services, failed in providing them.
- **Missing hospitals** - The existence of hospitals in the empanelled list did not necessarily translate into even their existence in the scheme.
- **Shortage of infrastructure & personnel** - Shortage of healthcare infrastructure, doctors and equipment in many States and UTs.

*Public healthcare expenditure as a percentage of GDP at around 2%, places India among the underdeveloped economies.*

## 3. India-Canada Relations

**Why in the news?**

India and Canada are dealing with an unprecedented diplomatic crisis, after Canadian Prime Minister accused agents of the Government of India for killing Canadian Khalistani leader Hardeep Singh Nijjar in June 2023.

**What is the history of India Canada relations?**

- **Political relation**- India shared diplomatic relation with Canada in 1947, Canada supported plebiscite in Kashmir in 1948, which reflects the diplomatic relation shared by both countries.



- India-Canada Track 1.5 Dialogue was established involving experts, government officials and business leaders from both sides to explore the possibility of future cooperation.
- **Economic relations**- In 2022, India was Canada's,
  o 9th-largest merchandise trading partner in the Indo-Pacific region,
  o 13th-largest merchandise trading partner globally, and
  o 14th-largest destination for merchandise export.
- Both the countries formally agreed to relaunch *Comprehensive Economic Partnership Agreement (CEPA),* a free trade agreement covering negotiation on the trade in services and investment, etc.
- **Science and Technology**- MoUs were renewed at the 7th India-Canada Joint Science and Technology Cooperation Committee (JSTCC) focusing on quantum computing, artificial intelligence (AI), and cyber-physical systems etc.,
- **Agriculture**- Canada has agreed to examine the request for Conformity Verification Body (CVB) status to APEDA (Agricultural and Processed Food Products Export

Development Authority) for hassle-free export of Indian organic products.

- **Nuclear cooperation**- Nuclear Cooperation Agreement (NCA) was signed with Canada in 2010.
- **Space relations**- *ANTRIX*, the Commercial arm of ISRO, has launched several nanosatellites from Canada.
- ISRO in its 100th Satellite launched in 2018, flew Canadian 1st LEO satellite, from Indian spaceport Srihari Kota, Andhra Pradesh.
- **Education**- Shastri Indo-Canadian Institute (SICI) is a unique bi-national organization fostering, since 1968, education and cultural cooperation and collaboration between India and Canada.
- **Indian diaspora**- Canada hosts one of the largest Indian diasporas in the world, numbering 1.6 million (PIOs and NRIs) which account for more than 4% of its total population.
- **Cultural relations**- Canada was the Country of Focus at the 48th International Film Festival of India held in Goa in 2017.
- *IC-IMPACTS (India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability)* is the Centre of Excellence for development of research collaborations between Canada and India.

**INDIA AND CANADA, IN NUMBERS**

**Canada accounts for just 0.56% of the total FDI in India.**
DPIIT data show total FDI equity inflow between April 2000 to June 2023 was $645,386.0884 mn, of which only $3,642.5243 mn came from Canada.

**But Canada is home to 5.26% of overseas Indians**
Of the 3,21,00,340 overseas Indians, 5.26% (16,89,055) are in Canada, including 1,78,410 NRIs and 15,10,645 PIOs, according to MEA data.

**And every 7th Indian student abroad is in Canada**
In 2022, of the estimated 13,24,954 Indian students abroad, 13.83% (1,83,310) were in Canada, according to Ministry of External Affairs data.

**Canada is 4th largest source of tourists in India (2021)**
Canada accounted for 5.3% (80,437) of Foreign Tourist Arrivals (FTAs) in India in 2021; 72.6% of Canadian FTAs were members of the Indian diaspora. FTAs from Canada rose to 3,51,859 in the pre-pandemic year 2019 from 88,600 in 2001. Arrivals from Canada fell sharply post pandemic.

**Bilateral trade is tiny; its balance is in India's favour**
India's trade with Canada was $8,161.02 mn during FY 2022-23, just 0.70% of India's total trade of $1,165,000.88 mn. Canada was India's 35th biggest trading partner. The balance of trade is in India's favour; in 2022-23, India's exports to Canada stood at $4,109.74 mn, and imports at $4,051.29 mn.

HARIKISHAN SHARMA

**What is the issue now?**

- **Canada's allegation**- Canadian security agencies have been actively pursuing credible allegations of a potential link between agents of the Government of India and the killing of a Canadian citizen, Hardeep Singh Nijjar.
- Canada has said that its *Five Eyes partners* could re-evaluate intelligence sharing and law enforcement cooperation with India if Canadian officials uncover definitive proof of India's involvement in Nijjar's murder.

> *The Five Eyes network is an intelligence alliance comprised of the United States, the United Kingdom, Australia, Canada, and New Zealand.*

- **India's reply** - India has dismissed the accusations as "absurd" and "motivated."
- **Responses** - In response to Ottawa's expulsion of an Indian official related to the case, India has reciprocated by expelling a senior Canadian diplomat.
- India suspended visa services in Canada. E-visa services were stopped too.
- India has asked Canada to downsize its diplomatic staff in the country, arguing that there should be parity in strength and rank equivalence in the mutual diplomatic presence.
- Both countries declared that they would pause trade talks with each other.

**How will the tussle affect India?**

- **Destruction of public image** - The allegations can damage India's public image as a democratic nation committed to a rules-based order or its perception as a trustworthy ally.
- **Haven for separatists**- The big issue for India is the safe haven that Canada has provided to separatist Khalistani groups.
- **Affect education**- Temporary suspension of visas would affect India as Canada is the 2nd

most popular destination for Indian students, especially from Punjab and Haryana.

- **India Canada standoff**- Erosion of trust and confidence which makes it difficult for both countries to engage in key issues.
- **Disrupt trade relations**- It affects the balance of trade which is in India's favour, and Canada is among the few countries with which India has a trade surplus.



Top imports from Canada to India
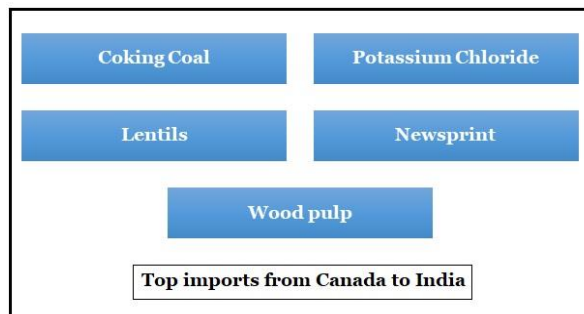
- The diplomatic tensions led to a pause in negotiations for a comprehensive free trade agreement between the two countries.
- **Hospitality sector**- Both countries issued travel advisories urging their citizens to 'exercise utmost caution' while travelling to some regions in the other country.
- **Affects revenue**- Canada is one of the top 10 countries to contribute to foreign tourist arrivals in Kerala.
- A strained relationship could affect the revenue.
- **Agriculture**- Canada is important to India as a supplier of:
  - Muriate of Potash (MOP) - It is the 3rd most consumed fertiliser in India after urea and di-ammonium phosphate.
  - Red lentil- Canada is the largest source of red lentils for India with the annual import being pegged at around 4-5 lakh tonnes.
- **Geopolitical relationship**- The recent standoff with Canada could affect India's relation with Western countries and groupings such as *QUAD*.

- Canada's Indo-Pacific strategy may be hindered without India's participation.

## What lies ahead?

- **People to people relation**- While the Canada-India dispute is a serious diplomatic matter, the relationship between their people remains robust.
- **Quiet diplomacy**- It is a diplomatic approach that focuses on behind the scenes negotiations and discussions.
- **Canada**- It should show respect for India's interest especially in Khalistan issue, which is a longstanding crisis between two countries.
- **India**- It should constructively engage with Canada on the entire gamut of legal processes and practices of both countries so that all grievances can be satisfactorily addressed.

# 4. Article 370 and 35 A

## Why in the news?

Recently, Chief Justice of India DY Chandrachud said that Article 35A of the Indian Constitution, took away the fundamental rights of the people of Jammu and Kashmir.

## Article 370:

- **Constitutional status:** Included in the Constitution on October 17, 1949, Article 370 exempted J&K from the Indian Constitution (except Article 1 and Article 370 itself) and permits the state to draft its own Constitution.
- It restricts Parliament's legislative powers in respect of J&K.
- For extending a central law on subjects included in the Instrument of Accession (IoA), mere "consultation" with the state government is needed. But for extending it to other matters, "concurrence" of the state government is mandatory.

- The IoA came into play when the Indian Independence Act, 1947 divided British India into India and Pakistan.
- **Part XXI**: Article 370 is the first article of Part XXI of the Constitution. The heading of this part is 'Temporary, Transitional and Special Provisions'.
  - o Article 370 could be interpreted as temporary in the sense that the J&K Constituent Assembly had a right to modify/delete/retain it; it decided to retain it.
- **Article 1:** Article 370 itself mentions Article 1, which includes J&K in the list of states. India has used Article 370 at least 45 times to extend provisions of the Indian Constitution to J&K.
  - o This is the only way through which, by mere Presidential Orders, India has almost nullified the effect of J&K's special status.
  - o By the 1954 order, almost the entire Constitution was extended to J&K including most Constitutional amendments.
- Article 3 of the J&K Constitution declares J&K to be an integral part of India. Moreover, people of state are referred as 'permanent residents' not 'citizens.'

**Article 35 A:**

- Article 35A stems from Article 370, having been introduced through a Presidential Order in 1954.
- Article 35A was not passed as per the amending process given in *Article 368* but was inserted on the recommendation of J&K's Constituent Assembly through a Presidential Order.

*Article 35A is unique in the sense that it does not appear in the main body of the Constitution — Article 35 is immediately followed by Article 36 — but comes up in Appendix I.*

- Article 35A empowers the J&K legislature to define the state's *permanent residents* and their special rights and privileges.

**Scrapping Articles 370 & 35A**:

### AUGUST 5-9, 2019: TWO PRESIDENTIAL ORDERS, FOUR LEGAL STEPS

**1** ON AUG 5, then President Ram Nath Kovind issued CO 272, a Presidential Order amending Article 367, which deals with the interpretation of the Constitution. CO 272 inserted a proviso in Article 367 which stated that the reference to the "Constituent Assembly" in Article 370(3) would instead be a reference to the "Legislative Assembly".

This paved the way for changes to Article 370 itself. Article 370(3) reads: "Notwithstanding anything in the foregoing provisions of this article, the President may...declare that this article shall cease to be operative or shall be operative only with...exceptions and modifications...as he may specify: Provided that the recommendation of the Constituent Assembly of the State referred to in Clause (2) shall be necessary before the President issues such a notification."

**2** WITHIN HOURS of the President issuing CO 272, Rajya Sabha recommended that Article 370 should cease to operate. Since Jammu and Kashmir was then under President's Rule, the Governor of the erstwhile state assumed the powers of the Legislative Assembly, and Parliament made the recommendation on behalf of the Governor.

**3** ON AUG 6, President Kovind issued a second proclamation, CO 273, operationalising the Rajya Sabha's recommendation. This meant that Article 370 effectively ceased to operate.

**4** ON AUG 9, Parliament passed The Jammu and Kashmir Reorganisation Act, 2019, bifurcating the state into two Union Territories.

- The Special status of Jammu & Kashmir was withdrawn by invoking the same Article 370 which had been seen as firewalling the autonomy of Jammu and Kashmir.
- Through the Constitution (Application to Jammu and Kashmir) Order, 2019, issued by President Ram Nath Kovind "in exercise of the powers conferred by Clause (1) of Article 370 of the Constitution", the Presidential Order has extended all provisions of the Indian Constitution to Jammu and Kashmir, including the chapter on Fundamental Rights.
  - o This clause enabled the President to specify the matters applicable to Jammu and Kashmir in concurrence with the Jammu and Kashmir government.
  - o The order amended Article 367, which contains guidance on how to read or interpret some provisions.
- Therefore, the discriminatory provisions under Article 35A are now unconstitutional. The President may also withdraw Article 35A.

**Constitutional and Legal Challenges for Constitutional Order 272 / Scrapping of Article 370 and 35A:**

- **Permanent feature of Constitution**: Article 370 had become a "permanent feature" of the Constitution.
  - o It has been argued by the petitioners that the provision is referred to as a "temporary provision" not because it can be terminated by the President, but because the provision gave the Constituent Assembly of Jammu and Kashmir the power to recommend changes to Article 370 until the state's Constitution was enacted.
- **Authority of Rajya Sabha**: It has been argued that Rajya Sabha cannot assume powers on behalf of the Governor even under Article 356 that the Legislative Assembly itself does not have.
  - o Article 356 states that during President's Rule, "powers of the Legislature of the State shall be exercisable by or under the authority of Parliament."

The most important feature of federalism in the United States was the "compact" between the 13 erstwhile British colonies that constituted themselves first into a confederation and then into a federal polity under the country's 1791 constitution. India's Supreme Court in State of West Bengal v. Union of India (1962) attached the highest importance to an "agreement or compact between states" as an essential characteristic of federalism. In SBI (2016), the apex court accepted the presence of this compact for Kashmir. Article 370 was an essential facet of India's federalism because, like the compact in the United States, it governed the relationship of the Union with Jammu and Kashmir. The Supreme Court has held federalism to be part of the basic structure of India's Constitution.

- **The legality of the presidential order**: A presidential order cannot change Article 370 on its own itself. The Order alters Article 367; however, the main content of the amendments amends Article 370.

  - o "You cannot do indirectly what you cannot do directly", the Supreme Court has repeatedly ruled. As a result, the order's constitutionality insofar as it modifies Article 370 is in controversy.
- **Misusing the President's Rule:** The governor serves as the Union Government's representative in the State. The Union Government has practically consulted itself for this amendment.
  - o Additionally, the President's Rule is just a temporary solution until the elected administration returns to power. Decisions of a permanent nature, such as altering a state's entire status, made by the governor rather than the elected legislative assembly are therefore intrinsically problematic.
- **Article 147 of Jammu & Kashmir Constitution:** By assuming that the legislative assembly has the authority to repeal Article 370, the presidential decision goes against Jammu and Kashmir's interpretation of the constitution.
  - o Nevertheless, such a move is forbidden by Article 147 of the Jammu and Kashmir Constitution.
  - o The Article clearly states that two-thirds of the members of the legislative assembly must agree before any amendments to the Jammu and Kashmir Constitution can be made.

**What lies ahead?**

- The repeal of Articles 370 and 35A constituted a momentous turning point in India's constitutional landscape.
- Through a series of constitutional maneuvers, the autonomy which was granted through these provisions was removed, which gave space for legal disputes and discussions.
- The careful balance that must be struck between the ideas of federalism and unity is imperative to respect the diverse country like India.

- Continuous efforts to reconcile the diverse identities within the Indian Union is required. The way forward will necessitate careful evaluation of legal precedents, constitutional principles, and regional residents' ambitions.

## 5. Constitutional Amendments for State's Ratification

*ProdEgyIAS's Expert Perspective: This article is also relevant to the topics, **Political-Administrative Reforms, Union Government, Federal Relations, Democracy** of Paper II of Public Administration Optional.*

### Why in the news?

The Law Ministry has recommended the Ram Nath Govind panel to examine if the constitutional amendments required to facilitate simultaneous elections would require ratification by the States.

### How is the Constitution amended?

*Article 368 in Part XX of the Constitution deals with the powers of Parliament to amend the Constitution and its procedure.*

- **Article 368**- It states that the Parliament may, in exercise of its constituent power, amend by way of addition, variation or repeal any provision of the Constitution in accordance with the procedure laid down for the purpose.
- **Limitation**- In the Kesavananda Bharati case (1973), the Supreme Court ruled that the Parliament cannotamend those provisions which form the 'basic structure' of the Constitution.
- **Procedures of Constitutional Amendments**-
- Simple majority- It does not require specific quorum.
- It is applicable to:

- o **Article 4**- It is related to changes in the organisation of states,
- o **Article 169**- It deals with abolition or creation of Legislative Councils in States,
- o **Schedule VI**- Provisions for the administration of Tribal Areas in the States of Assam, Meghalaya, Tripura, and Mizoram.
- **Special majority** - The requirement is applicable only to the final voting stage.
- Lok Sabha rules prescribe adherence to special majority at all effective stages of the Bill.
- It is applicable to:
  - o Fundamental Rights
  - o Directive Principles of State Policy
  - o All other provisions which are not covered by the 1st and 3rd categories.

| | |
|---|---|
| **Simple majority** | • It is outside the purview of Article 368.<br>• It is amended in the same way as normal legislations are passed |
| **Special majority** | • For amending provisions not within the first category.<br>• Majority of total membership of each House and<br>• Majority of 2/3rd of the members of each House present and voting. |
| **Special majority + States ratification** | • It is related to the federal structure of the polity<br>• Amendment-Special majority of Parliament<br>• Half of the state legislatures consent by simple majority |

- **Special majority + States ratification**- The moment half of the states give their consent, the formality is completed.
- There is no time limit within which the States should give their consent to the bill.
- **Revoking the ratification** – There is no specific mention in the Constitution about the States revoking their ratification.

**States Ratification in the U.S.**

- The U.S. Constitution does not specify any such time period. However, in Dilllon v. Gloss (1921), the U.S. Court held that State ratification must take place within 'reasonable time'.
- In the U.S., once a State has agreed to an amendment and communicated it to the Secretary of State, it cannot revoke its ratification. However, the US Court in Chandler v. Wise (1939) held that a state can ratify an amendment even if it has rejected it previously.
- **States Ratification was applied for:**
  - o 99th Amendment Act- Established the National Judicial Appointments Commission (NJAC) for the appointment of Supreme Court judges.
  - o 101st Amendment Act 2016- Introduced GST regime.
  - o Federal structure- Specifically listed in Article 368(2) and are commonly referred to as 'entrenched provisions'.

| Entrenched Provisions | Article |
|---|---|
| Election to the President of India | Article 54 and 55 |
| Extend of the executive power of the Union or State government | Article 73 and 162 |
| Union judiciary | Article 124-147 |
| High court | Article 214-231 |
| Distribution of legislative powers between the Union and the states | Article 245 to 255 |
| Any of the lists mentioned in 7th schedule | Union list, State list, Concurrent list |
| Representation of states in the Parliament | Article 82 |

| | |
|---|---|
| Goods and Services Tax Council | Article 279-A |
| Power of Parliament to amend the Constitution and its procedure | Article 368 itself |

## 6. PM-PRANAM Scheme

***ProdEgyIAS's Expert Perspective****: This article is also relevant to the topic of **Social Justice** of Public Administration Optional.*

**Why in the news?**

Promotion of the PM-PRANAM scheme will help the government reduce subsidy bills and fiscal deficits**.**

| **Fertiliser Requirement of India** |
|---|
| <ul><li>The Department of Agriculture and Farmers Welfare assesses the requirement of fertilisers each year before the start of the cropping season and informs the Ministry of Chemicals and Fertilisers to ensure the supply.</li><li>Fertilizer season- The Kharif season (June-October) accounts for nearly half the year's production of foodgrains, one-third of pulses and approximately two-thirds of oilseeds.</li><li>A sizable amount of fertiliser is required for this season.</li><li>**Fertilizer Consumption** - India has consumed about 500 LMT of fertilizer over the last ten years.</li><li>In 2020, the overall consumption of fertilisers stood at about 61 million tonnes, of which urea consumption increased exponentially.</li><li>India is a major buyer of Diammonium Phosphate (DAP).</li><li>India is the **2nd largest consumer** and the **3rd largest producer** of urea in the world.</li><li>India consumes around 33 million tonnes of urea annually, of which almost 70% is domestically produced</li></ul> |

and the rest is imported from other countries.



SPIKE IN CHEMICAL FERTILISER REQUIREMENT
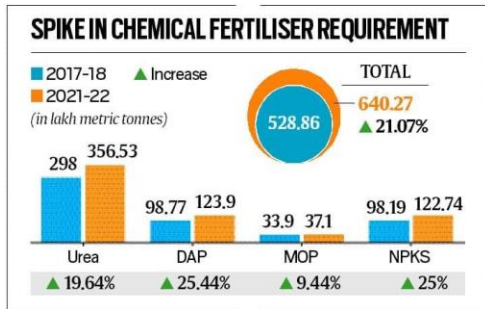
## What is PM- PRANAM?

- **Launch**- PM-PRANAM (PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth) was launched in Union Budget 2023–24.
- **Aim**- To promote the balanced use of chemical and alternative fertilisers, generating awareness of regenerative agriculture (RA).

> **Regenerative Agriculture** is an outcome-based food production system that:
> - Nurtures and restores soil health,
> - Protects the climate, water resources and biodiversity, and
> - Enhances farms' productivity and profitability.

- **Objective** - To incentivise the States and UTs to promote usage of alternative fertilizers and balanced use of chemical fertilizers.
- **Budget** - While the PRANAM scheme has no separate budget, a 50% subsidy savings will be provided to States/UTs.
- 70% of the grant provided under the scheme can be used for asset creation related to technological adoption of alternate fertilisers and alternate fertiliser production units.
- 30% grant money can be used for incentivising farmers, panchayats,

farmer producer organisations, self-help groups, etc.
- **Data**- iFMS (Integrated fertilisers Management System) data available in the Fertiliser Ministry dashboard will be used for this purpose.

## Why was the scheme introduced?

- **Increased demand**- The total requirement of 4 fertilisers — Urea, DAP (Di-ammonium Phosphate), MOP (Muriate of potash), NPKS (Nitrogen, Phosphorus and Potassium) — increased by 21% between 2017-2018 and 2021-2022.
- **Increase in subsidy-** Due to increased demand for fertiliser in the country over the past 5 years, the overall government expenditure on subsidies has also increased.
- Reduced use of chemical fertiliser will reduce the burden on the exchequer.
  - In 2022-23, the government has allocated Rs 1.05 lakh crore, but the fertiliser subsidy could cross Rs 2.25 lakh crore during this year.
- **Eco-friendly-** It seeks to reduce the use of chemical fertiliser, in line with the government's focus on promoting the balanced use of fertilizers.

## What lies ahead?

- **Reduce subsidy**- The gradual phase-out of subsidies on chemical fertilisers can stimulate alternative or bio-fertiliser adoption.
- Phase out retention pricing scheme- Retention pricing scheme which safeguards chemical fertiliser (urea) manufacturers, can be phased out to promote alternative fertiliser production.
- **Provide incentives**- The margin on bio-fertiliser sales should be worked out to incentivise sales and distribution networks.

- Lesson from Sri Lankan food crisis- Demonstrating alternative fertilisers on farmer fields is critical, to showcase higher productivity.
- Proper certification of such products can help farmers, or their organisations realise a remunerative price.
- **Improve infrastructure**- In Budget 2023-24, the government said that 10,000 Bio-Input Resource Centres will be set up over the next three years.
- It will create a national-level distributed micro-fertiliser and pesticide manufacturing network.

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**Steps Taken to Promote Use of Alternate Fertilisers**
- **DBT (Direct Benefit Transfer) system**- It was launched in 2016 to plug leakages in fertiliser subsidy.
- 100% subsidy on various fertiliser grades is released to the fertiliser companies on the basis of actual sales made by the retailers to the beneficiaries.
- **Nano urea**- India's first liquid nano urea plant is inaugurated at Kalol, Gujarat.
- It has a shelf life of a year, and farmers need not be worried about caking when it comes in contact with moisture.
- **Urea Gold** – It is a new variety of urea that is coated with sulphur which is expected to address sulphur deficiencies in the soil.
- Usage of "Bio-stimulants" in the Fertilizer Control Order-1985 (FCO).
- **Soil Health Card**- It was launched in 2014, gives information to farmers on the nutrient status of their soil.
- It gives recommendations on appropriate dosages of nutrients to be applied for improving soil health and fertility.
- **Neem-coated urea**- All the indigenous and imported urea were neem coated so as to make the urea slow release and difficult to use for non-agricultural purposes.
- **Paramparagat Krishi Vikas Yojana**- Assistance of Rs 50,000 per hectare/ 3 years is given.

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- In this, Rs. 31,000 (62%) is provided to the farmers directly through DBT, for inputs (bio-fertilizers, biopesticides, vermicompost, botanical extracts etc.)
- Mission Organic Value Chain Development for Northeastern Region- Farmers are given assistance of Rs 25000/ ha/ 3 years for both on farm & off-farm organic inputs, and seeds/ planting material.
- **National Mission on Oilseeds and Oil Palm**- Financial assistance at 50% subsidy to the tune of Rs. 300/- per ha is being provided for different components.
- It includes bio-fertilizers, supply of Rhizobium culture/Phosphate Solubilising Bacteria (PSB)/ Zinc Solubilising Bacteria etc.,
- **National Food Security Mission**- Financial assistance is provided for promotion of Bio-Fertilizer (Rhizobium/ PSB) @50% of the cost limited to Rs.300 per ha.
- **INM &IPM**- Government of India has also been promoting soil test based Integrated Nutrient Management (INM) under Soil Health Card Programme and Integrated Pest management (IPM) practices for judicious use of chemicals.

## 7. India- South Korea

The historic Camp David Summit held in August 2023 gives India and South Korea a unique opportunity to enhance their strategic partnership.

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**Camp David Summit**

- **Countries**- It is held among the leaders of the
  - United States,
  - Japan, and the
  - Republic of Korea (ROK)
- **Need**- To consult promptly with each other during crises and to coordinate responses to regional challenges, provocations and threats affecting common interests.

- **Cooperation**- It committed to hold trilateral military training exercises annually and to share real-time information on North Korean missile launches by the end of 2023.
- The countries promised to hold trilateral summits annually as well.
- **Project**- They would launch supply-chain early warning system pilot project to expand information-sharing and fight economic coercion together.
- **Russia-Ukraine War**- The leaders agreed to continue supporting Ukraine and to maintain strong, coordinated sanctions against Russia, while aiming to curb the dependence on Russian

## What is the history of India-South Korea relations?

- **Historical relation**- According to the 13th century Korean historical text "SamgukYusa" or "Heritage History of the Three Kingdoms", Princess Suriratna from Ayodhya (India) came to Korea in the year 48 AD.
- She married King Kim-Suro of the erstwhile Gaya Confederacy in ancient Korea and became Queen Heo Hwang-ok. Many Koreans trace their ancestry to this lineage.
- **Buddhism**- Some scholars believe that Buddhism reached Korea via the maritime route with the arrival of Princess Suriratna and her brother Monk Jangyu.
- **Literature**- Nobel Laureate Rabindranath Tagore composed a short but evocative poem titled 'Lamp of the East' in 1929 about Korea's glorious past and its promising bright future.
- **Political relations**- India played an important role in the Korean peninsula after Korea's independence in 1945.

- Former Indian diplomat Shri K P S Menon was the Chairman of the 9-member UN Commission set up in 1947 to hold elections in Korea.
- In 2018, both countries issued a statement outlining a "Vision for People, Prosperity, Peace and our Future."
- **Diplomatic relations**- Consular relations were established in 1962. Both established diplomatic relations in 1973.
- **Economic relations**- They both formed a "Strategic Partnership" in 2010, which was elevated to "Special Strategic Partnership" in 2015.
- **Korea plus**- This initiative aims to facilitate Korean investments in India.
- **Bilateral trade**- In 2022, it reached record levels of 27.8 billion dollars.
- India's import volume stands 18.8 billion dollars, while the export volume is 9 billion dollars.
- **Defence**- In 2020, India and South Korea signed a Roadmap for Defence Industries Cooperation.
- **Cultural relations**- In 2011, the Indian Cultural Centre was established in Seoul to showcase India's rich cultural heritage and promote cultural exchanges between both countries.

## What is the significance of Camp David meet?

- **Regional security**- It indicates a much-needed repair in South Korea and Japan relations.
- **Strengthen US alliance structure-** The summit reflects the multipolar urges of the contemporary international system in East Asia along with groupings such as
  - **AUKUS**- U.S, United Kingdom, Australia
  - **Quad** -India, Japan, Australia, U.S
  - **CHIP 4 Alliance**- U.S., Japan, Taiwan, and South Korea

- **New strategic direction**- It has the potential to set South Korea on strategic direction in Indo-Pacific with
  o Improved relations with Japan
  o More synergy with the American view on China
  o Enhance the engagement of Indo- Pacific
- **China challenge**- It marks a strategic shift in Seoul's traditional approach of not offending China at any cost.
- **QUAD grouping**- This summit mooted the South Korea's keen desire to join the group, it might apply for a membership in Quad Plus in 2024.
- **New foreign policy**- The main goal is to make South Korea a "global pivotal state".

**How would the summit strengthen India-Korea relations?**

- **Natural partner**- Korea is a natural partner for India in Indo-Pacific. It is due to a number of reasons.
  o South Korea's location in the Indo-Pacific, close to China.
  o It is a U.S. ally provides India with a like-minded strategic partner.
  o For both, the rise of China and its unilateral attempts at reordering the Asian security architecture are of great concern.
- **Regional partner**- For India, Seoul can be an important regional partner at a time when India is closer to the U.S. and is concerned about Chinese intentions and power like never before in history.
- **Enhance the relation** - It provides a unique opportunity for India and ROK to enhance their strategic partnership in the 50th year of their diplomatic relationship.
- **Diplomatic relations**- The partnership could also benefit from reciprocal visits by Prime Minister Narendra Modi and Mr. Yoon to each other's country.

**What lies ahead?**

- Political cooperation- The two sides should consider establishing an annual summit at the level of
  o Foreign Ministers Meet
  o 2+2 format dialogue

*India currently has 2+2 dialogues with the U.S., Japan, Australia, and Russia.*

- **Foster technology**- Both could explore the possibility of negotiating a South Korea-Japan-India-U.S. initiative on Critical and Emerging Technology (iCET), along the lines of the recently concluded India-U.S. iCET.
- **Defence** -South Korea's willingness and ability to cater to India's defence needs within the ambit of India's 'Make in India' programme must be utilised.
  o Example-The K9 Vajra, a 155 mm self-propelled howitzer, built by L&T with technology from South Korea's Hanwha Defense
  o South Korean-built K2 Black Panther tanks could also be co-produced in India for the Indian Army or third countries.
- **Nuclear energy-** Given Seoul's remarkable track record in supplying cheaper and faster nuclear reactors India could consider purchasing Korean-built reactors so as to expand the share of nuclear energy in the country's energy basket.

## General Studies III

### 1. Challenges in Tripling Global Renewable Energy Capacity

***ProdEgyIAS's Expert Perspective:*** *This article is also relevant to the topic, **Environmental Governance** of Public Administration optional.*

**Why in the News?**

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G20 countries have committed to work towards tripling Global Renewable Energy capacity by 2030 but there are several challenges in achieving the target.

**What are the climate actions taken in G20 meet 2023?**

The G20 nations collectively contribute to approximately 80% of global emissions.

- Delhi Declaration on Climate Action (G20 2023) - The only new and clear deliverable is tripling global renewable energy capacity by 2030.
- It recognised the need to accelerate efforts towards the phase down of unabated coal power in line with national circumstances.
- For the 1st time, G20 nations agreed on requirements of $5.9 trillion funds by 2030 to meet their climate goals.
  - According to IAEA, this could prevent 7 billion tonnes of carbon dioxide emissions by 2030.
- UK PM Rishi Sunak has announced $2 billion to Green Climate Fund (GCF) to tackle climate change at G20 Meet.

> *The GCF, established by 194 countries (Copenhagen Accord at COP15) is the largest global fund dedicated to supporting developing countries to reduce global emissions and helping communities adapt to the effects of climate change.*

- **Issues unaddressed** – The Summit avoided most of the contentious issues like greater emission cuts, phase-out of fossil fuels, and massive mobilisation of financial resources.
- It also did not provide any plan to amend existing policies and targets in order to achieve the target of ramping up of renewables.

**Status of Renewable Energy Production**

- **Global status** - The current global installed capacity of renewable energy is just short of 3,400 GW.
- Annual capacity additions of renewable energy are growing by around 10% every year.
- India and China together account for more than 50% of global capacity additions in each of the last five years.
- India's status - India is the 3rd largest energy consuming country in the world.
- As per Renewables 2022 Global Status Report, India stands.
  - 4th globally in renewable energy installed capacity.
  - 4th in wind power capacity
  - 4th in solar power capacity
- India has already achieved its target of 40% installed electric capacity from non-fossil fuels.
- India's installed non-fossil fuel capacity stands at more than 179.322 Giga Watts (including large Hydro and nuclear), about 43% of the country's total capacity (as of July 2023).
- Up to 100% FDI is allowed under the automatic route for renewable energy generation and distribution projects subject to provisions of The Electricity Act 2003.



RENEWABLE CAPACITY ADDITION GLOBALLY (IN MW)
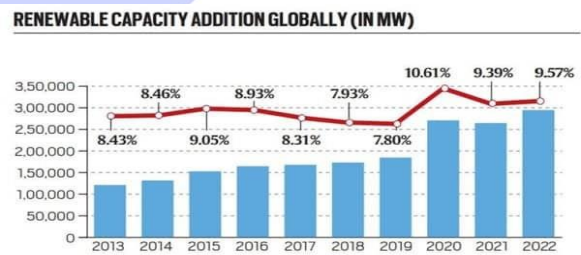
**What are the challenges in tripling renewable energy capacity by 2030?**

**Capacity additions** - Annual capacity additions have more than doubled from 2015 to 2022, rising by about 11% per year on average.

- But a higher annual growth rate is required to put renewables on track to meet the 2030 capacity target.
  - To triple the total capacity by 2030, the world would have to add nearly 1,000 GW of new capacity every year.
- Policy push - A higher annual growth rate would require much stronger policy push from governments.
- Availability of financial resources - According to an IRENA outlook, investments of about 5.3 trillion USD would be required per year, till 2050, for energy transition to limit the global rise in temperatures to within 1.5 degree Celsius from pre-industrial times.
- Achieving 1.5-degree Celsius goal- Even if the triple target is achieved by 2030, it alone would not be sufficient for the 1.5-degree Celsius goal.
- Renewable energy, if tripled, would be able to avoid only 7 billion tonnes of CO2 equivalent, or less than one third of what is required.

**Role of ISA in tripling Renewable Energy capacity**

Solar energy constitutes more than 50% of new renewable energy capacity additions every year.

- International Solar Alliance (ISA) – It was a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.
- It was conceptualized in COP21 to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.
- Currently, all member states of the United Nations are eligible to join the ISA.
- At present, 116 countries are signatories to the ISA Framework Agreement and 94 countries have ratified.

- **Role of ISA** - The ISA was created specifically for the purpose of rapidly scaling up solar energy across the world.
- ISA has launched the Green Hydrogen Innovation Centre to produce, transport and use low and zero-carbon hydrogen.
- It provides guarantees in crowding-in private sector investment into solar mini-grids in Africa.
- ISA is strengthening 20 solar startups in Africa which are to be expanded in other regions.

## 2. SDG Summit 2023

***ProdEgyIAS's Expert Perspective****: This article is also relevant to the topics, **Good Governance/Development Administration** of Public Administration Optional.*

**Why in the news?**

In the High-level Sustainable Development Goals (SDG) Summit 2023 held in New York, the world leaders endorsed a resolute political declaration, outlining their shared commitment to create a sustainable and inclusive world by 2030.

**What is the SDG Summit about?**

- The 2030 Agenda on Sustainable Development and its 17 SDGs is a global plan of action to drive economic prosperity and social well-being while protecting the environment.
- Countries established the **High-level Political Forum on Sustainable Development (HLPF)** to boost efforts to achieve the goals.
- The HLPF meets every year under the auspices of the Economic and Social Council, to review progress, examine obstacles, exchange best practices, and recommend new actions to achieve the 2030 Agenda.
- Countries agreed that every four years, the HLPF will meet under the auspices of the

General Assembly at the level of Heads of State and Government.

- In 2019, the 1st SDG Summit – the HLPF under the auspices of the General Assembly was convened in New York since the adoption of the 2030 Agenda in 2015.
- The 2nd SDG Summit was held in New York and was chaired by the President of the General Assembly.
- It resulted in the adoption of the Political Declaration, "Gearing up for a decade of action and delivery for sustainable development".



**What are the key highlights of the summit?**

- **Themes:**
  - Our shared commitment
  - Our changed world - Progress and remaining gaps and challenges.
  - Call to action – turning our world towards 2030.

| **Our Shared Commitment:** |
| --- |
| To review progress and accelerate the implementation of the 2030 Agenda for Sustainable Development |
| **Addis Abba Action Agenda:** Reaffirmed this agenda as integral part of the 2030 Agenda. |
| **Rio Declaration on Environment and Development:** Reaffirmed to the principle of common but differentiated responsibilities |
| **Global Accelerator on Jobs and Social Protection for Just Transitions**: Appreciated |

| |
| --- |
| this initiative which is led by ILO and UNDP that will create at least 400 mn jobs, primarily in the green, digital and care economies, and extend social protection floors to 4 bn people by 2030. |
| **Our Changed World - Progress and Remaining Gaps and Challenges:** There is a need for immediate course correction and acceleration of progress toward achieving the SDGs, due to COVID pandemic. |
| **Gap in funding:** The annual SDG funding gap has risen from 2.5 trillion dollar before the pandemic to an estimated 4.2 trillion dollars. |
| **Vienna Programme of Action:** Encouraged the progress of the programme in addressing the challenge of landlocked developed countries. |
| **SAMOA Pathway:** Encouraged the progress of Small Island Developing States Accelerated Modalities of Action (SAMOA) pathway which was the outcome of 3rd International Conference on Small Island Developing States. |
| **Doha Programme of Action:** Committed to the full implementation of the program which is a 10-year strategy to help world's 46 most vulnerable countries to achieve SDG for LDCs for the decade 2022-31**.** |

| **Call to Action – Turning our World towards 2030** | |
| --- | --- |
| **World Social Summit - 2025** | Look forward to the proposed world social summit in 2025 and emphasize that the summit outcome should give momentum towards the implementation of the 2030 Agenda. |
| **Education** | Recognize that early childhood education and care can generate substantial benefits for children and took |

| | | | |
|---|---|---|---|
| | note of 2022 UN <u>Transforming Education Summit.</u> | | regional, and global level |
| **Water related issues** | It took note on International Decade for Action, "Water for Sustainable Development", 2018-2028 and the water-related goals and targets of the 2030 Agenda and commended the convening of the UN 2023 Water Conference. | **Convention on Biological Diversity** | Committed to take urgent action to halt and reverse biodiversity loss by 2030. |
| | | **United Nations Convention to Combat Desertification** | Affirmed to combat desertification, land degradation, drought and floods, sand, and dust storms, and to achieve land degradation neutrality. |
| **New Urban Agenda** | Committed to make cities and human settlements inclusive, safe, resilient, and sustainable, through the implementation of this Agenda, to contribute to the achievement and localization of the 2030 Agenda | **UN Convention on the Law of the Sea** | Emphasised the need to enhance the Convention, which provides the legal framework for the conservation and sustainable use of oceans and their resources. |
| **10-Year Framework of Programmes on Sustainable Consumption and Production Patterns** | Recommitted to make fundamental changes in our consumption and production patterns through the implementation of the 10-Year Framework. | **Intergovernmental Negotiating Committee (INC)** | Supports the work of INC to develop an international legally binding instrument on plastic pollution, including in the marine environment by 2024. |
| **Renewable energy** | Committed to increase the share of renewable energy in the global energy mix by 2030. | **Official Development Assistance (ODA)** | Urged the developed countries to achieve the target of 0.7% of gross national income for ODA to developing countries and 0.15 to 0.20 % of ODA to LDCs. |
| **Sendai Framework for Disaster Risk Reduction (2015-30)** | Recommitted to the full implementation of the Sendai Framework to promote a disaster risk-informed approach to sustainable development at the local, national, | | |

## 3. Privatisation of Space Sector

*ProdEgyIAS's Expert Perspective: This article is also relevant to the topics of **Public Private Partnership, Globalisation & Privatisation** of Public Administration Optional.*

**Why in the news?**

IIT-Madras based space tech startup, Agnikul Cosmos, will soon launch its small satellite rocket, Agnibaan SOrTeD (SubOrbital Technological Demonstrator).

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**Status of India in Global Space Market**
- As per SpaceTech Analytics, in 2021, India is the 6th largest player in the industry internationally having 3.6% of the world's space-tech companies.
- U.S. leads the list housing 56.4% of all companies in the space-tech ecosystem.
- **Value** - The Indian Space Industry was valued at 7 billion dollars in 2019 and aspires to grow to 50 billion dollars by 2024.
- **Cost effectiveness** - The country's standout feature is its cost-effectiveness.
- India holds the distinction of being the first country to have reached the Mars' orbit in its first attempt.
- The total cost for Mangalyaan mission is 75 million dollars which is way cheaper than Western standards.



India space sector in US dollar billion

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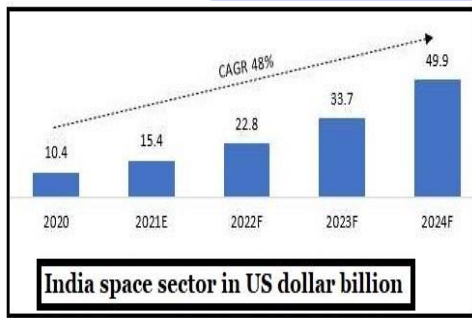
**What is the need for Privatisation?**

- The global space economy is currently valued at about USD 360 billion.
- Despite being one among a few spacefaring nations in the world, India accounts for only about 2% of the space economy.
- Over the last 2 decades, the private sector has played an increasingly important role in other spacefaring countries.

- Examples - SpaceX, Blue Origin, Virgin Galactic, and Arianespace.
- In India, players within the private space industry have been limited to being vendors or suppliers to the government's space program.
- Thus, a need arises for Non-Governmental Entities (NGEs) to participate in Indian space programme and boost India's market share in Global Space Economy.

**Indian space contribution**
**2% of global market share**

% of global market share

| | |
|---|---|
| US | 40% |
| UK | 7% |
| India | 2% |

| | |
|---|---|
| Global space economy (in 2021) | USD 386B |
| India (in 2021) | USD 7.6B |

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**Agnibaan**
- **About** - It is a 2-stage launch vehicle that is capable of taking payloads of up to 100 kilograms to a low-earth orbit around 700 kilometres from the surface of the Earth.
- **Engine** - The Agnibaan rocket will be powered by the company's 3D-printed Agnilet engines.
- **Agnilet Rocket** - It is entirely 3D-printed, single-piece, 6 kN semi-cryogenic engine.
- **Propellant** - A mixture of liquid kerosene at room temperature and super cold liquid oxygen to propel itself.
- Agnikul successfully test-fired the Agnilet engine at ISRO's facility in Thiruvananthapuram.

## What are the advantages of privatisation?

- **Reduces ISRO's burden** - Private participation will free up ISRO to concentrate on science, research and development, interplanetary exploration, and strategic launches.
- **Commercialisation**- Globally, private players in space are increasing due to commercial benefits.
- **Increase investment**- Due to revised Foreign Direct Investment, it would foster improved technology and efficiency.
- **Cost Competitive** - Promoting the private sector will enable the India to remain cost competitive within the global space market.
- **Job creation** - This would tap the potential of young entrepreneurs and create more employment opportunities.
- **Indigenization** - Indian Space Association supports the government's vision of 'Atmanirbhar India' (self-reliant India) and 'Make in India' to become a leader in the global space industry.
- **Infrastructure** - Agnikul cosmos launched India's first private launch pad and mission control centre at the Satish Dhawan Space Centre in Sriharikota.
- **Global leader-** Privatisation would make India a global leader in space sector.

## What are the steps taken by India to support private sector in space?

> *Indian Space Research Organisation formed in 1969. It is under Department of Space overseen directly by the Prime Minister of India*

- **Demand based Model** - In order to enhance utilization and maximize benefits from the space assets, it is proposed to change the approach from Supply Based Model to Demand Based Model.

- NewSpace India Limited (NSIL) will act as the aggregator of user requirements and obtain commitments.
- NSIL-New Space India Limited launched in 2019 as a wholly owned Government of India Undertaking under the administrative control of Department of Space (DOS).
- It will help in transferring technologies developed by ISRO to industries for commercialisation
- IN-SPACe-Indian National Space Promotion and Authorisation Centre is an autonomous body established in 2020 under the Department of Space.
- It aims to create an eco-system of industry, academia, and start-ups and to attract a major share in the global space economy.
- Indian Space Association- It was launched in 2021, to help private players carry out independent space activities, facilitate services and technology developed by ISRO to be utilised in the private sector.
- Revised FDI guidelines- This would open huge investment opportunities for foreign companies.
- FDI in the space sector is allowed up to 100% in the area of Satellites-Establishment and Operations through Government route.
- Atal Tinkering Labs- To boost participation of young people and students in the Indian space sector.
- It is an initiative of NITI Aayog, in collaboration with ISRO and the Central Board of Secondary Education (CBSE) as part of the Atal Innovation Mission.
- Indian Space Policy 2023 - The policy formally laid down the regulations of privatizing space missions in India, and also denoted clear guidelines of operations for NewSpace India Limited (NSIL), ISRO's commercial arm ANTRIX and Indian National Space Promotion and Authorization Centre (IN-SPACe).

**What lies ahead?**

- Optimal utilisation of space technology will revolutionise the delivery of governance services and enhance developmental efforts.
- The Indian space sector can potentially inspire the young populace with scientific curiosity and encourage them to pursue a career in STEM.
- Indian space sector has an opportunity to create a vibrant ecosystem for start-ups and private enterprises.
- Being one of the few spacefaring countries, India is increasingly encouraging private sector participation through various reforms that are expected to help India achieve a market share of more than 10% in the global space sector by 2030.

## 4. ISRO creates History

**How did ISRO evolve?**

- Dr.Vikram Sarabhai is known as father of Indian space programme.
- Indian Space Research Organisation (ISRO) is the space agency of India.
- Role- It is involved in science, engineering and technology to harvest the benefits of outer space for India and the mankind.
- Formation - It was formed on August 15, 1969 and superseded Indian National Committee for Space Research (INCOSPAR), set up in 1962 by Dr. Vikram Sarabhai with an expanded role to harness space technology.
- Department of Space (DoS) was set up and ISRO was brought under DoS in 1972.
- Objective- Development and application of space technology for various national needs.
- Space system- ISRO has established major space systems for:

  o Communication, television broadcasting and meteorological services
  o Resources monitoring and management.
  o Space-based navigation services.

| Specification | Location |
|---|---|
| Headquarters of ISRO | Bengaluru, Karnataka |
| Launch Vehicles | Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram |
| Satellites | U R Rao Satellite Centre (URSC), Bengaluru |
| Integration and launching of satellites and launch vehicles. | Satish Dhawan Space Centre (SDSC), Srihari Kota. |
| Development of liquid stages including cryogenic stage. | Liquid Propulsion Systems Centre at Valia Mala and Bengaluru. |
| Sensors for Communication and Remote Sensing satellites. | Space Applications Centre (SAC), Ahmedabad. |
| Remote Sensing satellite data reception processing and dissemination. | National Remote Sensing Centre (NRSC), Hyderabad. |

**What about ISRO's Satellite Program?**

- **Aryabhata**- Launched in 1975, it marked India's entry into the space era and became the forerunner of our space programme.

| Satellite Type | Applications | Examples |
|---|---|---|
| **Communication Satellites** | Provide services to telecommunications, television broadcasting, satellite | The Indian National Satellite (INSAT) series GSAT series, |

| | newsgathering, societal applications, weather forecasting, disaster warning and Search and Rescue operations. | KALPANA-1. |
|---|---|---|
| **Earth Observation Satellites** | Agriculture, water resources, urban planning, rural development, mineral prospecting, environment, forestry, ocean resources and disaster management. | Indian Remote Sensing (IRS) series, RESOURCE SAT-1, 2, 2A, CARTOSAT-1, 2, 2A, 2B, RISAT-1 and 2, OCEANSA |
| **Navigation Satellites** | Used to meet the emerging demand of positioning, navigation and timing and also civil aviation requirements. | GAGAN and IRN |

**What are the ISRO's launch vehicle programs?**

- They are used to carry spacecraft to space. India has three active operational launch vehicles-
  o Polar Satellite Launch Vehicle (PSLV)
  o Geosynchronous Satellite Launch Vehicle (GSLV),
  o Geosynchronous Satellite Launch Vehicle Mk-III (LVM3)
- **PSLV**- It is considered as Work horse of ISRO. It has been a versatile launch vehicle deployed for launching all 3 types of

payloads - Earth Observation, Geo-stationery, and Navigation.
- It marked India's entry into the Big Rockets league, as it could carry a payload of up to 1,000 kg.
  o **Example**- Chandrayaan 1 and Mangalyaan were launched by PSLV.
- Configuration of PSLV-
  o Generic PSLV - Six strap-ons,
  o PSLV-CA-the core alone configuration with no strap-ons
  o PSLV-XL- The most powerful one with extended strap-ons
- **GSLV**- It aimed to solve two of the biggest limitations of PSLV.
  o It can deliver a payload of about 1,750 kg to a lower Earth orbit, up to an altitude of 600 km from the Earth's surface.
  o It can go a few 100 kilometers higher in Geostationary Transfer Orbit (GTO), though only with a reduced payload.
- **LVM3**- It is the next generation launch vehicle. And the heaviest launch vehicle.
  o The rocket can put a 4,000 kg payload into geostationary orbits that are over 30,000 km from Earth.
  o GSAT-19 satellite is LVM-3's 1st successful mission launched in 2017.
- **HRLV**- The Human rated LVM3 is identified as the launch vehicle for **Gagan Yaan** mission, which is named HRLV.
- **Small Satellite Launch Vehicle (SSLV)**- It is being developed with complete indigenous technologies to meet the small satellite launch market on demand driven basis.

| **Historic Launchers** | **Operational Launchers** | **Future Launchers** |
|---|---|---|
| • Satellite Launch Vehicle (SLV – 3)<br>• Augmented Satellite Launch Vehicle (ASLV) | • Polar Satellite Launch Vehicle (PSLV)<br>• Geosynchronous Satellite Launch Vehicle (GSLV)<br>• Sounding Rockets<br>• Small Satellite Launch Vehicle | • Reusable Launch Vehicle – Technology Demonstrator (RLV-TD) |

**What about the planetary explorations of ISRO?**

- **Mangalyaan**- It is the maiden interplanetary mission of the ISRO to explore and observe Mars surface features, morphology, mineralogy, and the Martian atmosphere.
- Launched in 2013, the probe was successfully inserted into Martian orbit on September 24, 2014, in its first attempt.
- The mission was a "technology demonstrator" project to develop the technologies for designing, planning, managing, and operations of an interplanetary mission.
- Mangalyaan concluded its journey in 2022.

*ISRO was the 4th agency to reach the Mars orbit after Russia's Roscosmos, NASA, and ESA.*

**Moon exploration-**

- o **Chandrayaan**-1 - Chandrayaan-1's orbiter detected evidence of water on the Moon. It was launched in 2008.
- o **Chandrayaan**-2- It is India's first lander mission; it was launched in 2019.
- o **Chandrayaan**-3- The success of the mission is not only a major step forward for India's lunar programme but also showcases its capabilities and scientific advancement. It was launched in 2023.

*India becomes 1st country to land on Moon's South Pole and 4th country (after Russia, the U.S. and China) to land on the Moon.*

# 5. A Genetically modified Mustard

Recently, Indian scientists have developed the first ever low-pungent mustard that is pest and disease-resistant.

**What is mustard?**

India is the 4th largest oilseeds producer in the world. It has 20.8% of the total area under cultivation globally, accounting for 10% of global production.

- Mustard is a self-pollinating oilseed crop.
- Family - Brassicaceae
- Types
  - o White or Yellow mustard (Sinapis alba) - Mediterranean origin
  - o Brown or Indian mustard (Brassica juncea) - Himalayan origin
- The seeds contain about 30-40% vegetable oil, a slightly smaller proportion of protein, and a strong enzyme called myrosin.
- **Production** - Rajasthan is the largest producing state in the country.
- Other mustard cultivating states- Gujarat, Uttar Pradesh, West Bengal, Haryana, Punjab, Madhya Pradesh.
- **Issues**- Mustard seeds have high levels of glucosinolates, a group of sulphur and nitrogen-containing compounds that contribute to the characteristic pungency of their oil and meal.
- This limits the oil's acceptability among consumers.
- Rapeseed meal is unpalatable to poultry and pigs thus reducing their feed intake.
- High glucosinolates are also known to cause goiter (swelling of neck) and internal organ abnormalities in livestock.
- The canola quality seeds have low glucosinolates (30ppm). However, lowering glucosinolate levels in seed weakens its defence.
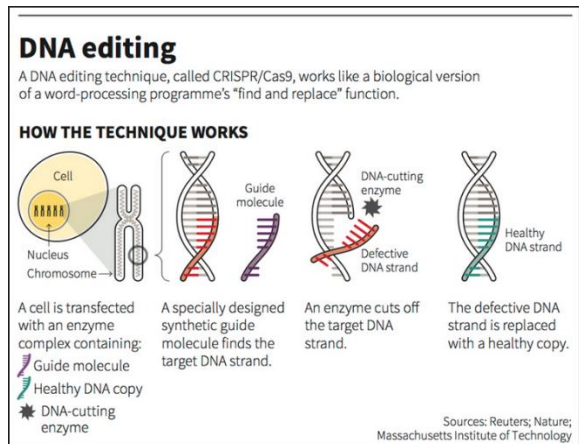
## What is Genome editing?

- Genome editing – It involves the use of technologies that allow genetic material to be added, removed, or altered at particular locations in the genome.
- It is a group of technologies that enables change in the DNA/RNA of an organism.
- It could introduce specific foreign DNA/RNA that is not available in the natural gene pool of the host plant species thereby introducing novel traits.
- **Objectives**
  - Crop improvement
  - Nutrition enhancement
  - Crop protection from drought, pests and insects.

## How gene edited mustard is produced?

Nobel Prize in Chemistry was awarded to Emmanuelle Charpentier and Jennifer Doudna in 2020 for their work in CRISPR/CAS9.

- Glucosinolates are synthesised in the leaves and pod walls of mustard plants.
- Their translocation and accumulation in the seeds happens through the action of glucosinolate transporter or GTR genes.
- CRISPR/Cas9, a gene-editing tool deploying an enzyme, acts as a "molecular scissors" to edit 10 out of the 12 GTR genes in 'Varuna', a high-yielding Indian mustard variety.
- The seeds of the resultant gene-edited Varuna variety had glucosinolate content below the 30-ppm canola-quality threshold.
- At the same time, the other plant parts had significantly higher glucosinolate accumulation.

## DNA editing

A DNA editing technique, called CRISPR/Cas9, works like a biological version of a word-processing programme's "find and replace" function.

**HOW THE TECHNIQUE WORKS**



A cell is transfected with an enzyme complex containing:
- Guide molecule
- Healthy DNA copy
- DNA-cutting enzyme

A specially designed synthetic guide molecule finds the target DNA strand.

An enzyme cuts off the target DNA strand.

The defective DNA strand is replaced with a healthy copy.

Sources: Reuters; Nature; Massachusetts Institute of Technology

## What are the advantages of gene edited mustard?

- **Canola quality mustard**- The seeds of the resultant targeted genes-edited Varuna mustard variety had glucosinolate content well below the 30-ppm canola-quality threshold.
- **Pest and disease resistance** - They were resistant against the virulent fungal pathogen Sclerotinia sclerotiorum and the insect pest Spodoptera litura.
- **Transgene free**- It does not contain foreign genes like those of the Bacillus thuringiensis bacteria in Bt-cotton or Bar-Barnase-Barstar in the GM hybrid mustard.

**CRISPR Cas-9**

- It stands for Clustered Regularly Interspaced Short Palindromic Repeats.
- It is the most prominent technology that enables to edit parts of the genome by removing, adding or altering sections of the DNA sequence.
- The CRISPR-Cas9 system consists of two key molecules that introduce a change mutation into the DNA.

- **Cas9**- An enzyme that acts as a pair of 'molecular scissors' that can cut the two strands of DNA at a specific location in the genome.
- **Guide RNA (gRNA)**- The gRNA is designed to find and bind to a specific sequence in the DNA.
- The Cas9 follows the guide RNA to the same location in the DNA sequence and makes a cut across both strands of the DNA.
- At this stage, the cell recognises that the DNA is damaged and tries to repair it.

- **Reduce import bill**- India is a huge importer of edible oils. Gene edited mustard helps in saving foreign exchange reserves.
- **Indigenization**- There is a dire need to boost domestic oilseeds production through focused breeding for improving crop yields, pest and disease resistance, and product quality.
- **Wider cultivation**- Mustard and soyabean are India's most widely cultivated oilseed crops.
- Its higher average oil extractable content makes mustard the bigger "oilseed" crop.
- **Food security**- It is the source of both fat for humans and protein for animals.

**How gene editing is different from gene modification?**

| About | Genome modification | Genome editing |
|---|---|---|
| Definition | Deliberate modification of the characteristics of an organism by manipulating its genetic | Artificial alteration of the genetic material of an organism to produce desired characteristics |

| | | |
|---|---|---|
| **Presence of Foreign DNA** | Involves introduction of foreign DNA | Does not involve introduction of foreign DNA |
| **Procedure** | Targeted removal of desired genes | Addition, removal and alteration of genetic material. |
| **Regulations** | Genetic Engineering Appraisal Committee (GEAC) gives the clearance. Union Government takes the final decision. | Ministry of Environment exempted GE plants "free of exogenous introduced DNA" from the requirement of GEAC approval for open field trials leading to commercial release. |
| **Example** | Golden rice, Bt- Cotton, GM Mustard etc., | Gene edited mustard |

## 6. Sequencing of Y Chromosome

Scientists have fully sequenced the Y chromosome for the first time, uncovering information that could have implications for the study of male infertility and other health problems.
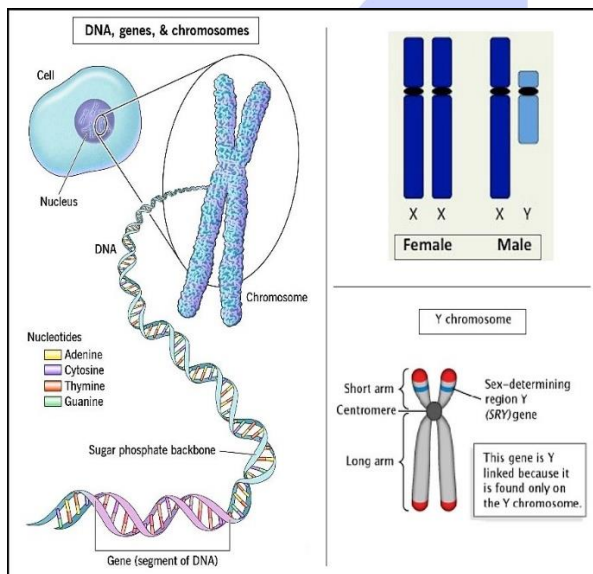
**What is Y chromosome?**

*DNA is a molecule that carries genetic information for the development and functioning of an organism.*

- In the nucleus of a human cell, each DNA molecule is packaged into a long thread like structure called chromosome.

- Most human cells contain 23 pairs of chromosomes. One half of each pair of chromosomes comes from one parent, while the other half comes from the other parent.
- The 23rd pair are X and Y chromosomes, often called as **sex chromosomes**. The other 22 pairs are called **autosomes**.
- Females have a pair of X chromosomes, whereas males have X and Y chromosome.
- The Y chromosome is male determining because it bears a gene called <u>SRY</u>, which directs the development of a ridge of cells into a testis in the embryo.
- The embryonic testes make male hormones, and these hormones direct the development of male features in a baby boy.



**What is the difficulty in sequencing Y chromosome?**

- **Repetition** - The Y chromosome was a particularly hard nut to crack because it is unusually repetitive.
- While all human chromosomes contain repeats, more than 30 million letters of the Y chromosome — out of 62.5 million — are repetitive sequences, sometimes called satellite DNA or junk DNA.

- Repetitive DNA complicates the assembling of data from genetic sequencing.
- **Palindromes** - The Y chromosome also contains palindromes — sequences of letters that are the same backward and forward, like radar.
- Degeneration of Proto- Y - The proto-Y is degenerating at a faster pace, losing about 10 active genes per million years, reducing the number from its original 1,000 to just 27.
- There has been great debate about whether this degradation will continue, because at this rate the whole human Y would disappear in a few million years.

> *The Y is the last human chromosome to have been sequenced end-to-end, or telomere to telomere (T2T)*

**How the scientists unravelled the complex Y chromosome?**

- **Sequencing -** Advanced "long-read" sequencing teChnology and computational methods enabled researchers to achieve a complete reading of the Y chromosome.
- This accomplishment added over 30 million repetitive base pairs to the human reference genome.
- The new technology has allowed sequencing of bases along individual long DNA molecules, producing long-reads of thousands of bases.
- It effectively dealt with repetitive sequences and transformed raw sequencing data into a usable resource.
- These longer reads are easier to distinguish and can therefore be assembled more easily.
- **Findings**- Overall, the combined research determined that the Y chromosome has 106 protein-coding genes.
- 42 were found that were new, but many still appear to be repeats.

**What is the importance of studying?**

- **Advanced diagnostics**- The study empowers future sequencing endeavours to explore health and disease aspects through comprehensive Y chromosome inclusion.
- To study whether loss of the Y chromosome is a biomarker of biological aging or has a direct effect on the health of men.
- **Infertility**- It will help to study conditions and disorders linked to the chromosome, such as lack of sperm production that leads to infertility.
- **Health**- Genes have been identified on the Y chromosomes that have been shown to be required for the prevention of cancer and cardiovascular disease.
- **Dark matter**- It represents the 'dark matter' of the genome. This analysis will allow us to better understand the regions of the Y chromosome that have regulatory functions and may encode mRNA and proteins.
- **Human evolution**- Assembling complete sequences of Y chromosomes across space and time not only helps to investigate sex chromosome evolution but also human evolution.
- **Gene therapy**- It will open up avenues to treat diseases that may be linked to Y chromosomes.
- **Future studies**- The findings provide a solid base to explore how genes for sex and sperm work, how **the Y** chromosome evolved, and whether as predicted will disappear in a few million years.

# Prelims Target -2024

A Strategic Programme Targeting Prelims 2024.
Course Fee: 35000 +GST

## Course Brief

- Regular classes for Prelims will be conducted from 15th November onwards for Polity, Economy, History, Geography, Environment, Ecology, Science & Technology.
- These classes will be followed by regular tests based on the UPSC module.
- Focus on concepts and identifying patterns of Prelims: PYQ analysis, MCQ practice (4000+) and Discussions, Current Affairs update.
- Important Topics of GS Paper 1, 2, and 3 (Prelims related): Discussion and Quality Enrichment (e.g., Polity, Governance, International relations etc.)

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(Students can come on 30th, 31st oct as well to appear for the test)

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# Objective type Practice Questions:

**1)** Which of these is/are some of the general characteristics of Parliamentary committees?

1. All members should be elected by the house.

2. It presents its report to the Speaker or the Chairman of the house.

3. It must have the status of a consultative committee with any Ministry at the Centre.

How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: a)

*Only statement 2 is correct.*

- A parliamentary committee means a committee that:
  - o Is appointed or elected by the House or nominated by the Speaker/Chairman.
  - o Works under the direction of the Speaker / Chairman
  - o Presents its report to the House or to the Speaker / Chairman.
  - o Has a secretariat provided by the Lok Sabha / Rajya Sabha.
- The consultative committees, which also consist of members of Parliament, are not parliamentary committees as they do not fulfil the above four conditions.

**2)** Consider the following statements regarding the terms of the Office of the Governor.

1. The Governor can resign at any time by addressing a resignation letter to the Chief Minister of the State.

2. The Constitution does not lay down the grounds upon which a governor may be removed by the President.

Which of the above statements is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

**Solution**: b)

*Only Statement 2 is correct.*

- The resignation letter is submitted to the President, and not the Chief Minister.
- A governor holds office for a term of five years from the date on which he enters his office. However, this term of five years is subject to the pleasure of the President.
- The Supreme Court held that the pleasure of the President is not justifiable. The governor has no security of tenure and no fixed term of office. He may be removed by the President at any time without mentioning any grounds for his removal.

**3)** Which of the following from the Constitution of India is/are especially relevant to Social Justice and Empowerment?

1. Preamble

2. First Schedule

3. Third Schedule

4. Fundamental Rights

5. Directive Principles of State Policy

How many of the above statements are correct?

a) Only two

b) Only three

c) Only four

d) All five

**Solution**: b)

*Option 1, 4 and 5 are correct.*

- **Preamble**: The words "JUSTICE, social, economic and political; EQUALITY of status and of opportunity; and to promote among them all FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation".
- **First Schedule**: It talks about Indian states and Indian territory.
- **Third Schedule**: It contains forms of Oaths and affirmations for office holders.
- **Fundamental Rights:**
  - o **A 23.** Prohibition of traffic in human beings and forced labour
  - o **A 24**. Prohibition of employment of children in factories, etc.
  - **Directive Principles of State Policy**:
    - o **A38**. State to secure a social order for the promotion of welfare of the people.
    - o **A39** (only first part) - The State shall, in particular, direct its policy towards securing – (a) that the citizens, men and women equally, have the right to an adequate means of livelihood.

**4)** Valuable minerals in India are more likely to be associated with

a) Blue quartz phenocrysts

b) Metamorphic and igneous rocks

c) Basaltic rocks of andesite and rhyolite type

d) Sedimentary and Haedan age rocks

**Solution**: b)

- Quartz and Basalt both can be associated with sedimentary rocks, even though Quartz may occur in felsic igneous rocks or granite.
- Bulk of the valuable minerals in India are products of pre-Paleozoic age spanning from

nearly 540-250 million years ago. The Hadean age refers to the one right after the formation of earth.
- These minerals are mostly associated with metamorphic and igneous rocks of the peninsular India, and not sedimentary rocks.

**5)** Which of the following are block mountains:

1. The Vosges Mountain

2. Satpura Mountains

3. Mount Kilimanjaro

Select the correct answer code:

a) 1, 2

b) 2, 3

c) 1, 3

d) 1, 2, 3

**Solution**: a)

Block Mountains are created when large areas are broken and displaced vertically. The uplifted blocks are termed as horsts and the lowered blocks are called graben. The Rhine valley and the Vosges Mountain in Europe are examples of such mountain systems. Vindhyan and Satpura ranges with Narmada rift valley is another example. Volcanic mountains are formed due to volcanic activity. Mt.Kilimanjaro in Africa and Mt.Fujiyama in Japan are examples of such mountains.

**6)** Ladakh, a cold desert in the Greater Himalayas, is enclosed by

a) Karakoram range in North and Zanskar range in South

b) Zanskar range in North and Karakoram range in South

c) Pir Panjal range in North and Zanskar range in South

d) Karakoram range in North and Pir Panjal range in South

**Solution**: a)

Pir Panjal is further South of Zanskar and Karakoram.

**7)** Consider the following statements.

1. Factor cost refers to the price arrived after deducting from the market price the government subsidy and adding indirect taxes.

2. GDP at factor cost is useful to see how competitive market forces are and how distortionary indirect taxes are.

Which of the above statements is/are incorrect?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

**Solution**: a)

- Factor costs are the actual production costs at which goods and services are produced in an economy.
- Factor cost refers to the price arrived after deducting from the market price the indirect taxes and adding to the resulting number government subsidies if any.

**8)** Which of the following are the factors considered behind the market determined exchange rates?

1. Net foreign currency inflows

2. Growth rate of the economy

3. Commodity dependence of the economy on global supplies

4. Forex reserves

How many of the above statements are correct?

a) Only one

b) Only two

c) Only three

d) All four

**Solution**: d)

Markets decide the exchange rate based on a variety of factors like:

• Net foreign currency inflows

• Commodity dependence of the country on global supplies

• Forex reserves

• Growth rate of the economy

If these factors are favourable, the currency strengthens.

9) Consider the following statements regarding GDP deflator.

1. GDP deflator is a measure of the level of prices of all new, domestically produced, final goods and services in an economy in a year.

2. Like CPI, the GDP deflator is based on a fixed basket of goods and services.

3. When GDP deflator is negative, it necessarily means that there is inflation in the economy.

How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: a)

*Only statement 1 is correct.*

- In economics, the GDP deflator is a measure of the level of prices of all new, domestically

produced, final goods and services in an economy in a year.

- Like the consumer price index (CPI), the GDP deflator is a measure of price inflation/deflation with respect to a specific base year.
- The GDP deflator is a more comprehensive inflation measure than the CPI index because it isn't based on a fixed basket of goods.

When GDP deflator is negative, nominal GDP is less than real DP. It means that there is deflation in the economy.

**10)** Core Inflation does not indicate a price rise in which of these commodities?

1. Consumer goods

2. Hydrocarbon fuel

3. Food products

4. IT products

Select the correct answer code:

a) 1, 2, 3

b) 1, 4

c) 2, 3

d) 1, 3, 4

**Solution**: c)

Core Inflation is also known as underlying inflation, is a measure of inflation which excludes items that face volatile price movement, notably food and energy. In other words, Core Inflation is nothing but Headline Inflation minus inflation that is contributed by food and energy commodities.

**11)** Consider the following statements regarding the differences between Buddhist and Jain literature.

1. While Buddhist tales and literature are didactic in character, Jain tales are not.

2. While ancient/medieval Buddhist literature is available in Sanskrit, ancient/medieval Jain literature was not composed in Sanskrit.

Which of the above statements are correct?

a) Only 1

b) Only 2

c) Both 1 and 2

d) Neither 1 nor 2

Solution: d)

- The Buddhist canonical literature is in Pali which includes Tipitaka (threefold basket). Buddhist literature is also abundantly available in Sanskrit, which includes the great epic Buddhacharita by Aswaghosha (78 A.D.).
- Like the Buddhist stories, the Jain tales in general are didactic in character. They are written in some forms of
- Prakrit. Jain literature is available in Sanskrit too, like the Upamitibhava Prapancha Katha of Siddharasi (906 A.D.).

**12)** Consider the following sites

1. Tekkalkota

2. Piklihal

3. Kupgallu

The above-mentioned sites are:

a) Jain pilgrimage sites from south India

b) Harappan sites from western India

c) Chalcolithic sites from north India

d) Neolithic paintings sites from south India

**Solution**: d)

The above-mentioned sites are Neolithic paintings sites from south India.

**Prehistoric Rock Painting**

1.The granite rocks of Karnataka and Andhra Pradesh provided suitable canvases to the Neolithic man for his paintings.

2. There are several such sites but the more famous among them are Kupgallu, Piklihal and Tekkalkota.

3. Three types of paintings have been reported from here—paintings in white, paintings in red ochre over a white background and paintings in red ochre.

**13)** Consider the following statements.

1. Buddhism and Jainism are part of Shraman tradition.

2. Stupa, vihara and Chaitya are part of only Buddhist religion

3. Yaksha worship is characteristic of all three main religions that is Buddhism, Hinduism and Jainism.

How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: b)

*Statement 2 is incorrect.*

- Sixth century BCE marks the beginning of new religious and social movements in the Gangetic valley in the form of Buddhism and Jainism which were part of the Shraman tradition.
- Stupa, vihara and chaitya are part of Buddhist and Jaina monastic complexes, but the largest number belongs to the Buddhist religion.
- The yakshas are a broad class of nature-spirits, usually benevolent, but sometimes

mischievous or capricious, connected with water, fertility, trees, the forest, treasure, and wilderness. They appear in Hindu, Jain, and Buddhist texts, as well as ancient and medieval era temples of South Asia and Southeast Asia as guardian deities.

**14)** Which of the following are the features of the Chalcolithic period?

1. Painted pottery was practiced during this period.

2. People started using iron but did not know of copper and bronze metals.

3. New technology for smelting metal ore was developed. How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: b)

*Statement 2 is incorrect.*

- Black on Red ware is a famous pottery of this age.
- It is marked by the use of copper as the first major metal in India. Bronze too was used. The Chalcolithic age is followed by the Iron Age. Iron is frequently referred to in the Vedas.

**15)** Which one of the following edicts mentions the personal name of Ashoka?

a) Taxila

b) Lumbini

c) Maski

d) Kalinga Edict

**Solution**: c)

- Maski is a town and an archaeological site in the Raichur district of the state of Karnataka, India. It lies on the bank of the Maski river which is a tributary of the Tungabhadra.
- Maski derives its name from Mahasangha or Masangi. The site came into prominence with the discovery of a minor rock edict of Emperor Ashoka by C. Beadon in 1915. It was the first edict of Emperor Ashoka that contained the name Ashoka in it instead of the earlier edicts that referred him as Devanampiya Piyadasi.

**16)** Consider the following statements regarding Cholas

1. The temples remained centres of economic activity during this period.

2. Education saw a rapid decline due to foreign invasions.

3. Caste system was brittle, and jobs were assigned based on the merit.

How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: a)

*Only statement 1 is correct.*

- The caste system was widely prevalent during the Chola period. Brahmins and Kshatriyas enjoyed special privileges.
- The inscriptions of the later period of the Chola rule mention about two major divisions among the castes –
- Valangai and Idangai castes.
- Education was also given importance. Besides the temples and mathas as educational centres, several educational institutions also flourished.
- A number of temples were built with the patronage of Chola kings and queens. The temples remained centres of economic activity during this period.
- The mathas had great influence during this period. Both agriculture and industry flourished. Reclamation of forest lands and the construction and maintenance of irrigation tanks led to agricultural prosperity.

**17)** Consider the following statements regarding the bhakti saint Tukaram:

1. He believed in a formless God.

2. He was a contemporary of saints Eknath and Ramdas.

3. He wrote his abhangas in Marathi.

How many of the above statements are correct?

a) Only one

b) Only two

c) All three

d) None

**Solution**: c)

• Sant Tukaram was a seventeenth century Marathi poet Saint, related to the Bhakti movement of Maharashtra. He was a contemporary of saints like Eknath and Ramdas.

• Tukaram was a devotee of Vitthal (a form of Lord Krishna), the supreme God in Vaishnavism.

• Tukaram believed in a formless God. According to him, it was not possible to enjoin spiritual joy with worldly activities. He stressed the all-pervasiveness of God. He rejected Vedic sacrifices, ceremonies, pilgrimages, idol worship, etc. He also preached the virtue of piety, forgiveness, and peace of mind. He spread the message of equality and brotherhood. He tried to

foster Hindu-Muslim Unity. Some of his verses are devoted to this theme. He wrote his abhangas in Marathi.

18) The royal title of "Devaputra" and "Hindu Suratrana" are often associated with which of these ruler/kingdoms respectively?

a) Kushanas and Vijayanagara

b) Vakatakas and Cheras

c) Shakas and Cholas

d) Magadha and Samudragupta

**Solution**: a)

- One means of claiming high status was to identify with a variety of deities. This strategy is best exemplified by the Kushanas (c. first century BCE-first century CE), who ruled over a vast kingdom extending from Central Asia to northwest India.
- Colossal statues of Kushana rulers have been found installed in a shrine at Mat near Mathura (Uttar Pradesh). Similar statues have been found in a shrine in Afghanistan as well. Some historians feel this indicates that the Kushanas considered themselves godlike. Many Kushana rulers also adopted the title devaputra, or "son of god", possibly inspired by Chinese rulers who called themselves sons of heaven.
- The Vijayanagara kings claimed to rule on behalf of the god Virupaksha. Rulers also indicated their close links with the gods by using the title "Hindu Suratrana" this meant Hindu Sultan.

19) Which of the following factor(s) influenced the growth of Modern Nationalism during British rule in India?

1. French Revolution.

2. Indian Renaissance.

3. Offshoot of modernization initiated by the British in India.

4. Strong reaction to British imperialist policies in India.

How many of the statements is/are correct?

a) Only one

b) Only two

c) Only three

d) All four

**Solution**: d)

- The rise and growth of Indian nationalism has been traditionally explained in terms of Indian response to the stimulus generated by the British Raj through creation of new institutions, new opportunities, resources, etc. In other words, Indian nationalism grew partly as a result of colonial policies and partly as a reaction to colonial policies. In fact, it would be more correct to see Indian nationalism as a product of a mix of various factors:
- Worldwide upsurge of the concepts of nationalism and right of self-determination initiated by the

**French Revolution**

- Indian Renaissance.
- Offshoot of modernisation initiated by the British in India.
- Strong reaction to British imperialist policies in India.

**20)** Consider the following statements.

1. Goa was liberated from Portuguese rule soon after India's Independence.

2. 'Operation Vijay' was the military action by which India liberated the territories of Goa, Daman, and Diu

from Portuguese rule.

Which of the above statements is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

**Solution**: b)

'Operation Vijay' — the military action in 1961 by which India liberated the territories of Goa, Daman and Diu from Portuguese rule.

**21)** The Bandung Conference of 1955, paved the way for the creation of

a) African Union

b) Commonwealth of Nations

c) Non-Aligned Movement (NAM)

d) Association of Southeast Asian Nations (ASEAN)

**Solution**: c)

1955 Afro-Asian Conference held in Bandung, Indonesia, of which India was a key architect. For the first time, former colonial territories of Asia and Africa came together in Bandung, igniting the spirit of third-world solidarity and paving the way for the creation of a Non-Aligned Movement (NAM).

**22)** Operation Searchlight is related to

a) Bangladesh Liberation War

b) Sino-Indian War

c) First Kashmir War

d) Sri Lankan Civil War

**Solution**: a)

Bangladesh Liberation War began after the Pakistani military junta based in West Pakistan launched Operation Searchlight against the people of East Pakistan on the night of 25 March 1971.

**23)** Green Revolution encompassed every technique to boost agricultural productivity in the nation. In this context which of the following are the components of the Green revolution initiated in the 1960s?

1. High Yielding Varieties (HYV) of seeds

2. Farm Mechanisation

3. Command Area Development (CAD)

4. Land reforms

5. Supply of agricultural credit

How many of the above options are correct?

a) Only two

b) Only three

c) Only four

d) All five

**Solution**: d)

The Green Revolution was not confined to only HYV seeds and fertilizers, but also encompassed every technique to boost agricultural productivity in the nation.

Briefly, some of the important components of the green revolution in India are as follows:

1. High Yielding Varieties (HYV) of seeds; 2. Irrigation (a) surface and (b) ground; 3. Use of fertilizers (chemical); 4. Use of Insecticides and Pesticides. 5. Command Area Development (CAD); 6. Consolidation of holdings; 7. Land reforms. 8. Supply of agricultural credit; 9. Rural electrification; 10. Rural Roads and Marketing; 11. Farm Mechanization; 12. Agricultural Universities.

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## 1. The Bhartiya Nyaya Sanhita, 2023

*ProdEgyIAS's Expert Perspective: This article is important for the topics of **Developmental Administration and Local Self Government** Local-Self Government of Public Administration optional Paper II.*

**Why in the news?**

Recently, in a landmark move, the Bhartiya Nyaya Sanhita, 2023, was presented in the Lok Sabha, heralding a significant shift in India's legal framework. This comprehensive bill seeks to replace the long-standing Indian Penal Code (IPC), which has been the cornerstone of criminal law in India since 1860.

The IPC, an enduring legal document, has played a pivotal role in shaping the country's jurisprudence.

**Introduction**:

In a landmark move, the Bhartiya Nyaya Sanhita, 2023, was presented in the Lok Sabha, heralding a significant shift in India's legal framework. This comprehensive bill seeks to replace the long-standing Indian Penal Code (IPC), which has been the cornerstone of criminal law in India since 1860. The IPC, an enduring legal document, has played a pivotal role in shaping the country's jurisprudence. It encompasses a wide array of criminal offences, ranging from those affecting the human body and property to matters of public order, health, safety, morality, and offences against the state. However, with changing times and evolving challenges, the need for a comprehensive overhaul became evident. The Bhartiya Nyaya Sanhita aims to address these evolving challenges by introducing sweeping reforms. It not only repeals the IPC but also introduces a fresh perspective on various aspects of criminal law.

Some of the key changes include redefining sedition, defining terrorism, combating organized crime, addressing issues related to mob lynching and hate crimes, and revising punishments for various offences.

The proposed legislation will repeal the offence of sedition, which is criminalised under Section 124A of the IPC. The Supreme Court in May this year, had asked the Centre and state government to refrain from registering cases under the offence of sedition,

**Key Changes Proposed in The Bill Include**

1. **Sedition**: The sedition law was drafted by Thomas Macaulay in 1837 and was added to the Indian Penal Code (IPC) in 1870 by James Stephen as Section 124A. According to Section 124A, the sedition law states that, "Whoever, by words, either spoken or written, or by signs, or by visible representation, or otherwise, brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards, the Government estab-lished by law shall be punished with im-prisonment for life, to which fine may be added."

Thus, IPC defines sedition as bringing or attempting to bring hatred contempt, or exciting disaffection towards the government. It is punishable with imprisonment term between three years and life. imprisonment, and/or a fine.

Bill removes this offence. It instead penalizes the following: (i) exciting or attempting to excite secession, armed rebellion, or subversive activities, (ii) encouraging feelings of separatist activities, or (iii) endangering sovereignty or unity and integrity of India. These offences may involve the exchange of words or signs, electronic communication, or use of financial

means. These will be punishable with imprisonment of up to seven years or life imprisonment, and a fine.

2. **Terrorism**: The Bill defines terrorism as an act that intends to threaten the unity, integrity, and security of the country, to intimidate the public or disturb public order. Terrorist acts include: (i) using firearms, bombs, or hazardous substances (biological or chemical) to cause death, danger to life, or spread a message of fear, (ii) destroying property or disrupting essential services, and (iii) activities included in the treaties listed in the Second Schedule of the Unlawful Activities (Prevention) Act, 1967 such as unlawful seizure of aircraft or taking of hostages. Punishment for attempting or committing terrorism includes (i) death or life imprisonment, where the offence has resulted in death of any person, (ii) imprisonment term between five years and life in other cases. An offender will also be liable to a fine of at least five lakh rupees.

> *The Bill also penalises conspiring, organising, or assisting in preparation of any terrorist act with an imprisonment term between five years and life imprisonment, and a fine of at least five lakh rupees.*

**3. Organised crime:** The Bill defines organised crime as (i) a continuing unlawful activity such as kidnapping, extortion, contract killing, land grabbing, financial scams, and cybercrime, (ii) carried out by use of violence, intimidation, or other unlawful means, (iii) to obtain material or financial benefit, and (iv) carried out, by individuals acting singly or jointly, as members of or on behalf of a crime syndicate. Attempting or committing an organised crime will be punishable with:

o death or life imprisonment, where the offence results in death of any person, and

o imprisonment term between five years and life, in other cases. The offender will also be liable to pay a fine.

**4. Petty organised crime**: The Bill makes attempting or committing petty organised crime punishable with imprisonment between one and seven years, and a fine. Petty organised crimes are those which cause general feelings of insecurity among citizens and are committed by organised criminal groups/gangs. These include organised pickpocketing, snatching, and theft.

**5. Murder by a group of persons on grounds of caste or race:** The Bill specifies a separate penalty for murder committed by five or more people on specified grounds. These include race, caste, sex, place of birth, language, or personal belief. Each offender will be punishable with imprisonment between seven years and life, or death. It will also attract a fine.

**6. Death penalty for gang rape of minor:** IPC allows the death penalty for gang rape of women below 12 years of age. The Bill allows the death penalty for gang rape of women below 18 years of age.

**7. Sexual intercourse by deceitful means**: The Bill penalises the act of sexual intercourse with a woman (not amounting to rape) through deceitful means or a promise of marriage without intending to fulfil it. It will be punishable with simple or rigorous imprisonment for up to 10 years, and a fine.

**8. Extending applicability of certain offences to boys:** Under the IPC, importing girls under the age of 21 years for illicit intercourse with another person is an offence. The Bill specifies that importing boys under the age of 18 years for illicit intercourse with another person will also be an offence.

This legislative proposal is the result of a cooperative effort involving input from numerous stakeholders, which include the public, the judiciary, the states, union territories, and legal academics.

While addressing the difficulties of modern society, the bill attempts to strike a balance between ensuring justice and protecting the weak. It's important that any reforms to the IPC are made with a commitment to the principles of justice, human rights, and the rule of law. Reforms should be driven by careful consideration, consultation with stakeholders, and a focus on balancing the interests of individuals and society at large.

Critics contend that certain components in the new bill simply rename existing elements, while other provisions raise questions about the potentially broad powers handed to law enforcement organizations. Sedition treatment and the bill's expansive definition of activities jeopardizing sovereignty have also drawn criticism. Furthermore, crucial topics like rape in marriage and blasphemy laws have gone neglected.

## 2. The Bhartiya Sakshya Bill, 2023

*ProdEgyIAS's Expert Perspective: This article is important for the topics of Law & Order and Police Reforms of Public Administration optional Paper II.*

**Why in the news?**

The Bhartiya Sakshya Bill, 2023 was introduced in Lok Sabha on August 11, 2023. It repeals the Indian Evidence Act, 1872.

As per the bill, it aims to 'consolidate and to provide for general rules and principles of evidence for fair trial'.

The Act provides rules for the admissibility of evidence in legal proceedings. The Bill retains several parts of the Act.

It removes certain colonial references from the Act, widens the ambit of electronic records admissible as evidence, and removes provisions related to telegraphic messages.

**Key changes proposed in the Bill include:**

a) **Admissibility of electronic or digital records as evidence:** The Act provides for two kinds of evidence – documentary and oral evidence. Documentary evidence includes information in electronic records that have been printed or stored in optical or magnetic media produced by a computer. Such information may have been stored or processed by a combination of computers or different computers.

   o The Bill provides that electronic or digital records will have the same legal effect as paper records. It expands electronic records to include information stored in semiconductor memory or any communication devices (smartphones, laptops).

   o This will also include records on emails, server logs, smartphones, locational evidence and voice mails.

   o As per the Bill, the information may have been created on, stored in, or processed by one or more computers or communication devices: (i) which may be standalone systems or on a computer network, or (ii) through an intermediary.

b) **Oral evidence**: Under the Act, oral evidence includes statements made before Courts by witnesses in relation to a fact under inquiry. The Bill adds any information given electronically to be considered as oral evidence.

c) **Secondary evidence**: Under the Act, documentary evidence includes primary and secondary evidence.

- Primary evidence includes the original document and its parts, such as electronic records and video recordings.
- Secondary evidence contains documents that can prove the contents of the original. Secondary evidence includes certain copies of the original documents and oral accounts of the document's content.

The Bill expands secondary evidence to include: (i) oral and written admissions, and (ii) the testimony of a person who has examined the document and is skilled in the examination of documents.

Under the Act, secondary evidence may be required under various conditions, such as when the original: (i) is in the possession of the person against whom the document is sought to be proved, or (ii) has been destroyed. The Bill adds that secondary evidence may be required if the genuineness of the document itself is in question.

**d) Production of documents:** The Act provides for the production of documents. If a witness is summoned to produce a document and has it in their possession or power, they must bring it to Court regardless of any objection to its production or admissibility. The Court will determine the validity of such a document. The Bill adds that no Court will require any privileged communication between the Ministers and the President to be produced before it.

**e) Joint trials:** A joint trial refers to the trial of more than one person for the same offence. The Act states that in a joint trial, if a confession made by one of the accused which also affects other accused is proven, it will be treated as a confession against both.

- The Bill adds an explanation to this provision. It states that a trial of multiple persons, where an accused has absconded or has not responded to an arrest warrant, will be treated as a joint trial.

**Advantages of Bhartiya Sakshya Bill 2023:**

The new Bill has certain plus points as compared to the old Act.

- Addresses issues of admissibility of evidence in electronic form – The old Act was not this open to e-evidence. The Bill also widens the scope of secondary evidence by including evidence in electronic form and such copies (soft copy) made thereof.
- **It has more Indian-ness in it**: The Bill has more Indian-ness than the Act, it must be noted that all the words that relate to the Crown, British Queen, General Gazette etc. are all replaced by words like "India", "President", Official Gazette etc.
- **More sensitive to mental illnesses** – In the above-mentioned section, the word 'lunatic' has been replaced by 'person suffering from mental illnesses.' This is, indeed, an advancement of society. For so long, it has been a taboo-ed topic in India. However, the question that if mental illnesses include panic disorder or Depression or such other issues are included or not, cannot be known as yet.
- **The old Act had become obsolete** – Many sections in the old Act unnecessarily related to British Crown, British Queen, Commonwealth, cession of territory etc. As the time passed by, there have changes since those Acts; we gained freedom, and we merged parts of India to form this Union of States. It is now quite irrelevant to have mention of British queen or presumption as to cession of territories etc.

By repealing the British laws, India can truly emphasise its sovereignty.

## Challenges for the Bill:

- **Digital records can be easily tampered:** Digital records such as video recordings, photos or even documents can easily be edited; with the advent of AI nothing seems impossible nowadays. So, the evidence given by digital means may not be 100% true all the time.

- **Breach of privacy:** Since there is a lot of pressure on use of electronic means in these Bills, it can lead to infringement of Privacy Rights of the people. Where there is electronic data, there is always a risk of hacking and cybercrime.

- **Lots of law practitioners are not tech-savvy** – Although India has become digitised, a huge part of India remains technically challenged. Old Advocates or judges may not have clear understanding of digital evidence or digital record. There may be errors regarding this as well.

- **Yet to be accepted:** As has been said, it is only a Bill that is yet to be passed. It will become the law only after it is finally signed by the President. So, currently, it is one of the challenges.

## Conclusion

Although the Bill has its own disadvantages and the reform of Criminal Law in India is a huge step, it is for the greater good. The Bill, if accepted, shall provide e-data, e-evidence etc. and it is important since India has now become digitised.

When even schools and colleges have moved online, our law lagged behind in the race of development. This step will take us forward in the long run. This is the true "Indian" Evidence Act or the Bhartiya Sakshya Adhiniyam.

The Bill is yet to be accepted; it has only been introduced by Amit Shah. It still has to be accepted by both the Houses and then finally by the President; only then can it become the Act.

## 3. Bhartiya Nagarik Suraksha Bill, 2023

***ProdEgyIAS's Expert Perspective****: This article is important for the topics of **Law & Order and Police Reforms** of Public Administration optional Paper II.*

### Why in the news?

The Bharatiya Nagarik Suraksha Sanhita, 2023 was introduced in Lok Sabha on August 11, 2023. It repeals the Code of Criminal Procedure, 1973.

The Code provides for the procedure for arrest, prosecution, and bail for offences under various Acts including the Indian Penal Code, 1860. The Bill retains most of the provisions of the Code.

### Key changes proposed under the Bill include:

a) **Detention of undertrials**: Under the Code, if an accused has spent under detention half of the maximum period of imprisonment for an offence, during investigation or trial, he must be released on his personal bond. This does not apply to offences which are punishable by death.

  o The Bill adds that this provision will also not apply to:
  (i)     offences punishable by life imprisonment, and
  (ii)    persons against whom proceedings are pending in more than one offence.

  o It further adds that first-time offenders will be released on bail if they have completed detention for one-third of the maximum imprisonment which can be imposed for the offence.

  o The superintendent of the jail where the accused is detained must make the application seeking the release of such undertrials on bail.

b) **Trials in electronic mode**: The Bill provides that all trials, inquiries, and proceedings may be

held in electronic mode. It also provides for the production of electronic communication devices, likely to contain digital evidence, for investigation, inquiry, or trial. Electronic communication includes communication through devices such as mobiles, computers, or telephone.

**c) Medical examination of accused**: The Code allows conducting a medical examination of the accused in certain cases, including cases of rape. Such examination is carried out by a registered medical practitioner on the request of at least a sub-inspector level police officer. The Bill provides that any police officer can request for such an examination.

**d) Forensic investigation**: The Bill mandates forensic investigation for offences punishable with at least seven years of imprisonment. In such cases, forensic experts will visit crime scenes to collect forensic evidence and record the process on mobile phone or any other electronic device. If a state does not have forensics facility, it shall utilise such facility in another state.

**e) Power to prohibit carrying arms**: The Code empowers the District Magistrate to prohibit the carrying of arms in any procession, mass drills, or mass training with arms in public places. This may be done to preserve public peace, public safety, or maintain public order. Such prohibitions may be in place for up to six months. However, the provision was not notified under the Code. The Bill omits this provision.

**f) Signatures and finger impressions**: The Code empowers a Metropolitan/Judicial Magistrate to order any person to provide specimen signatures or handwriting. Such an order can be given for any investigation or proceeding under the Code.

- o However, such specimens cannot be collected from a person who has not been arrested under the investigation. Bill expands this to include finger impressions and voice samples. These samples may also be taken from a person who has not been arrested.

**g) Timelines for procedures**: The Bill prescribes timelines for various procedures. For instance, it requires medical practitioners who examine rape victims to submit their reports to the investigating officer within seven days.

- o Other specified timelines include: (i) giving judgement within 30 days of completion of arguments (extendable up to 60 days), (ii) informing the victim of progress of investigation within 90 days, and (iii) framing of charges by a sessions court within 60 days from the first hearing on such charges.

h) **Trial in absence of offender:** The Bill provides for conduct of trial and pronouncement of judgement in the absence of a proclaimed offender.
- o This shall be done when such a person has absconded to evade trial and there is no immediate prospect of arresting him.
- o Proclaimed offender refers to a person who: (i) is accused of an offence punishable with imprisonment of at least 10 years or death and (ii) fails to appear at a specified time and place as specified by a Court.

i) **Metropolitan magistrates:** The Code empowers the state governments to notify any city or town with a population of more than one million as a metropolitan area. Such areas have Metropolitan Magistrates. The Bill omits this provision.

Reforming the Code of Criminal Procedure is an essential step in reshaping India's criminal justice system. Public administration, as the key driver of these reforms, plays a central role in ensuring that the system is more efficient, fair, and accessible. The implementation of these reforms efficiently will be imperative in order to ensure the rights and dignity of every citizen are protected within the legal process which will in turn help to uphold the principles of justice in the country.

## 4. Social Security Net

*ProdEgyIAS's Expert Perspective: This article is important for the topics of **Development Administration and Social Sector Initiatives** of Public Administration optional.*

**Why in news?**

According to the Periodic Labour Force Survey Annual Report 2021–22, 53% of all salaried workers in India do not receive any social security payments.

**What is Social Security Net?**

- Social welfare services provided by a community of individuals at the state and local levels. These services are geared toward eliminating poverty in a specific area.
  - These services may include housing re-assignment, job placement, subsidies for household bills, and other cash equivalents for food.
  - Social safety net works in conjunction with a number of other poverty reduction programs with the primary goal of reducing/preventing poverty.
- Social safety nets are non-contributory transfer programs that are typically designed to help the poor or people who are more susceptible to shocks, such as cash transfers, which can be either targeted or not and conditional or not.
  - Food or another type of in-kind donation.
  - Public workfare jobs.
  - Widespread price breaks, such as those for gasoline or groceries.
  - Fee exemptions for crucial services like education or health care.

**Importance of Safety nets:**

- Effective social safety nets (SSNs) assist in addressing inequality and poverty while fostering inclusive growth.

- Safety nets enable households to make better investments in their future.
- Safety nets help households manage risk e.g., health risk.
- At Global level, Safety nets are made to protect nations and are for minimising the negative effects of globalisation on those who are economically weak.
- Safety nets help communities create assets.
- Government recognizes that safety and health of workers has a positive impact on productivity and economic and social development.

**Status of Safety Nets in India:**

- The Periodic Labour Force Survey Annual Report 2021–22 indicates that over 53% of India's salaried workers is not covered by social security.
- In India, only 1.9% of the 20% of workers who are the lowest have access to any benefits.
- Gig workers, who make up roughly 1.3% of India's labor force that is actively employed, infrequently have access to any social security benefits.
- India was placed 40th out of 43 countries in the Mercer Global Pension Index (2021 MCGPI).

**Steps taken by Government:**

The government has established financial safety nets, including the largest free food program in the world, direct cash transfers, and assistance for small businesses:

- **Disability Benefit**: The Employee's Compensation Act, 1923, formerly known as the 'Workmen's Compensation Act, 1923', requires the employer to pay compensation to employees or their families in cases of employment related injuries that result in death or disability.
- **Maternity Benefit:** Women in the organized sector get paid maternity leave

of 26 weeks, up from 12 weeks, for the first two children. For the third child, the maternity leave entitled will be 12 weeks. India now has the third most maternity leave in the world, following Canada (50 weeks) and Norway (44 weeks).

- **Barbell Strategy:** The government decided on implementing a "Barbell Strategy" that incorporated a number of safety-nets to mitigate the effects on society's most vulnerable groups, as well as a flexible policy response based on a Bayesian update of information.
- **Gratuity**: Establishments with 10 or more employees must provide the payment of 15 days of additional wages for each year of service to employees who have worked at a company for five years or more.
  - Gratuity is provided as a lump sum payout by a company. In the event of the death or disablement of the employee, the gratuity must still be paid to the nominee or the heir of the employee.
  - The employer can, however, reject the payment of gratuity to an employee if the individual has been terminated from the job due to any misconduct. In such a case of forfeiture, there must be a termination order containing the charges and the misconduct of the employee.
- **Creation of Fund**: The National Social Security Fund was set up for unorganised sector workers, with an initial allocation of just ₹1,000 crore to support schemes for weavers, rickshaw pullers and bidi workers etc.
- **Social security agreements (SSAs):** India has concluded various Social Security Agreements (SSAs) to ease the social security obligations on cross-border / international workers. Under these SSAs, incentives such as detachment, exportability of pension, totalization of benefits, and

withdrawal of social security benefits are available.

- **Push for Digitisation**: In order to reduce corruption and ensure that citizens receive the benefits of social security programs, the government is pushing for a reduction in human interference. For instance, the e-Shram platform has allowed for the enrollment of about 300 million workers while expanding the coverage of accident insurance (of a 2-lakh cover) and disability insurance (of a 1 lakh cover).
- **Cash transfer**: Under Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) a transfer of Rs 6,000 per year in three instalments has been provided.
- **Food security:**
  - Pradhan Mantri Garib Kalyan Anna Yojana was launched to provide additional free-of-cost food grains to National Food Security Act (NFSA) beneficiaries 5 kg per person per month, over and above the regular monthly NFSA foodgrains.
  - One Nation One Ration Card: to ensure PDS benefit for people in transit, especially migrant workers.
  - Ujjawala Scheme: under the scheme the target was to release 8 Crore LPG Connections to the deprived households by March 2020.
- Employment Security
  - Pradhan Mantri Garib Kalyan Rojgar Abhiyaan (PM-GKRA) was launched for immediate employment & livelihood opportunities to returnee migrant workers.
  - Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS): It aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to at least one member of every household whose

adult members volunteer to do unskilled manual work.

- o **Aatmanirbhar Bharat Rojgar Yojana (ABRY)** was launched to reduce the financial burden of the employers and encourages them to hire more workers, implemented by EPFO.
- The Code on Social Security, 2020: This is a comprehensive law that consolidates and simplifies nine previous laws related to social security. It covers employees in both the organized and unorganized sectors, and provides for retirement pension, provident fund, life and disability insurance, healthcare and unemployment benefits, sick pay and leaves, and paid parental leaves.
- The Employees' Provident Fund Organisation (EPFO): This is a statutory body that administers the Employees' Provident Fund Scheme, the Employees' Pension Scheme, and the Employees' Deposit Linked Insurance Scheme. These schemes provide retirement pension, provident fund, and life and disability insurance to employees in the organized sector.
- **The Employees' State Insurance (ESI):** This is a self-financing social security scheme that provides medical care and cash benefits to employees in case of sickness, maternity, disability, and unemployment. It covers employees in the organized sector who earn less than a certain threshold.
- **The National Pension System (NPS):** This is a voluntary, defined contribution pension scheme that allows individuals to save for their retirement. It is open to all citizens of India, including those working in the unorganized sector. It offers multiple investment options and tax benefits.
- **The National Social Assistance Programme (NSAP):** The NSAP is a social security and welfare programme that provides support to aged persons, widows, disabled persons, and bereaved families on

death of the primary breadwinner, belonging to below poverty line households.

- **Housing**

The goal of the Pradhan Mantri Awas Yojana - Gramin and Urban is to provide "Housing to All" by the year 2022.

- **Credit**

The PM SVANidhi Scheme will lend urban street vendors working funds so they can reopen for business.

**Challenges**

**1. Low Budgetary Allocation**: Governmental budgetary allocation has always been constrained. For instance, the amount allocated to the national social security fund was minuscule in comparison to the Center for Budget and Governance Accountability's anticipated requirement of approximately 22,841 crores.

**2. Increasing Burden**: The cost of providing social assistance to the workforce's poorest 20% is expected to be in trillions, or roughly 0.69% of GDP in FY20.

**3. Accessibility**: 91% of India's workforce is employed in the unorganized, socially unprotected informal sector.

**4. Coverage**: While the Code on Social Security (2020) merged existing social security legislation, it dealt fundamentally with formal enterprises and did not cover informal ones.

**5. Compliance Burden**: Presence of a complex process to register for social scheme and low awareness is leading to less coverage e.g., e-Shram puts the burden of registration on informal workers, who are required to furnish a self-declaration and share their Aadhaar card.

**6. Complex and Confusing Processes:** The existing social security framework has become complex, with overlapping areas of authority between the State and Centre, and confusing

definitions being used such as between a platform worker, an unorganised worker and someone who is self-employed.

**7. Migrant Worker**: Migrant workers often face discrimination and suspicion from authorities in their working area, which hinder the effective utilisation of the schemes by them.

## Global Practices

Building social protection systems involves reducing fragmentation among different social safety net programs. For example, the Mexican Progresa-Oportunidades program replaced 15 existing inefficient, ineffective and uncoordinated programs with a single, effective and integrated conditional cash transfer initiative. In Romania, the Social Assistance Reform Strategy and Action Plan 2011-13 is consolidating all means-tested social safety nets into a single program targeting low-income households. Similar initiatives are underway, including in countries like Brazil that have pioneered integrated safety net systems, including expanding it through redistribution.

**Brazil's General Social Security Scheme**

- It is a contribution-based scheme that restores all or a portion of the lost income for the worker and his family.
- This covers any situation brought on by a workplace accident, a disability that prevents a worker from working, a death, a sickness, or medical treatment, etc.
- Any income loss brought on by a worker's incarceration must be paid for by the low-income insured person.
- While worker support funds are used to pay for unemployment insurance, the Unified Health System offers health insurance coverage.
- The Constitution clearly specifies that the National Treasury will act if there are inadequate funds.

- There is no need to bring a ton of documents when applying for social security payments; all it takes is a phone call or a trip to the bank.

**Way forward**

- **For Workers**:
  o For formal workers the government should expand employer and employee contribution under the Employees' Provident Fund Organisation (EPFO) system.
  o For informal workers with meaningful income, whether self-employed or in an informal enterprise, partial contributions can be elicited.
  o Government should persuade informal enterprises to formalise and expand their total contribution to the fund.
- **Unemployed Individual**: For those who are unemployed or have stopped looking for work, or do not earn enough, the government should step in to make provision for employment and provide for the social security initiatives.
- **Easy and Wholistic Coverage**: Greater support is required for financing social security for most of the India's labour force.
  o There should be a push for a pan-India labour force card and an expansion of existing successful schemes such as the Building and Other Construction Workers Schemes to other categories of workers.
  o Such expansion requires a loosening of existing restrictions on benefit portability, having a 90-day mandatory cooling period, as well as a more straightforward registration process.
- **Domestic Worker**: Special provisions should be made for domestic workers owing to their uncertain employment. The

government should promote the idea of organised domestic worker association.

- **Strengthening Existing Schemes**: Government should also strengthen the existing schemes, for example the Employees' Provident Fund (EPF), the Employees' State Insurance Scheme (ESI), and the National Social Assistance Programme (NSAP), with budgetary support and expansion of coverage.
- **Raising Awareness**: Government should give a more significant push to raise awareness about social security to ensure that more workers are aware of the available benefits.

The workforce in India is becoming more job insecure as jobs are becoming more ad hoc and hire/fire policies are expanding.

Campaigns to raise awareness of social security rights as well as government services and programs may be supported by organizations like the Self-Employed Women's Association, which operates Shakti Kendras (worker facilitation centers).

Policymakers must give up supply-side modifications in favor of actions that encourage fair growth in order to guarantee that the benefits of growth trickle down while fostering a feeling of social stability.

## A case study: Reforming the local Self-Government

***ProdEgyIAS's Expert Perspective:*** *This article is important for the topic of **Local-Self Government** of Public Administration optional Paper II.*

**Introduction**:

Derived from an officially documented Magna Carta, the concept of local self-government (LSG) was initially introduced during the tenure of Lord Ripon (1880–1884) while serving as the viceroy of British India. This pioneering initiative earned him the title of *Father of Local Self Government*. Following India's independence, this system of governance was further developed and expanded. Today, LSGs encompass both rural and urban entities, with the state holding exclusive authority over them, as stipulated by the state subject clause within our Constitution.

These organizations run independently of the Central Government, both in terms of management and operations. However, LSGs have been directly governed by the central government since 1947. It was believed that granting them more freedom, autonomy, and staff would enable them to work more freely and transparently without influence from the state government. The Constitution was amended in order to achieve this.

States are required under the 73rd and 74th Constitutional Amendments to establish village panchayats or urban bodies and to provide them with the necessary authority and capabilities to operate as self-governing organizations. Most governments nevertheless deny LSGs the required ability to function as independent organizations, even in light of recent amendments.

**Challenges faced by LSGs in Inda:**

a) **Fund shortage**
- Local self-government bodies (LSGs) are required to effectively handle their financial matters with the aim of reducing their reliance on external funding, including grants and assistance, as emphasized by the 73rd and 74th Constitutional Amendments. Consequently, it is imperative to generate internal resources. To generate revenue from various funding channels, it is essential to access these sources in a prompt manner.
- In urban entities such as Municipalities, NACs, and commissionerate zones, a significant challenge arises from the failure

to assess properties, businesses, and related activities.

- o Statistics indicate that in more than 60 percent of cases, assessments have not been commenced.
- o Internal or external audits in all such cases ponder over why the assessments have not been done and what the lacunae are.
- o At times, internal audits never attempt to find the real fault with a real official who has neglected making an assessment. But an external audit examines all pros and cons to opine on a better option to proceed with the assessment.

- Cross-verification of the allotment of houses by various government agencies with the units assessed in the urban bodies can detect how many were left unassessed.
- Other constructions directly undertaken by individuals may be monitored by agencies approving plan estimates for the construction of the houses.
- So, auditing can better address the cause of the pendency of the assessments and with the rectification of all these issues, revenue in terms of holding tax with a larger number of fresh assessments will naturally increase.
  - o Therefore, the fund crunch may go away. But it may be noticed that the LSGs very much neglect this area.
  - o A good number of officials function in such a manner that assessment of fresh cases gets either delayed or not commenced.

**b) Unplanned urbanisation**

- **Lack of Vision:** Urban development that was planned in 1950 is naturally far deficient compared with the needed development in 2023. So, it can be termed unplanned now and the cause may be the unprepared vision document.
  - o The audit on this front needs to check the available vision documents to suggest certain issues that need to be covered.
  - o A vision document should cover a minimum 20-year period. The document is definitely not rigid, as it needs revamping at every moment as per the need.

- **Increased level of Rural-urban Migration:** The migration of rural masses to cities or towns to earn a livelihood is at its peak now, which was not so in 1950. With a heavily rising population, the government finds difficulty tackling unemployment.
  - o At the village level, no adequate provision of work is there for which people are being forced to migrate to cities. So, there should be constant, flexible planning to avert such issues to the best possible extent.

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**Remedies for Unemployment**:

LSGs should see that sufficient scope is there for the local mass to get awareness timely to have employment and in this context, allotments given by the Government of India under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) are noteworthy.

Unemployment allowance is there under the Act in case a job applicant with an assigned job card is not provided with work in a specified time frame.

Thus, awareness of government schemes for the rural or urban masses may partially succeed in curbing the migration of rural masses to urban areas.

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**c) Excessive state control**

- Under the 73rd and 74th Constitutional Amendments, states are to take steps to organise village panchayats or urban bodies and endow them with such powers and authorities as may be necessary to enable them to function as units of self-government.

- States are therefore mandated to transfer all controls to the LSGs. An audit in such matters is to see the way the administration is affected.
- In planning, organising, directing, staffing, co-ordinating, reporting and budgeting, audit has its own say. Any deficiency at any point will result in management failure.
- An audit is supposed to find remedies, not exclusively fault-finding modalities. Something is not happening; the concept here is most important and that part should be scrutinised with sincerity in the audit.
- An audit is to see and analyse the effects and prescribe ways of combating the bad causes. This can be achieved if communications from all fronts are kept open at all times.
- That means the auditee should be open to auditors. A patient should talk openly with the physician to get the best diagnostic treatment.
- A meagre failure may cause excessive drug abuse through excessive control for which LSGs, of course, have no possible remedy from their side. It is only government machinery that can address the cause. In any case, balanced control should be there—no excess or no less.

### d) Multiplicity of agencies

- Multiple agencies are working under LSG. Drainage, sewerage, and sanitation are the agencies to work together for the effective functioning of the LSG. These three are there to perform in a manner to combat the health hazards of the people.
- Any deficiency with any agency affects the other. Similarly, the finance wing is linked with taxation covering assessment, tax demand realisation, etc. To make all linked agencies function efficiently, audits must adhere to the requisite knowledge.
- Generally, comments on delayed tender, tender fixing, delayed execution, improper estimation, delayed execution, and revision

of estimation during execution, employing the right manpower for sanitation, taxation or alike, help LSGs find their weak zone to be checked in detail for taking adequate measures for protection/precaution.
- Various yojanas form the burning point in the workings of LSG. We can take the case of Pradan Mantri Awas Yojana (PMAY). Under PMAY, one has to locate the eligibility first and then, based on the eligibility factors, beneficiaries are to be identified.
- Any deficiency in identifying beneficiaries will result in the greatest failure of the scheme. Often, it is noticed that political people get weighted in getting identified for their own benefit. This is highly irregular and against the spirit of the scheme. These points are to be kept into consideration.

### e) Substandard personnel

- LSGs are manned by substandard people who are mostly computer illiterate. In the present context, it is almost impossible to do work without a computer and these computer illiterates who were there in regular service can't just be fired out. That is the greatest hurdle.
- They have to be trained in the best interest of the LSGs to cope with the work as per the needs of the moment.
- The same applies to audit mass. Audit people also can't work without knowing the computer. Therefore, strengthening the internal audit of LSGs needs to train audit people on computers to manage their audit work efficiently.

### f) Low level of people's participation

- LSGs can function satisfactorily with people's participation and that is the requirement. But due to a lack of awareness or illiteracy, people fear participating.
- For instance, under the flagship programme of MGNREGA, job holders get paid by direct bank transfer (DBT). One can fairly argue

that because of DBT, the payment is transparent. But this is not the reality. Middlemen do everything on behalf of the jobholder. The pass books are kept with them from the date of account opening, as are the withdrawal forms. Money can be drawn at the sweet will of the middlemen without the knowledge of the jobholder.

- So, in order to uphold socio-economic justice, audit people must have a basic idea of field facts.

### g) Unscientific distribution of function

- It may be seen that duty assignments are not present in many offices. Someone is overburdened with work and others are having idle times.
- The auditor should insist on the duty charts. This may locate some idle manpower and the audit may observe them utilising them in some other offices where their job can most profitably be utilised.

## Conclusion

The success of LSGs' functioning depends upon generating revenues at their level with the least dependence on grants and government assistance. They can function effectively with functionaries at their level with little or no intervention from government machinery.

These issues may be resolved with the proper factual examination of the cause and effect of any aspect of the audit.

The government should not utilise the services of the LSG personnel for purposes other than those for which they are meant. To use the personnel in an election or enumeration, much of the manpower is there without any LSG function.

This very much affects the management of the LSGs. Strengthening LSGs will lead to a flourishing economy since LSGs function at the grass root level.

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